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September 28, 2009 **XCG File No. 1-664-17-03**

Brian Hamilton, Chief Administrative Officer, and
Chief and Council
Mohawks of the Bay of Quinte
13 Old York Road, RR#1
Tyendinaga Mohawk Territory, ON K0K 1X0

Re: XCG Response to Ministry of the Environment (MOE) And Waste Management (WM) Comments on XCG Reports related to Draft Amendment to Provisional Certificate of Approval, Waste Disposal Site, Richmond Landfill Site, Ontario

Dear Chief and Council:

As you requested, XCG Consultants Ltd. (XCG) has prepared this letter to respond to comments provided by the Ministry of the Environment (MOE) and Waste Management (WM) on several XCG reports pertaining to a draft Amendment to Provisional Certificate of Approval, Waste Disposal Site, for the Richmond Landfill Site (the "Draft Amendment"). The Draft Amendment proposes to approve the closure plan for the site, which was released by Waste Management (WM) in a document dated June 2007. The XCG reports that were prepared pertaining to the Draft Amendment are the following:

- "Review of Draft Amendment to Provisional Certificate of Approval, Waste Disposal Site, Richmond Landfill Site, Ontario," May 29, 2009;
- "Surface and Groundwater Sampling, Richmond Landfill Vicinity," May 29, 2009;
- "Odour Modelling, Richmond Landfill Vicinity," May 29, 2009;
- "Odour Modelling, Richmond Landfill Vicinity," August 6, 2009 (revised version of the May 29 report of the same title).

Comments by the MOE and WM, and WM's consultant RWDI Air inc., on the above reports were provided in a number of letters and emails. The MOE and WM comments are reproduced in Tables 1 to 3 (attached in Appendix A), along with references to the original documents that contain the comments. For each MOE and WM comment, XCG's response to the comment is provided in the right-hand column of the table.

Appendices B to E contain a number of attachments that are referenced in XCG's responses in Tables 1 to 3.

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If you have any questions, comments, or require further assistance, please do not hesitate to contact the undersigned.

Yours truly,

XCG CONSULTANTS LTD.

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Encl.	Appendix A	Tables 1 to 3
	Appendix B	AERMOD Odour Modelling Results Based on Emission Rate of 12 OU/s/m^2
	Appendix C	AERMOD Data Files Corresponding to Model Run based on Emission Rate of 12 OU/s/m^2
	Appendix D	"Statistical Analysis of Historic Monitoring Data at the Richmond Landfill, Napanee, Ontario," May 26, 2006
	Appendix E	"Groundwater Investigation, Vicinity of Richmond Landfill, Napanee, Ontario," May 24, 2006

cc: Todd Kring, Mohawks of the Bay of Quinte

APPENDIX A

TABLES 1 TO 3

TABLE 1 — XCG RESPONSE TO WASTE MANAGEMENT COMMENTS ON LETTER FROM XCG TO THE MOHAWKS OF THE BAY OF QUINTE, DATED MAY 29, 2009, RE: REVIEW OF DRAFT AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL, WASTE DISPOSAL SITE, RICHMOND LANDFILL SITE, ONTARIO

Comment Reference Number	Original XCG Comment	Waste Management (WM) Comment Provided in Letter to Ministry of the Environment, Dated August 5, 2009, Re: Review of Reports Prepared by XCG Consultants Ltd. Regarding the Richmond Landfill, Napanee, Ontario	XCG Response
1-1	Condition 6a, Draft Amendment. XCG's comments regarding the final cover design in the 2007 Closure Plan were provided in Item 13 of the 2007 XCG Closure Plan Review Letter. The MOE has in part addressed XCG's comments by specifying that the silty clay soil used for final cover must have a hydraulic conductivity of 1 x 10^{-8} m/s or less. However, a number of XCG's concerns have not been addressed, including: - Calculations of water balance and leachate generation have not been provided to justify the final cover design. This information should be made available for public review before the Draft Amendment is finalized. - No provision has been made for a drainage layer beneath the final cover layer to reduce the likelihood of leachate seeps and to improve the operation of gas collection wells. - There has been no incorporation of any synthetic cap material, which would be prudent given the concerns regarding the sensitive hydrogeology of the area. - The final maximum slope of 3.5 horizontal to 1 vertical has not been changed and does not meet the standard set in Ontario Regulation 232/98, Section 30(1).	Condition 6a – The MOE has provided a specific requirement for the final cover soil to have a hydraulic conductivity of 1 x 10^{-8} m/s. This specification is intended to address the issues of minimization of potential leachate seeps, enhancement of operating conditions for landfill gas collection, and need for synthetic cover material. In regards to the final maximum slope of our landfill, we have constructed our landfill in accordance with the Certificate of Approval and MOE has considered the 3.5 horizontal to 1 vertical slope to be in compliance.	WM's comment does not address XCG's recommendation that calculations of water balance and leachate generation be made available for public review to justify the final cover design. This is an outstanding recommendation that should be addressed. WM also did not address XCG's comment about the drainage layer beneath the final cover layer. XCG recommends that a drainage layer be incorporated in the design. XCG does not agree that using final cover soil with a hydraulic conductivity of 1 x 10^{-8} m/s addresses the "need for synthetic cover material". Given the sensitive hydrogeology of the area, a cap design that incorporates layers of natural clay material as well as synthetic materials should be used. XCG recognizes that it would not be practical to alter the final maximum slope requirements now that the waste mound is close to having reached its final contours. It is noted, however, that because the final slope is steeper than the 4:1 standard, the completed slopes will be more prone to erosion damage than they would have been if a less steep slope had been used. This is further reason for implementing an improved cap design, incorporating both natural clay and synthetic components, as discussed above. Also, frequent inspections of the completed slopes will be needed in order to promptly identify and repair erosion damage.
1-2	Condition 6b, Draft Amendment. Before the Draft Amendment is finalized, the public should have all opportunity, given the environmental sensitivity of the area and the level of concern that has been expressed regarding the landfill site, to review and provide comments on the Quality Assurance/Quality Control Plan for placement of the final cover material.	Condition 6b – The approval of the Quality Assurance and Quality Control Plan that we develop following the approval of the Draft Amendment to the Provisional Certificate of Approval rests solely with the MOE. However, we defer to the MOE in terms of whether or not they choose to consult with other parties in the review of our Quality Assurance and Quality Control Plan.	XCG recommends that the MOE obtain the Quality Assurance and Quality Control Plan from WM and distribute it for public comment prior to approval of the Draft Amendment.

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1-3	Condition 8a, Draft Amendment. XCG's comments regarding the proposed WM groundwater, surface water and landfill gas monitoring programs were provided in Items 12 and 19 of the 2007 XCG Closure Plan Review Letter. The majority of XCG's concerns regarding the monitoring programs have not been addressed in the Draft Amendment document or in the other supporting information provided for review. The following concerns should be addressed: - The work that has been completed to establish Reasonable Use (RU) Criteria is inadequate, based on XCG's review of the 2007 Closure Plan, and revised RU Criteria have not been provided or specified in the Draft Amendment. It is of concern that some of the RU Criteria listed in Table 4 of Appendix C of the 2007 Closure Plan are greater than the MOE Table 2 standards that apply to potable groundwater areas in Ontario. For example, the vinyl chloride RU Criterion is 0.005 mg/L, which is ten times the Table 2 standard of 0.0005 mg/L. - In Schedule B of the Draft Amendment tritium has not been included as one of the parameters to be monitored in groundwater. As discussed in Item 19 of the 2007 XCG Closure Plan Review Letter, past studies have indicated that tritium is a valuable parameter for assessing leachate impacts at this site, particularly given the elevated naturally occurring concentrations in this area of a number of parameters that are commonly used to track leachate migration, such as chloride and iron. It is recommended that tritium be added in the Amendment as a required parameter for monitoring of all monitoring wells that are included in the monitoring program. It is noted that past studies by XCG, using tritium as one of the test parameters, including a recent study dated May 11, 2009, entitled "Surface and Groundwater Sampling, Richmond Landfill Vicinity," have found evidence of probable off-site leachate impacts. More extensive analyses of tritium in the network of on-site wells would be very useful in providing a more comprehensive picture of leachate migration on the site. - The monitoring program outlined in Schedule B of the Draft Amendment includes over 70 wells from which samples are to be collected and analyzed. There is no indication in the Draft Amendment regarding whether or not the number of wells to be monitored will be reduced after site closure. XCG had expressed concern in the 2007 XCG Closure Plan Review Letter regarding the small number of groundwater monitoring locations included for post-closure monitoring according to the 2007 Closure Plan. It is assumed that the details of the proposed post-closure monitoring will be defined in the Environmental Monitoring Program (EMP) that is to be submitted within 90 days of the issuance of the finalized Amendment. Given the environmentally sensitive nature of this site and the level of interest that has been expressed by the public and other stakeholders, the EMP document should be produced and made available for public review and comment before the Draft Amendment is finalized. - The surface water monitoring program outlined in Schedule C of the Draft Amendment references three surface water monitoring locations, S4, S8 and S9, that are now obsolete because of the extensive changes that have been made to the southwest stormwater pond and surrounding area. The surface water monitoring program, including the revised sampling locations, needs to be updated and should be made available for public review and comment before the Draft Amendment is finalized. As discussed in Item 12 of the 2007 XCG Closure Plan Review Letter, sampling of the northeast and northwest ponds "up to two times per year" is inadequate. The minimum monitoring frequency (not the maximum) should be defined for these ponds. The water quality trends in the ponds will be key in determining the presence of impacts from the closed landfill, especially with respect to the performance of the final cover.	Condition 8a – The items identified in this comment all relate to the environmental monitoring plan (EMP) submitted with the Closure Plan. The Draft Amendment to the Certificate of Approval requires that a revised EMP be submitted for review and approval. The items identified in this comment will be addressed in the submittal of the revised EMP, as appropriate.	XCG recommends that the MOE obtain the EMP from WM and distribute it for public comment prior to approval of the Draft Amendment.
1-4	Conditions 14 to 18 and 20, Draft Amendment. XCG's comments regarding the proposed WM financial assurance are provided in Item 7 of the 2007 XCG Closure Plan Review Letter. The financial assurance calculation provided in Table 8.1 of the 2007 Closure Plan indicates a total of $5,983,322, which does not match the figure $11,495,773 listed in Condition 20 of the Draft Amendment. XCG has not been provided with details of the revised calculations that led to the revised financial assurance figure. Ensuring the adequacy of the financial assurances to cover all aspects of closure, post-closure care, and contingency plans for dealing with emergency conditions is essential, and therefore an opportunity for public and third party review of the details of the revised financial assurance calculations should be provided.	Conditions 14 to 18 & 20 – The changes made to financial assurance between Table 8.1 of the 2007 Closure Plan and Condition 20 of the Draft Amendment are based upon the MOE's 2005 Guidelines for Financial Assurance.	XCG recommends that the MOE make available for public comment, prior to the approval of the Draft Amendment, the details of the up-to-date financial assurance calculations.

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1-5	Condition 19, Draft Amendment. XCG's comment regarding the contaminating life span of the Richmond landfill Site are provided in Items 6 and 23 of the 2007 XCG Closure Plan Review Letter. XCG and the public have not been given an opportunity to review an updated estimate of the contaminating life span of the site. Rather than having WM submit this information within 90 day of issuance of the Amendment, the updated information should be released, and the public and stakeholders should have an opportunity to review and comment on it, prior to the finalization of the Amendment. As mentioned in Item 23 of the 2007 XCG Closure Plan Review Letter, the contaminating life span of the existing Richmond Landfill Site was previously calculated by WM's consultants to be approximately 300 years. On this basis, it would be prudent to continue with the post-closure maintenance and monitoring measures indefinitely.	Condition 19 – We will develop a contaminating life estimate in consultation with the MOE. However, we defer to MOE in terms of whether or not they choose to consult with other parties in the review of our contaminating site life estimate.	XCG recommends that the MOE obtain the detailed contaminating life span calculations from WM and distribute them for public comment prior to approval of the Draft Amendment.

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1-6	Condition 60 and 61, Draft Amendment. XCG has the following concerns regarding the stormwater management pond sampling requirements as outlined in these conditions: - According to the Draft Amendment, the acute toxicity testing prior to discharge is only required for the southwest stormwater pond, and not for the northeast and northwest stormwater ponds. The other two ponds also have the potential to negatively impact a surface water body (Marysville Creek) and they should therefore be subject to the same requirements as the southwest pond. In addition to parameters that are acutely toxic to rainbow trout and daphnia magna, there are many other parameters of concern that could potentially cause harm to the natural environment, including parameters such as heavy metals that can bioaccumulate in aquatic organisms. The list of parameters required to be sampled prior to discharge of the water in the southwest pond is a much longer list than just acute toxicity testing, as shown in Table 2 of the Certificate of Approval (C of A) Industrial Sewage Works Number 5268-7E8LJW, issued August 19, 2008. Conditions 60 and 61 of the Draft Amendment should be modified to refer to this longer list of parameters. - The Pollutech acute lethality bioassay reports provided to XCG by the MOE only cover two sampling dates (November 18, 2008, and March 9, 2009) for the southwest stormwater pond. It is expected that discharge events would have occurred more often than twice between the C of A being issued in August 2008 and the time when XCG received the results from the MOE for review (Friday, May 22, 2009). Based on the requirement of C of A 5268-7E8LJW to conduct acute toxicity testing prior to every discharge of water from the pond, there should be more analytical certificates documenting the testing that has been done. In addition to the acute lethality results, there should also be result for the analyses of the parameters listed in Table 2 referenced in the point above. The public should be given an opportunity to review and comment on these test results before the Draft Amendment is finalized. - Based on a review of the Henderson Paddon Drawing entitled “Storm Water Pond and Ditch Upgrades,” the sampling inlet for the southwest pond is located at an elevation of 123.2 metres within the southwestern-most sedimentation pond. This is 0.9 metres deeper than the elevation of the cattail shelf that represents the bottom of the layer of pond water that is drained when the outlet valve for the pond is opened. This sampling depth may be appropriate for contaminants that may be associated with suspended solids that tend to settle towards the bottom of the pond, but it would not be appropriate for contaminants that may float at or near the surface of the pond, such as hydrocarbon-related contaminants. It is noted that the “Hydrocarbon Impact Soil Storage Pad,” which is shown on the above-referenced Henderson Paddon drawing, drains into the southwest stormwater pond. Provisions should be made in the pond sampling program to ensure that the potential for floating contaminants is taken into account. - Given the relatively large surface area of the different sections of the southwest stormwater pond, and the presence of various sedimentation ponds within these sections, there is a potential for accumulated sediment to become resuspended in the pond water during windy conditions. Thus, a pond sample collected on a calm day could potentially show a significantly lower level of contamination than that present in the pond water several days later, if conditions had become windy in the meantime. This possibility should be taken into account in the pond sampling program and a pond management plan detailing the method of managing accumulated sediment should be made available for public review and comment. - According to Certificate of Approval Industrial Sewage Works Number 5268- 7E8LJW for the southwest stormwater pond, the pond has been designed to “provide quantity and quality control of stormwater runoff from storm events up to 1:100 return frequency.” Before the Draft Amendment is finalized, the public should be given an opportunity to review and comment on the supporting calculations used to size the pond to retain a 1:100 year storm event. The design should be based on a 1:100 year storm event combined with a major snowmelt event occurring at the same time. It is acknowledged that the Certificate of Approval for the southwest pond has already been finalized and issued, but because the pond forms an integral part of the environmental controls for the landfill, the pond design information requires further consideration in the context of the Draft Amendment. - As mentioned in Item 18 of the 2007 XCG Closure Plan Review Letter, a stormwater management plan for the landfill site should be prepared. It should be provided to the public for review and comment before the Draft Amendment is finalized.	Conditions 60 & 61 – We sample surface water parameters as per Table 2 of the Provisional Certificate of Approval # 5268-7E8LJW prior discharge. We have conducted voluntary acute toxicity testing on surface water for our southwest storm pond as further verification of the storm water quality prior to discharge. We have only conducted release of surface water from our southwest pond on two occasions since the issuance of Provisional Certificate of Approval #5268-7E8LJW in August 2008, which followed receipt of confirmation of survival rate of rainbow trout and daphnia magna (i.e. after November 18, 2008 and March 8, 2009). Sampling and testing of surface water from our southwest pond is done in compliance with Conditions set out in Provisional Certificate of Approval #5268- 7ELJW, and the storm pond has been designed with a weir system and shut-off valves to limit turbidity that would facilitate movement of potential floating contaminants and agitation of accumulated sediments. In addition, the surface water sampling program will be re-addressed as part of the revised EMP. The southwest storm pond has been approved by the MOE (i.e. Provisional Certificate of Approval # 5268-7ELJW) to meet the 1:100 year storm water event and ongoing operation and management of the southwest storm pond is conducted in accordance with Conditions set out in Provisional Certificate of Approval #5268-7ELJW.	It is recommended that an EMP be developed that adequately addresses XCG’s comments. The provisions of the Certificate of Approval (C of A) Industrial Sewage Works Number 5268-7E8LJW do not adequately address XCG’s concerns about stormwater quality leaving the landfill site property. The EMP should be made available for public comment prior to the approval of the Draft Amendment.

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1-7	Condition 66, Draft Amendment. The operations and procedures manual should be prepared in advance of the issuance of the Amendment and provided to the public for review and comment prior to the finalization of the Draft Amendment.	Condition 66 The approval of the Operations and Maintenance Manual (O&M) that we develop following approval of a Draft Amendment to the Provisional Certificate of Approval rests solely with the MOE. However, we defer to the MOE about whether or not they choose to consult with other parties in their review of our O&M.	XCG recommends that the MOE obtain the operations and procedures manual from WM and distribute it for public comment prior to approval of the Draft Amendment.
1-8	Condition 75, Draft Amendment. XCG's comments regarding the cleaning and inspection of the Leachate system are provided in Item 14 of the 2007 XCG Closure Plan Review Letter. The "visual inspections" referred to in this condition should be clarified as including camera inspections no less frequently than twice per year.	Condition 75 The approval of the cleaning and inspection of our leachate management system that we develop following an approval of the Draft Amendment to the Provisional Certificate of Approval rests solely with the MOE. However, we defer to the MOE regarding whether or not they choose to consult with other parties in their review of our inspections.	XCG recommends that the MOE obtain the procedures for cleaning and inspection of the leachate management system from WM and distribute them for public comment prior to approval of the Draft Amendment.
1-9	Condition 81, Draft Amendment. XCG's comments regarding the leachate management are provided in Items 5 and 11 of the 2007 XCG Closure Plan Review Letter. Reliance on haulage to sewage treatment plants with a provision for development of an "action plan" in the future when a location for disposal is not available is an inadequate contingency plan. As noted in the 2007 XCG Closure Plan Review Letter, Item 11, the 2007 Closure Plan states that an existing approval is in place for spray irrigation of the leachate, and that this may be implemented in the future as a contingency measure (page 1-4 of the Closure Plan). Given the many concerns expressed during the EA review process regarding odour impacts and surface water impacts, spray irrigation of Leachate should not be accepted as a contingency measure for leachate management following closure. A detailed leachate management contingency plan should be developed and made available for public review and comment prior to the finalization of the Draft Amendment.	Condition 81 Haulage of leachate to sewage treatment plants has been approved by the MOE and a Provisional Certificate of Approval is in place that allows the spray irrigation of leachate that may be implemented as a contingency action. The Draft Amendment to the Provisional Certificate of Approval includes conditions to address leachate collection, management and contingency matters. However, we defer to the MOE regarding whether or not they choose to consult with other parties in their review of our leachate collection, management and contingency systems.	Based on WM's response, XCG continues to have concerns regarding the proposed leachate management approach. A detailed leachate management contingency plan should be developed and made available for public review and comment prior to the finalization of the Draft Amendment.
1-10	Condition 84, Draft Amendment. A detailed Leachate collection system contingency plan, which could form a part of the more general Leachate management contingency plan referenced above, should be developed and made available for public review and comment prior to the finalization of the Draft Amendment.	Condition 84 The Draft Amendment to the Provisional Certificate of Approval includes Conditions to address leachate collection, management and contingency matters. However, we defer to the MOE regarding whether or not they choose to consult with other parties in their review of our leachate collection, management and contingency systems.	XCG recommends that the MOE obtain a leachate management contingency plan from WM and distribute it for public comment prior to approval of the Draft Amendment.

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1-11	Condition 88, Draft Amendment. A detailed contingency plan for the failure of the landfill gas collection system should be developed and made available for public review and comment prior to the finalization of the Draft Amendment.	Condition 88 The Draft Amendment to the Provisional Certificate of Approval includes conditions to address landfill gas collection, management and contingency matters. However, we defer to the MOR regarding whether or not they choose to consult with other parties in review of our landfill gas collection, management and contingency systems.	XCG recommends that the MOE obtain a landfill gas collection system contingency plan from WM and distribute it for public comment prior to approval of the Draft Amendment.
1-12	Condition 115, Draft Amendment. The Groundwater and Surface Water Impact Contingency Plan should be developed and made available for public review and comment prior to the finalization of the Draft Amendment. A public review of this document prior to issuing the approval is particularly critical given the environmental sensitivity of the area and the potential for groundwater and surface water quality to be impacted by the landfill operation, as well as the degree of concern that has been expressed in the past regarding previously proposed contingency measures, such as the fracture trench approach mentioned in Section C, Item 2, of the attached 2007 XCG Closure Plan Review Letter.	Condition 115 Approval of the Groundwater and Surface Water Impact Contingency Plan that we develop following approval of Draft Amendment to the Provisional Certificate of Approval rests solely with the MOE. However, we defer to the MOE as to whether or not the MOE chooses to consult with other parties in their review of our plan.	XCG recommends that the MOE obtain the Groundwater and Surface Water Impact Contingency Plan from WM and distribute it for public comment prior to approval of the Draft Amendment.
1-13	Condition 123, Draft Amendment. A detailed Emergency Response Manual should be developed and made available for public review and comment prior to the finalization of the Draft Amendment.	Condition 123 – The approval of the Emergency Response Plan (ERP) that we develop following approval of the Draft Amendment to Provisional Certificate of Approval rests solely with the MOE. However, we defer to the MOE as to whether or not they choose to consult with their review of our ERP.	XCG recommends that the MOE obtain the ERP from WM and distribute it for public comment prior to approval of the Draft Amendment.
1-14	Condition 126, Draft Amendment. XCG's comments regarding the timing of landfill closure are provided in Items 3 and 8 of the 2007 XCG Closure Plan Review Letter. The current Provisional Certificate of Approval A371203, Condition 34, indicates that "a schedule indicating the time period for implementing" the closure activities is to be provided. The 2007 Closure Plan does not provide this and the Draft Amendment does not require it. A specific schedule with required dates for completion of all closure activities should form part of the Amendment. As stated in Item 8 of the 2007 XCG Closure Plan Review Letter, it is XCG's opinion that the landfill closure should proceed immediately. This is based on the concerns about the current landfill operation that were raised by the MOE, other reviewing regulatory agencies, third party reviewers (including XCG), and the public during the review of the Richmond Landfill Expansion Environmental Assessment (EA) documents. There were many concerns expressed during this process related to the sensitive nature of the hydrogeology of the site, the inadequacy of the existing liner beneath the landfill, the inadequacy of the existing environmental monitoring program, and the possibility of off-site groundwater quality impacts arising from the landfill operations. Based on these concerns, it would be prudent to proceed with immediate closure of the landfill, in order to reduce the risk of increasing the severity of ongoing environmental impacts and/or causing new negative environmental impacts in the future.	Condition 126 – The Draft Amendment to the Provisional Certificate of Approval includes the conditions to appropriate closure of our landfill at the time it reaches approved landfill contours. However, we defer to the MOE as to whether or not they choose to consult with other parties regarding our closure plan implementation.	For the reasons explained in the column to the left, XCG recommends that the MOE takes steps to ensure that the closure of the landfill proceeds as soon as possible. The Draft Amendment should not be approved without containing specific dates for completion of all closure activities.

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1-15	Schedule D, Draft Amendment. XCG's comments regarding the landfill gas monitoring program are provided in Items 5 and 19 of the 2007 XCG Closure Plan Review Letter. The landfill gas monitoring should include monitoring not only of methane, but also of carbon dioxide, oxygen, hydrogen sulphide and pressure. Furthermore, given numerous odour complaints that have been received from residents and odour modelling results as documented in XCG's report of March 31, 2009, entitled "Odour Modelling, Richmond Landfill Vicinity," a detailed odour monitoring program should be developed for the surrounding area and a copy of this should be made available for public review and comment prior to finalizing the Draft Amendment. Furthermore, there should be a landfill gas contingency plan developed to address potential explosive levels of methane and other potential problems with landfill gas, and this contingency plan should similarly be made available for public review and comment prior to finalizing the Draft Amendment.	Schedule D – We are monitoring landfill gas in accordance with relevant requirements, including our Provisional Certificate of Approval #1335-5LRN5N. The Draft Amendment to the Provisional Certificate of Approval includes conditions to address landfill gas collection, management and contingency matters. However, we defer to the MOE as to whether nor not they choose to consult with other parties regarding our landfill gas monitoring program.	XCG recommends that the MOE obtain odour and landfill gas contingency plans from WM and distribute them for public comment prior to approval of the Draft Amendment.

TABLE 2 — XCG RESPONSE TO WASTE MANAGEMENT COMMENTS ON XCG REPORT ENTITLED "SURFACE AND GROUNDWATER SAMPLING, RICHMOND LANDFILL VICINITY," DATED MAY 29, 2009

Comment Reference Number	**Waste Management (WM) Comment Provided in Memorandum to Don Wright and Dave White of WM from Chris Prucha of WM, dated July 31, 2009, Re: Review of XCG Report Dated 29May2009**	**XCG Response**
2-1	The information presented in the XCG report lacks sufficient detail to allow for a complete analysis of results and conclusions. For example, the exact location of the groundwater monitoring well that was sampled is not documented, nor are the borehole and monitor construction details such as well depth, monitor screen type and depth, and other details provided. Previous surface water and groundwater sampling investigations completed by XCG are referenced in the letter, but are not described in detail and cannot be verified as we do not have any reports related to these previous investigations. In the case if groundwater quality, conclusions appear to be drawn and attributed to the Richmond Landfill, based on this single, unconfirmed sampling event.	Reports containing the additional details mentioned in WM's comment were provided to the MOE in 2006 and have been in the public record since then. The key reports are: "Statistical Analysis of Historic Monitoring Data at the Richmond Landfill, Napanee, Ontario," May 26, 2006, and "Groundwater Investigation, Vicinity of Richmond Landfill, Napanee, Ontario," May 24, 2006. Copies of these reports are attached as Appendices D and E, respectively. It is agreed that definitive conclusions regarding groundwater quality cannot be made based on a single sampling event in a single location. XCG's findings were meant to be considered in the context of the previous findings, as documented in the 2006 reports cited above.
2-2	Surface water results were compared to Provincial Water Quality Objectives (PWQO, 1994). Small exceedances above PWQO were noted for all surface water samples, although these are not discussed in detail in the report. We noted that concentrations, while comparable between upstream and downstream sampling locations, are generally higher at the upstream location compared to the downstream location. This suggests that the water discharging from the on-site storm water management pond is generally improved compared to the upstream surface water quality.	XCG agrees that, at the time of the XCG sampling events, there was no indication of elevated concentrations of contaminants in the water discharging from the storm water management pond.
2-3	In addition, XCG made comment regarding the discharge procedure from the storm water management ponds. We are managing storm water in these ponds in accordance with our Certificate of Approval.	For the reasons explained on pages 3 and 4 of XCG's May 29 (2009) report, XCG does not agree that the ponds are being managed in compliance with the Certificate of Approval. It is noted that WM indicates in its letter of August 5, 2009, Re: "Review of Reports Prepared by XCG Consultants Ltd. Regarding the Richmond Landfill, Napanee, Ontario," that WM has "only conducted release of surface water from our southwest pond on two occasions since the issuance of Provisional Certificate of Approval #5268-7E8LJW in August 2008, which followed receipt of confirmation of survival rate of rainbow trout and daphnia magna (i.e. after November 18, 2008 and March 8, 2009)." During the April 3 XCG sampling event, it appeared that the flow volume in the outlet ditch volume was too high to be solely due to runoff from the small catchment area feeding the short stretch of outlet ditch only. Based on these observations, it is XCG's professional opinion that water was being released from the stormwater ponds at that time, but no acute lethality testing records were available corresponding to this date.
2-4	The report does not provide any information about the well that was sampled, aside from its general location to the southeast of the landfill, in the road allowance of Beechwood Road. Additionally, the depth and well installation and construction details (screen type, length and depth) are not documented. The fact that the low yielding well was purged dry on two occasions prior to sampling and has insufficient water for a duplicate sample to be collected suggests that it is constructed in a low permeability formation, where advective groundwater flow is limited.	Details regarding the well construction are provided in the report attached in Appendix E. Although this well has a low yield, there is nevertheless potential for leachate impacts to have reached this location during the many years that the Richmond Landfill has been in operation.

TABLE 2 — XCG RESPONSE TO WASTE MANAGEMENT COMMENTS ON XCG REPORT ENTITLED "SURFACE AND GROUNDWATER SAMPLING, RICHMOND LANDFILL VICINITY," DATED MAY 29, 2009

Comment Reference Number	Waste Management (WM) Comment Provided in Memorandum to Don Wright and Dave White of WM from Chris Prucha of WM, dated July 31, 2009, Re: Review of XCG Report Dated 29May2009	XCG Response
2-5	The report states that "typical background tritium activities in modern precipitation (and non-leachate impacted groundwater) not exceed 50 TU", yet concludes from the tritium results obtained from this sampling event (40.9 TU) that there is a "high probability that off-site leachate impacts are present in MW03-06-D." These two statements not to appear to be consistent.	The statement regarding background tritium levels not exceeding 50 TU is a general statement that is not specifically applicable to the groundwater characteristics in the area of interest. The report in Appendix D contains a statistical analysis of historic groundwater tritium findings at the Richmond Landfill. Based in the findings of this statistical analysis, the "value 40.35 TU is considered to be representative of the threshold tritium level at which a probable leachate impact exists, based on typical background tritium concentrations in the area." Based on this, any value over 40.35 TU is considered to be indicative of a probable leachate impact. It is noted that a much more extensive groundwater quality study (including tritum analyses of all samples) would be needed to evaluate the degree and extent of any off-site leachate impacts that have occurred. The work conducted by XCG up to now provides only preliminary information about a few sampling locations. It is XCG's opinion that the findings of these preliminary investigations point to the need for much more extensive investigations.
2-6	Some volatile organic compounds (VOC) were detected at low levels, including benzene, dichloromethane, toluene, vinyl chloride and o-xylene. It should be noted that benzene, toluene, ethylbenzene and xylenes (BTEX) are constituents known to occur naturally in groundwater in this area. Finally, the reported vinyl chloride concentration (0.2 ug/L) corresponds to the analytical method detection limit and no samples have been collected to confirm this presence.	It is agreed that there are BTEX constituents known to naturally occur in groundwater in the area. Nevertheless, the presence of these parameters along with detectable vinyl chloride and dichloromethane indicate the potential for an off-site leachate impact, and further investigations of this should be conducted.
2-7	As noted previously, the results presented in the report cannot be fully evaluated until additional sampling data are available. The absence of quality assurance and quality control (QA/QC) data or discussion is also problematic. Additionally, field parameters such as pH, temperature and electrical conductivity provide useful information about the groundwater conditions, but were apparently not included as part of the sampling program conducted by XCG.	Additional data collected historically are provided in the report in Appendix E.
2-8	The results obtained by XCG should be confirmed and the comments outlined here should be addressed before a complete evaluation of the results and conclusions from their study can be undertaken. Once confirmed by additional sampling, the results should be evaluated in relation to the extensive historical water quality information database available for the site, in particular leachate and sampling locations located between the landfill and the XCG sampling locations. Conclusions about landfill impacts should be drawn from multiple lines of evidence.	XCG agrees with this comment and would add that the follow-up investigations should include additional off-site groundwater testing, including tritium as a key parameter.

TABLE 3 — XCG RESPONSE TO MINISTRY OF THE ENVIRONMENT (MOE) AND WASTE MANAGEMENT (WM) COMMENTS ON XCG REPORT ENTITLED "ODOUR MODELLING, RICHMOND LANDFILL VICINITY," DATED MAY 29, 2009, AND REVISED XCG REPORT OF THE SAME TITLE, DATED AUGUST 6, 2009

Comment Reference Number	Waste Management (WM) or Ministry of the Environment (MOE) Comment	XCG Response
Comments on May 29 XCG Report, Prepared by WM Consultant RWDI Air Inc. in Letter Dated July 30, 2009, Re: Peer Review Richmond Landfill, Napanee, RWDI Project 0925063B		
3-1	At the time of the initial odour assessment of the Richmond Landfill, conducted for the Waste Management of Canada Corporation, current standard dispersion models (SCREEN3, AERMOD) were not in general use in Ontario (report was dated October of 2005, Regulation 419 requiring AERMOD modelling came into force November 30, 2005), odour legislated limits has not been formulated (Regulation 419 was amended to include odour limit in August 2007) and the current protocols for meteorological data (5 years) did not yet exist (required with AERMOD). Therefore, the input information set and subsequent assessment had limitations. The aim of the analysis is provided by XCG (May 29, 2009) was to address these shortcomings. This peer review addresses the major concerns associated with the XCG analysis.	It is agreed that the aim of XCG's modelling work was to address the shortcomings of odour assessments completed previously. However, it was not XCG's intention to obtain air dispersion modelling results that would be fully representative of the impacts of all odour emission sources at the landfill. As further discussed below, XCG's modelling work was aimed at determining whether the operations at the Richmond Landfill Site have the potential to give rise to odour impacts on receptors in the Tyendinaga Mohawk Territory (TMT).
3-2	**2.1 Selection of Landfill Sources** Only odour emissions from fresh waste placement activities were considered, without proper justification and in contradiction to actual findings at many landfill sites. ***XCG Report (2.2.1)*** ***'based on initial calculations, only odour emission estimates from fresh waste operations were considered significant in this report.'*** The assumption that only working face freshly tipped waste is a significant source has not been proven. In fact, in a summary document of various landfill sources in Europe[1], it was found that landfill gas, covered waste, tipped compacted and uncovered waste can also contribute to the same extent; and in the case of capping failures and fissures, drilling and gas infrastructure, odours from these sources can exceed the contribution of freshly tipped waste by orders of magnitude (see Attachment A). Also of paramount importance, there are no details as to how any of the odour emissions were calculated, nor were sample calculations given.	It is agreed that in addition to fresh waste placement activities, there are numerous other sources of odour at landfill sites. This fact was acknowledged in Section 2.1.1 of XCG's report, which discussed a number of potential emission sources at the landfill, including fresh waste placement activities, the leachate holding lagoon, leachate collection manholes, composting operations, temporary soil storage pad, use of hydrocarbon contaminated soil as cover material, and landfill gas not captured by the gas collection system. In the scientific literature, there are varying findings regarding the degree to which these different sources contribute to the overall odour emissions arising from landfill sites. A number of studies have found that the primary source of emissions from landfills is related to fresh waste placement.[2,3,4] In the conclusions of XCG's report, it was stated that "other odour sources at the landfill site were not modelled and may contribute to additional potential odour impacts." As stated in XCG's response at 3-1, it was not XCG's intention to obtain air dispersion modelling results that would be fully representative of the impacts of all odour emission sources at the landfill, but rather to determine whether the operations at the Richmond Landfill Site have the potential to give rise to odour impacts on receptors in the TMT. To achieve this aim it was not necessary to comprehensively include all sources of emissions at the landfill site. Section 5.2.5 of XCG's report explains how the odour emissions were calculated for inclusion as inputs to the AERMOD model. XCG used the 67,000 OU/s geometric mean of odour emission rates calculated for nine landfill sites, based on the findings of Nicolas, J. et al (2008)[2], emitted from an area source with dimensions of 25 m x 100 m (see Section 5.1 of XCG's report), with a source height of approximately 40 m above grade.

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[1] Longhurst, P., 'Principles of Landfill Odour Emissions and Control', AWE International, March 2007.

[2] Nicolas, J., Romain, A.C., Delva, J., Collart, C., Lebrun, V. 2008. Odour annoyance assessment around landfill sites: methods and results. NOSE2008: International Conference on Environmental Odour Monitoring and Control. AIDIC: Rome, Italy.

[3] Karnik, M., Parry, C., 2001. Landfill odour control - a practitioner's experience. Sardinia 2001, Cagliari, Italy.

[4] Stretch, D., Laister, G., Strachan, L., Saner, M., 2001. Odour trails from landfill sites. Sardinia 2001, Cagliari, Italy.

TABLE 3 — XCG RESPONSE TO MINISTRY OF THE ENVIRONMENT (MOE) AND WASTE MANAGEMENT (WM) COMMENTS ON XCG REPORT ENTITLED "ODOUR MODELLING, RICHMOND LANDFILL VICINITY," DATED MAY 29, 2009, AND REVISED XCG REPORT OF THE SAME TITLE, DATED AUGUST 6, 2009

Comment Reference Number	**Waste Management (WM) or Ministry of the Environment (MOE) Comment**	**XCG Response**
3-3	**2.2 Use of Sampling Data** The significance of the sampling data was not well understood and hence these data were not utilized to substantiate emission rates used**.** ***XCG Report (4)*** ***'Samples collected for odour analyses were essentially "grab" samples. The number of samples collected failed to account for potential odour impact (see definition of simultaneous occurrence above) as a result of time, location, and correct meteorology.'*** The samples that were taken were source samples taken in accordance with accepted protocol at that time and are for most purposes independent of meteorology. We do not expect that alternate sampling locations of the same landfill would result in significant differences, especially in light of the order of magnitude differences between different landfills or the variability in odour panel analysis results.	XCG does not agree that the sampling data collected at several discrete locations approximately 10 years ago at the Richmond Landfill Site would be useful "to substantiate the emission rates used" in XCG's model. It is doubtful that these data are representative of the current conditions at the site, given the significant changes that have occurred there in the last 10 years. Furthermore, as discussed in Nicolas, J. et al (2008), source testing to determine odour emissions at landfill sites is prone to inaccuracy.[2] As an alternative to using 10-year-old source testing information for the landfill site, XCG used the geometric mean of odour emission rates calculated for nine landfill sites, based on the findings of Nicolas, J. et al (2008)[2], as described in the response under 3-2. This was done due to a lack of current information available for deriving emission rates based on the specific characteristics of the Richmond Landfill Site. To address WM's and the MOE's concerns regarding this approach, XCG has now re-run the AERMOD model using an emission rate of 12 OU/s/m^2, which is the upper bound of the odour flux rate for fresh waste presented in Attachment A of RWDI's July 30 letter, based on an area source with dimensions 25 m x 100 m, which is XCG's estimate of the maximum likely working face area based on the zone where further filling may take place in the top of the existing waste mound. The results for this model run are included in Appendix B. The results support XCG's previous finding that there is a potential for odour impacts exceeding 1 OU/m^3 over the majority of the TMT. (It is noted that the boundaries of the TMT are indicated by the green squares on the figure in Appendix B.)
3-4	**2.3 Determination of Emission Rates** The emission factors used were not well documented, and differed drastically for the two models for the same source. ***XCG Report (5.1)*** ***'Using a lower bound for odour emission rates for fresh waste operations as indicated in the scientific literature reviewed (0.2 OU/s/m2), screening level dispersion was conducted.'…*** When conducting an air quality assessment, the worst case upper bound is generally used. Perhaps XCG had chosen to use the lower bound in order to provide a conservative estimate of the potential impacts of the landfill on their client. However, no justification for using the lower bound is given, which makes it difficult to comment on the appropriateness of their choice.	In response to this concern, XCG re-ran the SCREEN3 model using the same emission rate used in the AERMOD model. The results of the new model run were presented in XCG's revised odour modelling report, dated August 6, 2009.

TABLE 3 — XCG RESPONSE TO MINISTRY OF THE ENVIRONMENT (MOE) AND WASTE MANAGEMENT (WM) COMMENTS ON XCG REPORT ENTITLED “ODOUR MODELLING, RICHMOND LANDFILL VICINITY,” DATED MAY 29, 2009, AND REVISED XCG REPORT OF THE SAME TITLE, DATED AUGUST 6, 2009

<table>
<tr><th>Comment Reference Number</th><th>Waste Management (WM) or Ministry of the Environment (MOE) Comment</th><th>XCG Response</th></tr>
<tr><td>3-5</td><td>

XCG Report (5.2.1)

‘The geometric mean rate of odour emission for a fresh waste operation source (67,000) OU/s as reported by Nicolas, J. et al,2008) and working face dimensions (similar to the screening level dispersion level dispersion model’s dimensions) were used as inputs.’

The emissions calculated by SCREEN3 and AERMOD use different emission rates. (SCREEN3 uses 0.2 OU/s/m2 , for fresh waste tipping, for the assumed working face of 2500m2 this yields **500 OU/s**. For AERMOD an emission factor for fresh waste operations of **67,000 OU/s** was used, based on one study). The large discrepancy in emission factors used for virtually the same source is not justified. A paper was cited for justification of the 67,000 OU/s emission factor, however the paper was concerned with examining total off-site impacts from landfills in Belgium and does not address odour concentrations beyond 1 km.

Our own measurements taken on working face sources in Ontario landfills indicate that working face odours usually are in the 3,000 to 10,000 OU/s range. Measurements taken in Ontario by RWDI include the Trail Road landfill, Britannia St. Landfill, Eastview Landfill, Caledon Landfill etc.

</td><td>

With regard to the discrepancy between the SCREEN3 and AERMOD emission rates, see XCG’s response under 3-4.

As discussed under 3-3, XCG has now re-run the AERMOD model using an upper bound odour flux rate from RWDI’s July 30 letter. The results indicate a potential for odour impacts exceeding 1 OU/m^3 over the majority of the TMT. It is noted that this new model run still does not take into account many other potential odour sources at the landfill site (see lists of other sources under 3-2). Modelling that takes into account these other sources would be expected to show greater odour impacts on the TMT.

</td></tr>
<tr><td>3-6</td><td>

2.4 SCREEN3 Modelling Results

The wrong units were reported, resulting in values 1,000,000 times the actual modelling results.

XCG Report (5.1)

‘At five kilometres, the 1-hour averaging period indicated an odour concentration of approximately 7,500 OU/m3.

When emission rates are input as OU/s, the screening level results from SCREEN3 and AERMOD are output in µOU/m3 by default, rather than OU/m3, this means that the reported values in XCG’s report and Attachment B are high by a factor of 10^6.

The input files for the SCREEN3 (as well as for AERMOD) were not available for review. However, RWDI has conducted a SCREEN3 modelling run based on the model inputs presented in the XCG report. The input parameters used in RWDI’s SCREEN3 model are listed below in Table 1. The SCREEN3 model file can be found in RWDI Attachment B.

<table>
<tr><td>Odour emission factor</td><td>0.2 OU/s/m^2</td></tr>
<tr><td>Source dimensions</td><td>100m x 20m, at a source height of 40m</td></tr>
<tr><td>Receptor location</td><td>5 km from source</td></tr>
<tr><td>Receptor (i.e. breathing zone) height</td><td>1.5 m</td></tr>
<tr><td>Resulting maximum odour concentrations at receptor point</td><td>0.006005 OU/m^3</td></tr>
</table>

This is an obvious error that an experienced odour team should have noticed. An error of this magnitude should have been caught.

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To address this error, XCG re-ran the SCREEN3 model. The results of the new model run were presented in XCG’s revised odour modelling report, dated August 6, 2009.

</td></tr>
</table>

TABLE 3 — XCG RESPONSE TO MINISTRY OF THE ENVIRONMENT (MOE) AND WASTE MANAGEMENT (WM) COMMENTS ON XCG REPORT ENTITLED "ODOUR MODELLING, RICHMOND LANDFILL VICINITY," DATED MAY 29, 2009, AND REVISED XCG REPORT OF THE SAME TITLE, DATED AUGUST 6, 2009

Comment Reference Number	Waste Management (WM) or Ministry of the Environment (MOE) Comment	XCG Response
3-7	**2.5 AERMOD Modelling Receptor Grid** The receptor grid was so coarse that a very small data set contributed to the quantification of maximum odour impact. ***XCG Report (5.2.2)*** ***'…a relatively coarse receptor grid was set up with 1,000 metre spacing overlaying the TMT. The MOE specified tiered or radial receptor grid was not used in the model setup, since the modeling was not centered around the Richmond Landfill site.'*** According to the MOE Guidelines for Air Dispersion Modelling[5], the area of modeling coverage varies with distance from the source, starting at 20m for an area within 200m, 500m for an area within 4800m, and 1000m or less for an area greater that 4800m from the source. Although the grid size would comply with this guideline at a distance greater than 4.8 km, the coarse grid size does not define the maximum odour levels very well, despite the addition of receptors at the border of TMT 4.5 km from the Richmond Landfill.	XCG does not agree that use of a 1,000 grid spacing overlaying the TMT resulted in a material difference in model results compared to what would have been obtained using a 500 m grid spacing for the portions of the TMT within 4.8 km of the landfill site. Nevertheless, to address this concern, the new AERMOD model results in Appendix B were obtained using the following grid spacings as specified in the MOE protocol (O. Reg. 419/05 S.14): • within 200 m of the source: 20 m grid spacing • within 300 m of the source: 50 m grid spacing • within 800 m of the source: 100 m grid spacing • within 1800 m of the source: 200 m grid spacing • within 4800 m of the source: 500 m grid spacing • > 4800 m from the source: 1000 m grid spacing

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[5] Ontario Ministry of the Environment, 'Air Dispersion Modelling Guideline for Ontario', March 2009.,PIBs # 5165e02.

TABLE 3 — XCG RESPONSE TO MINISTRY OF THE ENVIRONMENT (MOE) AND WASTE MANAGEMENT (WM) COMMENTS ON XCG REPORT ENTITLED “ODOUR MODELLING, RICHMOND LANDFILL VICINITY,” DATED MAY 29, 2009, AND REVISED XCG REPORT OF THE SAME TITLE, DATED AUGUST 6, 2009

Comment Reference Number	Waste Management (WM) or Ministry of the Environment (MOE) Comment	XCG Response
Comments on May 29 XCG Report, Prepared by Frank Dobroff of the MOE in Memorandum Dated June 19, 2009, Re: Richmond Landfill – Odour Modeling for Mohawks of Bay of Quinte		
3-8	A new assessment was conducted involving modeling by Screen3 and AERMOD employing different emission estimates obtained from literature and utilizing a different meteorological data set. The new emission estimates were only for fresh waste operations and thus differed significantly from the previous modeling by the operators - Waste Management of Canada Corp, who included only landfill gas (LFG) and composting operations in their assessment. The authors indicated that “based on initial calculations” only odour emission estimates from fresh waste operations were significant and chose to use this source alone in its assessments. There was also a non-specified literature source given in a bibliography listing as further evidence for fresh waste operations being dominant and “typically orders of magnitude higher than LFG generation”. There was no elaboration on what calculations had been undertaken to arrive at this conclusion. Our experience indicates that the fresh waste sources are not always the greatest.	See XCG response under 3-2.
3-9	They selected two area emission estimates (one for each model) from literature sources- the second one being very recent (a single 2008 study) for the AERMOD assessment. I cannot comment on the legitimacy of these estimates or the criticisms of the previous emission estimations. A source testing engineer would need to comment on those.	Rudolf Wan of the MOE provided comments regarding XCG’s emission estimates. See items 3-15 to 3-20.
3-10	The Screen3 modeling employed an emission estimate of 0.2 Odour Units/sec/square metre for the working face of the landfill treated as an area source. Based on the 2500 m^2 size of the working face, this translates to a release rate of 500 OU/sec, compared to the 67000 OU/sec value that was used in AERMOD. It is not explained why two disparate emission estimates were used in the two models. Unfortunately, the authors have misinterpreted the Screen3 outputs and reported predicted concentrations six orders of magnitude too high. The outputs (all 1 hour average) should be interpreted as microOdour Units, not Odour units. Consequently, the actual predicted maximum was 0.04 OU, not 0.371E+5 OU predicted to occur 296 metres from the landfill (in my model run). At distances 5 km and 20 km (on Tyendinaga Mohawk Territory (TMT)), concentrations by their modeling were only .0075 and .002 OU respectively, well below the 1.0 OU guideline.	See XCG responses under 3-4 and 3-6.
3-11	I further assessed with Screen3 by running the model with the higher emission rate used in AERMOD calculated to be 26.8 g/sec/m^2 and arrived at a maximum value of 5.0 OU (296 m from landfill) and 1.0 OU at 5 km and 0.26 OU at 20 km (all 1 hour averages). Concentrations of 1-5 OU were predicted (above the 1.0 OU guideline) at distances of 200 metres to 5 km using the higher emission rate. Treating these for 10 minute averaging would increase them of course.	The results reported by the MOE agree closely with XCG’s SCREEN3 results in the revised report of August 6, 2009.

TABLE 3 — XCG RESPONSE TO MINISTRY OF THE ENVIRONMENT (MOE) AND WASTE MANAGEMENT (WM) COMMENTS ON XCG REPORT ENTITLED "ODOUR MODELLING, RICHMOND LANDFILL VICINITY," DATED MAY 29, 2009, AND REVISED XCG REPORT OF THE SAME TITLE, DATED AUGUST 6, 2009

Comment Reference Number	Waste Management (WM) or Ministry of the Environment (MOE) Comment	XCG Response
3-12	The AERMOD results cannot be checked for accuracy or suitability of inputs, as no data files were provided other than a pictorial output of Odour Unit contours of maximum levels using a very coarse receptor grid with 1000 metre spacing extending out across the TMT. There was no smaller grid around the landfill with short receptor spacing to see the predicted localized landfill impacts as per normal analysis (the focus was on TMT). The emission estimate of 67000 OU/sec was over 100 times greater than what was used in Screen3. A maximum reading of 199 OU (10 minute average) was predicted somewhere on or close to the landfill with predictions of 12 OU at the northeast corner of TMT and 2 OU at the furthest southwest corner of TMT. It would appear that the authors correctly employed a conversion factor to convert microOU to OU in AERMOD since the predictions were in similar ranges to the Screen3 run with the higher emission rate. The high predictions would need to be compared to complaint records for frequency and location, previous Technical Support odour survey results, and a just completed TAGA survey report, but they do seem to be over-predicted in AERMOD.	The AERMOD data files corresponding to the latest model run (pictorial results included in Appendix B) have been provided in Appendix C. A tighter grid spacing was used for this latest model run as discussed under 3-7, and the latest model run is based on a lower emission rate as discussed under 3-3. This model run indicates the potential for odour impacts in the northeastern portion of the TMT approaching 5 OU/m^3. According to information obtained from the Mohawks of the Bay of Quinte (MBQ), there have been a number of complaints in the past regarding odours from the Richmond Landfill impacting residents in the northeastern portion of the TMT. This history of complaints in this area provides some evidence to support XCG's AERMOD modelling findings.
3-13	I would agree that the 5 year Ministry data set (Ottawa Surface, Maniwaki Upper Air) was better to use in AERMOD than the one year Kingston Airport data set used previously. It is noted in the wind rose pictorials supplied that Kingston Airport wind data are only measured from 6:00am to 11:00pm. This makes the comparisons to the Ottawa wind roses somewhat suspect and at least partly explains why average wind speeds for Kingston were higher (4.5 m/s vs 3.33 m/s). The missing nighttime hours would generally include very light wind speeds and would likely reduce the Kingston annual wind speed average if they had been included. The frequency of north through to east northeast winds (making TMT downwind of landfill) is higher for the Kingston data than Ottawa (23 vs 18.5% approximately). The difference between the two met data sets was a slight veering in directions and possibly slightly higher wind speeds for Kingston. In the study presented, no frequency of occurrence information was computed, only maxima, so these differences in the met data would not have played a large factor in influencing the predictions. I can only assume that the missing nighttime hours were backfilled with other nearby data in the original assessment as per normal practice when data sets are incomplete. I am advised that the Kingston airport historically measured around the clock until the mid 1990s.	XCG is generally in agreement with these comments.
3-14	In summary, the modeling information supplied for this review appeared flawed and likely over predicted effects of the landfill and may have been improperly assessed by focusing only on the waste handling operations at the working face. Source testing engineers should review the emission estimations and other source characterizations.	These concerns are addressed in XCG's responses above.
Comments on May 29 XCG Report, Prepared by Rudolf Wan of the MOE, Contained in an Email from Bruce Hawkins of the MOE to Kevin Shipley of XCG, Dated August 10, 2009, Re: MOE Comments on the Odour Report - Richmond LFS		
3-15	Although the report has pointed out that there are other odour sources in the site beside the fresh waste operation e.g. composting operation and landfill gas generation and release, the report has not provided adequate supporting information to support that the fresh waste operation is the only significant source. The ministry's experience is that odours from composting operation and from landfill gas release are always significant sources of odour from landfills.	See XCG response under 3-2.

TABLE 3 — XCG RESPONSE TO MINISTRY OF THE ENVIRONMENT (MOE) AND WASTE MANAGEMENT (WM) COMMENTS ON XCG REPORT ENTITLED "ODOUR MODELLING, RICHMOND LANDFILL VICINITY," DATED MAY 29, 2009, AND REVISED XCG REPORT OF THE SAME TITLE, DATED AUGUST 6, 2009

Comment Reference Number	Waste Management (WM) or Ministry of the Environment (MOE) Comment	XCG Response
3-16	The quoted emission rate of 67,000 ou/s from fresh waste operation is an odour emission rate which is dependent upon the type(s) of waste and the mass or surface area of the waste. The use of that odour emission rate directly to the site without addressing or adjusting to the type(s) of waste and mass or surface area of the discharge is inappropriate.	See XCG response under 3-3.
3-17	There is no supporting information on the use of the odour emission rate of 0.2 ou/s/m^2 in the Screen3 model run. Furthermore there is no supporting information on the dimensions of the area source. The source of that emission rate is also not provided in the report.	See XCG response under 3-4. The dimensions of the area source are based on XCG's estimate of the maximum likely working face area in consideration of the zone where further filling may take place in the top of the existing waste mound. The dimensions of the relatively level apex of the waste mound are roughly 200 m by 30 m and it was assumed that not more than half of this area would likely be opened for filling activities. It is probable that waste placement activities would usually be limited to smaller areas—the 100 m x 25 m area assumed by XCG was judged to be a reasonable maximum.
3-18	I agreed with Frank that the outputs from the Screen3 model run should be in micro-OU.	See XCG response under 3-6.
3-19	The use of the odour emission rate of 67,000 ou/s in the AERMOD dispersion model is not supported. Besides, there is no input and output files of the AERMOD run in the report. Therefore no comment can be made on the modelling. For example, it is not clear if the source is modeled as an AREA source, or an "initial vertical dimension" (sigma-z) has been defined for the AREA source.	See XCG responses under 3-3 and 3-12.
3-20	That the emission estimations in the report are based on "un-validated source test reports", the data quality of the emission estimation is considered as "marginal or uncertain" in accordance with MOE's Procedure Document. That the odour emission estimations and impact study in the report are not based on site-specific data, or have not been assessed with the (limited) site-specific data, the conclusions of the report are not considered as definitive and conclusive.	These concerns are addressed in XCG's responses above.
Comments on August 6 XCG Report, Prepared by Frank Dobroff of the MOE, Contained in an Email from Bruce Hawkins of the MOE to Kevin Shipley of XCG, Dated August 10, 2009, Re: MOE Comments on the Odour Report - Richmond LFS		
3-21	The revised XCG report on odour modeling dated Aug 6/09 is the same as the May 29/09 version that I previously reviewed and commented on in June 19 memo - with one exception. They became aware of the mistake in the interpretation of the Screen3 model outputs- ie. outputs were in microOU, not OU. Consequently they got rid of the lower emission rate (Q) that they previously used in Screen3 (0.2 g/s) and replaced it with the higher emission rate that they used in AERMOD. Their calculations for that were the same as mine so their new Q was what I had used when I reran the model to see what it would give. The only difference was they set their shortest downwind distance from landfill at 500m while I used default 100m, so my maximum value is a bit higher than theirs. Everything else matched.	XCG is generally in agreement with these comments.
3-22	They also added a section 5.2.6 which among other things confirms that they introduced the unit factor of a million to one in AERMOD which I had commented on before as likely to have been done.	XCG is generally in agreement with this comment.
3-23	The revision does not change my review, since I ran the Screen3 before as they have done it now and reported the predictions in my comments.	XCG's responses regarding the points made in Mr. Dobroff's original review are provided under 3-8 to 3-14.

TABLE 3 — XCG RESPONSE TO MINISTRY OF THE ENVIRONMENT (MOE) AND WASTE MANAGEMENT (WM) COMMENTS ON XCG REPORT ENTITLED "ODOUR MODELLING, RICHMOND LANDFILL VICINITY," DATED MAY 29, 2009, AND REVISED XCG REPORT OF THE SAME TITLE, DATED AUGUST 6, 2009

Comment Reference Number	Waste Management (WM) or Ministry of the Environment (MOE) Comment	XCG Response
Comments on August 6 XCG Report, Prepared by Rudolf Wan of the MOE, Contained in an Email from Bruce Hawkins of the MOE to Kevin Shipley of XCG, Dated August 11, 2009, Re: Revised Odour Modeling Report - Richmond Landfill (These are revisions of Mr. Wan's comments on the May 29 report.)		
3-24	Although the report has pointed out that there are other odour sources in the site beside the fresh waste operation e.g. composting operation and landfill gas generation and release, the report has not provided adequate supporting information to support that the fresh waste operation is the only significant source. The ministry's experience is that odours from composting operation and from landfill gas release are always significant sources of odour from landfills.	See XCG response under 3-2.
3-25	The quoted emission rate of 67,000 ou/s from fresh waste operation is an odour emission rate which is dependent upon the type(s) of waste and the mass or surface area of the waste. The use of that odour emission rate directly to the site without addressing or adjusting to the type(s) of waste and mass or surface area of the discharge is inappropriate.	See XCG response under 3-3.
3-26	There is no supporting information on the dimensions of the area source used in the Screen3 model run.	See XCG response under 3-17.
3-27	The use of the odour emission rate of 67,000 ou/s in the Screen3 and AERMOD dispersion model runs is not supported. Besides, there is no input and output files of the AERMOD run in the report. Therefore no comment can be made on the modelling. For example, it is not clear if the source is modeled as an AREA source, or an "initial vertical dimension" (sigma-z) has been defined for the AREA source.	See XCG responses under 3-3 and 3-12.
3-28	That the emission estimations in the report are based on "un-validated source test reports", the data quality of the emission estimation is considered as "marginal or uncertain" in accordance with MOE's Procedure Document. That the odour emission estimations and impact study in the report are not based on site-specific data, or have not been assessed with the (limited) site-specific data, the conclusions of the report are not considered as definitive and conclusive.	See XCG response under 3-20.
Comments on August 6 XCG Report, Prepared by WM Consultant RWDI Air Inc. in Letter Dated August 10, 2009, Re: Peer Review Richmond Landfill, Napanee – Additional Comments, RWDI Project 0925063B		
3-29	They have corrected the error of the over-reporting their results by a factor of one million. They have also addressed the discrepancy between the two models they used by bumping up the emission rates in the SCREEN 3 model to a total emission of 67,000 OU/s.	XCG is generally in agreement with these comments.
3-30	The paper that develops this estimate used a method whereby observers would record observations around landfills in Belgium. The study shows that the median distance down wind that odour can be detected from the landfills (this is equivalent to a concentration of 1 OU/m3) was 612 m. The maximum distance cited in the study was 700 metres. This is the basis for the odour emission rates that were used to calculate odour impacts of over 1 OU/m3 at distances over 15 kilometres away.	XCG agrees that the paper used to obtain landfill odour emission information found that the maximum distance from the source at which odour was perceived was 700 m. However, the distance from a landfill at which odours can be detected varies greatly based on meteorological and atmospheric conditions. The wind speeds during the observation events mentioned in Nicolas, J. et al (2008) are in the order of 5 m/s, or 18 km/hour, and the observations were not made during evening or night-time situations, when conditions are more likely to cause odour impacts at greater distances. Odour impacts at distances of several kilometres from landfill sites are well documented in the scientific literature. For example, a Carp Road Landfill odour report prepared by H. Moore[6] discussing odour complaints in 2006 and 2007 found that detectable odours from the landfill, based on records of complaints received, extended beyond 7 km from the source.

---

[6] Moore, H., Carp Road Landfill Odour Report (to the end of 2007), January 2008, obtained from http://www.clclc.ca/content.php?doc=10&xwm=true

TABLE 3 — XCG RESPONSE TO MINISTRY OF THE ENVIRONMENT (MOE) AND WASTE MANAGEMENT (WM) COMMENTS ON XCG REPORT ENTITLED "ODOUR MODELLING, RICHMOND LANDFILL VICINITY," DATED MAY 29, 2009, AND REVISED XCG REPORT OF THE SAME TITLE, DATED AUGUST 6, 2009

Comment Reference Number	Waste Management (WM) or Ministry of the Environment (MOE) Comment	XCG Response
3-31	The fundamental flaw still remains in that the use of a 2500 m2 working face is completely erroneous. The typical size of a working face is 10 metres by 10 metres or 10 metres by 15 metres. We have attached SCREEN 3 modelling results for a working face emission. Further, we have used an emission rate based on a series of 8 samples collected from the Trail Road Landfill in Ottawa. The odour emissions from these samples were 0.32 to 0.83 OU/m2/s. In order to be conservative, we have used the upper range of these values. Ottawa is most likely to have similar characteristics to Richmond of those in our library of measurements - the absolute highest value measured was 09=.96 OU/m^2/s but this was taken at a landfill that was still receiving sewage sludge. The actual odour emissions are likely lower than our historic values since the amount of organics in the waste stream has been reduced since the time of the measurements.	A discussion of the size of the working face is provided in XCG's response under 3-17. The working face size is variable and dependent upon WM's operational approach and the methods used by the individual operators who are in charge of waste placement and compaction at any given time. The assumption of a 100 m x 25 m area was based on XCG's judgement regarding a reasonable maximum size of the working face. Odour emission rates measured at the Trail Road Landfill are not necessarily representative of odour emission rates at the Richmond Landfill. It is noted that the odour emission rates discussed by RWDI in this comment are about one order of magnitude lower than the upper range value of 12 OU/s/m^2 indicated for "freshly tipped refuse" in Attachment A of RWDI's previous peer review letter of July 30, 2009. Given the difficulties involved in accurately assessing odour emission rates from landfill site sources (see discussion in XCG's response under 3-3), it is XCG's opinion that a conservative approach should be followed through the use of an upper limit emission rate obtained from the scientific literature.
3-32	The SCREEN3 outputs are also attached to this document and show the results in micro odour units per cubic metre. At 5,000 metres, adjusting for a 10 minute averaging period (multiply by 1.65), the results for 100 m2 and 150 m2 working faces are 0.002 and 0.003 OU/m3, respectively. This compares to the results presented by XCG that show 1 OU/m3 at this distance. We would expect similar decreases in the AERMOD modelling. There are other odour sources at the landfill but we accept XCG's contention that the working face is the major source.	XCG disagrees with the working face area and emission rates used in this model, as explained in the response under 3-31 above.

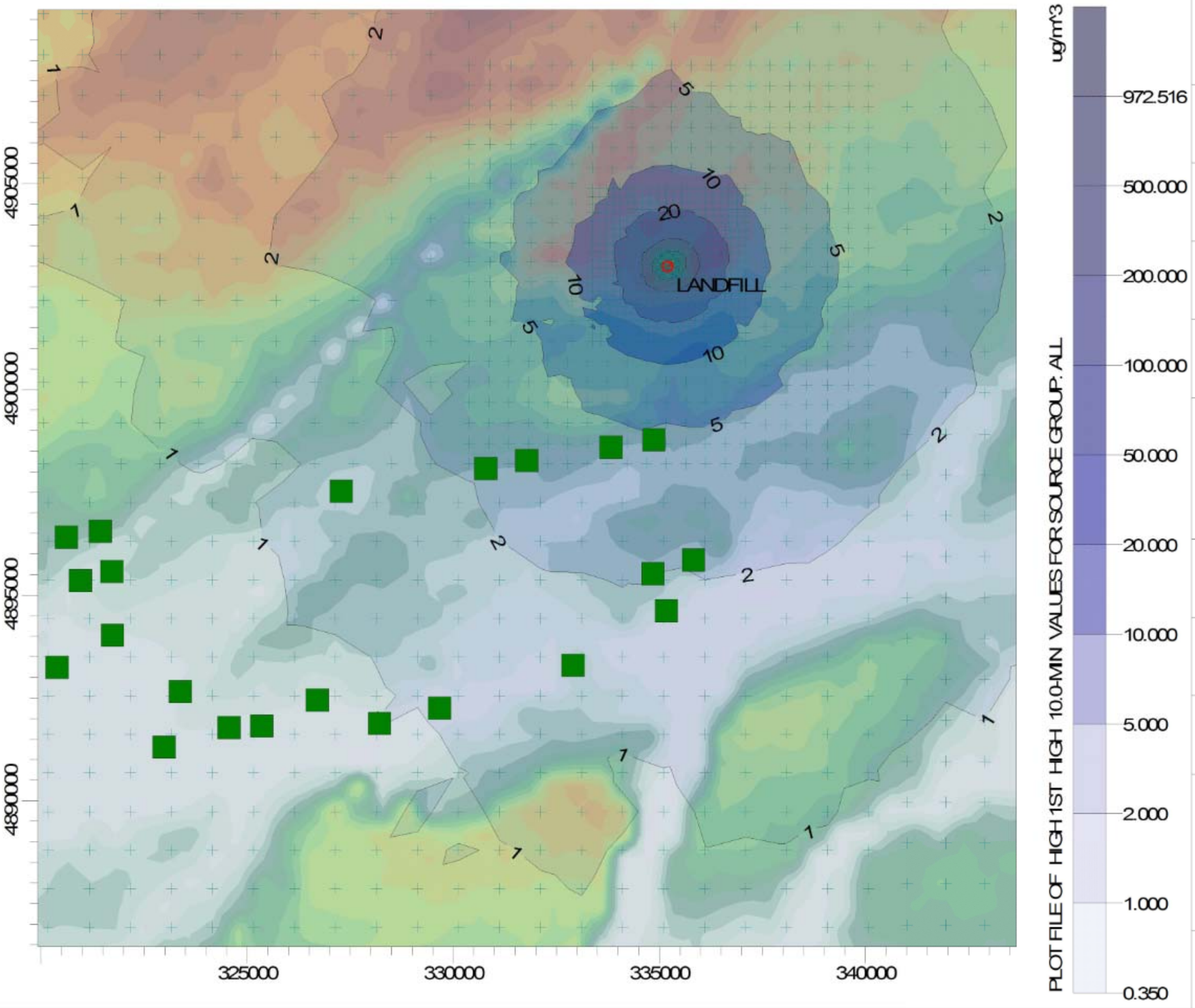
APPENDIX B

AERMOD ODOUR MODELLING RESULTS

BASED ON EMISSION RATE OF 12 OU/S/M^2

PROJECT TITLE:

Richmond Landfill Odour Modelling
Working Face Fresh Waste Area Source



COMMENTS:

Meteorological Data: MOE Eastern Region (Kingston, Cornwall).
Elevated terrain option.
12 OU/s/m^2
10-minute averaging period.

SOURCES:

1

RECEPTORS:

2979

OUTPUT TYPE:

Concentration

MAX:

972.51596 ug/m^3

COMPANY NAME:

XCG Consultants Ltd.

MODELER:

DYC

DATE:

9/21/2009

SCALE: 1:150,268

0 5 km

XCG

PROJECT NO.:

1-664-17-03

AERMOD View - Lakes Environmental Software

C:\Documents and Settings\davidc\My Documents\Lakes\AERMOD View\Elevated12OU\Elev12OU.isc

APPENDIX C

AERMOD DATA FILES CORRESPONDING TO MODEL RUN BASED ON EMISSION RATE OF 12 OU/S/M^2

```
**
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 6.1.0
** Lakes Environmental Software Inc.
** Date: 9/21/2009
** File: C:\Documents and Settings\davidc\My Documents\Lakes\AERMOD
View\Elevated12OU\Elev12OU.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE 12 OU/s/m^2 elevated option
   MODELOPT DFAULT CONC
   AVERTIME 1
   POLLUTID ODOUR
   FLAGPOLE 1.00
   RUNORNOT RUN
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION LANDFILL AREA 335200.000 4902990.000 151.000
** DESCRSRC Landfill area
** Source Parameters **
   SRCPARAM LANDFILL 12 1.500 100.000 25.000 -20.000 0.000
   CONCUNIT 1 OU/S OU/M**3
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED Elev12OU.rou
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
```

```
****************************************
**
**
ME STARTING
   SURFFILE MASSENCR.SFC
   PROFFILE MASSENCR.PFL
   SURFDATA 72622 1996 MASSENA
   UAIRDATA 725180 1996 ALBANY
   PROFBASE 10 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST ELEV12OU.AD\01H1GALL.PLT
OU FINISHED

***********************************
*** SETUP Finishes Successfully ***
***********************************
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE   1
CONC                        DFAULT ELEV   FLGPOL

                                           ***     MODEL SETUP OPTIONS
SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**Model Uses NO DRY DEPLETION.  DDPLETE =  F
**Model Uses NO WET DEPLETION.  WDPLETE =  F
**NO GAS DRY DEPOSITION Data Provided.

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
           1. Stack-tip Downwash.
           2. Model Accounts for ELEVated Terrain Effects.
           3. Use Calms Processing Routine.
           4. Use Missing Data Processing Routine.
           5. No Exponential Decay

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:   1-HR

**This Run Includes:     1 Source(s);      1 Source Group(s); and    2979
Receptor(s)

**The Model Assumes A Pollutant Type of:  ODOUR

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor
(RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting
(PLOTFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for
Calm Hours
                                                                m for
Missing Hours
                                                                b for
Both Calm and Missing Hours
```

```
**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;
Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = OU/S
;  Emission Rate Unit Factor =    1.0000
                 Output Units   = OU/M**3

**Approximate Storage Requirements of Model =     1.3 MB of RAM.
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE   2
CONC                        DFAULT ELEV   FLGPOL



                                                 *** AREA SOURCE DATA ***

             NUMBER EMISSION RATE  COORD (SW CORNER)  BASE     RELEASE
X-DIM     Y-DIM    ORIENT.    INIT.   URBAN  EMISSION RATE
   SOURCE     PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF
AREA   OF AREA   OF AREA     SZ     SOURCE  SCALAR VARY
     ID       CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)
(METERS)  (METERS)   (DEG.)  (METERS)              BY
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  LANDFILL      0   0.12000E+02  335200.0 4902990.0   151.0     1.50
100.00     25.00    -20.00     0.00     NO
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE   3
CONC                        DFAULT ELEV   FLGPOL



                                           *** SOURCE IDs DEFINING SOURCE
GROUPS ***

GROUP ID                                                    SOURCE IDs



 ALL       LANDFILL,
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE   4
CONC                         DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 335827.2, 4895852.0,      93.9,      93.9,       1.0);         (
334869.3, 4898775.0,      88.3,      88.3,       1.0);
    ( 333830.1, 4898596.5,      93.0,      93.0,       1.0);         (
331784.2, 4898271.5,      92.7,      92.7,       1.0);
    ( 330793.8, 4898076.5,      93.1,      93.1,       1.0);         (
327286.6, 4897524.5,      82.0,      82.0,       1.0);
    ( 321441.2, 4896550.5,      95.0,      95.0,       1.0);         (
321717.3, 4895576.0,      86.0,      86.0,       1.0);
    ( 320954.1, 4895349.0,      74.0,      74.0,       1.0);         (
320613.2, 4896404.5,      94.1,      94.1,       1.0);
    ( 319444.1, 4896096.0,     102.0,     102.0,       1.0);         (
320385.8, 4893238.0,      74.0,      74.0,       1.0);
    ( 321733.5, 4894017.5,      74.0,      74.0,       1.0);         (
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    ( 322983.8, 4891306.0,      74.0,      74.0,       1.0);         (
324558.8, 4891776.5,      74.6,      74.6,       1.0);
    ( 325354.4, 4891809.0,      73.0,      73.0,       1.0);         (
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    ( 328212.1, 4891874.0,      72.5,      72.5,       1.0);         (
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    ( 332904.6, 4893287.0,      76.2,      97.0,       1.0);         (
334842.4, 4895521.5,      89.0,      89.0,       1.0);
    ( 335177.1, 4894613.5,      73.0,      73.0,       1.0);         (
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    ( 334985.4, 4902800.5,     130.1,     130.1,       1.0);         (
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    ( 334985.4, 4902840.0,     128.8,     152.0,       1.0);         (
334985.4, 4902860.0,     128.3,     152.0,       1.0);
    ( 334985.4, 4902880.0,     128.1,     152.0,       1.0);         (
334985.4, 4902899.5,     128.2,     152.0,       1.0);
    ( 334985.4, 4902919.5,     128.2,     152.0,       1.0);         (
334985.4, 4902939.5,     128.1,     152.0,       1.0);
    ( 334985.4, 4902959.5,     128.0,     152.0,       1.0);         (
334985.4, 4902979.0,     127.5,     152.0,       1.0);
    ( 334985.4, 4902999.0,     127.2,     152.0,       1.0);         (
334985.4, 4903019.0,     127.3,     152.0,       1.0);
    ( 334985.4, 4903039.0,     127.9,     152.0,       1.0);         (
334985.4, 4903058.5,     128.2,     152.0,       1.0);
```

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    ( 334985.4, 4903078.5,     128.2,     152.0,       1.0);         (
334985.4, 4903098.5,     127.6,     152.0,       1.0);
    ( 334985.4, 4903118.5,     127.1,     152.0,       1.0);         (
334985.4, 4903138.0,     127.0,     152.0,       1.0);
    ( 334985.4, 4903158.0,     126.4,     152.0,       1.0);         (
334985.4, 4903178.0,     125.7,     152.0,       1.0);
    ( 334985.4, 4903198.0,     125.1,     125.1,       1.0);         (
334985.4, 4903217.5,     125.0,     125.0,       1.0);
    ( 334985.4, 4903237.5,     125.0,     125.0,       1.0);         (
334985.4, 4903257.5,     125.0,     125.0,       1.0);
    ( 334985.4, 4903277.5,     125.0,     125.0,       1.0);         (
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    ( 335005.2, 4902800.5,     129.5,     152.0,       1.0);         (
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    ( 335005.2, 4902840.0,     128.2,     152.0,       1.0);         (
335005.2, 4902860.0,     128.1,     152.0,       1.0);
    ( 335005.2, 4902880.0,     128.3,     152.0,       1.0);         (
335005.2, 4902899.5,     128.8,     152.0,       1.0);
    ( 335005.2, 4902919.5,     128.8,     152.0,       1.0);         (
335005.2, 4902939.5,     128.6,     152.0,       1.0);
    ( 335005.2, 4902959.5,     128.0,     152.0,       1.0);         (
335005.2, 4902979.0,     127.9,     152.0,       1.0);
    ( 335005.2, 4902999.0,     128.1,     152.0,       1.0);         (
335005.2, 4903019.0,     128.7,     152.0,       1.0);
    ( 335005.2, 4903039.0,     128.8,     152.0,       1.0);         (
335005.2, 4903058.5,     128.8,     152.0,       1.0);
    ( 335005.2, 4903078.5,     128.8,     152.0,       1.0);         (
335005.2, 4903098.5,     128.2,     152.0,       1.0);
    ( 335005.2, 4903118.5,     127.6,     152.0,       1.0);         (
335005.2, 4903138.0,     127.1,     152.0,       1.0);
    ( 335005.2, 4903158.0,     126.4,     152.0,       1.0);         (
335005.2, 4903178.0,     125.7,     152.0,       1.0);
    ( 335005.2, 4903198.0,     125.1,     152.0,       1.0);         (
335005.2, 4903217.5,     125.0,     125.0,       1.0);
    ( 335005.2, 4903237.5,     125.0,     125.0,       1.0);         (
335005.2, 4903257.5,     125.0,     125.0,       1.0);
    ( 335005.2, 4903277.5,     125.0,     125.0,       1.0);         (
335025.1, 4902780.5,     130.0,     151.0,       1.0);
    ( 335025.1, 4902800.5,     129.3,     152.0,       1.0);         (
335025.1, 4902820.0,     128.8,     152.0,       1.0);
    ( 335025.1, 4902840.0,     128.5,     152.0,       1.0);         (
335025.1, 4902860.0,     128.5,     152.0,       1.0);
    ( 335025.1, 4902880.0,     128.7,     152.0,       1.0);         (
335025.1, 4902899.5,     129.0,     152.0,       1.0);
    ( 335025.1, 4902919.5,     129.3,     152.0,       1.0);         (
335025.1, 4902939.5,     129.2,     152.0,       1.0);
    ( 335025.1, 4902959.5,     128.5,     152.0,       1.0);         (
335025.1, 4902979.0,     128.8,     152.0,       1.0);
    ( 335025.1, 4902999.0,     129.5,     152.0,       1.0);         (
335025.1, 4903019.0,     130.5,     152.0,       1.0);
    ( 335025.1, 4903039.0,     129.9,     152.0,       1.0);         (
335025.1, 4903058.5,     129.4,     152.0,       1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE   5
CONC                        DFAULT ELEV   FLGPOL



                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 335025.1, 4903078.5,     129.0,     152.0,       1.0);         (
335025.1, 4903098.5,     128.4,     152.0,       1.0);
    ( 335025.1, 4903118.5,     127.7,     152.0,       1.0);         (
335025.1, 4903138.0,     127.1,     152.0,       1.0);
    ( 335025.1, 4903158.0,     126.4,     152.0,       1.0);         (
335025.1, 4903178.0,     125.7,     152.0,       1.0);
    ( 335025.1, 4903198.0,     125.1,     152.0,       1.0);         (
335025.1, 4903217.5,     125.0,     152.0,       1.0);
    ( 335025.1, 4903237.5,     125.0,     125.0,       1.0);         (
335025.1, 4903257.5,     125.0,     125.0,       1.0);
    ( 335025.1, 4903277.5,     125.0,     125.0,       1.0);         (
335045.0, 4902780.5,     130.0,     152.0,       1.0);
    ( 335045.0, 4902800.5,     129.4,     152.0,       1.0);         (
335045.0, 4902820.0,     129.1,     152.0,       1.0);
    ( 335045.0, 4902840.0,     129.0,     152.0,       1.0);         (
335045.0, 4902860.0,     129.0,     152.0,       1.0);
    ( 335045.0, 4902880.0,     129.1,     152.0,       1.0);         (
335045.0, 4902899.5,     129.3,     152.0,       1.0);
    ( 335045.0, 4902919.5,     130.1,     152.0,       1.0);         (
335045.0, 4902939.5,     130.4,     152.0,       1.0);
    ( 335045.0, 4902959.5,     130.2,     152.0,       1.0);         (
335045.0, 4902979.0,     130.9,     152.0,       1.0);
    ( 335045.0, 4902999.0,     131.9,     152.0,       1.0);         (
335045.0, 4903019.0,     133.1,     152.0,       1.0);
    ( 335045.0, 4903039.0,     131.5,     152.0,       1.0);         (
335045.0, 4903058.5,     130.1,     152.0,       1.0);
    ( 335045.0, 4903078.5,     129.1,     152.0,       1.0);         (
335045.0, 4903098.5,     128.3,     152.0,       1.0);
    ( 335045.0, 4903118.5,     127.6,     152.0,       1.0);         (
335045.0, 4903138.0,     126.9,     152.0,       1.0);
    ( 335045.0, 4903158.0,     126.3,     152.0,       1.0);         (
335045.0, 4903178.0,     125.7,     152.0,       1.0);
    ( 335045.0, 4903198.0,     125.1,     152.0,       1.0);         (
335045.0, 4903217.5,     125.0,     152.0,       1.0);
    ( 335045.0, 4903237.5,     125.0,     125.0,       1.0);         (
335045.0, 4903257.5,     125.0,     125.0,       1.0);
    ( 335045.0, 4903277.5,     125.0,     125.0,       1.0);         (
335064.9, 4902780.5,     130.0,     152.0,       1.0);
```

```
    ( 335064.9, 4902800.5,     129.9,     152.0,        1.0);         (
335064.9, 4902820.0,     129.6,     152.0,        1.0);
    ( 335064.9, 4902840.0,     129.0,     152.0,        1.0);         (
335064.9, 4902860.0,     129.0,     152.0,        1.0);
    ( 335064.9, 4902880.0,     129.6,     152.0,        1.0);         (
335064.9, 4902899.5,     130.6,     152.0,        1.0);
    ( 335064.9, 4902919.5,     131.9,     152.0,        1.0);         (
335064.9, 4902939.5,     133.2,     152.0,        1.0);
    ( 335064.9, 4902959.5,     134.8,     152.0,        1.0);         (
335064.9, 4902979.0,     136.0,     152.0,        1.0);
    ( 335064.9, 4902999.0,     137.0,     152.0,        1.0);         (
335064.9, 4903019.0,     137.8,     152.0,        1.0);
    ( 335064.9, 4903039.0,     134.4,     152.0,        1.0);         (
335064.9, 4903058.5,     131.5,     152.0,        1.0);
    ( 335064.9, 4903078.5,     129.2,     152.0,        1.0);         (
335064.9, 4903098.5,     127.9,     152.0,        1.0);
    ( 335064.9, 4903118.5,     126.9,     152.0,        1.0);         (
335064.9, 4903138.0,     126.2,     152.0,        1.0);
    ( 335064.9, 4903158.0,     126.1,     152.0,        1.0);         (
335064.9, 4903178.0,     125.7,     152.0,        1.0);
    ( 335064.9, 4903198.0,     125.1,     152.0,        1.0);         (
335064.9, 4903217.5,     125.0,     152.0,        1.0);
    ( 335064.9, 4903237.5,     125.0,     152.0,        1.0);         (
335064.9, 4903257.5,     125.0,     125.0,        1.0);
    ( 335064.9, 4903277.5,     125.0,     125.0,        1.0);         (
335084.8, 4902780.5,     131.0,     152.0,        1.0);
    ( 335084.8, 4902800.5,     130.6,     152.0,        1.0);         (
335084.8, 4902820.0,     130.0,     152.0,        1.0);
    ( 335084.8, 4902840.0,     129.0,     152.0,        1.0);         (
335084.8, 4902860.0,     130.0,     152.0,        1.0);
    ( 335084.8, 4902880.0,     131.6,     152.0,        1.0);         (
335084.8, 4902899.5,     133.9,     152.0,        1.0);
    ( 335084.8, 4902919.5,     136.5,     152.0,        1.0);         (
335084.8, 4902939.5,     138.7,     152.0,        1.0);
    ( 335084.8, 4902959.5,     140.4,     152.0,        1.0);         (
335084.8, 4902979.0,     141.4,     152.0,        1.0);
    ( 335084.8, 4902999.0,     141.6,     152.0,        1.0);         (
335084.8, 4903019.0,     141.0,     152.0,        1.0);
    ( 335084.8, 4903039.0,     136.5,     152.0,        1.0);         (
335084.8, 4903058.5,     132.7,     152.0,        1.0);
    ( 335084.8, 4903078.5,     129.7,     152.0,        1.0);         (
335084.8, 4903098.5,     128.0,     152.0,        1.0);
    ( 335084.8, 4903118.5,     126.7,     152.0,        1.0);         (
335084.8, 4903138.0,     126.1,     152.0,        1.0);
    ( 335084.8, 4903158.0,     126.0,     152.0,        1.0);         (
335084.8, 4903178.0,     125.7,     152.0,        1.0);
    ( 335084.8, 4903198.0,     125.1,     152.0,        1.0);         (
335084.8, 4903217.5,     125.0,     152.0,        1.0);
    ( 335084.8, 4903237.5,     125.0,     152.0,        1.0);         (
335084.8, 4903257.5,     125.0,     125.0,        1.0);
    ( 335084.8, 4903277.5,     125.0,     125.0,        1.0);         (
335104.6, 4902780.5,     132.1,     152.0,        1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE   6
CONC                        DFAULT ELEV   FLGPOL



                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                            (METERS)

    ( 335104.6, 4902800.5,     131.4,     152.0,       1.0);         (
335104.6, 4902820.0,     130.4,     152.0,       1.0);
    ( 335104.6, 4902840.0,     129.1,     152.0,       1.0);         (
335104.6, 4902860.0,     131.1,     152.0,       1.0);
    ( 335104.6, 4902880.0,     134.0,     152.0,       1.0);         (
335104.6, 4902899.5,     137.5,     152.0,       1.0);
    ( 335104.6, 4902919.5,     141.6,     152.0,       1.0);         (
335104.6, 4902939.5,     144.4,     152.0,       1.0);
    ( 335104.6, 4902959.5,     145.9,     152.0,       1.0);         (
335104.6, 4902979.0,     146.3,     152.0,       1.0);
    ( 335104.6, 4902999.0,     145.5,     152.0,       1.0);         (
335104.6, 4903019.0,     143.4,     152.0,       1.0);
    ( 335104.6, 4903039.0,     138.2,     152.0,       1.0);         (
335104.6, 4903058.5,     133.9,     152.0,       1.0);
    ( 335104.6, 4903078.5,     130.4,     152.0,       1.0);         (
335104.6, 4903098.5,     128.3,     152.0,       1.0);
    ( 335104.6, 4903118.5,     126.8,     152.0,       1.0);         (
335104.6, 4903138.0,     126.1,     152.0,       1.0);
    ( 335104.6, 4903158.0,     126.0,     152.0,       1.0);         (
335104.6, 4903178.0,     125.7,     152.0,       1.0);
    ( 335104.6, 4903198.0,     125.1,     152.0,       1.0);         (
335104.6, 4903217.5,     125.0,     152.0,       1.0);
    ( 335104.6, 4903237.5,     125.0,     152.0,       1.0);         (
335104.6, 4903257.5,     125.0,     125.0,       1.0);
    ( 335104.6, 4903277.5,     125.0,     125.0,       1.0);         (
335124.5, 4902780.5,     132.8,     152.0,       1.0);
    ( 335124.5, 4902800.5,     131.6,     152.0,       1.0);         (
335124.5, 4902820.0,     130.6,     152.0,       1.0);
    ( 335124.5, 4902840.0,     129.8,     152.0,       1.0);         (
335124.5, 4902860.0,     131.8,     152.0,       1.0);
    ( 335124.5, 4902880.0,     135.3,     152.0,       1.0);         (
335124.5, 4902899.5,     140.1,     152.0,       1.0);
    ( 335124.5, 4902919.5,     144.7,     152.0,       1.0);         (
335124.5, 4902939.5,     148.0,     151.0,       1.0);
    ( 335124.5, 4902959.5,     149.9,     151.0,       1.0);         (
335124.5, 4902979.0,     149.0,     151.0,       1.0);
    ( 335124.5, 4902999.0,     147.3,     152.0,       1.0);         (
335124.5, 4903019.0,     144.8,     152.0,       1.0);
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```
    ( 335124.5, 4903039.0,     139.6,     152.0,       1.0);          (
335124.5, 4903058.5,     135.0,     152.0,       1.0);
    ( 335124.5, 4903078.5,     131.1,     152.0,       1.0);          (
335124.5, 4903098.5,     129.0,     152.0,       1.0);
    ( 335124.5, 4903118.5,     127.3,     152.0,       1.0);          (
335124.5, 4903138.0,     126.1,     152.0,       1.0);
    ( 335124.5, 4903158.0,     126.0,     152.0,       1.0);          (
335124.5, 4903178.0,     125.7,     152.0,       1.0);
    ( 335124.5, 4903198.0,     125.1,     152.0,       1.0);          (
335124.5, 4903217.5,     125.0,     152.0,       1.0);
    ( 335124.5, 4903237.5,     125.0,     152.0,       1.0);          (
335124.5, 4903257.5,     125.0,     152.0,       1.0);
    ( 335124.5, 4903277.5,     125.0,     125.0,       1.0);          (
335144.4, 4902780.5,     133.4,     152.0,       1.0);
    ( 335144.4, 4902800.5,     132.1,     152.0,       1.0);          (
335144.4, 4902820.0,     131.0,     152.0,       1.0);
    ( 335144.4, 4902840.0,     130.0,     152.0,       1.0);          (
335144.4, 4902860.0,     131.4,     152.0,       1.0);
    ( 335144.4, 4902880.0,     134.7,     152.0,       1.0);          (
335144.4, 4902899.5,     139.9,     152.0,       1.0);
    ( 335144.4, 4902919.5,     144.9,     152.0,       1.0);          (
335144.4, 4902939.5,     148.8,     152.0,       1.0);
    ( 335144.4, 4902959.5,     151.4,     151.4,       1.0);          (
335144.4, 4902979.0,     150.8,     150.8,       1.0);
    ( 335144.4, 4902999.0,     149.2,     152.0,       1.0);          (
335144.4, 4903019.0,     146.6,     152.0,       1.0);
    ( 335144.4, 4903039.0,     141.1,     152.0,       1.0);          (
335144.4, 4903058.5,     136.1,     152.0,       1.0);
    ( 335144.4, 4903078.5,     131.8,     152.0,       1.0);          (
335144.4, 4903098.5,     129.3,     152.0,       1.0);
    ( 335144.4, 4903118.5,     127.6,     152.0,       1.0);          (
335144.4, 4903138.0,     126.6,     152.0,       1.0);
    ( 335144.4, 4903158.0,     126.2,     152.0,       1.0);          (
335144.4, 4903178.0,     125.7,     152.0,       1.0);
    ( 335144.4, 4903198.0,     125.1,     152.0,       1.0);          (
335144.4, 4903217.5,     125.0,     152.0,       1.0);
    ( 335144.4, 4903237.5,     125.0,     152.0,       1.0);          (
335144.4, 4903257.5,     125.0,     152.0,       1.0);
    ( 335144.4, 4903277.5,     125.0,     125.0,       1.0);          (
335164.2, 4902780.5,     134.1,     134.1,       1.0);
    ( 335164.2, 4902800.5,     132.9,     152.0,       1.0);          (
335164.2, 4902820.0,     131.6,     152.0,       1.0);
    ( 335164.2, 4902840.0,     130.3,     152.0,       1.0);          (
335164.2, 4902860.0,     130.7,     152.0,       1.0);
    ( 335164.2, 4902880.0,     133.4,     152.0,       1.0);          (
335164.2, 4902899.5,     138.4,     152.0,       1.0);
    ( 335164.2, 4902919.5,     143.9,     152.0,       1.0);          (
335164.2, 4902939.5,     148.3,     152.0,       1.0);
    ( 335164.2, 4902959.5,     151.8,     151.8,       1.0);          (
335164.2, 4902979.0,     151.9,     151.9,       1.0);
    ( 335164.2, 4902999.0,     150.7,     152.0,       1.0);          (
335164.2, 4903019.0,     148.3,     152.0,       1.0);
```

```
                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                            (METERS)

    ( 335164.2, 4903039.0,     142.7,     152.0,       1.0);         (
335164.2, 4903058.5,     137.5,     152.0,       1.0);
    ( 335164.2, 4903078.5,     132.8,     152.0,       1.0);         (
335164.2, 4903098.5,     129.9,     152.0,       1.0);
    ( 335164.2, 4903118.5,     127.9,     152.0,       1.0);         (
335164.2, 4903138.0,     127.1,     152.0,       1.0);
    ( 335164.2, 4903158.0,     126.4,     152.0,       1.0);         (
335164.2, 4903178.0,     125.7,     152.0,       1.0);
    ( 335164.2, 4903198.0,     125.1,     152.0,       1.0);         (
335164.2, 4903217.5,     125.0,     152.0,       1.0);
    ( 335164.2, 4903237.5,     125.0,     152.0,       1.0);         (
335164.2, 4903257.5,     125.0,     152.0,       1.0);
    ( 335164.2, 4903277.5,     125.0,     125.0,       1.0);         (
335184.1, 4902780.5,     134.8,     134.8,       1.0);
    ( 335184.1, 4902800.5,     134.0,     152.0,       1.0);         (
335184.1, 4902820.0,     132.9,     152.0,       1.0);
    ( 335184.1, 4902840.0,     131.6,     152.0,       1.0);         (
335184.1, 4902860.0,     130.7,     152.0,       1.0);
    ( 335184.1, 4902880.0,     132.3,     152.0,       1.0);         (
335184.1, 4902899.5,     136.5,     152.0,       1.0);
    ( 335184.1, 4902919.5,     142.3,     152.0,       1.0);         (
335184.1, 4902939.5,     147.2,     152.0,       1.0);
    ( 335184.1, 4902959.5,     151.1,     151.1,       1.0);         (
335184.1, 4902979.0,     151.2,     151.2,       1.0);
    ( 335184.1, 4902999.0,     150.5,     150.5,       1.0);         (
335184.1, 4903019.0,     148.9,     148.9,       1.0);
    ( 335184.1, 4903039.0,     144.6,     152.0,       1.0);         (
335184.1, 4903058.5,     140.0,     152.0,       1.0);
    ( 335184.1, 4903078.5,     134.8,     152.0,       1.0);         (
335184.1, 4903098.5,     131.4,     152.0,       1.0);
    ( 335184.1, 4903118.5,     128.9,     152.0,       1.0);         (
335184.1, 4903138.0,     127.2,     152.0,       1.0);
    ( 335184.1, 4903158.0,     126.4,     152.0,       1.0);         (
335184.1, 4903178.0,     125.7,     152.0,       1.0);
    ( 335184.1, 4903198.0,     125.1,     152.0,       1.0);         (
335184.1, 4903217.5,     125.0,     152.0,       1.0);
    ( 335184.1, 4903237.5,     125.0,     152.0,       1.0);         (
335184.1, 4903257.5,     125.0,     152.0,       1.0);
```

```
    ( 335184.1, 4903277.5,     125.0,     125.0,       1.0);         (
335204.0, 4902780.5,     135.0,     135.0,       1.0);
    ( 335204.0, 4902800.5,     134.3,     152.0,       1.0);         (
335204.0, 4902820.0,     133.3,     152.0,       1.0);
    ( 335204.0, 4902840.0,     132.0,     152.0,       1.0);         (
335204.0, 4902860.0,     130.7,     152.0,       1.0);
    ( 335204.0, 4902880.0,     131.5,     152.0,       1.0);         (
335204.0, 4902899.5,     134.5,     152.0,       1.0);
    ( 335204.0, 4902919.5,     140.1,     152.0,       1.0);         (
335204.0, 4902939.5,     145.3,     152.0,       1.0);
    ( 335204.0, 4902959.5,     149.9,     149.9,       1.0);         (
335204.0, 4902979.0,     150.7,     150.7,       1.0);
    ( 335204.0, 4902999.0,     150.5,     150.5,       1.0);         (
335204.0, 4903019.0,     149.5,     149.5,       1.0);
    ( 335204.0, 4903039.0,     146.3,     150.0,       1.0);         (
335204.0, 4903058.5,     142.3,     152.0,       1.0);
    ( 335204.0, 4903078.5,     137.2,     152.0,       1.0);         (
335204.0, 4903098.5,     132.9,     152.0,       1.0);
    ( 335204.0, 4903118.5,     129.6,     152.0,       1.0);         (
335204.0, 4903138.0,     127.7,     152.0,       1.0);
    ( 335204.0, 4903158.0,     126.6,     152.0,       1.0);         (
335204.0, 4903178.0,     125.7,     152.0,       1.0);
    ( 335204.0, 4903198.0,     125.1,     152.0,       1.0);         (
335204.0, 4903217.5,     125.0,     152.0,       1.0);
    ( 335204.0, 4903237.5,     125.0,     152.0,       1.0);         (
335204.0, 4903257.5,     125.0,     150.0,       1.0);
    ( 335204.0, 4903277.5,     125.0,     125.0,       1.0);         (
335223.9, 4902780.5,     134.5,     135.0,       1.0);
    ( 335223.9, 4902800.5,     134.0,     152.0,       1.0);         (
335223.9, 4902820.0,     133.1,     152.0,       1.0);
    ( 335223.9, 4902840.0,     131.9,     152.0,       1.0);         (
335223.9, 4902860.0,     130.6,     152.0,       1.0);
    ( 335223.9, 4902880.0,     131.0,     152.0,       1.0);         (
335223.9, 4902899.5,     132.9,     152.0,       1.0);
    ( 335223.9, 4902919.5,     137.9,     152.0,       1.0);         (
335223.9, 4902939.5,     143.0,     152.0,       1.0);
    ( 335223.9, 4902959.5,     148.2,     149.0,       1.0);         (
335223.9, 4902979.0,     149.9,     149.9,       1.0);
    ( 335223.9, 4902999.0,     150.6,     150.6,       1.0);         (
335223.9, 4903019.0,     150.0,     150.0,       1.0);
    ( 335223.9, 4903039.0,     147.6,     150.0,       1.0);         (
335223.9, 4903058.5,     144.1,     150.0,       1.0);
    ( 335223.9, 4903078.5,     139.5,     152.0,       1.0);         (
335223.9, 4903098.5,     134.1,     152.0,       1.0);
    ( 335223.9, 4903118.5,     130.2,     152.0,       1.0);         (
335223.9, 4903138.0,     128.3,     152.0,       1.0);
    ( 335223.9, 4903158.0,     126.9,     152.0,       1.0);         (
335223.9, 4903178.0,     125.9,     152.0,       1.0);
    ( 335223.9, 4903198.0,     125.2,     152.0,       1.0);         (
335223.9, 4903217.5,     125.1,     152.0,       1.0);
    ( 335223.9, 4903237.5,     125.0,     152.0,       1.0);         (
335223.9, 4903257.5,     125.0,     150.0,       1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE   8
CONC                         DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 335223.9, 4903277.5,     125.0,     125.0,       1.0);         (
335243.8, 4902780.5,     131.8,     152.0,       1.0);
    ( 335243.8, 4902800.5,     132.2,     152.0,       1.0);         (
335243.8, 4902820.0,     132.0,     152.0,       1.0);
    ( 335243.8, 4902840.0,     131.2,     152.0,       1.0);         (
335243.8, 4902860.0,     130.4,     152.0,       1.0);
    ( 335243.8, 4902880.0,     131.0,     152.0,       1.0);         (
335243.8, 4902899.5,     132.9,     152.0,       1.0);
    ( 335243.8, 4902919.5,     136.1,     152.0,       1.0);         (
335243.8, 4902939.5,     140.1,     152.0,       1.0);
    ( 335243.8, 4902959.5,     144.9,     151.0,       1.0);         (
335243.8, 4902979.0,     148.3,     151.0,       1.0);
    ( 335243.8, 4902999.0,     150.1,     150.1,       1.0);         (
335243.8, 4903019.0,     150.0,     150.0,       1.0);
    ( 335243.8, 4903039.0,     148.0,     150.0,       1.0);         (
335243.8, 4903058.5,     144.8,     150.0,       1.0);
    ( 335243.8, 4903078.5,     140.1,     151.0,       1.0);         (
335243.8, 4903098.5,     134.4,     152.0,       1.0);
    ( 335243.8, 4903118.5,     130.4,     152.0,       1.0);         (
335243.8, 4903138.0,     128.9,     152.0,       1.0);
    ( 335243.8, 4903158.0,     127.6,     152.0,       1.0);         (
335243.8, 4903178.0,     126.5,     152.0,       1.0);
    ( 335243.8, 4903198.0,     125.9,     152.0,       1.0);         (
335243.8, 4903217.5,     125.3,     152.0,       1.0);
    ( 335243.8, 4903237.5,     125.0,     152.0,       1.0);         (
335243.8, 4903257.5,     125.0,     150.0,       1.0);
    ( 335243.8, 4903277.5,     125.0,     125.0,       1.0);         (
335263.6, 4902780.5,     130.1,     152.0,       1.0);
    ( 335263.6, 4902800.5,     130.8,     152.0,       1.0);         (
335263.6, 4902820.0,     130.9,     152.0,       1.0);
    ( 335263.6, 4902840.0,     130.6,     152.0,       1.0);         (
335263.6, 4902860.0,     130.5,     152.0,       1.0);
    ( 335263.6, 4902880.0,     131.1,     152.0,       1.0);         (
335263.6, 4902899.5,     132.5,     152.0,       1.0);
    ( 335263.6, 4902919.5,     134.6,     152.0,       1.0);         (
335263.6, 4902939.5,     137.7,     152.0,       1.0);
    ( 335263.6, 4902959.5,     142.1,     151.0,       1.0);         (
335263.6, 4902979.0,     146.3,     151.0,       1.0);
```

```
    ( 335263.6, 4902999.0,     148.9,     148.9,       1.0);          (
335263.6, 4903019.0,     149.5,     149.5,       1.0);
    ( 335263.6, 4903039.0,     147.9,     147.9,       1.0);          (
335263.6, 4903058.5,     145.3,     150.0,       1.0);
    ( 335263.6, 4903078.5,     141.2,     150.0,       1.0);          (
335263.6, 4903098.5,     135.6,     152.0,       1.0);
    ( 335263.6, 4903118.5,     131.4,     152.0,       1.0);          (
335263.6, 4903138.0,     129.2,     152.0,       1.0);
    ( 335263.6, 4903158.0,     128.1,     152.0,       1.0);          (
335263.6, 4903178.0,     127.2,     152.0,       1.0);
    ( 335263.6, 4903198.0,     126.5,     152.0,       1.0);          (
335263.6, 4903217.5,     125.9,     152.0,       1.0);
    ( 335263.6, 4903237.5,     125.4,     151.0,       1.0);          (
335263.6, 4903257.5,     125.4,     150.0,       1.0);
    ( 335263.6, 4903277.5,     125.2,     125.2,       1.0);          (
335283.5, 4902780.5,     128.9,     152.0,       1.0);
    ( 335283.5, 4902800.5,     129.6,     152.0,       1.0);          (
335283.5, 4902820.0,     129.9,     152.0,       1.0);
    ( 335283.5, 4902840.0,     129.9,     152.0,       1.0);          (
335283.5, 4902860.0,     130.6,     152.0,       1.0);
    ( 335283.5, 4902880.0,     131.2,     152.0,       1.0);          (
335283.5, 4902899.5,     131.8,     152.0,       1.0);
    ( 335283.5, 4902919.5,     133.1,     152.0,       1.0);          (
335283.5, 4902939.5,     135.6,     152.0,       1.0);
    ( 335283.5, 4902959.5,     139.6,     152.0,       1.0);          (
335283.5, 4902979.0,     144.2,     151.0,       1.0);
    ( 335283.5, 4902999.0,     147.3,     147.3,       1.0);          (
335283.5, 4903019.0,     148.6,     149.0,       1.0);
    ( 335283.5, 4903039.0,     147.5,     147.5,       1.0);          (
335283.5, 4903058.5,     145.6,     147.0,       1.0);
    ( 335283.5, 4903078.5,     142.5,     150.0,       1.0);          (
335283.5, 4903098.5,     137.4,     151.0,       1.0);
    ( 335283.5, 4903118.5,     133.0,     152.0,       1.0);          (
335283.5, 4903138.0,     129.6,     152.0,       1.0);
    ( 335283.5, 4903158.0,     128.6,     152.0,       1.0);          (
335283.5, 4903178.0,     127.8,     152.0,       1.0);
    ( 335283.5, 4903198.0,     127.2,     152.0,       1.0);          (
335283.5, 4903217.5,     126.5,     151.0,       1.0);
    ( 335283.5, 4903237.5,     126.1,     150.0,       1.0);          (
335283.5, 4903257.5,     126.0,     150.0,       1.0);
    ( 335283.5, 4903277.5,     125.5,     125.5,       1.0);          (
335303.4, 4902780.5,     128.2,     152.0,       1.0);
    ( 335303.4, 4902800.5,     128.9,     152.0,       1.0);          (
335303.4, 4902820.0,     129.2,     152.0,       1.0);
    ( 335303.4, 4902840.0,     129.2,     152.0,       1.0);          (
335303.4, 4902860.0,     129.9,     152.0,       1.0);
    ( 335303.4, 4902880.0,     130.3,     152.0,       1.0);          (
335303.4, 4902899.5,     130.4,     152.0,       1.0);
    ( 335303.4, 4902919.5,     131.7,     152.0,       1.0);          (
335303.4, 4902939.5,     134.1,     152.0,       1.0);
    ( 335303.4, 4902959.5,     137.6,     152.0,       1.0);          (
335303.4, 4902979.0,     142.6,     151.0,       1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE   9
CONC                        DFAULT ELEV   FLGPOL



                                              *** DISCRETE CARTESIAN
RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                            (METERS)

    ( 335303.4, 4902999.0,     145.8,     149.0,       1.0);         (
335303.4, 4903019.0,     146.6,     149.0,       1.0);
    ( 335303.4, 4903039.0,     146.4,     146.4,       1.0);         (
335303.4, 4903058.5,     145.5,     145.5,       1.0);
    ( 335303.4, 4903078.5,     143.7,     143.7,       1.0);         (
335303.4, 4903098.5,     139.6,     150.0,       1.0);
    ( 335303.4, 4903118.5,     135.3,     151.0,       1.0);         (
335303.4, 4903138.0,     131.0,     152.0,       1.0);
    ( 335303.4, 4903158.0,     129.5,     152.0,       1.0);         (
335303.4, 4903178.0,     128.5,     151.0,       1.0);
    ( 335303.4, 4903198.0,     127.8,     151.0,       1.0);         (
335303.4, 4903217.5,     127.2,     150.0,       1.0);
    ( 335303.4, 4903237.5,     126.6,     150.0,       1.0);         (
335303.4, 4903257.5,     126.1,     147.0,       1.0);
    ( 335303.4, 4903277.5,     125.9,     125.9,       1.0);         (
335323.2, 4902780.5,     127.6,     152.0,       1.0);
    ( 335323.2, 4902800.5,     128.2,     152.0,       1.0);         (
335323.2, 4902820.0,     128.7,     152.0,       1.0);
    ( 335323.2, 4902840.0,     129.0,     152.0,       1.0);         (
335323.2, 4902860.0,     129.4,     152.0,       1.0);
    ( 335323.2, 4902880.0,     129.7,     152.0,       1.0);         (
335323.2, 4902899.5,     130.0,     152.0,       1.0);
    ( 335323.2, 4902919.5,     131.0,     152.0,       1.0);         (
335323.2, 4902939.5,     133.0,     152.0,       1.0);
    ( 335323.2, 4902959.5,     136.0,     151.0,       1.0);         (
335323.2, 4902979.0,     140.9,     150.0,       1.0);
    ( 335323.2, 4902999.0,     144.1,     149.0,       1.0);         (
335323.2, 4903019.0,     145.1,     145.1,       1.0);
    ( 335323.2, 4903039.0,     145.4,     145.4,       1.0);         (
335323.2, 4903058.5,     145.2,     145.2,       1.0);
    ( 335323.2, 4903078.5,     144.5,     144.5,       1.0);         (
335323.2, 4903098.5,     141.6,     145.0,       1.0);
    ( 335323.2, 4903118.5,     137.5,     150.0,       1.0);         (
335323.2, 4903138.0,     132.4,     151.0,       1.0);
    ( 335323.2, 4903158.0,     130.1,     151.0,       1.0);         (
335323.2, 4903178.0,     128.7,     151.0,       1.0);
    ( 335323.2, 4903198.0,     128.1,     150.0,       1.0);         (
335323.2, 4903217.5,     127.4,     150.0,       1.0);
```

```
    ( 335323.2, 4903237.5,     126.8,     150.0,        1.0);          (
335323.2, 4903257.5,     126.1,     145.0,        1.0);
    ( 335323.2, 4903277.5,     126.0,     126.0,        1.0);          (
335343.1, 4902780.5,     127.0,     151.0,        1.0);
    ( 335343.1, 4902800.5,     127.6,     152.0,        1.0);          (
335343.1, 4902820.0,     128.2,     152.0,        1.0);
    ( 335343.1, 4902840.0,     128.9,     152.0,        1.0);          (
335343.1, 4902860.0,     129.0,     152.0,        1.0);
    ( 335343.1, 4902880.0,     129.3,     152.0,        1.0);          (
335343.1, 4902899.5,     129.9,     152.0,        1.0);
    ( 335343.1, 4902919.5,     130.6,     152.0,        1.0);          (
335343.1, 4902939.5,     132.1,     152.0,        1.0);
    ( 335343.1, 4902959.5,     134.7,     151.0,        1.0);          (
335343.1, 4902979.0,     139.1,     150.0,        1.0);
    ( 335343.1, 4902999.0,     142.2,     149.0,        1.0);          (
335343.1, 4903019.0,     143.7,     143.7,        1.0);
    ( 335343.1, 4903039.0,     144.5,     144.5,        1.0);          (
335343.1, 4903058.5,     144.9,     144.9,        1.0);
    ( 335343.1, 4903078.5,     145.0,     145.0,        1.0);          (
335343.1, 4903098.5,     143.2,     143.2,        1.0);
    ( 335343.1, 4903118.5,     139.6,     145.0,        1.0);          (
335343.1, 4903138.0,     133.8,     150.0,        1.0);
    ( 335343.1, 4903158.0,     130.7,     150.0,        1.0);          (
335343.1, 4903178.0,     128.7,     150.0,        1.0);
    ( 335343.1, 4903198.0,     128.1,     150.0,        1.0);          (
335343.1, 4903217.5,     127.4,     150.0,        1.0);
    ( 335343.1, 4903237.5,     126.8,     147.0,        1.0);          (
335343.1, 4903257.5,     126.2,     145.0,        1.0);
    ( 335343.1, 4903277.5,     126.0,     126.0,        1.0);          (
335363.0, 4902780.5,     127.0,     127.0,        1.0);
    ( 335363.0, 4902800.5,     127.2,     151.0,        1.0);          (
335363.0, 4902820.0,     127.6,     151.0,        1.0);
    ( 335363.0, 4902840.0,     128.2,     152.0,        1.0);          (
335363.0, 4902860.0,     128.7,     152.0,        1.0);
    ( 335363.0, 4902880.0,     129.1,     152.0,        1.0);          (
335363.0, 4902899.5,     129.2,     152.0,        1.0);
    ( 335363.0, 4902919.5,     129.9,     152.0,        1.0);          (
335363.0, 4902939.5,     131.3,     152.0,        1.0);
    ( 335363.0, 4902959.5,     133.4,     151.0,        1.0);          (
335363.0, 4902979.0,     136.9,     150.0,        1.0);
    ( 335363.0, 4902999.0,     140.0,     149.0,        1.0);          (
335363.0, 4903019.0,     142.4,     142.4,        1.0);
    ( 335363.0, 4903039.0,     143.6,     143.6,        1.0);          (
335363.0, 4903058.5,     144.4,     144.4,        1.0);
    ( 335363.0, 4903078.5,     145.0,     145.0,        1.0);          (
335363.0, 4903098.5,     143.6,     143.6,        1.0);
    ( 335363.0, 4903118.5,     140.4,     145.0,        1.0);          (
335363.0, 4903138.0,     135.1,     146.0,        1.0);
    ( 335363.0, 4903158.0,     131.2,     150.0,        1.0);          (
335363.0, 4903178.0,     128.7,     150.0,        1.0);
    ( 335363.0, 4903198.0,     128.1,     150.0,        1.0);          (
335363.0, 4903217.5,     127.4,     149.0,        1.0);
```

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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  10
CONC                        DFAULT ELEV   FLGPOL



                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 335363.0, 4903237.5,     126.9,     145.0,       1.0);         (
335363.0, 4903257.5,     126.8,     145.0,       1.0);
    ( 335363.0, 4903277.5,     126.3,     126.3,       1.0);         (
335382.9, 4902780.5,     126.6,     126.6,       1.0);
    ( 335382.9, 4902800.5,     126.9,     126.9,       1.0);         (
335382.9, 4902820.0,     127.3,     151.0,       1.0);
    ( 335382.9, 4902840.0,     128.0,     151.0,       1.0);         (
335382.9, 4902860.0,     128.4,     151.0,       1.0);
    ( 335382.9, 4902880.0,     128.7,     151.0,       1.0);         (
335382.9, 4902899.5,     129.0,     151.0,       1.0);
    ( 335382.9, 4902919.5,     129.4,     151.0,       1.0);         (
335382.9, 4902939.5,     130.5,     151.0,       1.0);
    ( 335382.9, 4902959.5,     132.5,     151.0,       1.0);         (
335382.9, 4902979.0,     135.7,     150.0,       1.0);
    ( 335382.9, 4902999.0,     138.8,     144.0,       1.0);         (
335382.9, 4903019.0,     141.4,     141.4,       1.0);
    ( 335382.9, 4903039.0,     142.8,     142.8,       1.0);         (
335382.9, 4903058.5,     143.5,     143.5,       1.0);
    ( 335382.9, 4903078.5,     143.3,     145.0,       1.0);         (
335382.9, 4903098.5,     141.5,     145.0,       1.0);
    ( 335382.9, 4903118.5,     138.8,     145.0,       1.0);         (
335382.9, 4903138.0,     135.0,     145.0,       1.0);
    ( 335382.9, 4903158.0,     131.5,     149.0,       1.0);         (
335382.9, 4903178.0,     129.1,     150.0,       1.0);
    ( 335382.9, 4903198.0,     128.1,     149.0,       1.0);         (
335382.9, 4903217.5,     127.4,     146.0,       1.0);
    ( 335382.9, 4903237.5,     127.0,     145.0,       1.0);         (
335382.9, 4903257.5,     127.0,     145.0,       1.0);
    ( 335382.9, 4903277.5,     126.7,     126.7,       1.0);         (
335402.8, 4902780.5,     126.0,     126.0,       1.0);
    ( 335402.8, 4902800.5,     126.7,     126.7,       1.0);         (
335402.8, 4902820.0,     127.3,     127.3,       1.0);
    ( 335402.8, 4902840.0,     127.9,     150.0,       1.0);         (
335402.8, 4902860.0,     128.0,     151.0,       1.0);
    ( 335402.8, 4902880.0,     128.3,     151.0,       1.0);         (
335402.8, 4902899.5,     128.9,     151.0,       1.0);
    ( 335402.8, 4902919.5,     129.0,     151.0,       1.0);         (
335402.8, 4902939.5,     129.9,     151.0,       1.0);
```

```
    ( 335402.8, 4902959.5,     131.9,     151.0,       1.0);          (
335402.8, 4902979.0,     135.0,     149.0,       1.0);
    ( 335402.8, 4902999.0,     138.0,     142.0,       1.0);          (
335402.8, 4903019.0,     140.7,     141.0,       1.0);
    ( 335402.8, 4903039.0,     141.9,     143.0,       1.0);          (
335402.8, 4903058.5,     141.9,     143.0,       1.0);
    ( 335402.8, 4903078.5,     140.5,     145.0,       1.0);          (
335402.8, 4903098.5,     137.9,     145.0,       1.0);
    ( 335402.8, 4903118.5,     135.6,     145.0,       1.0);          (
335402.8, 4903138.0,     133.8,     145.0,       1.0);
    ( 335402.8, 4903158.0,     131.4,     146.0,       1.0);          (
335402.8, 4903178.0,     129.4,     146.0,       1.0);
    ( 335402.8, 4903198.0,     128.1,     146.0,       1.0);          (
335402.8, 4903217.5,     127.4,     145.0,       1.0);
    ( 335402.8, 4903237.5,     127.0,     145.0,       1.0);          (
335402.8, 4903257.5,     127.0,     143.0,       1.0);
    ( 335402.8, 4903277.5,     127.0,     127.0,       1.0);          (
335422.6, 4902780.5,     126.0,     126.0,       1.0);
    ( 335422.6, 4902800.5,     126.7,     126.7,       1.0);          (
335422.6, 4902820.0,     127.1,     127.1,       1.0);
    ( 335422.6, 4902840.0,     127.2,     127.2,       1.0);          (
335422.6, 4902860.0,     127.8,     150.0,       1.0);
    ( 335422.6, 4902880.0,     128.1,     150.0,       1.0);          (
335422.6, 4902899.5,     128.2,     151.0,       1.0);
    ( 335422.6, 4902919.5,     128.7,     151.0,       1.0);          (
335422.6, 4902939.5,     129.7,     151.0,       1.0);
    ( 335422.6, 4902959.5,     131.2,     150.0,       1.0);          (
335422.6, 4902979.0,     133.9,     149.0,       1.0);
    ( 335422.6, 4902999.0,     136.7,     143.0,       1.0);          (
335422.6, 4903019.0,     139.4,     139.4,       1.0);
    ( 335422.6, 4903039.0,     138.9,     143.0,       1.0);          (
335422.6, 4903058.5,     137.7,     145.0,       1.0);
    ( 335422.6, 4903078.5,     135.9,     145.0,       1.0);          (
335422.6, 4903098.5,     133.2,     146.0,       1.0);
    ( 335422.6, 4903118.5,     131.5,     149.0,       1.0);          (
335422.6, 4903138.0,     131.0,     146.0,       1.0);
    ( 335422.6, 4903158.0,     129.9,     146.0,       1.0);          (
335422.6, 4903178.0,     128.9,     146.0,       1.0);
    ( 335422.6, 4903198.0,     128.1,     145.0,       1.0);          (
335422.6, 4903217.5,     127.4,     145.0,       1.0);
    ( 335422.6, 4903237.5,     127.0,     145.0,       1.0);          (
335422.6, 4903257.5,     127.0,     143.0,       1.0);
    ( 335422.6, 4903277.5,     127.0,     127.0,       1.0);          (
335442.5, 4902780.5,     126.0,     126.0,       1.0);
    ( 335442.5, 4902800.5,     126.4,     126.4,       1.0);          (
335442.5, 4902820.0,     126.7,     126.7,       1.0);
    ( 335442.5, 4902840.0,     127.0,     127.0,       1.0);          (
335442.5, 4902860.0,     127.7,     127.7,       1.0);
    ( 335442.5, 4902880.0,     128.0,     128.0,       1.0);          (
335442.5, 4902899.5,     128.0,     150.0,       1.0);
    ( 335442.5, 4902919.5,     128.6,     150.0,       1.0);          (
335442.5, 4902939.5,     129.5,     150.0,       1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  11
CONC                        DFAULT ELEV   FLGPOL


                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 335442.5, 4902959.5,     130.6,     149.0,       1.0);         (
335442.5, 4902979.0,     132.9,     144.0,       1.0);
    ( 335442.5, 4902999.0,     135.0,     144.0,       1.0);         (
335442.5, 4903019.0,     136.8,     143.0,       1.0);
    ( 335442.5, 4903039.0,     135.4,     145.0,       1.0);         (
335442.5, 4903058.5,     133.8,     145.0,       1.0);
    ( 335442.5, 4903078.5,     132.1,     146.0,       1.0);         (
335442.5, 4903098.5,     130.2,     149.0,       1.0);
    ( 335442.5, 4903118.5,     129.3,     149.0,       1.0);         (
335442.5, 4903138.0,     129.6,     146.0,       1.0);
    ( 335442.5, 4903158.0,     129.0,     145.0,       1.0);         (
335442.5, 4903178.0,     128.4,     145.0,       1.0);
    ( 335442.5, 4903198.0,     128.0,     145.0,       1.0);         (
335442.5, 4903217.5,     127.4,     145.0,       1.0);
    ( 335442.5, 4903237.5,     127.0,     145.0,       1.0);         (
335442.5, 4903257.5,     127.0,     127.0,       1.0);
    ( 335442.5, 4903277.5,     127.0,     127.0,       1.0);         (
335462.4, 4902780.5,     126.0,     126.0,       1.0);
    ( 335462.4, 4902800.5,     126.0,     126.0,       1.0);         (
335462.4, 4902820.0,     126.3,     126.3,       1.0);
    ( 335462.4, 4902840.0,     127.0,     127.0,       1.0);         (
335462.4, 4902860.0,     127.6,     127.6,       1.0);
    ( 335462.4, 4902880.0,     127.9,     127.9,       1.0);         (
335462.4, 4902899.5,     128.0,     128.0,       1.0);
    ( 335462.4, 4902919.5,     128.6,     141.0,       1.0);         (
335462.4, 4902939.5,     129.3,     144.0,       1.0);
    ( 335462.4, 4902959.5,     129.9,     144.0,       1.0);         (
335462.4, 4902979.0,     131.8,     144.0,       1.0);
    ( 335462.4, 4902999.0,     133.1,     144.0,       1.0);         (
335462.4, 4903019.0,     133.7,     145.0,       1.0);
    ( 335462.4, 4903039.0,     131.9,     145.0,       1.0);         (
335462.4, 4903058.5,     130.3,     149.0,       1.0);
    ( 335462.4, 4903078.5,     129.0,     149.0,       1.0);         (
335462.4, 4903098.5,     128.4,     149.0,       1.0);
    ( 335462.4, 4903118.5,     128.3,     149.0,       1.0);         (
335462.4, 4903138.0,     128.9,     145.0,       1.0);
    ( 335462.4, 4903158.0,     128.4,     145.0,       1.0);         (
335462.4, 4903178.0,     128.0,     145.0,       1.0);
```

```
    ( 335462.4, 4903198.0,     128.0,     145.0,       1.0);        (
335462.4, 4903217.5,     127.5,     145.0,       1.0);
    ( 335462.4, 4903237.5,     127.1,     143.0,       1.0);        (
335462.4, 4903257.5,     127.0,     127.0,       1.0);
    ( 335462.4, 4903277.5,     127.0,     127.0,       1.0);        (
335482.2, 4902780.5,     126.0,     126.0,       1.0);
    ( 335482.2, 4902800.5,     126.0,     126.0,       1.0);        (
335482.2, 4902820.0,     126.3,     126.3,       1.0);
    ( 335482.2, 4902840.0,     127.0,     127.0,       1.0);        (
335482.2, 4902860.0,     127.2,     127.2,       1.0);
    ( 335482.2, 4902880.0,     127.5,     127.5,       1.0);        (
335482.2, 4902899.5,     128.0,     128.0,       1.0);
    ( 335482.2, 4902919.5,     128.6,     128.6,       1.0);        (
335482.2, 4902939.5,     129.1,     143.0,       1.0);
    ( 335482.2, 4902959.5,     129.2,     144.0,       1.0);        (
335482.2, 4902979.0,     130.7,     144.0,       1.0);
    ( 335482.2, 4902999.0,     131.6,     144.0,       1.0);        (
335482.2, 4903019.0,     131.8,     145.0,       1.0);
    ( 335482.2, 4903039.0,     130.3,     145.0,       1.0);        (
335482.2, 4903058.5,     129.2,     145.0,       1.0);
    ( 335482.2, 4903078.5,     128.3,     146.0,       1.0);        (
335482.2, 4903098.5,     128.1,     146.0,       1.0);
    ( 335482.2, 4903118.5,     128.1,     145.0,       1.0);        (
335482.2, 4903138.0,     128.2,     145.0,       1.0);
    ( 335482.2, 4903158.0,     128.1,     145.0,       1.0);        (
335482.2, 4903178.0,     128.0,     145.0,       1.0);
    ( 335482.2, 4903198.0,     128.0,     145.0,       1.0);        (
335482.2, 4903217.5,     127.8,     127.8,       1.0);
    ( 335482.2, 4903237.5,     127.6,     127.6,       1.0);        (
335482.2, 4903257.5,     127.1,     127.1,       1.0);
    ( 335482.2, 4903277.5,     127.0,     127.0,       1.0);        (
334985.4, 4903327.5,     125.9,     125.9,       1.0);
    ( 334985.4, 4903377.5,     126.0,     126.0,       1.0);        (
335035.1, 4903327.5,     125.2,     125.2,       1.0);
    ( 335035.1, 4903377.5,     126.0,     126.0,       1.0);        (
335084.8, 4903327.5,     125.0,     125.0,       1.0);
    ( 335084.8, 4903377.5,     125.9,     125.9,       1.0);        (
335134.6, 4903327.5,     125.2,     125.2,       1.0);
    ( 335134.6, 4903377.5,     126.0,     126.0,       1.0);        (
335184.3, 4903327.5,     125.2,     125.2,       1.0);
    ( 335184.3, 4903377.5,     126.0,     126.0,       1.0);        (
335234.1, 4903327.5,     125.2,     125.2,       1.0);
    ( 335234.1, 4903377.5,     126.0,     126.0,       1.0);        (
335283.8, 4903327.5,     125.1,     125.1,       1.0);
    ( 335283.8, 4903377.5,     125.9,     125.9,       1.0);        (
335333.6, 4903327.5,     126.0,     126.0,       1.0);
    ( 335333.6, 4903377.5,     126.0,     126.0,       1.0);        (
335383.3, 4903327.5,     126.0,     126.0,       1.0);
    ( 335383.3, 4903377.5,     126.0,     126.0,       1.0);        (
335433.0, 4903327.5,     126.8,     126.8,       1.0);
    ( 335433.0, 4903377.5,     126.0,     126.0,       1.0);        (
335482.8, 4903327.5,     127.0,     127.0,       1.0);
```

```
                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                            (METERS)

    ( 335482.8, 4903377.5,     126.8,     126.8,       1.0);         (
335532.5, 4903327.5,     127.4,     127.4,       1.0);
    ( 335532.5, 4903377.5,     127.0,     127.0,       1.0);         (
335582.2, 4903327.5,     128.1,     128.1,       1.0);
    ( 335582.2, 4903377.5,     127.2,     127.2,       1.0);         (
335532.2, 4903277.5,     128.0,     128.0,       1.0);
    ( 335532.2, 4903228.0,     128.0,     128.0,       1.0);         (
335532.2, 4903178.0,     128.0,     128.0,       1.0);
    ( 335532.2, 4903128.0,     128.6,     128.6,       1.0);         (
335532.2, 4903078.5,     129.0,     143.0,       1.0);
    ( 335532.2, 4903029.0,     129.8,     129.8,       1.0);         (
335532.2, 4902979.0,     130.0,     130.0,       1.0);
    ( 335532.2, 4902929.0,     129.0,     129.0,       1.0);         (
335532.2, 4902879.5,     127.6,     127.6,       1.0);
    ( 335532.2, 4902830.0,     126.7,     126.7,       1.0);         (
335532.2, 4902780.0,     126.4,     126.4,       1.0);
    ( 335532.2, 4902730.0,     126.7,     126.7,       1.0);         (
335532.2, 4902680.5,     127.8,     127.8,       1.0);
    ( 335582.2, 4903277.5,     128.1,     128.1,       1.0);         (
335582.2, 4903228.0,     128.1,     128.1,       1.0);
    ( 335582.2, 4903178.0,     129.0,     129.0,       1.0);         (
335582.2, 4903128.0,     129.0,     129.0,       1.0);
    ( 335582.2, 4903078.5,     129.1,     129.1,       1.0);         (
335582.2, 4903029.0,     130.0,     130.0,       1.0);
    ( 335582.2, 4902979.0,     130.0,     130.0,       1.0);         (
335582.2, 4902929.0,     129.0,     129.0,       1.0);
    ( 335582.2, 4902879.5,     128.0,     128.0,       1.0);         (
335582.2, 4902830.0,     127.0,     127.0,       1.0);
    ( 335582.2, 4902780.0,     127.0,     127.0,       1.0);         (
335582.2, 4902730.0,     128.7,     128.7,       1.0);
    ( 335582.2, 4902680.5,     130.0,     130.0,       1.0);         (
335482.2, 4902730.5,     126.0,     126.0,       1.0);
    ( 335482.2, 4902680.5,     125.9,     125.9,       1.0);         (
335432.5, 4902730.5,     125.4,     125.4,       1.0);
    ( 335432.5, 4902680.5,     125.1,     125.1,       1.0);         (
335382.8, 4902730.5,     126.0,     126.0,       1.0);
    ( 335382.8, 4902680.5,     125.0,     125.0,       1.0);         (
335333.0, 4902730.5,     126.3,     126.3,       1.0);
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    ( 335333.0, 4902680.5,     125.0,     125.0,        1.0);         (
335283.3, 4902730.5,     127.2,     127.2,       1.0);
    ( 335283.3, 4902680.5,     125.6,     125.6,        1.0);         (
335233.6, 4902730.5,     131.0,     131.0,       1.0);
    ( 335233.6, 4902680.5,     127.5,     136.0,        1.0);         (
335183.8, 4902730.5,     134.7,     134.7,       1.0);
    ( 335183.8, 4902680.5,     131.5,     131.5,        1.0);         (
335134.1, 4902730.5,     135.7,     135.7,       1.0);
    ( 335134.1, 4902680.5,     134.8,     136.0,        1.0);         (
335084.3, 4902730.5,     134.6,     134.6,       1.0);
    ( 335084.3, 4902680.5,     135.7,     135.7,        1.0);         (
335034.6, 4902730.5,     132.8,     132.8,       1.0);
    ( 335034.6, 4902680.5,     135.3,     135.3,        1.0);         (
334984.8, 4902730.5,     132.6,     132.6,       1.0);
    ( 334984.8, 4902680.5,     134.5,     134.5,        1.0);         (
334935.1, 4902730.5,     131.5,     131.5,       1.0);
    ( 334935.1, 4902680.5,     133.5,     133.5,        1.0);         (
334885.4, 4902730.5,     130.6,     130.6,       1.0);
    ( 334885.4, 4902680.5,     132.6,     132.6,        1.0);         (
334935.4, 4902780.5,     130.5,     130.5,       1.0);
    ( 334935.4, 4902830.0,     129.2,     129.2,        1.0);         (
334935.4, 4902880.0,     127.7,     152.0,       1.0);
    ( 334935.4, 4902930.0,     127.0,     152.0,        1.0);         (
334935.4, 4902979.5,     126.5,     152.0,       1.0);
    ( 334935.4, 4903029.0,     125.8,     152.0,        1.0);         (
334935.4, 4903079.0,     125.5,     152.0,       1.0);
    ( 334935.4, 4903129.0,     125.5,     152.0,        1.0);         (
334935.4, 4903178.5,     125.0,     125.0,       1.0);
    ( 334935.4, 4903228.0,     125.0,     125.0,        1.0);         (
334935.4, 4903278.0,     125.0,     125.0,       1.0);
    ( 334935.4, 4903328.0,     126.0,     126.0,        1.0);         (
334935.4, 4903377.5,     126.0,     126.0,       1.0);
    ( 334885.4, 4902780.5,     129.8,     129.8,        1.0);         (
334885.4, 4902830.0,     128.3,     128.3,       1.0);
    ( 334885.4, 4902880.0,     127.7,     127.7,        1.0);         (
334885.4, 4902930.0,     126.2,     151.0,       1.0);
    ( 334885.4, 4902979.5,     126.0,     151.0,        1.0);         (
334885.4, 4903029.0,     125.0,     151.0,       1.0);
    ( 334885.4, 4903079.0,     125.0,     125.0,        1.0);         (
334885.4, 4903129.0,     124.9,     124.9,       1.0);
    ( 334885.4, 4903178.5,     124.8,     124.8,        1.0);         (
334885.4, 4903228.0,     125.0,     125.0,       1.0);
    ( 334885.4, 4903278.0,     125.0,     125.0,        1.0);         (
334885.4, 4903328.0,     125.9,     125.9,       1.0);
    ( 334885.4, 4903377.5,     126.9,     126.9,        1.0);         (
334885.4, 4903477.5,     128.0,     128.0,       1.0);
    ( 334885.4, 4903577.5,     129.0,     129.0,        1.0);         (
334885.4, 4903677.5,     129.9,     129.9,       1.0);
    ( 334885.4, 4903777.5,     130.0,     130.0,        1.0);         (
334885.4, 4903877.5,     129.1,     129.1,       1.0);
    ( 334985.1, 4903477.5,     127.0,     127.0,        1.0);         (
334985.1, 4903577.5,     127.9,     127.9,       1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  13
CONC                        DFAULT ELEV   FLGPOL


                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 334985.1, 4903677.5,     128.8,     128.8,       1.0);         (
334985.1, 4903777.5,     129.0,     129.0,       1.0);
    ( 334985.1, 4903877.5,     129.0,     129.0,       1.0);         (
335084.8, 4903477.5,     126.0,     126.0,       1.0);
    ( 335084.8, 4903577.5,     127.0,     127.0,       1.0);         (
335084.8, 4903677.5,     128.0,     128.0,       1.0);
    ( 335084.8, 4903777.5,     128.0,     128.0,       1.0);         (
335084.8, 4903877.5,     128.8,     128.8,       1.0);
    ( 335184.6, 4903477.5,     126.0,     126.0,       1.0);         (
335184.6, 4903577.5,     126.6,     126.6,       1.0);
    ( 335184.6, 4903677.5,     127.0,     127.0,       1.0);         (
335184.6, 4903777.5,     128.0,     128.0,       1.0);
    ( 335184.6, 4903877.5,     128.1,     128.1,       1.0);         (
335284.3, 4903477.5,     126.0,     126.0,       1.0);
    ( 335284.3, 4903577.5,     127.0,     127.0,       1.0);         (
335284.3, 4903677.5,     127.0,     127.0,       1.0);
    ( 335284.3, 4903777.5,     127.0,     127.0,       1.0);         (
335284.3, 4903877.5,     128.0,     128.0,       1.0);
    ( 335384.1, 4903477.5,     126.2,     126.2,       1.0);         (
335384.1, 4903577.5,     127.0,     127.0,       1.0);
    ( 335384.1, 4903677.5,     127.0,     127.0,       1.0);         (
335384.1, 4903777.5,     127.0,     127.0,       1.0);
    ( 335384.1, 4903877.5,     128.0,     128.0,       1.0);         (
335483.8, 4903477.5,     126.0,     126.0,       1.0);
    ( 335483.8, 4903577.5,     127.5,     127.5,       1.0);         (
335483.8, 4903677.5,     127.8,     127.8,       1.0);
    ( 335483.8, 4903777.5,     127.0,     127.0,       1.0);         (
335483.8, 4903877.5,     127.2,     127.2,       1.0);
    ( 335583.6, 4903477.5,     126.0,     126.0,       1.0);         (
335583.6, 4903577.5,     126.9,     126.9,       1.0);
    ( 335583.6, 4903677.5,     126.9,     126.9,       1.0);         (
335583.6, 4903777.5,     126.0,     126.0,       1.0);
    ( 335583.6, 4903877.5,     127.0,     127.0,       1.0);         (
335683.3, 4903477.5,     126.9,     126.9,       1.0);
    ( 335683.3, 4903577.5,     126.4,     126.4,       1.0);         (
335683.3, 4903677.5,     127.0,     127.0,       1.0);
    ( 335683.3, 4903777.5,     127.0,     127.0,       1.0);         (
335683.3, 4903877.5,     127.3,     127.3,       1.0);
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    ( 335783.0, 4903477.5,     128.0,     128.0,       1.0);         (
335783.0, 4903577.5,     128.0,     128.0,       1.0);
    ( 335783.0, 4903677.5,     128.0,     128.0,       1.0);         (
335783.0, 4903777.5,     127.9,     127.9,       1.0);
    ( 335783.0, 4903877.5,     128.0,     128.0,       1.0);         (
335882.8, 4903477.5,     129.0,     129.0,       1.0);
    ( 335882.8, 4903577.5,     129.0,     129.0,       1.0);         (
335882.8, 4903677.5,     129.0,     129.0,       1.0);
    ( 335882.8, 4903777.5,     128.0,     128.0,       1.0);         (
335882.8, 4903877.5,     128.6,     128.6,       1.0);
    ( 335982.5, 4903477.5,     130.0,     130.0,       1.0);         (
335982.5, 4903577.5,     129.2,     129.2,       1.0);
    ( 335982.5, 4903677.5,     129.0,     129.0,       1.0);         (
335982.5, 4903777.5,     128.0,     128.0,       1.0);
    ( 335982.5, 4903877.5,     129.0,     129.0,       1.0);         (
336082.2, 4903477.5,     130.0,     130.0,       1.0);
    ( 336082.2, 4903577.5,     130.0,     130.0,       1.0);         (
336082.2, 4903677.5,     129.0,     129.0,       1.0);
    ( 336082.2, 4903777.5,     128.8,     128.8,       1.0);         (
336082.2, 4903877.5,     128.7,     128.7,       1.0);
    ( 335682.2, 4903377.5,     129.0,     129.0,       1.0);         (
335682.2, 4903278.0,     129.4,     129.4,       1.0);
    ( 335682.2, 4903178.0,     130.0,     130.0,       1.0);         (
335682.2, 4903078.0,     130.0,     130.0,       1.0);
    ( 335682.2, 4902978.5,     130.0,     130.0,       1.0);         (
335682.2, 4902879.0,     129.6,     129.6,       1.0);
    ( 335682.2, 4902779.0,     129.0,     129.0,       1.0);         (
335682.2, 4902679.0,     130.0,     130.0,       1.0);
    ( 335682.2, 4902579.5,     127.9,     127.9,       1.0);         (
335682.2, 4902480.0,     125.0,     125.0,       1.0);
    ( 335682.2, 4902380.0,     122.9,     122.9,       1.0);         (
335682.2, 4902280.0,     121.0,     121.0,       1.0);
    ( 335682.2, 4902180.5,     120.0,     120.0,       1.0);         (
335782.2, 4903377.5,     129.1,     129.1,       1.0);
    ( 335782.2, 4903278.0,     130.0,     130.0,       1.0);         (
335782.2, 4903178.0,     130.0,     130.0,       1.0);
    ( 335782.2, 4903078.0,     130.0,     130.0,       1.0);         (
335782.2, 4902978.5,     130.0,     130.0,       1.0);
    ( 335782.2, 4902879.0,     129.1,     129.1,       1.0);         (
335782.2, 4902779.0,     128.0,     128.0,       1.0);
    ( 335782.2, 4902679.0,     130.0,     130.0,       1.0);         (
335782.2, 4902579.5,     128.3,     128.3,       1.0);
    ( 335782.2, 4902480.0,     125.0,     125.0,       1.0);         (
335782.2, 4902380.0,     121.8,     121.8,       1.0);
    ( 335782.2, 4902280.0,     120.0,     120.0,       1.0);         (
335782.2, 4902180.5,     119.3,     119.3,       1.0);
    ( 335882.2, 4903377.5,     130.0,     130.0,       1.0);         (
335882.2, 4903278.0,     130.0,     130.0,       1.0);
    ( 335882.2, 4903178.0,     130.0,     130.0,       1.0);         (
335882.2, 4903078.0,     130.0,     130.0,       1.0);
    ( 335882.2, 4902978.5,     130.0,     130.0,       1.0);         (
335882.2, 4902879.0,     128.3,     128.3,       1.0);
```

```
                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 335882.2, 4902779.0,     130.0,     130.0,       1.0);         (
335882.2, 4902679.0,     129.6,     129.6,       1.0);
    ( 335882.2, 4902579.5,     126.2,     126.2,       1.0);         (
335882.2, 4902480.0,     123.9,     123.9,       1.0);
    ( 335882.2, 4902380.0,     120.7,     120.7,       1.0);         (
335882.2, 4902280.0,     119.3,     119.3,       1.0);
    ( 335882.2, 4902180.5,     118.0,     118.0,       1.0);         (
335982.2, 4903377.5,     130.0,     130.0,       1.0);
    ( 335982.2, 4903278.0,     130.0,     130.0,       1.0);         (
335982.2, 4903178.0,     130.0,     130.0,       1.0);
    ( 335982.2, 4903078.0,     130.0,     130.0,       1.0);         (
335982.2, 4902978.5,     130.0,     130.0,       1.0);
    ( 335982.2, 4902879.0,     129.0,     129.0,       1.0);         (
335982.2, 4902779.0,     130.0,     130.0,       1.0);
    ( 335982.2, 4902679.0,     128.5,     128.5,       1.0);         (
335982.2, 4902579.5,     125.2,     125.2,       1.0);
    ( 335982.2, 4902480.0,     124.0,     124.0,       1.0);         (
335982.2, 4902380.0,     120.7,     120.7,       1.0);
    ( 335982.2, 4902280.0,     119.1,     119.1,       1.0);         (
335982.2, 4902180.5,     118.0,     118.0,       1.0);
    ( 336082.2, 4903377.5,     130.0,     130.0,       1.0);         (
336082.2, 4903278.0,     130.0,     130.0,       1.0);
    ( 336082.2, 4903178.0,     130.0,     130.0,       1.0);         (
336082.2, 4903078.0,     130.0,     130.0,       1.0);
    ( 336082.2, 4902978.5,     130.0,     130.0,       1.0);         (
336082.2, 4902879.0,     129.3,     129.3,       1.0);
    ( 336082.2, 4902779.0,     130.0,     130.0,       1.0);         (
336082.2, 4902679.0,     125.9,     125.9,       1.0);
    ( 336082.2, 4902579.5,     123.3,     123.3,       1.0);         (
336082.2, 4902480.0,     121.0,     121.0,       1.0);
    ( 336082.2, 4902380.0,     120.2,     120.2,       1.0);         (
336082.2, 4902280.0,     119.1,     119.1,       1.0);
    ( 336082.2, 4902180.5,     118.0,     118.0,       1.0);         (
335582.2, 4902580.5,     127.3,     127.3,       1.0);
    ( 335582.2, 4902480.5,     124.0,     124.0,       1.0);         (
335582.2, 4902380.5,     123.0,     123.0,       1.0);
    ( 335582.2, 4902280.5,     122.3,     122.3,       1.0);         (
335582.2, 4902180.5,     121.0,     121.0,       1.0);
```

```
    ( 335482.5, 4902580.5,     125.0,     125.0,        1.0);          (
335482.5, 4902480.5,     125.0,     125.0,        1.0);
    ( 335482.5, 4902380.5,     122.7,     122.7,        1.0);          (
335482.5, 4902280.5,     121.3,     121.3,        1.0);
    ( 335482.5, 4902180.5,     120.8,     120.8,        1.0);          (
335382.8, 4902580.5,     125.0,     125.0,        1.0);
    ( 335382.8, 4902480.5,     125.0,     125.0,        1.0);          (
335382.8, 4902380.5,     122.7,     122.7,        1.0);
    ( 335382.8, 4902280.5,     120.3,     120.3,        1.0);          (
335382.8, 4902180.5,     119.0,     119.0,        1.0);
    ( 335283.0, 4902580.5,     124.0,     124.0,        1.0);          (
335283.0, 4902480.5,     125.0,     125.0,        1.0);
    ( 335283.0, 4902380.5,     122.7,     122.7,        1.0);          (
335283.0, 4902280.5,     120.3,     120.3,        1.0);
    ( 335283.0, 4902180.5,     118.9,     118.9,        1.0);          (
335183.3, 4902580.5,     126.2,     126.2,        1.0);
    ( 335183.3, 4902480.5,     123.0,     123.0,        1.0);          (
335183.3, 4902380.5,     122.5,     122.5,        1.0);
    ( 335183.3, 4902280.5,     121.0,     121.0,        1.0);          (
335183.3, 4902180.5,     119.0,     119.0,        1.0);
    ( 335083.6, 4902580.5,     128.4,     134.0,        1.0);          (
335083.6, 4902480.5,     123.0,     123.0,        1.0);
    ( 335083.6, 4902380.5,     121.0,     121.0,        1.0);          (
335083.6, 4902280.5,     120.0,     120.0,        1.0);
    ( 335083.6, 4902180.5,     118.0,     118.0,        1.0);          (
334983.8, 4902580.5,     136.1,     136.1,        1.0);
    ( 334983.8, 4902480.5,     125.9,     136.0,        1.0);          (
334983.8, 4902380.5,     122.6,     122.6,        1.0);
    ( 334983.8, 4902280.5,     120.3,     120.3,        1.0);          (
334983.8, 4902180.5,     118.0,     118.0,        1.0);
    ( 334884.1, 4902580.5,     135.8,     135.8,        1.0);          (
334884.1, 4902480.5,     130.2,     130.2,        1.0);
    ( 334884.1, 4902380.5,     124.1,     124.1,        1.0);          (
334884.1, 4902280.5,     120.3,     120.3,        1.0);
    ( 334884.1, 4902180.5,     120.0,     120.0,        1.0);          (
334784.3, 4902580.5,     133.5,     133.5,        1.0);
    ( 334784.3, 4902480.5,     130.6,     130.6,        1.0);          (
334784.3, 4902380.5,     126.6,     126.6,        1.0);
    ( 334784.3, 4902280.5,     122.0,     122.0,        1.0);          (
334784.3, 4902180.5,     120.0,     120.0,        1.0);
    ( 334684.6, 4902580.5,     130.2,     130.2,        1.0);          (
334684.6, 4902480.5,     131.0,     131.0,        1.0);
    ( 334684.6, 4902380.5,     128.4,     128.4,        1.0);          (
334684.6, 4902280.5,     124.3,     124.3,        1.0);
    ( 334684.6, 4902180.5,     121.0,     121.0,        1.0);          (
334584.8, 4902580.5,     126.9,     126.9,        1.0);
    ( 334584.8, 4902480.5,     128.0,     128.0,        1.0);          (
334584.8, 4902380.5,     127.6,     127.6,        1.0);
    ( 334584.8, 4902280.5,     124.3,     124.3,        1.0);          (
334584.8, 4902180.5,     120.0,     120.0,        1.0);
    ( 334485.1, 4902580.5,     125.0,     125.0,        1.0);          (
334485.1, 4902480.5,     126.0,     126.0,        1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  15
CONC                        DFAULT ELEV   FLGPOL



                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 334485.1, 4902380.5,     125.8,     125.8,       1.0);         (
334485.1, 4902280.5,     123.8,     123.8,       1.0);
    ( 334485.1, 4902180.5,     120.0,     120.0,       1.0);         (
334385.4, 4902580.5,     123.7,     123.7,       1.0);
    ( 334385.4, 4902480.5,     124.0,     124.0,       1.0);         (
334385.4, 4902380.5,     124.0,     124.0,       1.0);
    ( 334385.4, 4902280.5,     122.5,     122.5,       1.0);         (
334385.4, 4902180.5,     120.0,     120.0,       1.0);
    ( 334785.4, 4902680.5,     131.7,     131.7,       1.0);         (
334785.4, 4902780.0,     129.0,     129.0,       1.0);
    ( 334785.4, 4902880.0,     127.7,     127.7,       1.0);         (
334785.4, 4902980.0,     126.0,     126.0,       1.0);
    ( 334785.4, 4903079.5,     125.0,     125.0,       1.0);         (
334785.4, 4903179.0,     124.3,     124.3,       1.0);
    ( 334785.4, 4903279.0,     125.3,     125.3,       1.0);         (
334785.4, 4903379.0,     127.0,     127.0,       1.0);
    ( 334785.4, 4903478.5,     128.3,     128.3,       1.0);         (
334785.4, 4903578.0,     129.6,     129.6,       1.0);
    ( 334785.4, 4903678.0,     130.0,     130.0,       1.0);         (
334785.4, 4903778.0,     130.0,     130.0,       1.0);
    ( 334785.4, 4903877.5,     129.4,     129.4,       1.0);         (
334685.4, 4902680.5,     128.6,     128.6,       1.0);
    ( 334685.4, 4902780.0,     127.2,     127.2,       1.0);         (
334685.4, 4902880.0,     126.1,     126.1,       1.0);
    ( 334685.4, 4902980.0,     125.1,     125.1,       1.0);         (
334685.4, 4903079.5,     124.0,     124.0,       1.0);
    ( 334685.4, 4903179.0,     125.0,     125.0,       1.0);         (
334685.4, 4903279.0,     126.0,     126.0,       1.0);
    ( 334685.4, 4903379.0,     127.0,     127.0,       1.0);         (
334685.4, 4903478.5,     128.3,     128.3,       1.0);
    ( 334685.4, 4903578.0,     129.6,     129.6,       1.0);         (
334685.4, 4903678.0,     130.0,     130.0,       1.0);
    ( 334685.4, 4903778.0,     130.0,     130.0,       1.0);         (
334685.4, 4903877.5,     129.3,     129.3,       1.0);
    ( 334585.4, 4902680.5,     125.8,     125.8,       1.0);         (
334585.4, 4902780.0,     124.8,     124.8,       1.0);
    ( 334585.4, 4902880.0,     124.0,     124.0,       1.0);         (
334585.4, 4902980.0,     123.3,     123.3,       1.0);
```

```
    ( 334585.4, 4903079.5,     123.2,     123.2,       1.0);          (
334585.4, 4903179.0,     125.0,     125.0,       1.0);
    ( 334585.4, 4903279.0,     125.7,     125.7,       1.0);          (
334585.4, 4903379.0,     127.0,     127.0,       1.0);
    ( 334585.4, 4903478.5,     128.3,     128.3,       1.0);          (
334585.4, 4903578.0,     130.0,     130.0,       1.0);
    ( 334585.4, 4903678.0,     130.0,     130.0,       1.0);          (
334585.4, 4903778.0,     130.0,     130.0,       1.0);
    ( 334585.4, 4903877.5,     129.4,     129.4,       1.0);          (
334485.4, 4902680.5,     124.0,     124.0,       1.0);
    ( 334485.4, 4902780.0,     123.0,     123.0,       1.0);          (
334485.4, 4902880.0,     123.0,     123.0,       1.0);
    ( 334485.4, 4902980.0,     123.0,     123.0,       1.0);          (
334485.4, 4903079.5,     124.0,     124.0,       1.0);
    ( 334485.4, 4903179.0,     125.2,     125.2,       1.0);          (
334485.4, 4903279.0,     126.6,     126.6,       1.0);
    ( 334485.4, 4903379.0,     128.0,     128.0,       1.0);          (
334485.4, 4903478.5,     129.0,     129.0,       1.0);
    ( 334485.4, 4903578.0,     130.0,     130.0,       1.0);          (
334485.4, 4903678.0,     130.0,     130.0,       1.0);
    ( 334485.4, 4903778.0,     128.9,     128.9,       1.0);          (
334485.4, 4903877.5,     128.0,     128.0,       1.0);
    ( 334385.4, 4902680.5,     123.0,     123.0,       1.0);          (
334385.4, 4902780.0,     122.0,     122.0,       1.0);
    ( 334385.4, 4902880.0,     122.0,     122.0,       1.0);          (
334385.4, 4902980.0,     123.0,     123.0,       1.0);
    ( 334385.4, 4903079.5,     124.0,     124.0,       1.0);          (
334385.4, 4903179.0,     125.2,     125.2,       1.0);
    ( 334385.4, 4903279.0,     126.6,     126.6,       1.0);          (
334385.4, 4903379.0,     128.0,     128.0,       1.0);
    ( 334385.4, 4903478.5,     129.3,     129.3,       1.0);          (
334385.4, 4903578.0,     130.0,     130.0,       1.0);
    ( 334385.4, 4903678.0,     129.0,     129.0,       1.0);          (
334385.4, 4903778.0,     127.0,     127.0,       1.0);
    ( 334385.4, 4903877.5,     127.0,     127.0,       1.0);          (
334385.4, 4904044.0,     127.0,     127.0,       1.0);
    ( 334385.4, 4904211.0,     128.0,     128.0,       1.0);          (
334385.4, 4904377.5,     128.0,     128.0,       1.0);
    ( 334385.4, 4904544.0,     129.0,     129.0,       1.0);          (
334385.4, 4904711.0,     129.0,     129.0,       1.0);
    ( 334385.4, 4904877.5,     129.0,     129.0,       1.0);          (
334578.0, 4904044.0,     128.0,     128.0,       1.0);
    ( 334578.0, 4904211.0,     127.4,     127.4,       1.0);          (
334578.0, 4904377.5,     128.0,     128.0,       1.0);
    ( 334578.0, 4904544.0,     128.0,     128.0,       1.0);          (
334578.0, 4904711.0,     128.4,     128.4,       1.0);
    ( 334578.0, 4904877.5,     129.0,     129.0,       1.0);          (
334770.7, 4904044.0,     128.9,     128.9,       1.0);
    ( 334770.7, 4904211.0,     128.0,     128.0,       1.0);          (
334770.7, 4904377.5,     128.0,     128.0,       1.0);
    ( 334770.7, 4904544.0,     128.0,     128.0,       1.0);          (
334770.7, 4904711.0,     129.0,     129.0,       1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  16
CONC                        DFAULT ELEV   FLGPOL


                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 334770.7, 4904877.5,     129.9,     129.9,       1.0);         (
334963.3, 4904044.0,     129.0,     129.0,       1.0);
    ( 334963.3, 4904211.0,     129.0,     129.0,       1.0);         (
334963.3, 4904377.5,     129.0,     129.0,       1.0);
    ( 334963.3, 4904544.0,     129.0,     129.0,       1.0);         (
334963.3, 4904711.0,     129.4,     129.4,       1.0);
    ( 334963.3, 4904877.5,     130.0,     130.0,       1.0);         (
335155.9, 4904044.0,     130.0,     130.0,       1.0);
    ( 335155.9, 4904211.0,     130.0,     130.0,       1.0);         (
335155.9, 4904377.5,     130.0,     130.0,       1.0);
    ( 335155.9, 4904544.0,     129.0,     129.0,       1.0);         (
335155.9, 4904711.0,     130.0,     130.0,       1.0);
    ( 335155.9, 4904877.5,     130.0,     130.0,       1.0);         (
335348.5, 4904044.0,     129.0,     129.0,       1.0);
    ( 335348.5, 4904211.0,     130.0,     130.0,       1.0);         (
335348.5, 4904377.5,     130.0,     130.0,       1.0);
    ( 335348.5, 4904544.0,     130.0,     130.0,       1.0);         (
335348.5, 4904711.0,     130.0,     130.0,       1.0);
    ( 335348.5, 4904877.5,     130.0,     130.0,       1.0);         (
335541.2, 4904044.0,     127.0,     127.0,       1.0);
    ( 335541.2, 4904211.0,     128.8,     128.8,       1.0);         (
335541.2, 4904377.5,     130.0,     130.0,       1.0);
    ( 335541.2, 4904544.0,     130.0,     130.0,       1.0);         (
335541.2, 4904711.0,     129.7,     129.7,       1.0);
    ( 335541.2, 4904877.5,     130.0,     130.0,       1.0);         (
335733.8, 4904044.0,     129.0,     129.0,       1.0);
    ( 335733.8, 4904211.0,     127.0,     127.0,       1.0);         (
335733.8, 4904377.5,     128.9,     128.9,       1.0);
    ( 335733.8, 4904544.0,     128.0,     128.0,       1.0);         (
335733.8, 4904711.0,     128.0,     128.0,       1.0);
    ( 335733.8, 4904877.5,     129.0,     129.0,       1.0);         (
335926.4, 4904044.0,     130.0,     130.0,       1.0);
    ( 335926.4, 4904211.0,     129.2,     129.2,       1.0);         (
335926.4, 4904377.5,     129.0,     129.0,       1.0);
    ( 335926.4, 4904544.0,     129.0,     129.0,       1.0);         (
335926.4, 4904711.0,     128.0,     128.0,       1.0);
    ( 335926.4, 4904877.5,     129.0,     129.0,       1.0);         (
336119.1, 4904044.0,     130.0,     130.0,       1.0);
```

```
    ( 336119.1, 4904211.0,     130.0,     130.0,       1.0);          (
336119.1, 4904377.5,     130.0,     130.0,       1.0);
    ( 336119.1, 4904544.0,     129.0,     129.0,       1.0);          (
336119.1, 4904711.0,     130.0,     130.0,       1.0);
    ( 336119.1, 4904877.5,     130.0,     130.0,       1.0);          (
336311.7, 4904044.0,     129.1,     129.1,       1.0);
    ( 336311.7, 4904211.0,     130.0,     130.0,       1.0);          (
336311.7, 4904377.5,     131.0,     131.0,       1.0);
    ( 336311.7, 4904544.0,     131.0,     131.0,       1.0);          (
336311.7, 4904711.0,     130.6,     130.6,       1.0);
    ( 336311.7, 4904877.5,     131.0,     131.0,       1.0);          (
336504.3, 4904044.0,     127.0,     127.0,       1.0);
    ( 336504.3, 4904211.0,     127.7,     127.7,       1.0);          (
336504.3, 4904377.5,     129.4,     129.4,       1.0);
    ( 336504.3, 4904544.0,     130.8,     130.8,       1.0);          (
336504.3, 4904711.0,     132.0,     132.0,       1.0);
    ( 336504.3, 4904877.5,     131.1,     131.1,       1.0);          (
336697.0, 4904044.0,     126.9,     126.9,       1.0);
    ( 336697.0, 4904211.0,     126.0,     126.0,       1.0);          (
336697.0, 4904377.5,     128.8,     128.8,       1.0);
    ( 336697.0, 4904544.0,     129.0,     129.0,       1.0);          (
336697.0, 4904711.0,     131.0,     131.0,       1.0);
    ( 336697.0, 4904877.5,     132.7,     132.7,       1.0);          (
336889.6, 4904044.0,     127.7,     127.7,       1.0);
    ( 336889.6, 4904211.0,     125.3,     125.3,       1.0);          (
336889.6, 4904377.5,     126.2,     126.2,       1.0);
    ( 336889.6, 4904544.0,     129.0,     129.0,       1.0);          (
336889.6, 4904711.0,     131.0,     131.0,       1.0);
    ( 336889.6, 4904877.5,     132.0,     132.0,       1.0);          (
337082.2, 4904044.0,     121.0,     121.0,       1.0);
    ( 337082.2, 4904211.0,     123.0,     123.0,       1.0);          (
337082.2, 4904377.5,     125.2,     125.2,       1.0);
    ( 337082.2, 4904544.0,     127.0,     127.0,       1.0);          (
337082.2, 4904711.0,     129.3,     129.3,       1.0);
    ( 337082.2, 4904877.5,     130.9,     130.9,       1.0);          (
336248.9, 4903877.5,     129.0,     129.0,       1.0);
    ( 336248.9, 4903685.0,     130.0,     130.0,       1.0);          (
336248.9, 4903492.0,     130.0,     130.0,       1.0);
    ( 336248.9, 4903299.5,     130.0,     130.0,       1.0);          (
336248.9, 4903107.0,     131.0,     131.0,       1.0);
    ( 336248.9, 4902914.5,     130.7,     130.7,       1.0);          (
336248.9, 4902721.5,     124.1,     124.1,       1.0);
    ( 336248.9, 4902529.0,     120.7,     120.7,       1.0);          (
336248.9, 4902336.5,     118.2,     118.2,       1.0);
    ( 336248.9, 4902143.5,     117.8,     117.8,       1.0);          (
336248.9, 4901951.0,     120.0,     120.0,       1.0);
    ( 336248.9, 4901758.5,     118.7,     118.7,       1.0);          (
336248.9, 4901566.0,     112.2,     112.2,       1.0);
    ( 336248.9, 4901373.0,     107.1,     107.1,       1.0);          (
336248.9, 4901180.5,     105.5,     105.5,       1.0);
    ( 336415.6, 4903877.5,     129.4,     129.4,       1.0);          (
336415.6, 4903685.0,     131.0,     131.0,       1.0);
```

```
                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 336415.6, 4903492.0,     131.9,     131.9,       1.0);         (
336415.6, 4903299.5,     133.6,     133.6,       1.0);
    ( 336415.6, 4903107.0,     130.9,     130.9,       1.0);         (
336415.6, 4902914.5,     126.6,     126.6,       1.0);
    ( 336415.6, 4902721.5,     123.2,     123.2,       1.0);         (
336415.6, 4902529.0,     121.1,     121.1,       1.0);
    ( 336415.6, 4902336.5,     119.0,     119.0,       1.0);         (
336415.6, 4902143.5,     116.0,     116.0,       1.0);
    ( 336415.6, 4901951.0,     115.2,     115.2,       1.0);         (
336415.6, 4901758.5,     112.0,     112.0,       1.0);
    ( 336415.6, 4901566.0,     108.1,     108.1,       1.0);         (
336415.6, 4901373.0,     107.8,     107.8,       1.0);
    ( 336415.6, 4901180.5,     110.0,     110.0,       1.0);         (
336582.2, 4903877.5,     130.0,     130.0,       1.0);
    ( 336582.2, 4903685.0,     132.0,     132.0,       1.0);         (
336582.2, 4903492.0,     134.0,     134.0,       1.0);
    ( 336582.2, 4903299.5,     135.0,     135.0,       1.0);         (
336582.2, 4903107.0,     128.5,     128.5,       1.0);
    ( 336582.2, 4902914.5,     125.0,     125.0,       1.0);         (
336582.2, 4902721.5,     122.0,     122.0,       1.0);
    ( 336582.2, 4902529.0,     119.8,     119.8,       1.0);         (
336582.2, 4902336.5,     115.7,     115.7,       1.0);
    ( 336582.2, 4902143.5,     114.0,     114.0,       1.0);         (
336582.2, 4901951.0,     112.0,     112.0,       1.0);
    ( 336582.2, 4901758.5,     110.6,     110.6,       1.0);         (
336582.2, 4901566.0,     107.9,     107.9,       1.0);
    ( 336582.2, 4901373.0,     112.3,     112.3,       1.0);         (
336582.2, 4901180.5,     112.4,     112.4,       1.0);
    ( 336748.9, 4903877.5,     131.0,     131.0,       1.0);         (
336748.9, 4903685.0,     132.0,     132.0,       1.0);
    ( 336748.9, 4903492.0,     134.0,     134.0,       1.0);         (
336748.9, 4903299.5,     132.6,     132.6,       1.0);
    ( 336748.9, 4903107.0,     126.0,     126.0,       1.0);         (
336748.9, 4902914.5,     122.0,     122.0,       1.0);
    ( 336748.9, 4902721.5,     119.1,     119.1,       1.0);         (
336748.9, 4902529.0,     114.7,     114.7,       1.0);
    ( 336748.9, 4902336.5,     112.8,     112.8,       1.0);         (
336748.9, 4902143.5,     112.0,     112.0,       1.0);
```

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    ( 336748.9, 4901951.0,     110.4,     110.4,        1.0);          (
336748.9, 4901758.5,     110.0,     110.0,        1.0);
    ( 336748.9, 4901566.0,     113.9,     113.9,        1.0);          (
336748.9, 4901373.0,     116.0,     116.0,        1.0);
    ( 336748.9, 4901180.5,     113.7,     113.7,        1.0);          (
336915.6, 4903877.5,     130.5,     130.5,        1.0);
    ( 336915.6, 4903685.0,     131.4,     131.4,        1.0);          (
336915.6, 4903492.0,     135.1,     135.1,        1.0);
    ( 336915.6, 4903299.5,     129.3,     129.3,        1.0);          (
336915.6, 4903107.0,     122.9,     122.9,        1.0);
    ( 336915.6, 4902914.5,     119.5,     119.5,        1.0);          (
336915.6, 4902721.5,     113.5,     113.5,        1.0);
    ( 336915.6, 4902529.0,     112.5,     112.5,        1.0);          (
336915.6, 4902336.5,     111.0,     111.0,        1.0);
    ( 336915.6, 4902143.5,     110.0,     110.0,        1.0);          (
336915.6, 4901951.0,     110.8,     110.8,        1.0);
    ( 336915.6, 4901758.5,     113.1,     113.1,        1.0);          (
336915.6, 4901566.0,     116.0,     116.0,        1.0);
    ( 336915.6, 4901373.0,     116.0,     116.0,        1.0);          (
336915.6, 4901180.5,     113.7,     113.7,        1.0);
    ( 337082.2, 4903877.5,     126.4,     126.4,        1.0);          (
337082.2, 4903685.0,     127.6,     127.6,        1.0);
    ( 337082.2, 4903492.0,     130.3,     130.3,        1.0);          (
337082.2, 4903299.5,     122.9,     122.9,        1.0);
    ( 337082.2, 4903107.0,     118.8,     118.8,        1.0);          (
337082.2, 4902914.5,     115.0,     115.0,        1.0);
    ( 337082.2, 4902721.5,     116.0,     116.0,        1.0);          (
337082.2, 4902529.0,     115.1,     115.1,        1.0);
    ( 337082.2, 4902336.5,     113.0,     113.0,        1.0);          (
337082.2, 4902143.5,     113.3,     113.3,        1.0);
    ( 337082.2, 4901951.0,     113.4,     113.4,        1.0);          (
337082.2, 4901758.5,     113.1,     113.1,        1.0);
    ( 337082.2, 4901566.0,     116.0,     116.0,        1.0);          (
337082.2, 4901373.0,     115.1,     115.1,        1.0);
    ( 337082.2, 4901180.5,     112.6,     112.6,        1.0);          (
336082.2, 4902014.0,     119.5,     119.5,        1.0);
    ( 336082.2, 4901847.0,     121.0,     121.0,        1.0);          (
336082.2, 4901680.5,     112.3,     121.0,        1.0);
    ( 336082.2, 4901514.0,     111.6,     111.6,        1.0);          (
336082.2, 4901347.0,     109.5,     109.5,        1.0);
    ( 336082.2, 4901180.5,     105.2,     105.2,        1.0);          (
335889.6, 4902014.0,     117.7,     117.7,        1.0);
    ( 335889.6, 4901847.0,     120.0,     120.0,        1.0);          (
335889.6, 4901680.5,     119.0,     119.0,        1.0);
    ( 335889.6, 4901514.0,     115.7,     115.7,        1.0);          (
335889.6, 4901347.0,     113.6,     113.6,        1.0);
    ( 335889.6, 4901180.5,     107.7,     107.7,        1.0);          (
335697.0, 4902014.0,     117.5,     117.5,        1.0);
    ( 335697.0, 4901847.0,     119.1,     119.1,        1.0);          (
335697.0, 4901680.5,     120.0,     120.0,        1.0);
    ( 335697.0, 4901514.0,     116.0,     116.0,        1.0);          (
335697.0, 4901347.0,     113.0,     113.0,        1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  18
CONC                        DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 335697.0, 4901180.5,     110.2,     110.2,       1.0);         (
335504.3, 4902014.0,     117.9,     117.9,       1.0);
    ( 335504.3, 4901847.0,     117.5,     117.5,       1.0);         (
335504.3, 4901680.5,     118.0,     118.0,       1.0);
    ( 335504.3, 4901514.0,     117.0,     117.0,       1.0);         (
335504.3, 4901347.0,     115.1,     115.1,       1.0);
    ( 335504.3, 4901180.5,     112.2,     112.2,       1.0);         (
335311.7, 4902014.0,     116.5,     116.5,       1.0);
    ( 335311.7, 4901847.0,     115.0,     115.0,       1.0);         (
335311.7, 4901680.5,     116.0,     116.0,       1.0);
    ( 335311.7, 4901514.0,     115.0,     115.0,       1.0);         (
335311.7, 4901347.0,     115.0,     115.0,       1.0);
    ( 335311.7, 4901180.5,     113.6,     113.6,       1.0);         (
335119.1, 4902014.0,     115.0,     115.0,       1.0);
    ( 335119.1, 4901847.0,     114.0,     114.0,       1.0);         (
335119.1, 4901680.5,     115.0,     115.0,       1.0);
    ( 335119.1, 4901514.0,     115.0,     115.0,       1.0);         (
335119.1, 4901347.0,     113.6,     113.6,       1.0);
    ( 335119.1, 4901180.5,     115.0,     115.0,       1.0);         (
334926.4, 4902014.0,     116.5,     116.5,       1.0);
    ( 334926.4, 4901847.0,     114.0,     114.0,       1.0);         (
334926.4, 4901680.5,     113.7,     113.7,       1.0);
    ( 334926.4, 4901514.0,     114.0,     114.0,       1.0);         (
334926.4, 4901347.0,     113.0,     113.0,       1.0);
    ( 334926.4, 4901180.5,     111.0,     111.0,       1.0);         (
334733.8, 4902014.0,     116.5,     116.5,       1.0);
    ( 334733.8, 4901847.0,     114.0,     114.0,       1.0);         (
334733.8, 4901680.5,     113.0,     113.0,       1.0);
    ( 334733.8, 4901514.0,     113.2,     113.2,       1.0);         (
334733.8, 4901347.0,     114.1,     114.1,       1.0);
    ( 334733.8, 4901180.5,     113.0,     113.0,       1.0);         (
334541.2, 4902014.0,     116.3,     116.3,       1.0);
    ( 334541.2, 4901847.0,     113.9,     113.9,       1.0);         (
334541.2, 4901680.5,     113.0,     113.0,       1.0);
    ( 334541.2, 4901514.0,     112.0,     112.0,       1.0);         (
334541.2, 4901347.0,     115.0,     115.0,       1.0);
    ( 334541.2, 4901180.5,     113.7,     113.7,       1.0);         (
334348.5, 4902014.0,     115.5,     115.5,       1.0);
```

```
    ( 334348.5, 4901847.0,     113.9,     113.9,       1.0);          (
334348.5, 4901680.5,     112.0,     112.0,       1.0);
    ( 334348.5, 4901514.0,     112.0,     112.0,       1.0);          (
334348.5, 4901347.0,     114.5,     114.5,       1.0);
    ( 334348.5, 4901180.5,     112.7,     112.7,       1.0);          (
334155.9, 4902014.0,     115.0,     115.0,       1.0);
    ( 334155.9, 4901847.0,     113.0,     113.0,       1.0);          (
334155.9, 4901680.5,     111.3,     111.3,       1.0);
    ( 334155.9, 4901514.0,     111.0,     111.0,       1.0);          (
334155.9, 4901347.0,     111.4,     111.4,       1.0);
    ( 334155.9, 4901180.5,     114.0,     114.0,       1.0);          (
333963.3, 4902014.0,     115.4,     115.4,       1.0);
    ( 333963.3, 4901847.0,     113.8,     113.8,       1.0);          (
333963.3, 4901680.5,     111.3,     111.3,       1.0);
    ( 333963.3, 4901514.0,     110.0,     110.0,       1.0);          (
333963.3, 4901347.0,     111.1,     111.1,       1.0);
    ( 333963.3, 4901180.5,     113.1,     113.1,       1.0);          (
333770.7, 4902014.0,     111.7,     111.7,       1.0);
    ( 333770.7, 4901847.0,     112.7,     112.7,       1.0);          (
333770.7, 4901680.5,     110.8,     110.8,       1.0);
    ( 333770.7, 4901514.0,     109.0,     109.0,       1.0);          (
333770.7, 4901347.0,     111.0,     111.0,       1.0);
    ( 333770.7, 4901180.5,     110.1,     110.1,       1.0);          (
333578.0, 4902014.0,     111.5,     111.5,       1.0);
    ( 333578.0, 4901847.0,     110.1,     110.1,       1.0);          (
333578.0, 4901680.5,     111.1,     111.1,       1.0);
    ( 333578.0, 4901514.0,     109.9,     109.9,       1.0);          (
333578.0, 4901347.0,     109.8,     109.8,       1.0);
    ( 333578.0, 4901180.5,     110.0,     110.0,       1.0);          (
333385.4, 4902014.0,     110.9,     110.9,       1.0);
    ( 333385.4, 4901847.0,     108.9,     108.9,       1.0);          (
333385.4, 4901680.5,     108.9,     108.9,       1.0);
    ( 333385.4, 4901514.0,     108.7,     108.7,       1.0);          (
333385.4, 4901347.0,     107.0,     107.0,       1.0);
    ( 333385.4, 4901180.5,     110.0,     110.0,       1.0);          (
334218.7, 4902180.5,     118.6,     118.6,       1.0);
    ( 334218.7, 4902373.0,     121.3,     121.3,       1.0);          (
334218.7, 4902566.0,     121.0,     121.0,       1.0);
    ( 334218.7, 4902758.5,     122.1,     122.1,       1.0);          (
334218.7, 4902951.0,     124.0,     124.0,       1.0);
    ( 334218.7, 4903143.5,     124.7,     124.7,       1.0);          (
334218.7, 4903336.5,     125.6,     125.6,       1.0);
    ( 334218.7, 4903529.0,     127.6,     127.6,       1.0);          (
334218.7, 4903721.5,     126.0,     126.0,       1.0);
    ( 334218.7, 4903914.5,     127.0,     127.0,       1.0);          (
334218.7, 4904107.0,     128.5,     128.5,       1.0);
    ( 334218.7, 4904299.5,     130.0,     130.0,       1.0);          (
334218.7, 4904492.0,     129.4,     129.4,       1.0);
    ( 334218.7, 4904685.0,     129.5,     129.5,       1.0);          (
334218.7, 4904877.5,     129.0,     129.0,       1.0);
    ( 334052.0, 4902180.5,     119.1,     119.1,       1.0);          (
334052.0, 4902373.0,     119.1,     119.1,       1.0);
```

```
                                                      *** DISCRETE CARTESIAN
RECEPTORS ***
                                                    (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                                    (METERS)

    ( 334052.0, 4902566.0,     121.0,     121.0,       1.0);         (
334052.0, 4902758.5,     123.0,     123.0,       1.0);
    ( 334052.0, 4902951.0,     125.0,     125.0,       1.0);         (
334052.0, 4903143.5,     126.0,     126.0,       1.0);
    ( 334052.0, 4903336.5,     125.0,     125.0,       1.0);         (
334052.0, 4903529.0,     126.0,     126.0,       1.0);
    ( 334052.0, 4903721.5,     127.0,     127.0,       1.0);         (
334052.0, 4903914.5,     128.0,     128.0,       1.0);
    ( 334052.0, 4904107.0,     129.9,     129.9,       1.0);         (
334052.0, 4904299.5,     130.4,     130.4,       1.0);
    ( 334052.0, 4904492.0,     129.0,     129.0,       1.0);         (
334052.0, 4904685.0,     130.5,     130.5,       1.0);
    ( 334052.0, 4904877.5,     130.2,     130.2,       1.0);         (
333885.4, 4902180.5,     115.0,     115.0,       1.0);
    ( 333885.4, 4902373.0,     119.8,     119.8,       1.0);         (
333885.4, 4902566.0,     121.0,     121.0,       1.0);
    ( 333885.4, 4902758.5,     123.0,     123.0,       1.0);         (
333885.4, 4902951.0,     125.0,     125.0,       1.0);
    ( 333885.4, 4903143.5,     128.6,     128.6,       1.0);         (
333885.4, 4903336.5,     130.0,     130.0,       1.0);
    ( 333885.4, 4903529.0,     128.0,     128.0,       1.0);         (
333885.4, 4903721.5,     128.0,     128.0,       1.0);
    ( 333885.4, 4903914.5,     128.9,     128.9,       1.0);         (
333885.4, 4904107.0,     134.6,     134.6,       1.0);
    ( 333885.4, 4904299.5,     130.4,     130.4,       1.0);         (
333885.4, 4904492.0,     129.0,     129.0,       1.0);
    ( 333885.4, 4904685.0,     130.0,     135.0,       1.0);         (
333885.4, 4904877.5,     133.1,     133.1,       1.0);
    ( 333718.7, 4902180.5,     116.0,     116.0,       1.0);         (
333718.7, 4902373.0,     119.4,     119.4,       1.0);
    ( 333718.7, 4902566.0,     121.0,     121.0,       1.0);         (
333718.7, 4902758.5,     123.0,     123.0,       1.0);
    ( 333718.7, 4902951.0,     125.0,     125.0,       1.0);         (
333718.7, 4903143.5,     130.0,     130.0,       1.0);
    ( 333718.7, 4903336.5,     130.0,     130.0,       1.0);         (
333718.7, 4903529.0,     128.0,     128.0,       1.0);
    ( 333718.7, 4903721.5,     129.0,     129.0,       1.0);         (
333718.7, 4903914.5,     130.0,     130.0,       1.0);
```

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    ( 333718.7, 4904107.0,     135.7,     135.7,       1.0);          (
333718.7, 4904299.5,     129.3,     129.3,       1.0);
    ( 333718.7, 4904492.0,     128.1,     128.1,       1.0);          (
333718.7, 4904685.0,     130.5,     130.5,       1.0);
    ( 333718.7, 4904877.5,     134.0,     134.0,       1.0);          (
333552.0, 4902180.5,     116.0,     116.0,       1.0);
    ( 333552.0, 4902373.0,     118.0,     118.0,       1.0);          (
333552.0, 4902566.0,     121.5,     121.5,       1.0);
    ( 333552.0, 4902758.5,     125.0,     125.0,       1.0);          (
333552.0, 4902951.0,     127.7,     127.7,       1.0);
    ( 333552.0, 4903143.5,     130.0,     130.0,       1.0);          (
333552.0, 4903336.5,     129.0,     129.0,       1.0);
    ( 333552.0, 4903529.0,     129.0,     129.0,       1.0);          (
333552.0, 4903721.5,     129.0,     129.0,       1.0);
    ( 333552.0, 4903914.5,     132.4,     132.4,       1.0);          (
333552.0, 4904107.0,     130.4,     130.4,       1.0);
    ( 333552.0, 4904299.5,     129.0,     129.0,       1.0);          (
333552.0, 4904492.0,     129.6,     129.6,       1.0);
    ( 333552.0, 4904685.0,     130.8,     130.8,       1.0);          (
333552.0, 4904877.5,     134.0,     134.0,       1.0);
    ( 333385.4, 4902180.5,     114.7,     114.7,       1.0);          (
333385.4, 4902373.0,     115.4,     115.4,       1.0);
    ( 333385.4, 4902566.0,     120.9,     120.9,       1.0);          (
333385.4, 4902758.5,     125.3,     125.3,       1.0);
    ( 333385.4, 4902951.0,     129.7,     129.7,       1.0);          (
333385.4, 4903143.5,     130.0,     130.0,       1.0);
    ( 333385.4, 4903336.5,     129.9,     129.9,       1.0);          (
333385.4, 4903529.0,     129.0,     129.0,       1.0);
    ( 333385.4, 4903721.5,     130.0,     130.0,       1.0);          (
333385.4, 4903914.5,     130.9,     130.9,       1.0);
    ( 333385.4, 4904107.0,     130.0,     130.0,       1.0);          (
333385.4, 4904299.5,     130.0,     130.0,       1.0);
    ( 333385.4, 4904492.0,     130.0,     130.0,       1.0);          (
333385.4, 4904685.0,     131.9,     131.9,       1.0);
    ( 333385.4, 4904877.5,     134.8,     134.8,       1.0);          (
333385.4, 4905376.5,     135.0,     135.0,       1.0);
    ( 333385.4, 4905876.0,     132.0,     132.0,       1.0);          (
333385.4, 4906375.0,     112.7,     136.0,       1.0);
    ( 333385.4, 4906874.0,     119.1,     119.1,       1.0);          (
333385.4, 4907373.5,     126.3,     126.3,       1.0);
    ( 333385.4, 4907872.5,     135.9,     135.9,       1.0);          (
333863.4, 4905376.5,     140.0,     140.0,       1.0);
    ( 333863.4, 4905876.0,     135.0,     135.0,       1.0);          (
333863.4, 4906375.0,     136.0,     136.0,       1.0);
    ( 333863.4, 4906874.0,     126.0,     126.0,       1.0);          (
333863.4, 4907373.5,     121.8,     121.8,       1.0);
    ( 333863.4, 4907872.5,     136.6,     136.6,       1.0);          (
334341.3, 4905376.5,     131.8,     131.8,       1.0);
    ( 334341.3, 4905876.0,     137.3,     137.3,       1.0);          (
334341.3, 4906375.0,     136.0,     136.0,       1.0);
    ( 334341.3, 4906874.0,     134.5,     134.5,       1.0);          (
334341.3, 4907373.5,     124.6,     124.6,       1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  20
CONC                        DFAULT ELEV   FLGPOL


                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                            (METERS)

    ( 334341.3, 4907872.5,     129.6,     129.6,       1.0);         (
334819.3, 4905376.5,     128.0,     128.0,       1.0);
    ( 334819.3, 4905876.0,     130.0,     130.0,       1.0);         (
334819.3, 4906375.0,     133.0,     133.0,       1.0);
    ( 334819.3, 4906874.0,     136.2,     136.2,       1.0);         (
334819.3, 4907373.5,     140.0,     140.0,       1.0);
    ( 334819.3, 4907872.5,     129.0,     129.0,       1.0);         (
335297.3, 4905376.5,     129.0,     129.0,       1.0);
    ( 335297.3, 4905876.0,     128.0,     128.0,       1.0);         (
335297.3, 4906375.0,     129.0,     129.0,       1.0);
    ( 335297.3, 4906874.0,     133.0,     133.0,       1.0);         (
335297.3, 4907373.5,     138.0,     138.0,       1.0);
    ( 335297.3, 4907872.5,     141.0,     141.0,       1.0);         (
335775.3, 4905376.5,     126.0,     126.0,       1.0);
    ( 335775.3, 4905876.0,     125.1,     125.1,       1.0);         (
335775.3, 4906375.0,     125.0,     125.0,       1.0);
    ( 335775.3, 4906874.0,     129.2,     129.2,       1.0);         (
335775.3, 4907373.5,     135.5,     135.5,       1.0);
    ( 335775.3, 4907872.5,     139.9,     139.9,       1.0);         (
336253.3, 4905376.5,     125.7,     125.7,       1.0);
    ( 336253.3, 4905876.0,     124.8,     124.8,       1.0);         (
336253.3, 4906375.0,     123.4,     123.4,       1.0);
    ( 336253.3, 4906874.0,     125.0,     125.0,       1.0);         (
336253.3, 4907373.5,     131.1,     131.1,       1.0);
    ( 336253.3, 4907872.5,     135.9,     135.9,       1.0);         (
336731.3, 4905376.5,     135.0,     135.0,       1.0);
    ( 336731.3, 4905876.0,     126.0,     126.0,       1.0);         (
336731.3, 4906375.0,     124.0,     124.0,       1.0);
    ( 336731.3, 4906874.0,     123.0,     123.0,       1.0);         (
336731.3, 4907373.5,     126.6,     126.6,       1.0);
    ( 336731.3, 4907872.5,     134.4,     134.4,       1.0);         (
337209.3, 4905376.5,     128.7,     128.7,       1.0);
    ( 337209.3, 4905876.0,     125.0,     125.0,       1.0);         (
337209.3, 4906375.0,     125.0,     125.0,       1.0);
    ( 337209.3, 4906874.0,     125.0,     125.0,       1.0);         (
337209.3, 4907373.5,     123.9,     123.9,       1.0);
    ( 337209.3, 4907872.5,     126.0,     126.0,       1.0);         (
337687.3, 4905376.5,     126.9,     126.9,       1.0);
```

```
    ( 337687.3, 4905876.0,     123.0,     123.0,       1.0);          (
337687.3, 4906375.0,     124.0,     124.0,       1.0);
    ( 337687.3, 4906874.0,     125.0,     125.0,       1.0);          (
337687.3, 4907373.5,     124.0,     124.0,       1.0);
    ( 337687.3, 4907872.5,     123.0,     123.0,       1.0);          (
338165.3, 4905376.5,     125.1,     125.1,       1.0);
    ( 338165.3, 4905876.0,     122.8,     122.8,       1.0);          (
338165.3, 4906375.0,     125.0,     125.0,       1.0);
    ( 338165.3, 4906874.0,     123.8,     123.8,       1.0);          (
338165.3, 4907373.5,     123.0,     123.0,       1.0);
    ( 338165.3, 4907872.5,     123.0,     123.0,       1.0);          (
338643.3, 4905376.5,     126.0,     126.0,       1.0);
    ( 338643.3, 4905876.0,     124.9,     124.9,       1.0);          (
338643.3, 4906375.0,     124.0,     124.0,       1.0);
    ( 338643.3, 4906874.0,     125.0,     125.0,       1.0);          (
338643.3, 4907373.5,     128.1,     128.1,       1.0);
    ( 338643.3, 4907872.5,     123.0,     123.0,       1.0);          (
339121.3, 4905376.5,     122.4,     122.4,       1.0);
    ( 339121.3, 4905876.0,     120.2,     120.2,       1.0);          (
339121.3, 4906375.0,     122.0,     122.0,       1.0);
    ( 339121.3, 4906874.0,     126.0,     126.0,       1.0);          (
339121.3, 4907373.5,     128.0,     128.0,       1.0);
    ( 339121.3, 4907872.5,     130.5,     130.5,       1.0);          (
339599.2, 4905376.5,     116.0,     116.0,       1.0);
    ( 339599.2, 4905876.0,     120.0,     120.0,       1.0);          (
339599.2, 4906375.0,     120.0,     120.0,       1.0);
    ( 339599.2, 4906874.0,     122.0,     122.0,       1.0);          (
339599.2, 4907373.5,     125.0,     125.0,       1.0);
    ( 339599.2, 4907872.5,     128.0,     128.0,       1.0);          (
340077.2, 4905376.5,     114.0,     114.0,       1.0);
    ( 340077.2, 4905876.0,     119.0,     119.0,       1.0);          (
340077.2, 4906375.0,     121.7,     121.7,       1.0);
    ( 340077.2, 4906874.0,     124.4,     124.4,       1.0);          (
340077.2, 4907373.5,     124.1,     124.1,       1.0);
    ( 340077.2, 4907872.5,     127.8,     127.8,       1.0);          (
337581.4, 4904877.5,     126.2,     126.2,       1.0);
    ( 337581.4, 4904399.5,     121.0,     121.0,       1.0);          (
337581.4, 4903921.5,     117.7,     117.7,       1.0);
    ( 337581.4, 4903443.5,     118.7,     118.7,       1.0);          (
337581.4, 4902965.5,     121.2,     121.2,       1.0);
    ( 337581.4, 4902487.5,     114.2,     114.2,       1.0);          (
337581.4, 4902009.5,     110.0,     110.0,       1.0);
    ( 337581.4, 4901531.5,     115.0,     115.0,       1.0);          (
337581.4, 4901053.5,     108.0,     108.0,       1.0);
    ( 337581.4, 4900575.5,     107.7,     107.7,       1.0);          (
337581.4, 4900097.5,      96.3,      96.3,       1.0);
    ( 337581.4, 4899619.5,      90.0,      90.0,       1.0);          (
337581.4, 4899141.5,      87.2,      87.2,       1.0);
    ( 337581.4, 4898663.5,      90.2,      90.2,       1.0);          (
337581.4, 4898185.5,      94.8,      94.8,       1.0);
    ( 338080.6, 4904877.5,     121.4,     121.4,       1.0);          (
338080.6, 4904399.5,     125.0,     125.0,       1.0);
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                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 338080.6, 4903921.5,     125.9,     125.9,       1.0);         (
338080.6, 4903443.5,     119.7,     119.7,       1.0);
    ( 338080.6, 4902965.5,     120.3,     120.3,       1.0);         (
338080.6, 4902487.5,     113.0,     113.0,       1.0);
    ( 338080.6, 4902009.5,     114.8,     114.8,       1.0);         (
338080.6, 4901531.5,     108.0,     108.0,       1.0);
    ( 338080.6, 4901053.5,     107.8,     107.8,       1.0);         (
338080.6, 4900575.5,     105.2,     105.2,       1.0);
    ( 338080.6, 4900097.5,      90.0,      90.0,       1.0);         (
338080.6, 4899619.5,      90.0,      90.0,       1.0);
    ( 338080.6, 4899141.5,      90.1,      90.1,       1.0);         (
338080.6, 4898663.5,      94.1,      94.1,       1.0);
    ( 338080.6, 4898185.5,      88.0,      88.0,       1.0);         (
338579.8, 4904877.5,     125.0,     125.0,       1.0);
    ( 338579.8, 4904399.5,     123.0,     123.0,       1.0);         (
338579.8, 4903921.5,     120.0,     120.0,       1.0);
    ( 338579.8, 4903443.5,     116.0,     116.0,       1.0);         (
338579.8, 4902965.5,     114.0,     114.0,       1.0);
    ( 338579.8, 4902487.5,     112.0,     112.0,       1.0);         (
338579.8, 4902009.5,     110.0,     110.0,       1.0);
    ( 338579.8, 4901531.5,     110.0,     110.0,       1.0);         (
338579.8, 4901053.5,     107.4,     107.4,       1.0);
    ( 338579.8, 4900575.5,      96.5,      96.5,       1.0);         (
338579.8, 4900097.5,      89.4,      89.4,       1.0);
    ( 338579.8, 4899619.5,      90.0,      90.0,       1.0);         (
338579.8, 4899141.5,      89.7,      89.7,       1.0);
    ( 338579.8, 4898663.5,      94.8,      94.8,       1.0);         (
338579.8, 4898185.5,      95.0,      95.0,       1.0);
    ( 339078.9, 4904877.5,     120.9,     120.9,       1.0);         (
339078.9, 4904399.5,     117.4,     117.4,       1.0);
    ( 339078.9, 4903921.5,     118.0,     118.0,       1.0);         (
339078.9, 4903443.5,     116.0,     116.0,       1.0);
    ( 339078.9, 4902965.5,     114.0,     114.0,       1.0);         (
339078.9, 4902487.5,     111.2,     111.2,       1.0);
    ( 339078.9, 4902009.5,     108.4,     108.4,       1.0);         (
339078.9, 4901531.5,     103.0,     103.0,       1.0);
    ( 339078.9, 4901053.5,     111.3,     111.3,       1.0);         (
339078.9, 4900575.5,      90.0,      90.0,       1.0);
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    ( 339078.9, 4900097.5,      91.3,      91.3,       1.0);          (
339078.9, 4899619.5,      90.0,      90.0,       1.0);
    ( 339078.9, 4899141.5,      92.3,      92.3,       1.0);          (
339078.9, 4898663.5,      93.5,      93.5,       1.0);
    ( 339078.9, 4898185.5,     105.1,     105.1,       1.0);          (
339578.1, 4904877.5,     116.0,     116.0,       1.0);
    ( 339578.1, 4904399.5,     115.0,     115.0,       1.0);          (
339578.1, 4903921.5,     116.3,     116.3,       1.0);
    ( 339578.1, 4903443.5,     119.0,     119.0,       1.0);          (
339578.1, 4902965.5,     114.6,     114.6,       1.0);
    ( 339578.1, 4902487.5,     108.2,     108.2,       1.0);          (
339578.1, 4902009.5,     103.6,     103.6,       1.0);
    ( 339578.1, 4901531.5,      95.4,      95.4,       1.0);          (
339578.1, 4901053.5,      95.0,      95.0,       1.0);
    ( 339578.1, 4900575.5,      89.0,      89.0,       1.0);          (
339578.1, 4900097.5,      91.2,      96.0,       1.0);
    ( 339578.1, 4899619.5,      90.0,      90.0,       1.0);          (
339578.1, 4899141.5,      96.0,      96.0,       1.0);
    ( 339578.1, 4898663.5,     102.4,     102.4,       1.0);          (
339578.1, 4898185.5,      96.3,      96.3,       1.0);
    ( 340077.2, 4904877.5,     115.9,     115.9,       1.0);          (
340077.2, 4904399.5,     114.0,     114.0,       1.0);
    ( 340077.2, 4903921.5,     115.0,     115.0,       1.0);          (
340077.2, 4903443.5,     118.4,     124.0,       1.0);
    ( 340077.2, 4902965.5,     110.1,     110.1,       1.0);          (
340077.2, 4902487.5,     112.9,     114.0,       1.0);
    ( 340077.2, 4902009.5,      99.4,      99.4,       1.0);          (
340077.2, 4901531.5,      93.4,      93.4,       1.0);
    ( 340077.2, 4901053.5,      90.0,      90.0,       1.0);          (
340077.2, 4900575.5,      89.0,      89.0,       1.0);
    ( 340077.2, 4900097.5,      88.9,      88.9,       1.0);          (
340077.2, 4899619.5,      95.0,      95.0,       1.0);
    ( 340077.2, 4899141.5,      98.1,      98.1,       1.0);          (
340077.2, 4898663.5,     100.0,     100.0,       1.0);
    ( 340077.2, 4898185.5,     100.0,     100.0,       1.0);          (
337082.2, 4900681.5,     110.0,     110.0,       1.0);
    ( 337082.2, 4900182.0,     105.9,     105.9,       1.0);          (
337082.2, 4899683.0,      95.7,      95.7,       1.0);
    ( 337082.2, 4899184.0,      90.0,      90.0,       1.0);          (
337082.2, 4898684.5,      96.0,      96.0,       1.0);
    ( 337082.2, 4898185.5,      90.2,      90.2,       1.0);          (
336604.2, 4900681.5,     107.0,     107.0,       1.0);
    ( 336604.2, 4900182.0,     108.0,     108.0,       1.0);          (
336604.2, 4899683.0,     106.0,     106.0,       1.0);
    ( 336604.2, 4899184.0,      90.9,      90.9,       1.0);          (
336604.2, 4898684.5,      86.4,      86.4,       1.0);
    ( 336604.2, 4898185.5,      90.0,      90.0,       1.0);          (
336126.3, 4900681.5,     106.0,     106.0,       1.0);
    ( 336126.3, 4900182.0,     106.0,     106.0,       1.0);          (
336126.3, 4899683.0,     110.0,     110.0,       1.0);
    ( 336126.3, 4899184.0,     101.1,     101.1,       1.0);          (
336126.3, 4898684.5,      89.0,      89.0,       1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  22
CONC                        DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 336126.3, 4898185.5,      87.3,      87.3,       1.0);         (
335648.3, 4900681.5,     103.1,     103.1,       1.0);
    ( 335648.3, 4900182.0,     102.0,     102.0,       1.0);         (
335648.3, 4899683.0,     103.0,     103.0,       1.0);
    ( 335648.3, 4899184.0,      98.0,      98.0,       1.0);         (
335648.3, 4898684.5,      92.6,      92.6,       1.0);
    ( 335648.3, 4898185.5,      90.0,      90.0,       1.0);         (
335170.3, 4900681.5,     109.7,     109.7,       1.0);
    ( 335170.3, 4900182.0,     102.0,     102.0,       1.0);         (
335170.3, 4899683.0,     100.0,     100.0,       1.0);
    ( 335170.3, 4899184.0,      97.3,      97.3,       1.0);         (
335170.3, 4898684.5,      92.5,      92.5,       1.0);
    ( 335170.3, 4898185.5,      88.2,      88.2,       1.0);         (
334692.3, 4900681.5,     110.9,     110.9,       1.0);
    ( 334692.3, 4900182.0,     106.4,     106.4,       1.0);         (
334692.3, 4899683.0,     103.4,     103.4,       1.0);
    ( 334692.3, 4899184.0,     103.3,     103.3,       1.0);         (
334692.3, 4898684.5,      88.0,      88.0,       1.0);
    ( 334692.3, 4898185.5,      90.0,      90.0,       1.0);         (
334214.3, 4900681.5,     110.0,     110.0,       1.0);
    ( 334214.3, 4900182.0,     110.0,     110.0,       1.0);         (
334214.3, 4899683.0,     116.5,     116.5,       1.0);
    ( 334214.3, 4899184.0,      99.6,      99.6,       1.0);         (
334214.3, 4898684.5,      92.9,      92.9,       1.0);
    ( 334214.3, 4898185.5,      85.0,      85.0,       1.0);         (
333736.3, 4900681.5,     108.1,     108.1,       1.0);
    ( 333736.3, 4900182.0,     112.0,     112.0,       1.0);         (
333736.3, 4899683.0,     114.6,     114.6,       1.0);
    ( 333736.3, 4899184.0,     107.6,     107.6,       1.0);         (
333736.3, 4898684.5,      94.5,      94.5,       1.0);
    ( 333736.3, 4898185.5,      86.4,      86.4,       1.0);         (
333258.3, 4900681.5,     107.6,     107.6,       1.0);
    ( 333258.3, 4900182.0,     111.0,     111.0,       1.0);         (
333258.3, 4899683.0,     113.0,     113.0,       1.0);
    ( 333258.3, 4899184.0,     107.1,     107.1,       1.0);         (
333258.3, 4898684.5,      99.2,      99.2,       1.0);
    ( 333258.3, 4898185.5,      91.2,      91.2,       1.0);         (
332780.3, 4900681.5,     107.3,     107.3,       1.0);
```

```
    ( 332780.3, 4900182.0,     113.0,     113.0,       1.0);          (
332780.3, 4899683.0,     115.0,     115.0,       1.0);
    ( 332780.3, 4899184.0,     109.1,     109.1,       1.0);          (
332780.3, 4898684.5,      99.3,      99.3,       1.0);
    ( 332780.3, 4898185.5,      94.9,      94.9,       1.0);          (
332302.3, 4900681.5,     108.9,     108.9,       1.0);
    ( 332302.3, 4900182.0,     109.4,     109.4,       1.0);          (
332302.3, 4899683.0,     112.8,     112.8,       1.0);
    ( 332302.3, 4899184.0,     106.0,     106.0,       1.0);          (
332302.3, 4898684.5,      95.1,      95.1,       1.0);
    ( 332302.3, 4898185.5,      93.8,      93.8,       1.0);          (
331824.3, 4900681.5,     105.0,     105.0,       1.0);
    ( 331824.3, 4900182.0,     110.6,     110.6,       1.0);          (
331824.3, 4899683.0,     109.8,     109.8,       1.0);
    ( 331824.3, 4899184.0,     101.3,     101.3,       1.0);          (
331824.3, 4898684.5,     101.5,     101.5,       1.0);
    ( 331824.3, 4898185.5,      91.0,      91.0,       1.0);          (
331346.3, 4900681.5,     101.2,     101.2,       1.0);
    ( 331346.3, 4900182.0,     104.1,     104.1,       1.0);          (
331346.3, 4899683.0,     106.9,     106.9,       1.0);
    ( 331346.3, 4899184.0,     102.1,     102.1,       1.0);          (
331346.3, 4898684.5,      96.0,      96.0,       1.0);
    ( 331346.3, 4898185.5,      93.8,      93.8,       1.0);          (
330868.4, 4900681.5,     102.0,     102.0,       1.0);
    ( 330868.4, 4900182.0,     101.6,     101.6,       1.0);          (
330868.4, 4899683.0,     104.2,     104.2,       1.0);
    ( 330868.4, 4899184.0,     104.0,     104.0,       1.0);          (
330868.4, 4898684.5,      99.5,      99.5,       1.0);
    ( 330868.4, 4898185.5,      94.9,      94.9,       1.0);          (
330390.4, 4900681.5,     102.1,     102.1,       1.0);
    ( 330390.4, 4900182.0,     101.0,     101.0,       1.0);          (
330390.4, 4899683.0,     105.0,     105.0,       1.0);
    ( 330390.4, 4899184.0,     102.1,     102.1,       1.0);          (
330390.4, 4898684.5,     100.0,     100.0,       1.0);
    ( 330390.4, 4898185.5,      93.0,      93.0,       1.0);          (
332886.2, 4901180.5,     106.1,     106.1,       1.0);
    ( 332886.2, 4901658.5,     108.4,     108.4,       1.0);          (
332886.2, 4902136.5,     114.7,     114.7,       1.0);
    ( 332886.2, 4902614.5,     122.4,     122.4,       1.0);          (
332886.2, 4903092.5,     134.6,     134.6,       1.0);
    ( 332886.2, 4903570.5,     135.0,     135.0,       1.0);          (
332886.2, 4904048.5,     128.4,     128.4,       1.0);
    ( 332886.2, 4904526.5,     128.0,     128.0,       1.0);          (
332886.2, 4905004.5,     130.0,     130.0,       1.0);
    ( 332886.2, 4905482.5,     126.2,     126.2,       1.0);          (
332886.2, 4905960.5,      95.6,     131.0,       1.0);
    ( 332886.2, 4906438.5,     117.7,     117.7,       1.0);          (
332886.2, 4906916.5,     127.0,     127.0,       1.0);
    ( 332886.2, 4907394.5,     140.0,     140.0,       1.0);          (
332886.2, 4907872.5,     144.0,     144.0,       1.0);
    ( 332387.0, 4901180.5,     104.0,     104.0,       1.0);          (
332387.0, 4901658.5,     110.2,     110.2,       1.0);
```

```


                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 332387.0, 4902136.5,     110.0,     110.0,       1.0);         (
332387.0, 4902614.5,     117.5,     117.5,       1.0);
    ( 332387.0, 4903092.5,     130.4,     140.0,       1.0);         (
332387.0, 4903570.5,     127.2,     127.2,       1.0);
    ( 332387.0, 4904048.5,     125.3,     125.3,       1.0);         (
332387.0, 4904526.5,     126.0,     126.0,       1.0);
    ( 332387.0, 4905004.5,     130.0,     130.0,       1.0);         (
332387.0, 4905482.5,      94.0,     130.0,       1.0);
    ( 332387.0, 4905960.5,     106.5,     106.5,       1.0);         (
332387.0, 4906438.5,     120.5,     120.5,       1.0);
    ( 332387.0, 4906916.5,     131.3,     131.3,       1.0);         (
332387.0, 4907394.5,     149.8,     149.8,       1.0);
    ( 332387.0, 4907872.5,     155.8,     155.8,       1.0);         (
331887.9, 4901180.5,     104.0,     104.0,       1.0);
    ( 331887.9, 4901658.5,     107.0,     107.0,       1.0);         (
331887.9, 4902136.5,     111.6,     111.6,       1.0);
    ( 331887.9, 4902614.5,     120.5,     120.5,       1.0);         (
331887.9, 4903092.5,     130.0,     130.0,       1.0);
    ( 331887.9, 4903570.5,     123.0,     123.0,       1.0);         (
331887.9, 4904048.5,     122.3,     122.3,       1.0);
    ( 331887.9, 4904526.5,     125.0,     125.0,       1.0);         (
331887.9, 4905004.5,     110.8,     110.8,       1.0);
    ( 331887.9, 4905482.5,      98.3,      98.3,       1.0);         (
331887.9, 4905960.5,     109.0,     109.0,       1.0);
    ( 331887.9, 4906438.5,     127.0,     127.0,       1.0);         (
331887.9, 4906916.5,     146.8,     146.8,       1.0);
    ( 331887.9, 4907394.5,     155.1,     155.1,       1.0);         (
331887.9, 4907872.5,     149.2,     149.2,       1.0);
    ( 331388.7, 4901180.5,     106.0,     106.0,       1.0);         (
331388.7, 4901658.5,     107.9,     107.9,       1.0);
    ( 331388.7, 4902136.5,     110.0,     110.0,       1.0);         (
331388.7, 4902614.5,     119.0,     119.0,       1.0);
    ( 331388.7, 4903092.5,     120.5,     129.0,       1.0);         (
331388.7, 4903570.5,     110.3,     110.3,       1.0);
    ( 331388.7, 4904048.5,     124.8,     124.8,       1.0);         (
331388.7, 4904526.5,     113.2,     113.2,       1.0);
    ( 331388.7, 4905004.5,     108.2,     108.2,       1.0);         (
331388.7, 4905482.5,     105.9,     105.9,       1.0);
```

```
    ( 331388.7, 4905960.5,     119.7,     119.7,       1.0);         (
331388.7, 4906438.5,     130.3,     130.3,       1.0);
    ( 331388.7, 4906916.5,     141.9,     141.9,       1.0);         (
331388.7, 4907394.5,     147.0,     147.0,       1.0);
    ( 331388.7, 4907872.5,     144.5,     144.5,       1.0);         (
330889.5, 4901180.5,     106.0,     106.0,       1.0);
    ( 330889.5, 4901658.5,     120.0,     120.0,       1.0);         (
330889.5, 4902136.5,     113.0,     113.0,       1.0);
    ( 330889.5, 4902614.5,     110.7,     110.7,       1.0);         (
330889.5, 4903092.5,     104.0,     104.0,       1.0);
    ( 330889.5, 4903570.5,     107.7,     107.7,       1.0);         (
330889.5, 4904048.5,     121.0,     121.0,       1.0);
    ( 330889.5, 4904526.5,      99.7,      99.7,       1.0);         (
330889.5, 4905004.5,      92.5,     120.0,       1.0);
    ( 330889.5, 4905482.5,     113.1,     113.1,       1.0);         (
330889.5, 4905960.5,     133.3,     133.3,       1.0);
    ( 330889.5, 4906438.5,     134.0,     134.0,       1.0);         (
330889.5, 4906916.5,     141.0,     141.0,       1.0);
    ( 330889.5, 4907394.5,     146.6,     146.6,       1.0);         (
330889.5, 4907872.5,     153.9,     153.9,       1.0);
    ( 330390.4, 4901180.5,     107.0,     107.0,       1.0);         (
330390.4, 4901658.5,     109.0,     109.0,       1.0);
    ( 330390.4, 4902136.5,     109.6,     109.6,       1.0);         (
330390.4, 4902614.5,     110.0,     110.0,       1.0);
    ( 330390.4, 4903092.5,     110.0,     110.0,       1.0);         (
330390.4, 4903570.5,      94.0,     121.0,       1.0);
    ( 330390.4, 4904048.5,      93.0,     121.0,       1.0);         (
330390.4, 4904526.5,      91.6,      91.6,       1.0);
    ( 330390.4, 4905004.5,     113.2,     113.2,       1.0);         (
330390.4, 4905482.5,     121.0,     121.0,       1.0);
    ( 330390.4, 4905960.5,     129.0,     129.0,       1.0);         (
330390.4, 4906438.5,     140.9,     140.9,       1.0);
    ( 330390.4, 4906916.5,     150.9,     150.9,       1.0);         (
330390.4, 4907394.5,     153.0,     153.0,       1.0);
    ( 330390.4, 4907872.5,     151.2,     151.2,       1.0);         (
330390.4, 4908811.5,     162.0,     162.0,       1.0);
    ( 330390.4, 4909750.0,     162.7,     162.7,       1.0);         (
330390.4, 4910689.0,     158.0,     158.0,       1.0);
    ( 330390.4, 4911628.0,     160.0,     160.0,       1.0);         (
330390.4, 4912566.5,     160.0,     160.0,       1.0);
    ( 330390.4, 4913505.5,     160.0,     160.0,       1.0);         (
330390.4, 4914444.5,     160.0,     160.0,       1.0);
    ( 330390.4, 4915383.5,     163.0,     163.0,       1.0);         (
330390.4, 4916322.0,     164.4,     164.4,       1.0);
    ( 330390.4, 4917261.0,     164.0,     164.0,       1.0);         (
330390.4, 4918200.0,     157.0,     157.0,       1.0);
    ( 330390.4, 4919138.5,     171.0,     171.0,       1.0);         (
330390.4, 4920077.5,     167.0,     167.0,       1.0);
    ( 331385.5, 4908811.5,     156.0,     156.0,       1.0);         (
331385.5, 4909750.0,     164.8,     164.8,       1.0);
    ( 331385.5, 4910689.0,     158.0,     158.0,       1.0);         (
331385.5, 4911628.0,     159.0,     159.0,       1.0);
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```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  24
CONC                        DFAULT ELEV   FLGPOL


                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 331385.5, 4912566.5,     159.0,     159.0,       1.0);         (
331385.5, 4913505.5,     160.0,     160.0,       1.0);
    ( 331385.5, 4914444.5,     160.0,     160.0,       1.0);         (
331385.5, 4915383.5,     163.3,     163.3,       1.0);
    ( 331385.5, 4916322.0,     160.3,     160.3,       1.0);         (
331385.5, 4917261.0,     165.0,     165.0,       1.0);
    ( 331385.5, 4918200.0,     165.0,     165.0,       1.0);         (
331385.5, 4919138.5,     159.3,     159.3,       1.0);
    ( 331385.5, 4920077.5,     169.8,     169.8,       1.0);         (
332380.5, 4908811.5,     145.7,     145.7,       1.0);
    ( 332380.5, 4909750.0,     156.8,     156.8,       1.0);         (
332380.5, 4910689.0,     160.0,     160.0,       1.0);
    ( 332380.5, 4911628.0,     159.0,     159.0,       1.0);         (
332380.5, 4912566.5,     162.1,     162.1,       1.0);
    ( 332380.5, 4913505.5,     159.0,     159.0,       1.0);         (
332380.5, 4914444.5,     157.9,     157.9,       1.0);
    ( 332380.5, 4915383.5,     160.0,     160.0,       1.0);         (
332380.5, 4916322.0,     164.3,     164.3,       1.0);
    ( 332380.5, 4917261.0,     164.0,     164.0,       1.0);         (
332380.5, 4918200.0,     170.0,     170.0,       1.0);
    ( 332380.5, 4919138.5,     161.4,     161.4,       1.0);         (
332380.5, 4920077.5,     160.0,     160.0,       1.0);
    ( 333375.6, 4908811.5,     145.0,     145.0,       1.0);         (
333375.6, 4909750.0,     144.0,     144.0,       1.0);
    ( 333375.6, 4910689.0,     157.0,     157.0,       1.0);         (
333375.6, 4911628.0,     159.0,     159.0,       1.0);
    ( 333375.6, 4912566.5,     160.0,     160.0,       1.0);         (
333375.6, 4913505.5,     160.0,     160.0,       1.0);
    ( 333375.6, 4914444.5,     160.4,     160.4,       1.0);         (
333375.6, 4915383.5,     160.0,     160.0,       1.0);
    ( 333375.6, 4916322.0,     161.4,     161.4,       1.0);         (
333375.6, 4917261.0,     170.0,     170.0,       1.0);
    ( 333375.6, 4918200.0,     174.0,     174.0,       1.0);         (
333375.6, 4919138.5,     170.4,     170.4,       1.0);
    ( 333375.6, 4920077.5,     161.7,     161.7,       1.0);         (
334370.7, 4908811.5,     149.3,     149.3,       1.0);
    ( 334370.7, 4909750.0,     143.0,     143.0,       1.0);         (
334370.7, 4910689.0,     139.6,     139.6,       1.0);
```

```
    ( 334370.7, 4911628.0,     152.0,     152.0,       1.0);         (
334370.7, 4912566.5,     160.1,     160.1,       1.0);
    ( 334370.7, 4913505.5,     159.0,     159.0,       1.0);         (
334370.7, 4914444.5,     159.5,     159.5,       1.0);
    ( 334370.7, 4915383.5,     157.4,     157.4,       1.0);         (
334370.7, 4916322.0,     165.6,     165.6,       1.0);
    ( 334370.7, 4917261.0,     170.0,     176.0,       1.0);         (
334370.7, 4918200.0,     175.0,     175.0,       1.0);
    ( 334370.7, 4919138.5,     178.7,     178.7,       1.0);         (
334370.7, 4920077.5,     171.2,     171.2,       1.0);
    ( 335365.8, 4908811.5,     109.2,     151.0,       1.0);         (
335365.8, 4909750.0,     142.6,     142.6,       1.0);
    ( 335365.8, 4910689.0,     136.0,     136.0,       1.0);         (
335365.8, 4911628.0,     136.9,     136.9,       1.0);
    ( 335365.8, 4912566.5,     146.3,     146.3,       1.0);         (
335365.8, 4913505.5,     167.1,     167.1,       1.0);
    ( 335365.8, 4914444.5,     155.9,     155.9,       1.0);         (
335365.8, 4915383.5,     165.9,     165.9,       1.0);
    ( 335365.8, 4916322.0,     169.1,     169.1,       1.0);         (
335365.8, 4917261.0,     170.7,     170.7,       1.0);
    ( 335365.8, 4918200.0,     169.0,     169.0,       1.0);         (
335365.8, 4919138.5,     168.0,     168.0,       1.0);
    ( 335365.8, 4920077.5,     169.0,     169.0,       1.0);         (
336360.9, 4908811.5,     150.1,     150.1,       1.0);
    ( 336360.9, 4909750.0,     144.4,     144.4,       1.0);         (
336360.9, 4910689.0,     114.7,     147.0,       1.0);
    ( 336360.9, 4911628.0,     138.0,     138.0,       1.0);         (
336360.9, 4912566.5,     139.8,     139.8,       1.0);
    ( 336360.9, 4913505.5,     139.0,     139.0,       1.0);         (
336360.9, 4914444.5,     152.1,     152.1,       1.0);
    ( 336360.9, 4915383.5,     148.1,     148.1,       1.0);         (
336360.9, 4916322.0,     165.0,     165.0,       1.0);
    ( 336360.9, 4917261.0,     167.3,     167.3,       1.0);         (
336360.9, 4918200.0,     163.0,     163.0,       1.0);
    ( 336360.9, 4919138.5,     156.7,     156.7,       1.0);         (
336360.9, 4920077.5,     154.0,     154.0,       1.0);
    ( 337356.0, 4908811.5,     133.0,     133.0,       1.0);         (
337356.0, 4909750.0,     140.2,     140.2,       1.0);
    ( 337356.0, 4910689.0,     150.0,     150.0,       1.0);         (
337356.0, 4911628.0,     122.8,     122.8,       1.0);
    ( 337356.0, 4912566.5,     137.8,     137.8,       1.0);         (
337356.0, 4913505.5,     150.0,     150.0,       1.0);
    ( 337356.0, 4914444.5,     155.0,     155.0,       1.0);         (
337356.0, 4915383.5,     148.8,     148.8,       1.0);
    ( 337356.0, 4916322.0,     158.3,     158.3,       1.0);         (
337356.0, 4917261.0,     170.0,     170.0,       1.0);
    ( 337356.0, 4918200.0,     169.8,     169.8,       1.0);         (
337356.0, 4919138.5,     169.2,     169.2,       1.0);
    ( 337356.0, 4920077.5,     151.7,     151.7,       1.0);         (
338351.1, 4908811.5,     125.7,     125.7,       1.0);
    ( 338351.1, 4909750.0,     137.6,     137.6,       1.0);         (
338351.1, 4910689.0,     138.4,     138.4,       1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  25
CONC                        DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 338351.1, 4911628.0,     133.0,     133.0,       1.0);         (
338351.1, 4912566.5,     133.9,     133.9,       1.0);
    ( 338351.1, 4913505.5,     134.8,     134.8,       1.0);         (
338351.1, 4914444.5,     153.9,     153.9,       1.0);
    ( 338351.1, 4915383.5,     146.6,     146.6,       1.0);         (
338351.1, 4916322.0,     155.0,     155.0,       1.0);
    ( 338351.1, 4917261.0,     166.3,     166.3,       1.0);         (
338351.1, 4918200.0,     175.0,     175.0,       1.0);
    ( 338351.1, 4919138.5,     174.6,     174.6,       1.0);         (
338351.1, 4920077.5,     174.0,     174.0,       1.0);
    ( 339346.2, 4908811.5,     127.1,     127.1,       1.0);         (
339346.2, 4909750.0,     133.0,     133.0,       1.0);
    ( 339346.2, 4910689.0,     137.0,     137.0,       1.0);         (
339346.2, 4911628.0,     130.0,     130.0,       1.0);
    ( 339346.2, 4912566.5,     138.2,     138.2,       1.0);         (
339346.2, 4913505.5,     159.0,     159.0,       1.0);
    ( 339346.2, 4914444.5,     147.4,     151.0,       1.0);         (
339346.2, 4915383.5,     136.5,     136.5,       1.0);
    ( 339346.2, 4916322.0,     130.7,     130.7,       1.0);         (
339346.2, 4917261.0,     162.0,     162.0,       1.0);
    ( 339346.2, 4918200.0,     169.5,     169.5,       1.0);         (
339346.2, 4919138.5,     175.0,     175.0,       1.0);
    ( 339346.2, 4920077.5,     184.0,     184.0,       1.0);         (
340341.2, 4908811.5,     122.5,     122.5,       1.0);
    ( 340341.2, 4909750.0,     138.1,     138.1,       1.0);         (
340341.2, 4910689.0,     145.0,     145.0,       1.0);
    ( 340341.2, 4911628.0,     144.8,     144.8,       1.0);         (
340341.2, 4912566.5,     134.0,     134.0,       1.0);
    ( 340341.2, 4913505.5,     167.7,     167.7,       1.0);         (
340341.2, 4914444.5,     170.0,     170.0,       1.0);
    ( 340341.2, 4915383.5,     171.0,     171.0,       1.0);         (
340341.2, 4916322.0,     145.0,     169.0,       1.0);
    ( 340341.2, 4917261.0,     134.7,     134.7,       1.0);         (
340341.2, 4918200.0,     154.3,     154.3,       1.0);
    ( 340341.2, 4919138.5,     175.0,     175.0,       1.0);         (
340341.2, 4920077.5,     183.0,     183.0,       1.0);
    ( 341336.3, 4908811.5,     130.1,     130.1,       1.0);         (
341336.3, 4909750.0,     141.5,     141.5,       1.0);
```

```
    ( 341336.3, 4910689.0,     145.0,     145.0,        1.0);         (
341336.3, 4911628.0,     146.0,     146.0,        1.0);
    ( 341336.3, 4912566.5,     131.0,     131.0,        1.0);         (
341336.3, 4913505.5,     158.2,     158.2,        1.0);
    ( 341336.3, 4914444.5,     178.9,     178.9,        1.0);         (
341336.3, 4915383.5,     177.0,     177.0,        1.0);
    ( 341336.3, 4916322.0,     177.4,     177.4,        1.0);         (
341336.3, 4917261.0,     175.0,     175.0,        1.0);
    ( 341336.3, 4918200.0,     138.0,     175.0,        1.0);         (
341336.3, 4919138.5,     142.2,     142.2,        1.0);
    ( 341336.3, 4920077.5,     176.1,     176.1,        1.0);         (
342331.4, 4908811.5,     127.0,     127.0,        1.0);
    ( 342331.4, 4909750.0,     151.7,     151.7,        1.0);         (
342331.4, 4910689.0,     143.0,     143.0,        1.0);
    ( 342331.4, 4911628.0,     147.0,     147.0,        1.0);         (
342331.4, 4912566.5,     142.2,     142.2,        1.0);
    ( 342331.4, 4913505.5,     133.0,     133.0,        1.0);         (
342331.4, 4914444.5,     155.8,     155.8,        1.0);
    ( 342331.4, 4915383.5,     168.0,     168.0,        1.0);         (
342331.4, 4916322.0,     182.0,     182.0,        1.0);
    ( 342331.4, 4917261.0,     181.0,     181.0,        1.0);         (
342331.4, 4918200.0,     179.0,     179.0,        1.0);
    ( 342331.4, 4919138.5,     145.1,     145.1,        1.0);         (
342331.4, 4920077.5,     140.0,     140.0,        1.0);
    ( 343326.5, 4908811.5,     126.0,     126.0,        1.0);         (
343326.5, 4909750.0,     133.1,     133.1,        1.0);
    ( 343326.5, 4910689.0,     143.0,     143.0,        1.0);         (
343326.5, 4911628.0,     139.0,     139.0,        1.0);
    ( 343326.5, 4912566.5,     140.8,     140.8,        1.0);         (
343326.5, 4913505.5,     137.4,     137.4,        1.0);
    ( 343326.5, 4914444.5,     133.0,     133.0,        1.0);         (
343326.5, 4915383.5,     147.8,     147.8,        1.0);
    ( 343326.5, 4916322.0,     165.0,     165.0,        1.0);         (
343326.5, 4917261.0,     169.0,     169.0,        1.0);
    ( 343326.5, 4918200.0,     176.0,     176.0,        1.0);         (
343326.5, 4919138.5,     180.3,     180.3,        1.0);
    ( 343326.5, 4920077.5,     149.2,     149.2,        1.0);         (
344321.6, 4908811.5,     128.0,     128.0,        1.0);
    ( 344321.6, 4909750.0,     133.0,     133.0,        1.0);         (
344321.6, 4910689.0,     137.6,     137.6,        1.0);
    ( 344321.6, 4911628.0,     138.0,     138.0,        1.0);         (
344321.6, 4912566.5,     139.0,     139.0,        1.0);
    ( 344321.6, 4913505.5,     146.7,     146.7,        1.0);         (
344321.6, 4914444.5,     143.1,     143.1,        1.0);
    ( 344321.6, 4915383.5,     139.0,     139.0,        1.0);         (
344321.6, 4916322.0,     151.6,     151.6,        1.0);
    ( 344321.6, 4917261.0,     168.0,     168.0,        1.0);         (
344321.6, 4918200.0,     178.0,     178.0,        1.0);
    ( 344321.6, 4919138.5,     164.2,     181.0,        1.0);         (
344321.6, 4920077.5,     161.6,     161.6,        1.0);
    ( 345316.7, 4908811.5,     130.0,     130.0,        1.0);         (
345316.7, 4909750.0,     138.3,     138.3,        1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  26
CONC                        DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 345316.7, 4910689.0,     148.3,     148.3,       1.0);         (
345316.7, 4911628.0,     148.0,     148.0,       1.0);
    ( 345316.7, 4912566.5,     139.0,     139.0,       1.0);         (
345316.7, 4913505.5,     146.0,     146.0,       1.0);
    ( 345316.7, 4914444.5,     143.6,     143.6,       1.0);         (
345316.7, 4915383.5,     141.0,     141.0,       1.0);
    ( 345316.7, 4916322.0,     149.0,     149.0,       1.0);         (
345316.7, 4917261.0,     159.6,     159.6,       1.0);
    ( 345316.7, 4918200.0,     171.0,     171.0,       1.0);         (
345316.7, 4919138.5,     170.8,     170.8,       1.0);
    ( 345316.7, 4920077.5,     168.0,     168.0,       1.0);         (
346311.8, 4908811.5,     133.7,     133.7,       1.0);
    ( 346311.8, 4909750.0,     143.0,     143.0,       1.0);         (
346311.8, 4910689.0,     149.6,     149.6,       1.0);
    ( 346311.8, 4911628.0,     146.0,     146.0,       1.0);         (
346311.8, 4912566.5,     144.7,     144.7,       1.0);
    ( 346311.8, 4913505.5,     149.5,     149.5,       1.0);         (
346311.8, 4914444.5,     152.0,     152.0,       1.0);
    ( 346311.8, 4915383.5,     145.6,     145.6,       1.0);         (
346311.8, 4916322.0,     144.4,     144.4,       1.0);
    ( 346311.8, 4917261.0,     159.9,     159.9,       1.0);         (
346311.8, 4918200.0,     175.0,     175.0,       1.0);
    ( 346311.8, 4919138.5,     184.0,     184.0,       1.0);         (
346311.8, 4920077.5,     184.8,     184.8,       1.0);
    ( 347306.8, 4908811.5,     133.0,     133.0,       1.0);         (
347306.8, 4909750.0,     145.0,     145.0,       1.0);
    ( 347306.8, 4910689.0,     148.9,     148.9,       1.0);         (
347306.8, 4911628.0,     139.1,     139.1,       1.0);
    ( 347306.8, 4912566.5,     149.2,     149.2,       1.0);         (
347306.8, 4913505.5,     149.5,     149.5,       1.0);
    ( 347306.8, 4914444.5,     149.8,     149.8,       1.0);         (
347306.8, 4915383.5,     148.0,     148.0,       1.0);
    ( 347306.8, 4916322.0,     147.4,     147.4,       1.0);         (
347306.8, 4917261.0,     150.0,     150.0,       1.0);
    ( 347306.8, 4918200.0,     156.1,     156.1,       1.0);         (
347306.8, 4919138.5,     167.5,     167.5,       1.0);
    ( 347306.8, 4920077.5,     190.5,     190.5,       1.0);         (
348301.9, 4908811.5,     131.1,     131.1,       1.0);
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```
    ( 348301.9, 4909750.0,     147.7,     147.7,       1.0);          (
348301.9, 4910689.0,     138.6,     138.6,       1.0);
    ( 348301.9, 4911628.0,     140.0,     140.0,       1.0);          (
348301.9, 4912566.5,     155.7,     155.7,       1.0);
    ( 348301.9, 4913505.5,     150.0,     150.0,       1.0);          (
348301.9, 4914444.5,     153.0,     153.0,       1.0);
    ( 348301.9, 4915383.5,     155.0,     155.0,       1.0);          (
348301.9, 4916322.0,     143.0,     143.0,       1.0);
    ( 348301.9, 4917261.0,     144.0,     144.0,       1.0);          (
348301.9, 4918200.0,     150.1,     150.1,       1.0);
    ( 348301.9, 4919138.5,     154.9,     154.9,       1.0);          (
348301.9, 4920077.5,     158.4,     158.4,       1.0);
    ( 349297.0, 4908811.5,     102.8,     116.0,       1.0);          (
349297.0, 4909750.0,     121.8,     121.8,       1.0);
    ( 349297.0, 4910689.0,     127.8,     141.0,       1.0);          (
349297.0, 4911628.0,     140.0,     140.0,       1.0);
    ( 349297.0, 4912566.5,     151.2,     151.2,       1.0);          (
349297.0, 4913505.5,     152.0,     152.0,       1.0);
    ( 349297.0, 4914444.5,     154.0,     154.0,       1.0);          (
349297.0, 4915383.5,     160.8,     160.8,       1.0);
    ( 349297.0, 4916322.0,     154.0,     154.0,       1.0);          (
349297.0, 4917261.0,     141.2,     141.2,       1.0);
    ( 349297.0, 4918200.0,     145.0,     145.0,       1.0);          (
349297.0, 4919138.5,     148.8,     148.8,       1.0);
    ( 349297.0, 4920077.5,     149.4,     149.4,       1.0);          (
350292.1, 4908811.5,     116.3,     116.3,       1.0);
    ( 350292.1, 4909750.0,     100.6,     100.6,       1.0);          (
350292.1, 4910689.0,     120.5,     120.5,       1.0);
    ( 350292.1, 4911628.0,     142.3,     142.3,       1.0);          (
350292.1, 4912566.5,     152.0,     152.0,       1.0);
    ( 350292.1, 4913505.5,     153.0,     153.0,       1.0);          (
350292.1, 4914444.5,     151.0,     151.0,       1.0);
    ( 350292.1, 4915383.5,     160.0,     160.0,       1.0);          (
350292.1, 4916322.0,     164.0,     164.0,       1.0);
    ( 350292.1, 4917261.0,     142.0,     142.0,       1.0);          (
350292.1, 4918200.0,     138.0,     138.0,       1.0);
    ( 350292.1, 4919138.5,     139.0,     139.0,       1.0);          (
350292.1, 4920077.5,     145.4,     145.4,       1.0);
    ( 351287.2, 4908811.5,     155.0,     155.0,       1.0);          (
351287.2, 4909750.0,     124.3,     124.3,       1.0);
    ( 351287.2, 4910689.0,     104.1,     104.1,       1.0);          (
351287.2, 4911628.0,     120.8,     120.8,       1.0);
    ( 351287.2, 4912566.5,     142.0,     142.0,       1.0);          (
351287.2, 4913505.5,     150.0,     150.0,       1.0);
    ( 351287.2, 4914444.5,     147.8,     147.8,       1.0);          (
351287.2, 4915383.5,     155.4,     155.4,       1.0);
    ( 351287.2, 4916322.0,     165.0,     165.0,       1.0);          (
351287.2, 4917261.0,     145.0,     145.0,       1.0);
    ( 351287.2, 4918200.0,     139.0,     139.0,       1.0);          (
351287.2, 4919138.5,     139.0,     139.0,       1.0);
    ( 351287.2, 4920077.5,     139.0,     139.0,       1.0);          (
352282.2, 4908811.5,     158.0,     158.0,       1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  27
CONC                        DFAULT ELEV   FLGPOL



                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 352282.2, 4909750.0,     133.2,     136.0,       1.0);         (
352282.2, 4910689.0,     117.3,     117.3,       1.0);
    ( 352282.2, 4911628.0,     119.1,     119.1,       1.0);         (
352282.2, 4912566.5,     147.0,     147.0,       1.0);
    ( 352282.2, 4913505.5,     150.0,     150.0,       1.0);         (
352282.2, 4914444.5,     151.9,     151.9,       1.0);
    ( 352282.2, 4915383.5,     148.0,     157.0,       1.0);         (
352282.2, 4916322.0,     143.0,     143.0,       1.0);
    ( 352282.2, 4917261.0,     151.7,     151.7,       1.0);         (
352282.2, 4918200.0,     139.0,     139.0,       1.0);
    ( 352282.2, 4919138.5,     138.0,     138.0,       1.0);         (
352282.2, 4920077.5,     140.0,     140.0,       1.0);
    ( 341016.1, 4907872.5,     123.8,     123.8,       1.0);         (
341016.1, 4906877.5,     121.0,     121.0,       1.0);
    ( 341016.1, 4905882.5,     114.0,     114.0,       1.0);         (
341016.1, 4904887.0,     111.0,     111.0,       1.0);
    ( 341016.1, 4903892.0,     114.9,     114.9,       1.0);         (
341016.1, 4902897.0,     110.1,     110.1,       1.0);
    ( 341016.1, 4901902.0,      95.2,      95.2,       1.0);         (
341016.1, 4900907.0,      90.0,      90.0,       1.0);
    ( 341016.1, 4899912.0,      92.6,      92.6,       1.0);         (
341016.1, 4898916.5,      92.4,      92.4,       1.0);
    ( 341016.1, 4897921.5,      91.9,      91.9,       1.0);         (
341016.1, 4896926.5,      78.0,      78.0,       1.0);
    ( 341016.1, 4895931.5,      74.7,      74.7,       1.0);         (
341016.1, 4894936.5,      80.6,      80.6,       1.0);
    ( 341016.1, 4893941.0,     108.0,     108.0,       1.0);         (
341016.1, 4892946.0,     106.8,     106.8,       1.0);
    ( 341016.1, 4891951.0,     103.0,     103.0,       1.0);         (
341016.1, 4890956.0,      97.9,      97.9,       1.0);
    ( 341016.1, 4889961.0,      75.0,      75.0,       1.0);         (
341016.1, 4888966.0,     102.0,     102.0,       1.0);
    ( 341016.1, 4887970.5,     101.0,     101.0,       1.0);         (
341016.1, 4886975.5,      99.2,      99.2,       1.0);
    ( 341016.1, 4885980.5,      96.0,      96.0,       1.0);         (
341954.9, 4907872.5,     121.0,     121.0,       1.0);
    ( 341954.9, 4906877.5,     117.9,     117.9,       1.0);         (
341954.9, 4905882.5,     120.0,     120.0,       1.0);
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    ( 341954.9, 4904887.0,     119.5,     119.5,       1.0);         (
341954.9, 4903892.0,     115.0,     115.0,       1.0);
    ( 341954.9, 4902897.0,     105.4,     105.4,       1.0);         (
341954.9, 4901902.0,      92.6,      92.6,       1.0);
    ( 341954.9, 4900907.0,      93.0,      93.0,       1.0);         (
341954.9, 4899912.0,      90.7,      90.7,       1.0);
    ( 341954.9, 4898916.5,      81.0,      81.0,       1.0);         (
341954.9, 4897921.5,      76.0,      76.0,       1.0);
    ( 341954.9, 4896926.5,      83.5,      83.5,       1.0);         (
341954.9, 4895931.5,      77.7,      77.7,       1.0);
    ( 341954.9, 4894936.5,      88.0,      88.0,       1.0);         (
341954.9, 4893941.0,     106.8,     106.8,       1.0);
    ( 341954.9, 4892946.0,     101.2,     101.2,       1.0);         (
341954.9, 4891951.0,      86.5,      86.5,       1.0);
    ( 341954.9, 4890956.0,      77.4,      77.4,       1.0);         (
341954.9, 4889961.0,      71.0,      71.0,       1.0);
    ( 341954.9, 4888966.0,      98.7,      98.7,       1.0);         (
341954.9, 4887970.5,     104.7,     104.7,       1.0);
    ( 341954.9, 4886975.5,     100.0,     100.0,       1.0);         (
341954.9, 4885980.5,      98.0,      98.0,       1.0);
    ( 342893.8, 4907872.5,     125.0,     125.0,       1.0);         (
342893.8, 4906877.5,     118.0,     118.0,       1.0);
    ( 342893.8, 4905882.5,     121.0,     121.0,       1.0);         (
342893.8, 4904887.0,     116.0,     116.0,       1.0);
    ( 342893.8, 4903892.0,     110.0,     110.0,       1.0);         (
342893.8, 4902897.0,      98.2,      98.2,       1.0);
    ( 342893.8, 4901902.0,      99.8,      99.8,       1.0);         (
342893.8, 4900907.0,      96.3,      96.3,       1.0);
    ( 342893.8, 4899912.0,      77.0,      77.0,       1.0);         (
342893.8, 4898916.5,      78.6,      78.6,       1.0);
    ( 342893.8, 4897921.5,      96.0,      96.0,       1.0);         (
342893.8, 4896926.5,      89.9,      89.9,       1.0);
    ( 342893.8, 4895931.5,      78.9,      78.9,       1.0);         (
342893.8, 4894936.5,      87.4,      87.4,       1.0);
    ( 342893.8, 4893941.0,      86.0,      86.0,       1.0);         (
342893.8, 4892946.0,      91.2,      91.2,       1.0);
    ( 342893.8, 4891951.0,      85.0,      85.0,       1.0);         (
342893.8, 4890956.0,      76.0,      76.0,       1.0);
    ( 342893.8, 4889961.0,      84.0,      84.0,       1.0);         (
342893.8, 4888966.0,     100.5,     100.5,       1.0);
    ( 342893.8, 4887970.5,     103.0,     103.0,       1.0);         (
342893.8, 4886975.5,     100.8,     100.8,       1.0);
    ( 342893.8, 4885980.5,      93.8,      93.8,       1.0);         (
343832.6, 4907872.5,     122.0,     122.0,       1.0);
    ( 343832.6, 4906877.5,     121.4,     121.4,       1.0);         (
343832.6, 4905882.5,     122.4,     122.4,       1.0);
    ( 343832.6, 4904887.0,     113.3,     113.3,       1.0);         (
343832.6, 4903892.0,      96.9,      96.9,       1.0);
    ( 343832.6, 4902897.0,     102.0,     102.0,       1.0);         (
343832.6, 4901902.0,      98.3,      98.3,       1.0);
    ( 343832.6, 4900907.0,      88.5,      88.5,       1.0);         (
343832.6, 4899912.0,      95.5,      95.5,       1.0);
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                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 343832.6, 4898916.5,     106.1,     106.1,       1.0);         (
343832.6, 4897921.5,     100.0,     100.0,       1.0);
    ( 343832.6, 4896926.5,      83.0,      83.0,       1.0);         (
343832.6, 4895931.5,      78.0,      78.0,       1.0);
    ( 343832.6, 4894936.5,      87.4,      87.4,       1.0);         (
343832.6, 4893941.0,      87.4,      87.4,       1.0);
    ( 343832.6, 4892946.0,      74.2,      74.2,       1.0);         (
343832.6, 4891951.0,      73.0,      73.0,       1.0);
    ( 343832.6, 4890956.0,      75.0,      75.0,       1.0);         (
343832.6, 4889961.0,      84.6,      84.6,       1.0);
    ( 343832.6, 4888966.0,     100.0,     100.0,       1.0);         (
343832.6, 4887970.5,     100.0,     100.0,       1.0);
    ( 343832.6, 4886975.5,      98.0,      98.0,       1.0);         (
343832.6, 4885980.5,      96.0,      96.0,       1.0);
    ( 344771.5, 4907872.5,     123.0,     123.0,       1.0);         (
344771.5, 4906877.5,     122.0,     122.0,       1.0);
    ( 344771.5, 4905882.5,     117.6,     117.6,       1.0);         (
344771.5, 4904887.0,     105.9,     105.9,       1.0);
    ( 344771.5, 4903892.0,     101.0,     101.0,       1.0);         (
344771.5, 4902897.0,      92.6,      92.6,       1.0);
    ( 344771.5, 4901902.0,      80.8,      91.0,       1.0);         (
344771.5, 4900907.0,      90.6,      90.6,       1.0);
    ( 344771.5, 4899912.0,     113.0,     113.0,       1.0);         (
344771.5, 4898916.5,     104.7,     104.7,       1.0);
    ( 344771.5, 4897921.5,      93.0,      93.0,       1.0);         (
344771.5, 4896926.5,      78.6,      78.6,       1.0);
    ( 344771.5, 4895931.5,      79.0,      79.0,       1.0);         (
344771.5, 4894936.5,      82.6,      82.6,       1.0);
    ( 344771.5, 4893941.0,      79.2,      79.2,       1.0);         (
344771.5, 4892946.0,      73.0,      73.0,       1.0);
    ( 344771.5, 4891951.0,      72.0,      72.0,       1.0);         (
344771.5, 4890956.0,      70.0,      70.0,       1.0);
    ( 344771.5, 4889961.0,      91.0,      91.0,       1.0);         (
344771.5, 4888966.0,     101.0,     101.0,       1.0);
    ( 344771.5, 4887970.5,     100.0,     100.0,       1.0);         (
344771.5, 4886975.5,      98.2,      98.2,       1.0);
    ( 344771.5, 4885980.5,      94.0,      94.0,       1.0);         (
345710.3, 4907872.5,     125.8,     125.8,       1.0);
```

```
    ( 345710.3, 4906877.5,     118.0,     118.0,       1.0);          (
345710.3, 4905882.5,     111.1,     111.1,       1.0);
    ( 345710.3, 4904887.0,      98.5,      98.5,       1.0);          (
345710.3, 4903892.0,      95.0,      95.0,       1.0);
    ( 345710.3, 4902897.0,     109.3,     126.0,       1.0);          (
345710.3, 4901902.0,     127.0,     127.0,       1.0);
    ( 345710.3, 4900907.0,     111.9,     111.9,       1.0);          (
345710.3, 4899912.0,     108.6,     108.6,       1.0);
    ( 345710.3, 4898916.5,      96.8,      96.8,       1.0);          (
345710.3, 4897921.5,      89.3,      89.3,       1.0);
    ( 345710.3, 4896926.5,      77.0,      77.0,       1.0);          (
345710.3, 4895931.5,      76.5,      76.5,       1.0);
    ( 345710.3, 4894936.5,      75.0,      75.0,       1.0);          (
345710.3, 4893941.0,      75.2,      75.2,       1.0);
    ( 345710.3, 4892946.0,      73.8,      73.8,       1.0);          (
345710.3, 4891951.0,      72.0,      72.0,       1.0);
    ( 345710.3, 4890956.0,      72.0,      72.0,       1.0);          (
345710.3, 4889961.0,      99.3,      99.3,       1.0);
    ( 345710.3, 4888966.0,      98.3,      98.3,       1.0);          (
345710.3, 4887970.5,      98.1,      98.1,       1.0);
    ( 345710.3, 4886975.5,      95.0,      95.0,       1.0);          (
345710.3, 4885980.5,      90.0,      90.0,       1.0);
    ( 346649.2, 4907872.5,     133.0,     133.0,       1.0);          (
346649.2, 4906877.5,     119.0,     119.0,       1.0);
    ( 346649.2, 4905882.5,     107.4,     107.4,       1.0);          (
346649.2, 4904887.0,      97.5,      97.5,       1.0);
    ( 346649.2, 4903892.0,     107.8,     107.8,       1.0);          (
346649.2, 4902897.0,     131.0,     131.0,       1.0);
    ( 346649.2, 4901902.0,     128.7,     128.7,       1.0);          (
346649.2, 4900907.0,     121.0,     121.0,       1.0);
    ( 346649.2, 4899912.0,     115.0,     115.0,       1.0);          (
346649.2, 4898916.5,      95.0,      95.0,       1.0);
    ( 346649.2, 4897921.5,      79.9,      79.9,       1.0);          (
346649.2, 4896926.5,      91.0,      91.0,       1.0);
    ( 346649.2, 4895931.5,      78.0,      78.0,       1.0);          (
346649.2, 4894936.5,      80.0,      80.0,       1.0);
    ( 346649.2, 4893941.0,      74.4,      74.4,       1.0);          (
346649.2, 4892946.0,      75.0,      75.0,       1.0);
    ( 346649.2, 4891951.0,      73.0,      73.0,       1.0);          (
346649.2, 4890956.0,      79.8,      79.8,       1.0);
    ( 346649.2, 4889961.0,      86.6,      86.6,       1.0);          (
346649.2, 4888966.0,      90.5,      90.5,       1.0);
    ( 346649.2, 4887970.5,      91.3,      91.3,       1.0);          (
346649.2, 4886975.5,      89.0,      89.0,       1.0);
    ( 346649.2, 4885980.5,      83.1,      83.1,       1.0);          (
347588.0, 4907872.5,     133.6,     133.6,       1.0);
    ( 347588.0, 4906877.5,     104.9,     121.0,       1.0);          (
347588.0, 4905882.5,     107.9,     138.0,       1.0);
    ( 347588.0, 4904887.0,     131.9,     131.9,       1.0);          (
347588.0, 4903892.0,     136.0,     136.0,       1.0);
    ( 347588.0, 4902897.0,     135.0,     135.0,       1.0);          (
347588.0, 4901902.0,     126.0,     126.0,       1.0);
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                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 347588.0, 4900907.0,     117.7,     117.7,       1.0);          (
347588.0, 4899912.0,     104.8,     104.8,       1.0);
    ( 347588.0, 4898916.5,      83.9,      83.9,       1.0);          (
347588.0, 4897921.5,      91.0,      91.0,       1.0);
    ( 347588.0, 4896926.5,      90.0,      90.0,       1.0);          (
347588.0, 4895931.5,      77.8,      77.8,       1.0);
    ( 347588.0, 4894936.5,      77.4,      77.4,       1.0);          (
347588.0, 4893941.0,      78.4,      78.4,       1.0);
    ( 347588.0, 4892946.0,      73.2,      73.2,       1.0);          (
347588.0, 4891951.0,      73.0,      73.0,       1.0);
    ( 347588.0, 4890956.0,      73.0,      73.0,       1.0);          (
347588.0, 4889961.0,      89.5,      89.5,       1.0);
    ( 347588.0, 4888966.0,      93.4,      93.4,       1.0);          (
347588.0, 4887970.5,      88.3,      88.3,       1.0);
    ( 347588.0, 4886975.5,      95.9,      95.9,       1.0);          (
347588.0, 4885980.5,      70.0,      70.0,       1.0);
    ( 348526.9, 4907872.5,      93.5,      93.5,       1.0);          (
348526.9, 4906877.5,     101.2,     144.0,       1.0);
    ( 348526.9, 4905882.5,     140.0,     140.0,       1.0);          (
348526.9, 4904887.0,     132.0,     132.0,       1.0);
    ( 348526.9, 4903892.0,     130.0,     130.0,       1.0);          (
348526.9, 4902897.0,     131.5,     131.5,       1.0);
    ( 348526.9, 4901902.0,     115.8,     115.8,       1.0);          (
348526.9, 4900907.0,     113.8,     113.8,       1.0);
    ( 348526.9, 4899912.0,      96.8,      96.8,       1.0);          (
348526.9, 4898916.5,      90.0,      90.0,       1.0);
    ( 348526.9, 4897921.5,      93.9,      93.9,       1.0);          (
348526.9, 4896926.5,      78.0,      78.0,       1.0);
    ( 348526.9, 4895931.5,      82.0,      82.0,       1.0);          (
348526.9, 4894936.5,      79.0,      79.0,       1.0);
    ( 348526.9, 4893941.0,      76.2,      76.2,       1.0);          (
348526.9, 4892946.0,      87.0,      87.0,       1.0);
    ( 348526.9, 4891951.0,      73.4,      73.4,       1.0);          (
348526.9, 4890956.0,      73.0,      73.0,       1.0);
    ( 348526.9, 4889961.0,      83.0,      83.0,       1.0);          (
348526.9, 4888966.0,      82.0,      82.0,       1.0);
    ( 348526.9, 4887970.5,      87.0,      87.0,       1.0);          (
348526.9, 4886975.5,      86.6,      86.6,       1.0);
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    ( 348526.9, 4885980.5,      71.0,      71.0,        1.0);          (
349465.7, 4907872.5,     111.9,     111.9,        1.0);
    ( 349465.7, 4906877.5,     147.9,     147.9,        1.0);          (
349465.7, 4905882.5,     140.0,     140.0,        1.0);
    ( 349465.7, 4904887.0,     129.2,     129.2,        1.0);          (
349465.7, 4903892.0,     125.0,     125.0,        1.0);
    ( 349465.7, 4902897.0,     119.9,     119.9,        1.0);          (
349465.7, 4901902.0,     120.8,     120.8,        1.0);
    ( 349465.7, 4900907.0,     103.7,     103.7,        1.0);          (
349465.7, 4899912.0,      88.9,      88.9,        1.0);
    ( 349465.7, 4898916.5,      90.0,      90.0,        1.0);          (
349465.7, 4897921.5,      80.2,      80.2,        1.0);
    ( 349465.7, 4896926.5,      88.9,      88.9,        1.0);          (
349465.7, 4895931.5,      92.1,      92.1,        1.0);
    ( 349465.7, 4894936.5,      83.9,      83.9,        1.0);          (
349465.7, 4893941.0,      84.2,      91.0,        1.0);
    ( 349465.7, 4892946.0,      75.1,      75.1,        1.0);          (
349465.7, 4891951.0,      77.9,      77.9,        1.0);
    ( 349465.7, 4890956.0,      77.0,      77.0,        1.0);          (
349465.7, 4889961.0,      81.0,      81.0,        1.0);
    ( 349465.7, 4888966.0,      90.0,      90.0,        1.0);          (
349465.7, 4887970.5,      82.3,      82.3,        1.0);
    ( 349465.7, 4886975.5,      68.0,      68.0,        1.0);          (
349465.7, 4885980.5,      70.0,      70.0,        1.0);
    ( 350404.6, 4907872.5,     149.2,     149.2,        1.0);          (
350404.6, 4906877.5,     148.9,     148.9,        1.0);
    ( 350404.6, 4905882.5,     136.0,     136.0,        1.0);          (
350404.6, 4904887.0,     123.7,     123.7,        1.0);
    ( 350404.6, 4903892.0,     120.9,     120.9,        1.0);          (
350404.6, 4902897.0,     128.9,     128.9,        1.0);
    ( 350404.6, 4901902.0,     110.0,     110.0,        1.0);          (
350404.6, 4900907.0,     104.0,     104.0,        1.0);
    ( 350404.6, 4899912.0,     101.4,     101.4,        1.0);          (
350404.6, 4898916.5,      94.2,      94.2,        1.0);
    ( 350404.6, 4897921.5,      90.2,      90.2,        1.0);          (
350404.6, 4896926.5,      88.3,      88.3,        1.0);
    ( 350404.6, 4895931.5,      94.0,      94.0,        1.0);          (
350404.6, 4894936.5,      87.6,      87.6,        1.0);
    ( 350404.6, 4893941.0,      81.0,      81.0,        1.0);          (
350404.6, 4892946.0,      83.3,      83.3,        1.0);
    ( 350404.6, 4891951.0,      90.0,      90.0,        1.0);          (
350404.6, 4890956.0,      84.9,      84.9,        1.0);
    ( 350404.6, 4889961.0,      88.1,      88.1,        1.0);          (
350404.6, 4888966.0,      92.0,      92.0,        1.0);
    ( 350404.6, 4887970.5,      73.7,      81.0,        1.0);          (
350404.6, 4886975.5,      69.0,      69.0,        1.0);
    ( 350404.6, 4885980.5,      69.0,      69.0,        1.0);          (
351343.4, 4907872.5,     154.4,     154.4,        1.0);
    ( 351343.4, 4906877.5,     141.8,     141.8,        1.0);          (
351343.4, 4905882.5,     130.0,     130.0,        1.0);
    ( 351343.4, 4904887.0,     129.9,     129.9,        1.0);          (
351343.4, 4903892.0,     131.0,     131.0,        1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  30
CONC                        DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 351343.4, 4902897.0,     115.9,     115.9,       1.0);         (
351343.4, 4901902.0,     109.7,     109.7,       1.0);
    ( 351343.4, 4900907.0,     112.0,     112.0,       1.0);         (
351343.4, 4899912.0,      99.0,      99.0,       1.0);
    ( 351343.4, 4898916.5,      99.2,      99.2,       1.0);         (
351343.4, 4897921.5,      96.0,      96.0,       1.0);
    ( 351343.4, 4896926.5,      95.0,      95.0,       1.0);         (
351343.4, 4895931.5,      97.3,      97.3,       1.0);
    ( 351343.4, 4894936.5,      89.6,      89.6,       1.0);         (
351343.4, 4893941.0,      84.1,      84.1,       1.0);
    ( 351343.4, 4892946.0,      89.2,      89.2,       1.0);         (
351343.4, 4891951.0,      94.6,      94.6,       1.0);
    ( 351343.4, 4890956.0,      94.0,      94.0,       1.0);         (
351343.4, 4889961.0,      95.0,      95.0,       1.0);
    ( 351343.4, 4888966.0,      86.1,      86.1,       1.0);         (
351343.4, 4887970.5,      72.0,      72.0,       1.0);
    ( 351343.4, 4886975.5,      71.0,      71.0,       1.0);         (
351343.4, 4885980.5,      72.0,      72.0,       1.0);
    ( 352282.2, 4907872.5,     153.8,     153.8,       1.0);         (
352282.2, 4906877.5,     141.4,     141.4,       1.0);
    ( 352282.2, 4905882.5,     129.0,     129.0,       1.0);         (
352282.2, 4904887.0,     119.5,     126.0,       1.0);
    ( 352282.2, 4903892.0,     131.1,     131.1,       1.0);         (
352282.2, 4902897.0,     118.1,     118.1,       1.0);
    ( 352282.2, 4901902.0,     125.0,     125.0,       1.0);         (
352282.2, 4900907.0,     110.6,     110.6,       1.0);
    ( 352282.2, 4899912.0,      95.3,      95.3,       1.0);         (
352282.2, 4898916.5,     100.6,     100.6,       1.0);
    ( 352282.2, 4897921.5,      96.0,      96.0,       1.0);         (
352282.2, 4896926.5,      97.7,      97.7,       1.0);
    ( 352282.2, 4895931.5,     102.8,     102.8,       1.0);         (
352282.2, 4894936.5,      94.1,      94.1,       1.0);
    ( 352282.2, 4893941.0,      95.5,      95.5,       1.0);         (
352282.2, 4892946.0,      90.8,      90.8,       1.0);
    ( 352282.2, 4891951.0,      91.0,      91.0,       1.0);         (
352282.2, 4890956.0,      91.1,      91.1,       1.0);
    ( 352282.2, 4889961.0,      90.0,      90.0,       1.0);         (
352282.2, 4888966.0,      72.1,      72.1,       1.0);
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```
    ( 352282.2, 4887970.5,      72.0,      72.0,       1.0);         (
352282.2, 4886975.5,      72.0,      72.0,       1.0);
    ( 352282.2, 4885980.5,      75.2,      75.2,       1.0);         (
340077.2, 4897246.5,      86.0,      86.0,       1.0);
    ( 340077.2, 4896308.0,      78.4,      78.4,       1.0);         (
340077.2, 4895369.0,      73.0,      73.0,       1.0);
    ( 340077.2, 4894430.0,      84.3,      84.3,       1.0);         (
340077.2, 4893491.5,     110.6,     110.6,       1.0);
    ( 340077.2, 4892552.5,     112.2,     112.2,       1.0);         (
340077.2, 4891613.5,     107.0,     107.0,       1.0);
    ( 340077.2, 4890674.5,     100.0,     100.0,       1.0);         (
340077.2, 4889736.0,      86.2,      97.0,       1.0);
    ( 340077.2, 4888797.0,      94.0,      94.0,       1.0);         (
340077.2, 4887858.0,     102.0,     102.0,       1.0);
    ( 340077.2, 4886919.5,      99.0,      99.0,       1.0);         (
340077.2, 4885980.5,      96.1,      96.1,       1.0);
    ( 339082.2, 4897246.5,      85.0,      85.0,       1.0);         (
339082.2, 4896308.0,      78.3,      78.3,       1.0);
    ( 339082.2, 4895369.0,      74.3,      74.3,       1.0);         (
339082.2, 4894430.0,      77.2,      77.2,       1.0);
    ( 339082.2, 4893491.5,      99.6,      99.6,       1.0);         (
339082.2, 4892552.5,     119.1,     127.0,       1.0);
    ( 339082.2, 4891613.5,     113.8,     113.8,       1.0);         (
339082.2, 4890674.5,     112.5,     112.5,       1.0);
    ( 339082.2, 4889736.0,     106.2,     106.2,       1.0);         (
339082.2, 4888797.0,      73.0,     102.0,       1.0);
    ( 339082.2, 4887858.0,      74.7,      74.7,       1.0);         (
339082.2, 4886919.5,      72.9,      72.9,       1.0);
    ( 339082.2, 4885980.5,      83.3,      83.3,       1.0);         (
338087.1, 4897246.5,      83.2,      83.2,       1.0);
    ( 338087.1, 4896308.0,      77.9,      77.9,       1.0);         (
338087.1, 4895369.0,      74.0,      74.0,       1.0);
    ( 338087.1, 4894430.0,      73.0,      73.0,       1.0);         (
338087.1, 4893491.5,      91.6,      91.6,       1.0);
    ( 338087.1, 4892552.5,     115.9,     115.9,       1.0);         (
338087.1, 4891613.5,     120.8,     120.8,       1.0);
    ( 338087.1, 4890674.5,     113.0,     113.0,       1.0);         (
338087.1, 4889736.0,     110.0,     110.0,       1.0);
    ( 338087.1, 4888797.0,     105.4,     105.4,       1.0);         (
338087.1, 4887858.0,      84.8,      84.8,       1.0);
    ( 338087.1, 4886919.5,      74.4,      74.4,       1.0);         (
338087.1, 4885980.5,      72.0,      72.0,       1.0);
    ( 337092.0, 4897246.5,      89.8,      89.8,       1.0);         (
337092.0, 4896308.0,      80.2,      80.2,       1.0);
    ( 337092.0, 4895369.0,      72.0,      72.0,       1.0);         (
337092.0, 4894430.0,      72.0,      72.0,       1.0);
    ( 337092.0, 4893491.5,      80.6,      80.6,       1.0);         (
337092.0, 4892552.5,     104.9,     104.9,       1.0);
    ( 337092.0, 4891613.5,     122.0,     122.0,       1.0);         (
337092.0, 4890674.5,     117.0,     117.0,       1.0);
    ( 337092.0, 4889736.0,     110.1,     110.1,       1.0);         (
337092.0, 4888797.0,     105.0,     105.0,       1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  31
CONC                        DFAULT ELEV   FLGPOL


                                             *** DISCRETE CARTESIAN
RECEPTORS ***
                                           (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                           (METERS)

    ( 337092.0, 4887858.0,      97.0,      97.0,       1.0);         (
337092.0, 4886919.5,      81.6,      81.6,       1.0);
    ( 337092.0, 4885980.5,      73.0,      73.0,       1.0);         (
336096.9, 4897246.5,      94.4,      94.4,       1.0);
    ( 336096.9, 4896308.0,      90.8,      90.8,       1.0);         (
336096.9, 4895369.0,      79.0,      79.0,       1.0);
    ( 336096.9, 4894430.0,      74.0,      74.0,       1.0);         (
336096.9, 4893491.5,      74.0,      74.0,       1.0);
    ( 336096.9, 4892552.5,      74.0,      74.0,       1.0);         (
336096.9, 4891613.5,      74.8,     115.0,       1.0);
    ( 336096.9, 4890674.5,      98.2,     100.0,       1.0);         (
336096.9, 4889736.0,     112.4,     112.4,       1.0);
    ( 336096.9, 4888797.0,     109.0,     109.0,       1.0);         (
336096.9, 4887858.0,      98.2,      98.2,       1.0);
    ( 336096.9, 4886919.5,      87.8,      87.8,       1.0);         (
336096.9, 4885980.5,      78.8,      78.8,       1.0);
    ( 335101.8, 4897246.5,      95.0,      95.0,       1.0);         (
335101.8, 4896308.0,      92.7,      92.7,       1.0);
    ( 335101.8, 4895369.0,      86.0,      86.0,       1.0);         (
335101.8, 4894430.0,      73.0,      73.0,       1.0);
    ( 335101.8, 4893491.5,      73.6,      73.6,       1.0);         (
335101.8, 4892552.5,      74.0,      74.0,       1.0);
    ( 335101.8, 4891613.5,      89.7,      89.7,       1.0);         (
335101.8, 4890674.5,      72.0,      72.0,       1.0);
    ( 335101.8, 4889736.0,      68.1,      68.1,       1.0);         (
335101.8, 4888797.0,      74.2,      86.0,       1.0);
    ( 335101.8, 4887858.0,      96.1,      96.1,       1.0);         (
335101.8, 4886919.5,      89.0,      89.0,       1.0);
    ( 335101.8, 4885980.5,      82.0,      82.0,       1.0);         (
334106.8, 4897246.5,      89.1,      91.0,       1.0);
    ( 334106.8, 4896308.0,      92.0,      92.0,       1.0);         (
334106.8, 4895369.0,      87.0,      87.0,       1.0);
    ( 334106.8, 4894430.0,      89.6,      89.6,       1.0);         (
334106.8, 4893491.5,      73.0,      73.0,       1.0);
    ( 334106.8, 4892552.5,      81.0,      81.0,       1.0);         (
334106.8, 4891613.5,      89.4,      89.4,       1.0);
    ( 334106.8, 4890674.5,      95.6,      95.6,       1.0);         (
334106.8, 4889736.0,     131.0,     131.0,       1.0);
```

```
    ( 334106.8, 4888797.0,     105.5,     132.0,       1.0);         (
334106.8, 4887858.0,      71.3,     126.0,       1.0);
    ( 334106.8, 4886919.5,      71.0,     121.0,       1.0);         (
334106.8, 4885980.5,      71.0,      71.0,       1.0);
    ( 333111.7, 4897246.5,      80.0,      80.0,       1.0);         (
333111.7, 4896308.0,      89.9,     101.0,       1.0);
    ( 333111.7, 4895369.0,      86.0,      86.0,       1.0);         (
333111.7, 4894430.0,      80.0,      80.0,       1.0);
    ( 333111.7, 4893491.5,      81.5,      96.0,       1.0);         (
333111.7, 4892552.5,      84.1,      84.1,       1.0);
    ( 333111.7, 4891613.5,      88.2,      88.2,       1.0);         (
333111.7, 4890674.5,     122.7,     136.0,       1.0);
    ( 333111.7, 4889736.0,     134.7,     134.7,       1.0);         (
333111.7, 4888797.0,     130.0,     130.0,       1.0);
    ( 333111.7, 4887858.0,     122.0,     122.0,       1.0);         (
333111.7, 4886919.5,     120.0,     120.0,       1.0);
    ( 333111.7, 4885980.5,     120.0,     120.0,       1.0);         (
332116.6, 4897246.5,      85.0,      85.0,       1.0);
    ( 332116.6, 4896308.0,      79.0,      79.0,       1.0);         (
332116.6, 4895369.0,      80.0,      80.0,       1.0);
    ( 332116.6, 4894430.0,      78.0,      78.0,       1.0);         (
332116.6, 4893491.5,      85.6,      91.0,       1.0);
    ( 332116.6, 4892552.5,      75.0,      75.0,       1.0);         (
332116.6, 4891613.5,      87.0,      87.0,       1.0);
    ( 332116.6, 4890674.5,     101.8,     136.0,       1.0);         (
332116.6, 4889736.0,     131.1,     131.1,       1.0);
    ( 332116.6, 4888797.0,     128.0,     128.0,       1.0);         (
332116.6, 4887858.0,     121.0,     121.0,       1.0);
    ( 332116.6, 4886919.5,     120.0,     120.0,       1.0);         (
332116.6, 4885980.5,     119.0,     119.0,       1.0);
    ( 331121.5, 4897246.5,      91.4,      91.4,       1.0);         (
331121.5, 4896308.0,      82.7,      82.7,       1.0);
    ( 331121.5, 4895369.0,      82.2,      82.2,       1.0);         (
331121.5, 4894430.0,      77.4,      77.4,       1.0);
    ( 331121.5, 4893491.5,      82.4,      82.4,       1.0);         (
331121.5, 4892552.5,      73.0,      73.0,       1.0);
    ( 331121.5, 4891613.5,      80.5,      80.5,       1.0);         (
331121.5, 4890674.5,      93.0,      93.0,       1.0);
    ( 331121.5, 4889736.0,     119.5,     124.0,       1.0);         (
331121.5, 4888797.0,     126.0,     126.0,       1.0);
    ( 331121.5, 4887858.0,     124.0,     124.0,       1.0);         (
331121.5, 4886919.5,     119.0,     119.0,       1.0);
    ( 331121.5, 4885980.5,     114.0,     114.0,       1.0);         (
330126.4, 4897246.5,      88.0,      88.0,       1.0);
    ( 330126.4, 4896308.0,      90.2,      90.2,       1.0);         (
330126.4, 4895369.0,      85.0,      85.0,       1.0);
    ( 330126.4, 4894430.0,      82.0,      82.0,       1.0);         (
330126.4, 4893491.5,      77.0,      77.0,       1.0);
    ( 330126.4, 4892552.5,      73.9,      73.9,       1.0);         (
330126.4, 4891613.5,      81.1,      81.1,       1.0);
    ( 330126.4, 4890674.5,      89.2,      89.2,       1.0);         (
330126.4, 4889736.0,      95.2,      95.2,       1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  32
CONC                        DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 330126.4, 4888797.0,     127.0,     127.0,       1.0);         (
330126.4, 4887858.0,     124.6,     124.6,       1.0);
    ( 330126.4, 4886919.5,     118.3,     118.3,       1.0);         (
330126.4, 4885980.5,     115.0,     115.0,       1.0);
    ( 329131.3, 4897246.5,      89.0,      89.0,       1.0);         (
329131.3, 4896308.0,      91.0,      91.0,       1.0);
    ( 329131.3, 4895369.0,      90.0,      90.0,       1.0);         (
329131.3, 4894430.0,      92.7,      92.7,       1.0);
    ( 329131.3, 4893491.5,      82.0,      82.0,       1.0);         (
329131.3, 4892552.5,      76.0,      76.0,       1.0);
    ( 329131.3, 4891613.5,      73.0,      73.0,       1.0);         (
329131.3, 4890674.5,      81.5,      81.5,       1.0);
    ( 329131.3, 4889736.0,     129.6,     129.6,       1.0);         (
329131.3, 4888797.0,     128.0,     128.0,       1.0);
    ( 329131.3, 4887858.0,     122.0,     122.0,       1.0);         (
329131.3, 4886919.5,     121.0,     121.0,       1.0);
    ( 329131.3, 4885980.5,     115.0,     115.0,       1.0);         (
328136.2, 4897246.5,      87.9,      87.9,       1.0);
    ( 328136.2, 4896308.0,      93.0,      93.0,       1.0);         (
328136.2, 4895369.0,      92.0,      93.0,       1.0);
    ( 328136.2, 4894430.0,      89.0,      89.0,       1.0);         (
328136.2, 4893491.5,      84.4,      84.4,       1.0);
    ( 328136.2, 4892552.5,      81.0,      81.0,       1.0);         (
328136.2, 4891613.5,      70.0,      70.0,       1.0);
    ( 328136.2, 4890674.5,      76.3,     131.0,       1.0);         (
328136.2, 4889736.0,      92.8,      92.8,       1.0);
    ( 328136.2, 4888797.0,     125.0,     125.0,       1.0);         (
328136.2, 4887858.0,     125.0,     125.0,       1.0);
    ( 328136.2, 4886919.5,     116.0,     116.0,       1.0);         (
328136.2, 4885980.5,     118.1,     118.1,       1.0);
    ( 327141.2, 4897246.5,      83.3,      83.3,       1.0);         (
327141.2, 4896308.0,      89.1,      89.1,       1.0);
    ( 327141.2, 4895369.0,     103.8,     105.0,       1.0);         (
327141.2, 4894430.0,      90.0,      90.0,       1.0);
    ( 327141.2, 4893491.5,      83.9,      83.9,       1.0);         (
327141.2, 4892552.5,      76.0,      76.0,       1.0);
    ( 327141.2, 4891613.5,      70.0,      70.0,       1.0);         (
327141.2, 4890674.5,      80.5,      80.5,       1.0);
```

```
    ( 327141.2, 4889736.0,     124.2,     124.2,       1.0);         (
327141.2, 4888797.0,     123.0,     123.0,       1.0);
    ( 327141.2, 4887858.0,     118.6,     118.6,       1.0);         (
327141.2, 4886919.5,     116.2,     116.2,       1.0);
    ( 327141.2, 4885980.5,     118.7,     118.7,       1.0);         (
326146.1, 4897246.5,      85.8,      85.8,       1.0);
    ( 326146.1, 4896308.0,      80.7,      80.7,       1.0);         (
326146.1, 4895369.0,      79.5,      79.5,       1.0);
    ( 326146.1, 4894430.0,      93.4,      93.4,       1.0);         (
326146.1, 4893491.5,      88.0,      88.0,       1.0);
    ( 326146.1, 4892552.5,      75.1,      75.1,       1.0);         (
326146.1, 4891613.5,      72.0,      72.0,       1.0);
    ( 326146.1, 4890674.5,      73.0,      73.0,       1.0);         (
326146.1, 4889736.0,      93.4,      93.4,       1.0);
    ( 326146.1, 4888797.0,     110.6,     110.6,       1.0);         (
326146.1, 4887858.0,     106.5,     117.0,       1.0);
    ( 326146.1, 4886919.5,     113.2,     113.2,       1.0);         (
326146.1, 4885980.5,     109.0,     109.0,       1.0);
    ( 325151.0, 4897246.5,      90.0,      90.0,       1.0);         (
325151.0, 4896308.0,      81.0,      81.0,       1.0);
    ( 325151.0, 4895369.0,      74.6,      78.0,       1.0);         (
325151.0, 4894430.0,      78.6,      78.6,       1.0);
    ( 325151.0, 4893491.5,      87.4,      87.4,       1.0);         (
325151.0, 4892552.5,      78.0,      78.0,       1.0);
    ( 325151.0, 4891613.5,      71.5,      71.5,       1.0);         (
325151.0, 4890674.5,      72.0,      72.0,       1.0);
    ( 325151.0, 4889736.0,      73.0,      73.0,       1.0);         (
325151.0, 4888797.0,      80.0,      80.0,       1.0);
    ( 325151.0, 4887858.0,      97.4,      97.4,       1.0);         (
325151.0, 4886919.5,      95.4,     116.0,       1.0);
    ( 325151.0, 4885980.5,     112.0,     112.0,       1.0);         (
324155.9, 4897246.5,      92.9,      92.9,       1.0);
    ( 324155.9, 4896308.0,      85.3,      85.3,       1.0);         (
324155.9, 4895369.0,      79.0,      79.0,       1.0);
    ( 324155.9, 4894430.0,      78.0,      78.0,       1.0);         (
324155.9, 4893491.5,      76.5,      76.5,       1.0);
    ( 324155.9, 4892552.5,      82.2,      82.2,       1.0);         (
324155.9, 4891613.5,      74.0,      74.0,       1.0);
    ( 324155.9, 4890674.5,      73.0,      73.0,       1.0);         (
324155.9, 4889736.0,      82.6,      82.6,       1.0);
    ( 324155.9, 4888797.0,      74.8,      74.8,       1.0);         (
324155.9, 4887858.0,      78.5,      78.5,       1.0);
    ( 324155.9, 4886919.5,      88.0,      88.0,       1.0);         (
324155.9, 4885980.5,     106.2,     106.2,       1.0);
    ( 323160.8, 4897246.5,      77.2,      79.0,       1.0);         (
323160.8, 4896308.0,      90.0,      90.0,       1.0);
    ( 323160.8, 4895369.0,      83.0,      83.0,       1.0);         (
323160.8, 4894430.0,      78.0,      78.0,       1.0);
    ( 323160.8, 4893491.5,      76.0,      76.0,       1.0);         (
323160.8, 4892552.5,      73.9,      73.9,       1.0);
    ( 323160.8, 4891613.5,      75.8,      75.8,       1.0);         (
323160.8, 4890674.5,      73.0,      73.0,       1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  33
CONC                         DFAULT ELEV   FLGPOL



                                                 *** DISCRETE CARTESIAN
RECEPTORS ***
                                               (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                                (METERS)

    ( 323160.8, 4889736.0,      74.0,      74.0,       1.0);         (
323160.8, 4888797.0,      88.9,      88.9,       1.0);
    ( 323160.8, 4887858.0,      77.0,      77.0,       1.0);         (
323160.8, 4886919.5,      80.0,      80.0,       1.0);
    ( 323160.8, 4885980.5,      90.0,      90.0,       1.0);         (
322165.7, 4897246.5,      98.1,      98.1,       1.0);
    ( 322165.7, 4896308.0,      78.2,      78.2,       1.0);         (
322165.7, 4895369.0,      86.0,      86.0,       1.0);
    ( 322165.7, 4894430.0,      79.0,      79.0,       1.0);         (
322165.7, 4893491.5,      74.0,      74.0,       1.0);
    ( 322165.7, 4892552.5,      73.0,      73.0,       1.0);         (
322165.7, 4891613.5,      73.0,      73.0,       1.0);
    ( 322165.7, 4890674.5,      73.0,      73.0,       1.0);         (
322165.7, 4889736.0,      73.0,      73.0,       1.0);
    ( 322165.7, 4888797.0,      85.2,      85.2,       1.0);         (
322165.7, 4887858.0,      86.0,      86.0,       1.0);
    ( 322165.7, 4886919.5,      79.0,      79.0,       1.0);         (
322165.7, 4885980.5,      79.8,      79.8,       1.0);
    ( 321170.6, 4897246.5,     107.2,     107.2,       1.0);         (
321170.6, 4896308.0,      88.5,      88.5,       1.0);
    ( 321170.6, 4895369.0,      75.2,      75.2,       1.0);         (
321170.6, 4894430.0,      79.3,      79.3,       1.0);
    ( 321170.6, 4893491.5,      74.0,      74.0,       1.0);         (
321170.6, 4892552.5,      72.1,      72.1,       1.0);
    ( 321170.6, 4891613.5,      72.0,      72.0,       1.0);         (
321170.6, 4890674.5,      72.0,      72.0,       1.0);
    ( 321170.6, 4889736.0,      73.0,      73.0,       1.0);         (
321170.6, 4888797.0,      82.0,      82.0,       1.0);
    ( 321170.6, 4887858.0,      87.0,      87.0,       1.0);         (
321170.6, 4886919.5,      88.5,      88.5,       1.0);
    ( 321170.6, 4885980.5,      74.3,      74.3,       1.0);         (
320175.5, 4897246.5,     100.2,     100.2,       1.0);
    ( 320175.5, 4896308.0,      92.6,      92.6,       1.0);         (
320175.5, 4895369.0,      88.0,      88.0,       1.0);
    ( 320175.5, 4894430.0,      75.0,      75.0,       1.0);         (
320175.5, 4893491.5,      74.3,      74.3,       1.0);
    ( 320175.5, 4892552.5,      72.1,      72.1,       1.0);         (
320175.5, 4891613.5,      71.0,      71.0,       1.0);
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    ( 320175.5, 4890674.5,      71.0,      71.0,       1.0);          (
320175.5, 4889736.0,      73.4,      73.4,       1.0);
    ( 320175.5, 4888797.0,      86.0,      86.0,       1.0);          (
320175.5, 4887858.0,      86.7,      86.7,       1.0);
    ( 320175.5, 4886919.5,      86.0,      86.0,       1.0);          (
320175.5, 4885980.5,      82.5,      82.5,       1.0);
    ( 319180.5, 4897246.5,     105.0,     105.0,       1.0);          (
319180.5, 4896308.0,     100.0,     100.0,       1.0);
    ( 319180.5, 4895369.0,      90.0,      90.0,       1.0);          (
319180.5, 4894430.0,      77.0,      77.0,       1.0);
    ( 319180.5, 4893491.5,      74.0,      74.0,       1.0);          (
319180.5, 4892552.5,      72.0,      72.0,       1.0);
    ( 319180.5, 4891613.5,      73.0,      73.0,       1.0);          (
319180.5, 4890674.5,      74.0,      74.0,       1.0);
    ( 319180.5, 4889736.0,      75.0,      75.0,       1.0);          (
319180.5, 4888797.0,      75.0,      75.0,       1.0);
    ( 319180.5, 4887858.0,      82.0,      82.0,       1.0);          (
319180.5, 4886919.5,      85.0,      85.0,       1.0);
    ( 319180.5, 4885980.5,      85.0,      85.0,       1.0);          (
318185.4, 4897246.5,     103.0,     103.0,       1.0);
    ( 318185.4, 4896308.0,     101.1,     101.1,       1.0);          (
318185.4, 4895369.0,      98.0,      98.0,       1.0);
    ( 318185.4, 4894430.0,      80.9,      80.9,       1.0);          (
318185.4, 4893491.5,      79.0,      79.0,       1.0);
    ( 318185.4, 4892552.5,      74.0,      74.0,       1.0);          (
318185.4, 4891613.5,      73.0,      73.0,       1.0);
    ( 318185.4, 4890674.5,      73.0,      73.0,       1.0);          (
318185.4, 4889736.0,      74.0,      74.0,       1.0);
    ( 318185.4, 4888797.0,      74.2,      74.2,       1.0);          (
318185.4, 4887858.0,      74.1,      74.1,       1.0);
    ( 318185.4, 4886919.5,      80.2,      80.2,       1.0);          (
318185.4, 4885980.5,      88.0,      88.0,       1.0);
    ( 329451.5, 4898185.5,      94.7,      94.7,       1.0);          (
329451.5, 4899180.5,      97.0,      97.0,       1.0);
    ( 329451.5, 4900175.5,     101.0,     101.0,       1.0);          (
329451.5, 4901171.0,     105.0,     105.0,       1.0);
    ( 329451.5, 4902166.0,     105.0,     105.0,       1.0);          (
329451.5, 4903161.0,      80.8,     116.0,       1.0);
    ( 329451.5, 4904156.0,     112.9,     112.9,       1.0);          (
329451.5, 4905151.0,     120.3,     120.3,       1.0);
    ( 329451.5, 4906146.0,     137.1,     137.1,       1.0);          (
329451.5, 4907141.5,     160.0,     160.0,       1.0);
    ( 329451.5, 4908136.5,     155.6,     155.6,       1.0);          (
329451.5, 4909131.5,     148.9,     148.9,       1.0);
    ( 329451.5, 4910126.5,     159.9,     159.9,       1.0);          (
329451.5, 4911121.5,     154.3,     154.3,       1.0);
    ( 329451.5, 4912117.0,     160.0,     160.0,       1.0);          (
329451.5, 4913112.0,     169.7,     169.7,       1.0);
    ( 329451.5, 4914107.0,     159.0,     159.0,       1.0);          (
329451.5, 4915102.0,     164.0,     164.0,       1.0);
    ( 329451.5, 4916097.0,     170.9,     170.9,       1.0);          (
329451.5, 4917092.0,     162.9,     162.9,       1.0);
```

```
                                                        *** DISCRETE CARTESIAN
RECEPTORS ***
                                                      (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                                      (METERS)

    ( 329451.5, 4918087.5,     156.0,     156.0,       1.0);         (
329451.5, 4919082.5,     170.0,     170.0,       1.0);
    ( 329451.5, 4920077.5,     170.1,     170.1,       1.0);         (
328512.7, 4898185.5,      87.5,      87.5,       1.0);
    ( 328512.7, 4899180.5,      91.6,      91.6,       1.0);         (
328512.7, 4900175.5,      97.6,      97.6,       1.0);
    ( 328512.7, 4901171.0,     104.6,     104.6,       1.0);         (
328512.7, 4902166.0,      95.7,      95.7,       1.0);
    ( 328512.7, 4903161.0,     108.6,     108.6,       1.0);         (
328512.7, 4904156.0,     120.6,     120.6,       1.0);
    ( 328512.7, 4905151.0,     138.4,     138.4,       1.0);         (
328512.7, 4906146.0,     145.5,     145.5,       1.0);
    ( 328512.7, 4907141.5,     146.0,     146.0,       1.0);         (
328512.7, 4908136.5,     143.0,     143.0,       1.0);
    ( 328512.7, 4909131.5,     145.0,     145.0,       1.0);         (
328512.7, 4910126.5,     155.0,     155.0,       1.0);
    ( 328512.7, 4911121.5,     161.0,     161.0,       1.0);         (
328512.7, 4912117.0,     163.0,     163.0,       1.0);
    ( 328512.7, 4913112.0,     160.0,     160.0,       1.0);         (
328512.7, 4914107.0,     169.1,     169.1,       1.0);
    ( 328512.7, 4915102.0,     162.4,     162.4,       1.0);         (
328512.7, 4916097.0,     160.0,     160.0,       1.0);
    ( 328512.7, 4917092.0,     159.6,     159.6,       1.0);         (
328512.7, 4918087.5,     168.9,     168.9,       1.0);
    ( 328512.7, 4919082.5,     165.8,     165.8,       1.0);         (
328512.7, 4920077.5,     174.0,     174.0,       1.0);
    ( 327573.8, 4898185.5,      85.1,      85.1,       1.0);         (
327573.8, 4899180.5,     100.1,     100.1,       1.0);
    ( 327573.8, 4900175.5,     106.0,     106.0,       1.0);         (
327573.8, 4901171.0,      91.1,      91.1,       1.0);
    ( 327573.8, 4902166.0,     108.0,     108.0,       1.0);         (
327573.8, 4903161.0,     119.0,     119.0,       1.0);
    ( 327573.8, 4904156.0,     129.9,     129.9,       1.0);         (
327573.8, 4905151.0,     135.0,     135.0,       1.0);
    ( 327573.8, 4906146.0,     146.3,     146.3,       1.0);         (
327573.8, 4907141.5,     146.1,     146.1,       1.0);
    ( 327573.8, 4908136.5,     145.0,     145.0,       1.0);         (
327573.8, 4909131.5,     145.0,     145.0,       1.0);
```

```
    ( 327573.8, 4910126.5,     159.9,     159.9,       1.0);          (
327573.8, 4911121.5,     169.8,     169.8,       1.0);
    ( 327573.8, 4912117.0,     174.9,     174.9,       1.0);          (
327573.8, 4913112.0,     171.8,     171.8,       1.0);
    ( 327573.8, 4914107.0,     156.1,     156.1,       1.0);          (
327573.8, 4915102.0,     165.0,     165.0,       1.0);
    ( 327573.8, 4916097.0,     166.0,     166.0,       1.0);          (
327573.8, 4917092.0,     153.2,     161.0,       1.0);
    ( 327573.8, 4918087.5,     159.0,     159.0,       1.0);          (
327573.8, 4919082.5,     164.6,     164.6,       1.0);
    ( 327573.8, 4920077.5,     174.6,     174.6,       1.0);          (
326635.0, 4898185.5,      90.0,      90.0,       1.0);
    ( 326635.0, 4899180.5,     102.0,     102.0,       1.0);          (
326635.0, 4900175.5,      78.4,      78.4,       1.0);
    ( 326635.0, 4901171.0,     100.1,     100.1,       1.0);          (
326635.0, 4902166.0,     115.0,     115.0,       1.0);
    ( 326635.0, 4903161.0,     126.1,     126.1,       1.0);          (
326635.0, 4904156.0,     145.1,     145.1,       1.0);
    ( 326635.0, 4905151.0,     142.0,     142.0,       1.0);          (
326635.0, 4906146.0,     138.8,     138.8,       1.0);
    ( 326635.0, 4907141.5,     141.4,     141.4,       1.0);          (
326635.0, 4908136.5,     142.1,     142.1,       1.0);
    ( 326635.0, 4909131.5,     147.0,     147.0,       1.0);          (
326635.0, 4910126.5,     159.9,     159.9,       1.0);
    ( 326635.0, 4911121.5,     162.2,     162.2,       1.0);          (
326635.0, 4912117.0,     169.2,     169.2,       1.0);
    ( 326635.0, 4913112.0,     154.0,     154.0,       1.0);          (
326635.0, 4914107.0,     165.2,     165.2,       1.0);
    ( 326635.0, 4915102.0,     160.2,     160.2,       1.0);          (
326635.0, 4916097.0,     143.3,     159.0,       1.0);
    ( 326635.0, 4917092.0,     154.1,     154.1,       1.0);          (
326635.0, 4918087.5,     160.2,     160.2,       1.0);
    ( 326635.0, 4919082.5,     164.1,     164.1,       1.0);          (
326635.0, 4920077.5,     164.0,     164.0,       1.0);
    ( 325696.2, 4898185.5,      94.8,      94.8,       1.0);          (
325696.2, 4899180.5,      81.1,      89.0,       1.0);
    ( 325696.2, 4900175.5,      98.8,      98.8,       1.0);          (
325696.2, 4901171.0,     108.2,     108.2,       1.0);
    ( 325696.2, 4902166.0,     126.0,     126.0,       1.0);          (
325696.2, 4903161.0,     144.5,     144.5,       1.0);
    ( 325696.2, 4904156.0,     143.9,     143.9,       1.0);          (
325696.2, 4905151.0,     140.0,     140.0,       1.0);
    ( 325696.2, 4906146.0,     138.5,     138.5,       1.0);          (
325696.2, 4907141.5,     142.0,     142.0,       1.0);
    ( 325696.2, 4908136.5,     150.5,     150.5,       1.0);          (
325696.2, 4909131.5,     154.0,     154.0,       1.0);
    ( 325696.2, 4910126.5,     161.7,     161.7,       1.0);          (
325696.2, 4911121.5,     157.5,     157.5,       1.0);
    ( 325696.2, 4912117.0,     149.0,     149.0,       1.0);          (
325696.2, 4913112.0,     149.4,     154.0,       1.0);
    ( 325696.2, 4914107.0,     133.0,     133.0,       1.0);          (
325696.2, 4915102.0,     134.0,     134.0,       1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  35
CONC                        DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 325696.2, 4916097.0,     151.4,     151.4,       1.0);         (
325696.2, 4917092.0,     155.1,     155.1,       1.0);
    ( 325696.2, 4918087.5,     160.0,     160.0,       1.0);         (
325696.2, 4919082.5,     165.7,     165.7,       1.0);
    ( 325696.2, 4920077.5,     171.0,     171.0,       1.0);         (
324757.3, 4898185.5,      94.7,      94.7,       1.0);
    ( 324757.3, 4899180.5,     100.0,     100.0,       1.0);         (
324757.3, 4900175.5,     113.1,     113.1,       1.0);
    ( 324757.3, 4901171.0,     112.3,     112.3,       1.0);         (
324757.3, 4902166.0,     129.3,     129.3,       1.0);
    ( 324757.3, 4903161.0,     133.0,     133.0,       1.0);         (
324757.3, 4904156.0,     142.9,     142.9,       1.0);
    ( 324757.3, 4905151.0,     140.0,     140.0,       1.0);         (
324757.3, 4906146.0,     145.1,     145.1,       1.0);
    ( 324757.3, 4907141.5,     144.8,     144.8,       1.0);         (
324757.3, 4908136.5,     154.0,     154.0,       1.0);
    ( 324757.3, 4909131.5,     156.2,     156.2,       1.0);         (
324757.3, 4910126.5,     161.9,     161.9,       1.0);
    ( 324757.3, 4911121.5,     162.1,     162.1,       1.0);         (
324757.3, 4912117.0,     158.8,     158.8,       1.0);
    ( 324757.3, 4913112.0,     133.7,     167.0,       1.0);         (
324757.3, 4914107.0,     132.8,     132.8,       1.0);
    ( 324757.3, 4915102.0,     153.7,     153.7,       1.0);         (
324757.3, 4916097.0,     160.7,     160.7,       1.0);
    ( 324757.3, 4917092.0,     163.0,     163.0,       1.0);         (
324757.3, 4918087.5,     164.0,     164.0,       1.0);
    ( 324757.3, 4919082.5,     168.3,     168.3,       1.0);         (
324757.3, 4920077.5,     172.8,     172.8,       1.0);
    ( 323818.4, 4898185.5,      90.0,      90.0,       1.0);         (
323818.4, 4899180.5,     113.0,     113.0,       1.0);
    ( 323818.4, 4900175.5,     124.0,     124.0,       1.0);         (
323818.4, 4901171.0,     116.0,     116.0,       1.0);
    ( 323818.4, 4902166.0,     131.5,     131.5,       1.0);         (
323818.4, 4903161.0,     138.0,     138.0,       1.0);
    ( 323818.4, 4904156.0,     142.1,     142.1,       1.0);         (
323818.4, 4905151.0,     148.0,     148.0,       1.0);
    ( 323818.4, 4906146.0,     144.2,     144.2,       1.0);         (
323818.4, 4907141.5,     147.9,     147.9,       1.0);
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    ( 323818.4, 4908136.5,     155.0,     155.0,       1.0);         (
323818.4, 4909131.5,     160.0,     160.0,       1.0);
    ( 323818.4, 4910126.5,     160.0,     160.0,       1.0);         (
323818.4, 4911121.5,     156.1,     156.1,       1.0);
    ( 323818.4, 4912117.0,     128.7,     128.7,       1.0);         (
323818.4, 4913112.0,     144.4,     144.4,       1.0);
    ( 323818.4, 4914107.0,     136.8,     149.0,       1.0);         (
323818.4, 4915102.0,     156.5,     156.5,       1.0);
    ( 323818.4, 4916097.0,     163.0,     163.0,       1.0);         (
323818.4, 4917092.0,     160.0,     160.0,       1.0);
    ( 323818.4, 4918087.5,     165.0,     165.0,       1.0);         (
323818.4, 4919082.5,     171.0,     171.0,       1.0);
    ( 323818.4, 4920077.5,     174.0,     174.0,       1.0);         (
322879.6, 4898185.5,     102.1,     102.1,       1.0);
    ( 322879.6, 4899180.5,     119.0,     119.0,       1.0);         (
322879.6, 4900175.5,     120.0,     120.0,       1.0);
    ( 322879.6, 4901171.0,     120.0,     120.0,       1.0);         (
322879.6, 4902166.0,     130.0,     130.0,       1.0);
    ( 322879.6, 4903161.0,     135.0,     135.0,       1.0);         (
322879.6, 4904156.0,     128.7,     128.7,       1.0);
    ( 322879.6, 4905151.0,     140.0,     140.0,       1.0);         (
322879.6, 4906146.0,     145.0,     145.0,       1.0);
    ( 322879.6, 4907141.5,     153.4,     153.4,       1.0);         (
322879.6, 4908136.5,     160.0,     160.0,       1.0);
    ( 322879.6, 4909131.5,     161.0,     161.0,       1.0);         (
322879.6, 4910126.5,     156.7,     156.7,       1.0);
    ( 322879.6, 4911121.5,     135.5,     161.0,       1.0);         (
322879.6, 4912117.0,     138.5,     138.5,       1.0);
    ( 322879.6, 4913112.0,     139.0,     139.0,       1.0);         (
322879.6, 4914107.0,     152.9,     152.9,       1.0);
    ( 322879.6, 4915102.0,     145.4,     145.4,       1.0);         (
322879.6, 4916097.0,     139.6,     145.0,       1.0);
    ( 322879.6, 4917092.0,     145.6,     145.6,       1.0);         (
322879.6, 4918087.5,     146.1,     163.0,       1.0);
    ( 322879.6, 4919082.5,     155.7,     155.7,       1.0);         (
322879.6, 4920077.5,     152.5,     166.0,       1.0);
    ( 321940.8, 4898185.5,     108.0,     108.0,       1.0);         (
321940.8, 4899180.5,     112.0,     112.0,       1.0);
    ( 321940.8, 4900175.5,     115.0,     115.0,       1.0);         (
321940.8, 4901171.0,     121.0,     121.0,       1.0);
    ( 321940.8, 4902166.0,     128.7,     128.7,       1.0);         (
321940.8, 4903161.0,     135.4,     135.4,       1.0);
    ( 321940.8, 4904156.0,     129.3,     129.3,       1.0);         (
321940.8, 4905151.0,     138.0,     138.0,       1.0);
    ( 321940.8, 4906146.0,     142.0,     142.0,       1.0);         (
321940.8, 4907141.5,     152.0,     152.0,       1.0);
    ( 321940.8, 4908136.5,     155.4,     155.4,       1.0);         (
321940.8, 4909131.5,     143.4,     143.4,       1.0);
    ( 321940.8, 4910126.5,     151.0,     151.0,       1.0);         (
321940.8, 4911121.5,     142.2,     142.2,       1.0);
    ( 321940.8, 4912117.0,     138.0,     138.0,       1.0);         (
321940.8, 4913112.0,     140.2,     140.2,       1.0);
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  36
CONC                        DFAULT ELEV   FLGPOL


                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 321940.8, 4914107.0,     154.0,     154.0,       1.0);         (
321940.8, 4915102.0,     145.7,     145.7,       1.0);
    ( 321940.8, 4916097.0,     144.8,     144.8,       1.0);         (
321940.8, 4917092.0,     158.0,     158.0,       1.0);
    ( 321940.8, 4918087.5,     157.6,     157.6,       1.0);         (
321940.8, 4919082.5,     165.0,     165.0,       1.0);
    ( 321940.8, 4920077.5,     172.4,     172.4,       1.0);         (
321001.9, 4898185.5,     104.9,     104.9,       1.0);
    ( 321001.9, 4899180.5,     115.0,     115.0,       1.0);         (
321001.9, 4900175.5,     119.0,     119.0,       1.0);
    ( 321001.9, 4901171.0,     120.0,     120.0,       1.0);         (
321001.9, 4902166.0,     124.6,     124.6,       1.0);
    ( 321001.9, 4903161.0,     123.1,     123.1,       1.0);         (
321001.9, 4904156.0,     130.0,     130.0,       1.0);
    ( 321001.9, 4905151.0,     135.0,     135.0,       1.0);         (
321001.9, 4906146.0,     145.4,     145.4,       1.0);
    ( 321001.9, 4907141.5,     154.0,     154.0,       1.0);         (
321001.9, 4908136.5,     140.1,     150.0,       1.0);
    ( 321001.9, 4909131.5,     147.8,     147.8,       1.0);         (
321001.9, 4910126.5,     131.2,     131.2,       1.0);
    ( 321001.9, 4911121.5,     135.1,     135.1,       1.0);         (
321001.9, 4912117.0,     140.0,     140.0,       1.0);
    ( 321001.9, 4913112.0,     156.0,     156.0,       1.0);         (
321001.9, 4914107.0,     148.5,     148.5,       1.0);
    ( 321001.9, 4915102.0,     149.8,     149.8,       1.0);         (
321001.9, 4916097.0,     155.9,     155.9,       1.0);
    ( 321001.9, 4917092.0,     160.0,     160.0,       1.0);         (
321001.9, 4918087.5,     166.0,     166.0,       1.0);
    ( 321001.9, 4919082.5,     165.0,     165.0,       1.0);         (
321001.9, 4920077.5,     177.1,     177.1,       1.0);
    ( 320063.1, 4898185.5,     109.7,     109.7,       1.0);         (
320063.1, 4899180.5,     119.0,     119.0,       1.0);
    ( 320063.1, 4900175.5,     120.0,     120.0,       1.0);         (
320063.1, 4901171.0,     120.3,     120.3,       1.0);
    ( 320063.1, 4902166.0,     116.8,     124.0,       1.0);         (
320063.1, 4903161.0,     131.0,     131.0,       1.0);
    ( 320063.1, 4904156.0,     130.0,     130.0,       1.0);         (
320063.1, 4905151.0,     140.0,     140.0,       1.0);
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    ( 320063.1, 4906146.0,     146.0,     146.0,         1.0);          (
320063.1, 4907141.5,     145.6,     145.6,         1.0);
    ( 320063.1, 4908136.5,     131.0,     131.0,         1.0);          (
320063.1, 4909131.5,     141.8,     141.8,         1.0);
    ( 320063.1, 4910126.5,     124.8,     124.8,         1.0);          (
320063.1, 4911121.5,     129.5,     129.5,         1.0);
    ( 320063.1, 4912117.0,     141.0,     141.0,         1.0);          (
320063.1, 4913112.0,     149.0,     149.0,         1.0);
    ( 320063.1, 4914107.0,     149.2,     149.2,         1.0);          (
320063.1, 4915102.0,     149.4,     149.4,         1.0);
    ( 320063.1, 4916097.0,     159.0,     159.0,         1.0);          (
320063.1, 4917092.0,     163.0,     163.0,         1.0);
    ( 320063.1, 4918087.5,     166.0,     166.0,         1.0);          (
320063.1, 4919082.5,     170.0,     170.0,         1.0);
    ( 320063.1, 4920077.5,     175.8,     175.8,         1.0);          (
319124.2, 4898185.5,     108.5,     108.5,         1.0);
    ( 319124.2, 4899180.5,     120.0,     120.0,         1.0);          (
319124.2, 4900175.5,     117.9,     117.9,         1.0);
    ( 319124.2, 4901171.0,     115.2,     115.2,         1.0);          (
319124.2, 4902166.0,     131.0,     131.0,         1.0);
    ( 319124.2, 4903161.0,     136.7,     136.7,         1.0);          (
319124.2, 4904156.0,     135.0,     135.0,         1.0);
    ( 319124.2, 4905151.0,     140.0,     140.0,         1.0);          (
319124.2, 4906146.0,     147.0,     147.0,         1.0);
    ( 319124.2, 4907141.5,     144.3,     144.3,         1.0);          (
319124.2, 4908136.5,     119.0,     127.0,         1.0);
    ( 319124.2, 4909131.5,     127.8,     130.0,         1.0);          (
319124.2, 4910126.5,     123.1,     123.1,         1.0);
    ( 319124.2, 4911121.5,     145.0,     145.0,         1.0);          (
319124.2, 4912117.0,     149.5,     149.5,         1.0);
    ( 319124.2, 4913112.0,     149.0,     149.0,         1.0);          (
319124.2, 4914107.0,     155.8,     155.8,         1.0);
    ( 319124.2, 4915102.0,     152.1,     152.1,         1.0);          (
319124.2, 4916097.0,     161.0,     161.0,         1.0);
    ( 319124.2, 4917092.0,     164.5,     164.5,         1.0);          (
319124.2, 4918087.5,     162.2,     162.2,         1.0);
    ( 319124.2, 4919082.5,     169.5,     169.5,         1.0);          (
319124.2, 4920077.5,     174.7,     174.7,         1.0);
    ( 318185.4, 4898185.5,     107.9,     107.9,         1.0);          (
318185.4, 4899180.5,     110.2,     110.2,         1.0);
    ( 318185.4, 4900175.5,     112.2,     112.2,         1.0);          (
318185.4, 4901171.0,     125.0,     125.0,         1.0);
    ( 318185.4, 4902166.0,     124.0,     124.0,         1.0);          (
318185.4, 4903161.0,     137.9,     137.9,         1.0);
    ( 318185.4, 4904156.0,     140.0,     140.0,         1.0);          (
318185.4, 4905151.0,     142.0,     142.0,         1.0);
    ( 318185.4, 4906146.0,     135.0,     135.0,         1.0);          (
318185.4, 4907141.5,     113.1,     113.1,         1.0);
    ( 318185.4, 4908136.5,     114.0,     114.0,         1.0);          (
318185.4, 4909131.5,     135.0,     135.0,         1.0);
    ( 318185.4, 4910126.5,     144.9,     144.9,         1.0);          (
318185.4, 4911121.5,     145.1,     145.1,         1.0);
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  37
CONC                        DFAULT ELEV   FLGPOL



                                            *** DISCRETE CARTESIAN
RECEPTORS ***
                                          (X-COORD, Y-COORD, ZELEV,
ZHILL, ZFLAG)
                                                          (METERS)

    ( 318185.4, 4912117.0,     144.3,     156.0,       1.0);         (
318185.4, 4913112.0,     145.7,     145.7,       1.0);
    ( 318185.4, 4914107.0,     160.6,     160.6,       1.0);         (
318185.4, 4915102.0,     150.9,     150.9,       1.0);
    ( 318185.4, 4916097.0,     156.7,     156.7,       1.0);         (
318185.4, 4917092.0,     159.0,     159.0,       1.0);
    ( 318185.4, 4918087.5,     164.0,     164.0,       1.0);         (
318185.4, 4919082.5,     171.4,     171.4,       1.0);
    ( 318185.4, 4920077.5,     175.1,     175.1,       1.0);
```

```
                                           *** METEOROLOGICAL DAYS
SELECTED FOR PROCESSING ***
                                                              (1=YES;
0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1
1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1

                      METEOROLOGICAL DATA PROCESSED BETWEEN START DATE:
0   0  0  0
                                                       AND END DATE:
9999  99 99 24

               NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO
DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.



                                     *** UPPER BOUND OF FIRST THROUGH FIFTH
WIND SPEED CATEGORIES ***
                                                        (METERS/SEC)

                                                1.54,   3.09,   5.14,
8.23,  10.80,
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  39
CONC                        DFAULT ELEV   FLGPOL


                                   *** UP TO THE FIRST 24 HOURS OF
METEOROLOGICAL DATA ***

  Surface file:   MASSENCR.SFC
Met Version:  06341
  Profile file:   MASSENCR.PFL
  Surface format:
(3(I2,1X),I3,1X,I2,1X,F6.1,1X,3(F6.3,1X),2(F5.0,1X),F8.1,1X,F6.3,1X,2(F6.
2,1X),F7.2,1X,F5.0,3(1X,F6.1))
  Profile format:
(4(I2,1X),F6.1,1X,I1,1X,F5.0,1X,F7.2,1X,F7.2,1X,F6.1,1X,F7.2)
  Surface station no.:    72622                  Upper air station no.:
725180
                 Name: MASSENA                                     Name:
ALBANY
                 Year:   1996                                      Year:
1996

First 24 hours of scalar data
YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0
BOWEN ALBEDO  REF WS   WD     HT  REF TA     HT
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
96 01 01   1 01  -37.8  0.361 -9.000 -9.000 -999.  498.    112.2  0.09
1.50   1.00    4.60   31.   10.0  266.4    2.0
96 01 01   1 02  -26.3  0.322 -9.000 -9.000 -999.  421.    114.9  0.09
1.50   1.00    4.10   28.   10.0  265.9    2.0
96 01 01   1 03  -46.3  0.404 -9.000 -9.000 -999.  591.    129.0  0.09
1.50   1.00    5.10   74.   10.0  265.9    2.0
96 01 01   1 04  -53.5  0.508 -9.000 -9.000 -999.  832.    221.2  0.09
1.50   1.00    6.20   73.   10.0  264.9    2.0
96 01 01   1 05  -46.6  0.404 -9.000 -9.000 -999.  598.    128.1  0.09
1.50   1.00    5.10   63.   10.0  264.2    2.0
96 01 01   1 06  -60.8  0.504 -9.000 -9.000 -999.  823.    190.4  0.09
1.50   1.00    6.20   62.   10.0  263.1    2.0
96 01 01   1 07  -48.6  0.402 -9.000 -9.000 -999.  594.    121.0  0.09
1.50   1.00    5.10   65.   10.0  262.5    2.0
96 01 01   1 08  -49.0  0.402 -9.000 -9.000 -999.  586.    119.7  0.09
1.50   1.00    5.10   63.   10.0  261.4    2.0
96 01 01   1 09  -43.7  0.407 -9.000 -9.000 -999.  596.    139.0  0.09
1.50   0.80    5.10   47.   10.0  260.9    2.0
96 01 01   1 10  -23.9  0.422 -9.000 -9.000 -999.  631.    284.0  0.09
1.50   0.70    5.10   51.   10.0  262.0    2.0
96 01 01   1 11    0.8  0.439  0.081  0.008   22.  668.  -8888.0  0.09
1.50   0.66    5.10   34.   10.0  261.4    2.0
```

```
96 01 01   1 12   10.5  0.536  0.390  0.009  203.  902.  -1321.6  0.09
1.50   0.64    6.20   46.   10.0  261.4    2.0
96 01 01   1 13   11.0  0.443  0.454  0.008  305.  685.   -712.4  0.09
1.50   0.64    5.10   33.   10.0  260.9    2.0
96 01 01   1 14    5.2  0.356  0.356  0.007  310.  493.   -779.6  0.09
1.50   0.66    4.10   49.   10.0  259.9    2.0
96 01 01   1 15   -5.3  0.209 -9.000 -9.000 -999.  232.    154.1  0.09
1.50   0.69    2.60   62.   10.0  258.1    2.0
96 01 01   1 16  -20.1  0.214 -9.000 -9.000 -999.  228.     44.0  0.09
1.50   0.78    3.10   64.   10.0  258.1    2.0
96 01 01   1 17   -1.8  0.043 -9.000 -9.000 -999.   74.      3.9  0.09
1.50   1.00    1.00   61.   10.0  257.5    2.0
96 01 01   1 18  -12.7  0.112 -9.000 -9.000 -999.   86.      9.9  0.09
1.50   1.00    2.60   47.   10.0  257.0    2.0
96 01 01   1 19   -1.9  0.043 -9.000 -9.000 -999.   22.      3.8  0.09
1.50   1.00    1.00  354.   10.0  257.5    2.0
96 01 01   1 20  -38.9  0.359 -9.000 -9.000 -999.  495.    107.6  0.09
1.50   1.00    4.60    7.   10.0  257.5    2.0
96 01 01   1 21  -31.8  0.314 -9.000 -9.000 -999.  405.     87.8  0.09
1.50   1.00    4.10   20.   10.0  258.1    2.0
96 01 01   1 22   -1.8  0.043 -9.000 -9.000 -999.  200.      3.9  0.09
1.50   1.00    1.00   12.   10.0  255.3    2.0
96 01 01   1 23   -1.8  0.043 -9.000 -9.000 -999.   59.      4.0  0.09
1.50   1.00    1.00  300.   10.0  253.8    2.0
96 01 01   1 24  -46.0  0.405 -9.000 -9.000 -999.  592.    130.2  0.09
1.50   1.00    5.10   30.   10.0  258.1    2.0
```

First hour of profile data

```
YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
96 01 01 01   10.0 1   31.    4.60   266.5   99.0  -99.00  -99.00
```

F indicates top of profile (=1) or below (=0)

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  40
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335827.25   4895852.00        1.24831  (97121005)
334869.28   4898775.00        2.52586  (96021508)
       333830.09   4898596.50        2.52626  (97012705)
331784.25   4898271.50        1.59063  (98021021)
       330793.78   4898076.50        1.32534  (00092901)
327286.56   4897524.50        0.72718  (96050403)
       321441.25   4896550.50        0.34771  (97111803)
321717.28   4895576.00        0.38258  (97051502)
       320954.12   4895349.00        0.31175  (97051502)
320613.16   4896404.50        0.40432  (97111803)
       319444.09   4896096.00        0.42226  (97013003)
320385.84   4893238.00        0.37328  (98121824)
       321733.50   4894017.50        0.38936  (98121824)
323373.44   4892653.50        0.39115  (99051601)
       322983.75   4891306.00        0.42824  (98021106)
324558.75   4891776.50        0.42921  (00010105)
       325354.38   4891809.00        0.43453  (97111801)
326702.03   4892442.50        0.59593  (00011507)
       328212.09   4891874.00        0.61396  (96021503)
329673.41   4892247.50        0.68438  (98021506)
       332904.59   4893287.00        0.85095  (98120502)
334842.38   4895521.50        1.32098  (96123120)
       335177.12   4894613.50        0.96531  (97021421)
334985.38   4902780.50       71.65093  (98021106)
       334985.38   4902800.50       76.45827  (96010723)
334985.38   4902820.00       82.53667  (96010723)
       334985.38   4902840.00       78.60298  (97010216)
334985.38   4902860.00       95.45117  (98012624)
       334985.38   4902880.00       82.89713  (96011202)
334985.38   4902899.50       94.53665  (97013003)
       334985.38   4902919.50      100.57884  (00012505)
334985.38   4902939.50      111.16580  (97010108)
```

```
       334985.38   4902959.50      109.74433  (00121520)
334985.38   4902979.00       97.66748  (97091704)
       334985.38   4902999.00      100.82657  (96121406)
334985.38   4903019.00      108.19027  (98012703)
       334985.38   4903039.00      100.87402  (98123116)
334985.38   4903058.50       94.73587  (98021602)
       334985.38   4903078.50       91.22454  (98122902)
334985.38   4903098.50       87.88965  (99121909)
       334985.38   4903118.50       84.37693  (98020620)
334985.38   4903138.00       79.90052  (00012504)
       334985.38   4903158.00       75.38717  (00012305)
334985.38   4903178.00       65.16637  (00012305)
       334985.38   4903198.00       65.61540  (96011603)
334985.38   4903217.50       63.74539  (96011603)
       334985.38   4903237.50       60.09626  (00012502)
334985.38   4903257.50       58.33067  (99020602)
       334985.38   4903277.50       52.64081  (99020602)
335005.25   4902780.50       73.29547  (98021106)
       335005.25   4902800.50       78.76855  (98021106)
335005.25   4902820.00       86.42288  (96010723)
       335005.25   4902840.00       89.33321  (96010723)
335005.25   4902860.00       94.98073  (98012624)
       335005.25   4902880.00      103.54330  (98012624)
335005.25   4902899.50       85.63634  (97013003)
       335005.25   4902919.50      114.39214  (97013003)
335005.25   4902939.50      121.98883  (00012505)
       335005.25   4902959.50      123.38963  (00121520)
335005.25   4902979.00      107.04282  (99090322)
       335005.25   4902999.00      111.89832  (96121406)
335005.25   4903019.00      118.52049  (98012703)
       335005.25   4903039.00      109.06009  (96012523)
335005.25   4903058.50      104.92935  (98021602)
       335005.25   4903078.50       99.67099  (97020823)
335005.25   4903098.50       92.10737  (99121909)
       335005.25   4903118.50       87.85602  (98021022)
335005.25   4903138.00       81.07919  (00012305)
       335005.25   4903158.00       76.37930  (00012305)
335005.25   4903178.00       69.51678  (96011603)
       335005.25   4903198.00       69.67293  (96011603)
335005.25   4903217.50       64.52072  (00012502)
       335005.25   4903237.50       62.86598  (99020602)
335005.25   4903257.50       56.91505  (99020602)
       335005.25   4903277.50       56.15841  (98020621)
335025.12   4902780.50       71.52893  (00010105)
       335025.12   4902800.50       81.15636  (98021106)
335025.12   4902820.00       87.28000  (98021106)
       335025.12   4902840.00       98.40346  (96010723)
335025.12   4902860.00       95.67249  (96010723)
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  41
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335025.12   4902880.00      114.19641  (98012624)
335025.12   4902899.50      106.25107  (96011202)
       335025.12   4902919.50      119.91774  (97013003)
335025.12   4902939.50      132.80441  (00012505)
       335025.12   4902959.50      134.14488  (00121520)
335025.12   4902979.00      120.30169  (96111605)
       335025.12   4902999.00      124.64554  (96121406)
335025.12   4903019.00      130.54065  (98012703)
       335025.12   4903039.00      121.14369  (96012523)
335025.12   4903058.50      114.42387  (98021602)
       335025.12   4903078.50      108.19550  (97020823)
335025.12   4903098.50      100.16684  (98020620)
       335025.12   4903118.50       93.00423  (00012504)
335025.12   4903138.00       86.80914  (00012305)
       335025.12   4903158.00       73.27253  (96011603)
335025.12   4903178.00       76.06226  (96011603)
       335025.12   4903198.00       69.53500  (00012502)
335025.12   4903217.50       67.92158  (99020602)
       335025.12   4903237.50       61.74037  (99020602)
335025.12   4903257.50       60.70211  (98020621)
       335025.12   4903277.50       57.81462  (98020621)
335045.00   4902780.50       82.24319  (00011507)
       335045.00   4902800.50       79.07851  (00011507)
335045.00   4902820.00       90.06104  (98021106)
       335045.00   4902840.00       97.31413  (98021106)
335045.00   4902860.00      112.27544  (96010723)
       335045.00   4902880.00      108.87538  (97010216)
335045.00   4902899.50      131.46181  (98012624)
       335045.00   4902919.50      110.20724  (97013003)
335045.00   4902939.50      141.87245  (97013003)
       335045.00   4902959.50      153.15326  (97010108)
335045.00   4902979.00      138.36105  (00121520)
```

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       335045.00   4902999.00      139.37888  (96121406)
335045.00   4903019.00      144.64066  (98012703)
       335045.00   4903039.00      133.94159  (96012523)
335045.00   4903058.50      123.60455  (98122902)
       335045.00   4903078.50      113.12926  (97020823)
335045.00   4903098.50      103.60345  (98020620)
       335045.00   4903118.50       95.52588  (00012305)
335045.00   4903138.00       86.57823  (00012305)
       335045.00   4903158.00       82.79538  (96011603)
335045.00   4903178.00       76.16637  (96011603)
       335045.00   4903198.00       73.54163  (99020602)
335045.00   4903217.50       67.18609  (99020602)
       335045.00   4903237.50       65.65519  (98020621)
335045.00   4903257.50       61.61478  (98020621)
       335045.00   4903277.50       59.19594  (00021803)
335064.88   4902780.50       81.40699  (98021021)
       335064.88   4902800.50       90.79282  (00011507)
335064.88   4902820.00       91.36024  (00011507)
       335064.88   4902840.00      101.22060  (98021106)
335064.88   4902860.00      109.47235  (98021106)
       335064.88   4902880.00      128.09804  (96010723)
335064.88   4902899.50      133.34703  (98012624)
       335064.88   4902919.50      141.57556  (98012624)
335064.88   4902939.50      157.42889  (97013003)
       335064.88   4902959.50      172.58182  (00012505)
335064.88   4902979.00      168.54431  (00121520)
       335064.88   4902999.00      156.29849  (96121406)
335064.88   4903019.00      161.27596  (98012703)
       335064.88   4903039.00      146.94016  (96012523)
335064.88   4903058.50      131.26350  (98122902)
       335064.88   4903078.50      119.55080  (98020620)
335064.88   4903098.50      109.88689  (00012504)
       335064.88   4903118.50      100.17850  (00012305)
335064.88   4903138.00       89.98900  (96011603)
       335064.88   4903158.00       85.06953  (96011603)
335064.88   4903178.00       80.17514  (00012502)
       335064.88   4903198.00       73.09478  (99020602)
335064.88   4903217.50       71.05072  (98020621)
       335064.88   4903237.50       65.75208  (98020621)
335064.88   4903257.50       63.39729  (00120901)
       335064.88   4903277.50       59.35220  (00120901)
335084.75   4902780.50       83.88516  (96012902)
       335084.75   4902800.50       91.41489  (98021021)
335084.75   4902820.00       99.30209  (00011507)
       335084.75   4902840.00      105.40826  (00011507)
335084.75   4902860.00      114.77527  (98021106)
       335084.75   4902880.00      124.38931  (98021106)
335084.75   4902899.50      145.92175  (96010723)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  42
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335084.75   4902919.50      167.06900  (98012624)
335084.75   4902939.50      148.14392  (97013003)
       335084.75   4902959.50      190.14018  (00012505)
335084.75   4902979.00      198.69250  (00121520)
       335084.75   4902999.00      175.71509  (96121406)
335084.75   4903019.00      181.01187  (98012703)
       335084.75   4903039.00      159.46832  (96012523)
335084.75   4903058.50      143.16563  (97020823)
       335084.75   4903078.50      127.08030  (98020620)
335084.75   4903098.50      113.14084  (00012305)
       335084.75   4903118.50       98.35840  (00012305)
335084.75   4903138.00       94.66624  (96011603)
       335084.75   4903158.00       87.68885  (00012502)
335084.75   4903178.00       80.07430  (99020602)
       335084.75   4903198.00       76.82533  (98020621)
335084.75   4903217.50       71.60707  (00021803)
       335084.75   4903237.50       68.14680  (00120901)
335084.75   4903257.50       62.33866  (00120901)
       335084.75   4903277.50       60.19936  (96021602)
335104.62   4902780.50       84.76743  (97012703)
       335104.62   4902800.50       92.99145  (97012703)
335104.62   4902820.00      100.11420  (98021021)
       335104.62   4902840.00      107.88963  (00011507)
335104.62   4902860.00      121.56363  (00011507)
       335104.62   4902880.00      131.50131  (98021106)
335104.62   4902899.50      147.90735  (96010723)
       335104.62   4902919.50      165.02185  (96010723)
335104.62   4902939.50      195.91896  (98012624)
       335104.62   4902959.50      216.31123  (97013003)
335104.62   4902979.00      229.36481  (97010108)
       335104.62   4902999.00      202.72133  (97091704)
335104.62   4903019.00      204.36215  (98012703)
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       335104.62   4903039.00      172.78824  (98021602)
335104.62   4903058.50      151.61403  (97020823)
       335104.62   4903078.50      131.43625  (00012504)
335104.62   4903098.50      116.47323  (00012305)
       335104.62   4903118.50      104.98652  (96011603)
335104.62   4903138.00       96.24442  (00012502)
       335104.62   4903158.00       88.06046  (99020602)
335104.62   4903178.00       83.25841  (98020621)
       335104.62   4903198.00       77.60799  (00021803)
335104.62   4903217.50       72.90672  (00120901)
       335104.62   4903237.50       67.39034  (96021602)
335104.62   4903257.50       66.15437  (96021602)
       335104.62   4903277.50       62.84675  (96021602)
335124.50   4902780.50       85.51904  (97010107)
       335124.50   4902800.50       92.79121  (98021506)
335124.50   4902820.00      101.32327  (97012703)
       335124.50   4902840.00      110.84119  (96012902)
335124.50   4902860.00      122.41202  (98021021)
       335124.50   4902880.00      139.55571  (00011507)
335124.50   4902899.50      151.22217  (98021106)
       335124.50   4902919.50      181.20978  (96010723)
335124.50   4902939.50      220.54346  (98012624)
       335124.50   4902959.50      279.29916  (97013003)
335124.50   4902979.00      311.97644  (00012505)
       335124.50   4902999.00      244.93048  (97091704)
335124.50   4903019.00      231.91031  (98012703)
       335124.50   4903039.00      189.07275  (98021602)
335124.50   4903058.50      156.87877  (98020620)
       335124.50   4903078.50      134.14902  (00012305)
335124.50   4903098.50      116.89043  (96011603)
       335124.50   4903118.50      105.94519  (00012502)
335124.50   4903138.00       97.20940  (99020602)
       335124.50   4903158.00       90.45216  (98020621)
335124.50   4903178.00       83.94019  (00021803)
       335124.50   4903198.00       77.67796  (00120901)
335124.50   4903217.50       74.65103  (96021602)
       335124.50   4903237.50       71.06934  (96021602)
335124.50   4903257.50       66.20897  (96010222)
       335124.50   4903277.50       63.29196  (96010222)
335144.38   4902780.50       84.77457  (98020622)
       335144.38   4902800.50       91.41373  (97010107)
335144.38   4902820.00      100.19543  (97010107)
       335144.38   4902840.00      109.66857  (98021506)
335144.38   4902860.00      122.84795  (97012703)
       335144.38   4902880.00      136.67274  (98021021)
335144.38   4902899.50      157.78577  (00011507)
       335144.38   4902919.50      177.00067  (98021106)
335144.38   4902939.50      253.55836  (96010723)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  43
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335144.38   4902959.50      351.43515  (98012624)
335144.38   4902979.00      405.25354  (97013003)
       335144.38   4902999.00      347.63550  (96111605)
335144.38   4903019.00      263.86328  (98012703)
       335144.38   4903039.00      199.99100  (98122902)
335144.38   4903058.50      161.87836  (98020620)
       335144.38   4903078.50      136.87985  (00012305)
335144.38   4903098.50      119.54997  (96011603)
       335144.38   4903118.50      107.52203  (99020602)
335144.38   4903138.00       98.75018  (98020621)
       335144.38   4903158.00       91.04501  (00120901)
335144.38   4903178.00       85.06378  (96021602)
       335144.38   4903198.00       80.75314  (96021602)
335144.38   4903217.50       75.20612  (96021602)
       335144.38   4903237.50       71.52196  (96021405)
335144.38   4903257.50       68.76418  (96021405)
       335144.38   4903277.50       65.04282  (96021405)
335164.25   4902780.50       84.10798  (97012705)
       335164.25   4902800.50       89.94643  (97012705)
335164.25   4902820.00       97.06586  (98020622)
       335164.25   4902840.00      106.21014  (98020622)
335164.25   4902860.00      118.54287  (97010107)
       335164.25   4902880.00      131.69144  (98021506)
335164.25   4902899.50      150.69145  (98012702)
       335164.25   4902919.50      175.64157  (00011507)
335164.25   4902939.50      223.85675  (98021106)
       335164.25   4902959.50      345.93265  (96010723)
335164.25   4902979.00      393.36157  (97013003)
       335164.25   4902999.00      504.94373  (00121520)
335164.25   4903019.00      304.15115  (98012703)
       335164.25   4903039.00      207.13940  (98122902)
335164.25   4903058.50      163.27969  (98020620)
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       335164.25   4903078.50      135.43277  (00012305)
335164.25   4903098.50      120.11772  (00012502)
       335164.25   4903118.50      108.34091  (98020621)
335164.25   4903138.00       99.18700  (00120901)
       335164.25   4903158.00       92.79881  (96021602)
335164.25   4903178.00       86.66113  (96021602)
       335164.25   4903198.00       81.89804  (96021405)
335164.25   4903217.50       77.79466  (96021405)
       335164.25   4903237.50       73.78252  (97012702)
335164.25   4903257.50       70.57236  (97012702)
       335164.25   4903277.50       66.80811  (97012702)
335184.12   4902780.50       81.23100  (98120502)
       335184.12   4902800.50       87.23949  (98020923)
335184.12   4902820.00       93.80541  (97012705)
       335184.12   4902840.00      103.49961  (97012705)
335184.12   4902860.00      112.48304  (97012705)
       335184.12   4902880.00      124.63026  (98020622)
335184.12   4902899.50      140.53995  (98021506)
       335184.12   4902919.50      162.49161  (97012703)
335184.12   4902939.50      193.80588  (98021021)
       335184.12   4902959.50      322.39096  (98021106)
335184.12   4902979.00      483.73343  (98012624)
       335184.12   4902999.00      588.86316  (00012505)
335184.12   4903019.00      342.03580  (98021608)
       335184.12   4903039.00      212.09897  (98122902)
335184.12   4903058.50      164.96196  (00012504)
       335184.12   4903078.50      137.49622  (96011603)
335184.12   4903098.50      120.05042  (98020621)
       335184.12   4903118.50      108.69097  (00120901)
335184.12   4903138.00      101.04746  (96021602)
       335184.12   4903158.00       94.35872  (96021405)
335184.12   4903178.00       89.13161  (97012702)
       335184.12   4903198.00       84.36962  (97012702)
335184.12   4903217.50       79.65816  (97012702)
       335184.12   4903237.50       74.54468  (99020823)
335184.12   4903257.50       70.90620  (99020823)
       335184.12   4903277.50       67.03141  (99020823)
335204.00   4902780.50       80.35842  (96020406)
       335204.00   4902800.50       85.31921  (96020406)
335204.00   4902820.00       90.84344  (97122205)
       335204.00   4902840.00       97.79895  (98120502)
335204.00   4902860.00      106.23358  (98120502)
       335204.00   4902880.00      117.04692  (97012705)
335204.00   4902899.50      129.68776  (97012705)
       335204.00   4902919.50      146.44479  (97010107)
335204.00   4902939.50      170.44261  (97012703)
       335204.00   4902959.50      277.33844  (00011507)
335204.00   4902979.00      382.61920  (98021106)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                       ***
***        09:46:50
**MODELOPTs:
PAGE  44
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335204.00   4902999.00      543.92749  (97013003)
335204.00   4903019.00      410.93417  (99090505)
       335204.00   4903039.00      215.12268  (97020823)
335204.00   4903058.50      163.53409  (00012305)
       335204.00   4903078.50      136.64383  (00012502)
335204.00   4903098.50      120.45065  (00021803)
       335204.00   4903118.50      110.70438  (97012702)
335204.00   4903138.00      103.60788  (97012702)
       335204.00   4903158.00       97.00591  (97012702)
335204.00   4903178.00       90.46661  (97012702)
       335204.00   4903198.00       85.46835  (00120921)
335204.00   4903217.50       81.11038  (00120921)
       335204.00   4903237.50       76.91098  (00120921)
335204.00   4903257.50       72.80959  (00120921)
       335204.00   4903277.50       68.70910  (00120921)
335223.88   4902780.50       77.69161  (99022401)
       335223.88   4902800.50       82.47826  (99022401)
335223.88   4902820.00       87.83399  (98020623)
       335223.88   4902840.00       94.69952  (96020406)
335223.88   4902860.00      102.36862  (96020406)
       335223.88   4902880.00      110.58007  (96020406)
335223.88   4902899.50      119.30568  (96020406)
       335223.88   4902919.50      132.87444  (97012705)
335223.88   4902939.50      150.50259  (98020622)
       335223.88   4902959.50      180.08992  (98021506)
335223.88   4902979.00      292.37540  (00011507)
       335223.88   4902999.00      453.87479  (99092606)
335223.88   4903019.00      412.05762  (99081922)
       335223.88   4903039.00      212.95593  (97020823)
335223.88   4903058.50      157.34552  (96011603)
       335223.88   4903078.50      136.55019  (96021603)
335223.88   4903098.50      125.16520  (00121518)
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       335223.88   4903118.50      115.27808  (00121518)
335223.88   4903138.00      106.61998  (98122706)
       335223.88   4903158.00       99.48756  (98122706)
335223.88   4903178.00       93.22079  (98122706)
       335223.88   4903198.00       87.68619  (98122706)
335223.88   4903217.50       82.81659  (98122706)
       335223.88   4903237.50       78.25042  (98122706)
335223.88   4903257.50       73.98624  (98122706)
       335223.88   4903277.50       69.98063  (98122706)
335243.75   4902780.50       75.66524  (99022005)
       335243.75   4902800.50       80.35125  (99022005)
335243.75   4902820.00       85.30453  (97010106)
       335243.75   4902840.00       91.21442  (97010106)
335243.75   4902860.00       97.73665  (97010106)
       335243.75   4902880.00      104.97047  (97010106)
335243.75   4902899.50      112.82207  (97010106)
       335243.75   4902919.50      123.10600  (96020406)
335243.75   4902939.50      135.24878  (96020406)
       335243.75   4902959.50      152.74504  (97012705)
335243.75   4902979.00      179.17525  (97010107)
       335243.75   4902999.00      301.48816  (99051502)
335243.75   4903019.00      330.68225  (97081905)
       335243.75   4903039.00      241.76675  (98022305)
335243.75   4903058.50      182.02455  (96020108)
       335243.75   4903078.50      154.53143  (96011602)
335243.75   4903098.50      136.11206  (99022322)
       335243.75   4903118.50      123.03246  (96021404)
335243.75   4903138.00      113.06733  (96021404)
       335243.75   4903158.00      104.65919  (96021603)
335243.75   4903178.00       97.51975  (96021603)
       335243.75   4903198.00       91.12387  (00121518)
335243.75   4903217.50       85.74112  (00121518)
       335243.75   4903237.50       80.69157  (00121518)
335243.75   4903257.50       76.05573  (00121518)
       335243.75   4903277.50       71.80434  (00121518)
335263.62   4902780.50       73.76741  (96010119)
       335263.62   4902800.50       78.18656  (96010119)
335263.62   4902820.00       82.74222  (96010119)
       335263.62   4902840.00       87.95447  (96021502)
335263.62   4902860.00       93.55560  (96021502)
       335263.62   4902880.00       99.69937  (96021502)
335263.62   4902899.50      106.45349  (96021502)
       335263.62   4902919.50      114.80820  (99022005)
335263.62   4902939.50      124.52563  (99022005)
       335263.62   4902959.50      136.12299  (97010106)
335263.62   4902979.00      158.73386  (99123103)
       335263.62   4902999.00      220.42355  (99102801)
335263.62   4903019.00      375.78317  (99070823)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  45
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335263.62   4903039.00      350.61224  (96020402)
335263.62   4903058.50      229.31708  (99012603)
       335263.62   4903078.50      178.53697  (00121501)
335263.62   4903098.50      151.42856  (96011602)
       335263.62   4903118.50      133.77861  (98020907)
335263.62   4903138.00      120.21737  (00121505)
       335263.62   4903158.00      110.50852  (99022322)
335263.62   4903178.00      101.71349  (96021404)
       335263.62   4903198.00       94.88232  (96021404)
335263.62   4903217.50       88.81390  (96021404)
       335263.62   4903237.50       83.04718  (96021404)
335263.62   4903257.50       77.67849  (96021404)
       335263.62   4903277.50       72.63473  (96021404)
335283.50   4902780.50       72.83432  (97122108)
       335283.50   4902800.50       77.08900  (00020406)
335283.50   4902820.00       81.57713  (00020406)
       335283.50   4902840.00       86.24849  (00020406)
335283.50   4902860.00       91.24742  (97020902)
       335283.50   4902880.00       97.10945  (97020902)
335283.50   4902899.50      103.36020  (97020902)
       335283.50   4902919.50      111.08133  (96020405)
335283.50   4902939.50      121.68175  (97010104)
       335283.50   4902959.50      136.09160  (96012824)
335283.50   4902979.00      163.30449  (98020904)
       335283.50   4902999.00      216.14554  (96021402)
335283.50   4903019.00      377.04211  (96010220)
       335283.50   4903039.00      427.36441  (96020404)
335283.50   4903058.50      297.82629  (96020107)
       335283.50   4903078.50      213.45520  (96020407)
335283.50   4903098.50      171.56976  (00011907)
       335283.50   4903118.50      146.96954  (00013008)
335283.50   4903138.00      130.85170  (96011602)
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       335283.50   4903158.00      117.39343  (98020907)
335283.50   4903178.00      107.24149  (00121505)
       335283.50   4903198.00       97.64035  (99022322)
335283.50   4903217.50       91.54170  (99022322)
       335283.50   4903237.50       85.63363  (99022322)
335283.50   4903257.50       79.93375  (99022322)
       335283.50   4903277.50       74.36776  (99022322)
335303.38   4902780.50       71.31623  (97020902)
       335303.38   4902800.50       75.70251  (97020902)
335303.38   4902820.00       79.66051  (97020902)
       335303.38   4902840.00       84.25895  (00120802)
335303.38   4902860.00       88.85467  (00120802)
       335303.38   4902880.00       94.71008  (96020106)
335303.38   4902899.50      101.39731  (96020405)
       335303.38   4902919.50      110.01974  (97010104)
335303.38   4902939.50      121.30772  (96020401)
       335303.38   4902959.50      138.09799  (99123103)
335303.38   4902979.00      165.36414  (97020903)
       335303.38   4902999.00      213.70180  (96021402)
335303.38   4903019.00      332.27765  (99121902)
       335303.38   4903039.00      438.50198  (97020905)
335303.38   4903058.50      369.49390  (96020402)
       335303.38   4903078.50      254.18808  (00011904)
335303.38   4903098.50      197.18990  (96020407)
       335303.38   4903118.50      163.41800  (00011907)
335303.38   4903138.00      141.01974  (96020108)
       335303.38   4903158.00      124.41319  (98021102)
335303.38   4903178.00      113.14419  (96011602)
       335303.38   4903198.00      103.53024  (96011602)
335303.38   4903217.50       94.94713  (98020907)
       335303.38   4903237.50       88.00846  (00121505)
335303.38   4903257.50       81.32129  (00121505)
       335303.38   4903277.50       74.26842  (00121505)
335323.25   4902780.50       70.42993  (00120802)
       335323.25   4902800.50       73.45036  (99121906)
335323.25   4902820.00       77.54765  (98020624)
       335323.25   4902840.00       82.31231  (96020106)
335323.25   4902860.00       87.65518  (96020405)
       335323.25   4902880.00       93.10243  (96020405)
335323.25   4902899.50      100.24590  (97010104)
       335323.25   4902919.50      109.17389  (96020401)
335323.25   4902939.50      120.01490  (96012824)
       335323.25   4902959.50      136.69989  (98011501)
335323.25   4902979.00      163.90042  (96010623)
       335323.25   4902999.00      208.30632  (96021402)
335323.25   4903019.00      297.55423  (99121902)
       335323.25   4903039.00      367.15060  (96010221)
335323.25   4903058.50      353.42999  (98010108)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  46
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335323.25   4903078.50      279.65326  (99021503)
335323.25   4903098.50      216.94212  (00120820)
       335323.25   4903118.50      178.13321  (96020407)
335323.25   4903138.00      151.73325  (00011907)
       335323.25   4903158.00      131.23770  (00121501)
335323.25   4903178.00      118.11871  (96020108)
       335323.25   4903198.00      105.96204  (98021102)
335323.25   4903217.50       96.04558  (98021102)
       335323.25   4903237.50       90.50014  (96011602)
335323.25   4903257.50       83.78358  (96011602)
       335323.25   4903277.50       77.35449  (98020907)
335343.12   4902780.50       68.74509  (98020624)
       335343.12   4902800.50       72.34212  (96020106)
335343.12   4902820.00       76.59474  (96020405)
       335343.12   4902840.00       81.10004  (96020405)
335343.12   4902860.00       85.64832  (96020324)
       335343.12   4902880.00       92.25645  (97010104)
335343.12   4902899.50       98.96255  (96020401)
       335343.12   4902919.50      107.28334  (96020401)
335343.12   4902939.50      119.59242  (99123103)
       335343.12   4902959.50      136.22450  (98020904)
335343.12   4902979.00      161.13335  (96010623)
       335343.12   4902999.00      200.65945  (99013005)
335343.12   4903019.00      262.73904  (99123022)
       335343.12   4903039.00      311.71719  (00021303)
335343.12   4903058.50      307.59698  (98020920)
       335343.12   4903078.50      266.51190  (96020402)
335343.12   4903098.50      221.37686  (99021503)
       335343.12   4903118.50      184.57661  (00120820)
335343.12   4903138.00      157.10089  (99012603)
       335343.12   4903158.00      137.68260  (99121908)
335343.12   4903178.00      122.66817  (00011907)
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          335343.12   4903198.00      108.21806  (00121501)
335343.12   4903217.50       99.97295  (96020108)
          335343.12   4903237.50       91.24774  (00013008)
335343.12   4903257.50       83.85025  (98021102)
          335343.12   4903277.50       77.19960  (96011602)
335363.00   4902780.50       67.61992  (96020405)
          335363.00   4902800.50       71.54070  (96020405)
335363.00   4902820.00       74.79704  (98020721)
          335363.00   4902840.00       79.80147  (96020324)
335363.00   4902860.00       85.13876  (97010104)
          335363.00   4902880.00       90.58965  (96020401)
335363.00   4902899.50       97.55307  (96020401)
          335363.00   4902919.50      106.50365  (96012824)
335363.00   4902939.50      118.03984  (99123103)
          335363.00   4902959.50      135.78143  (97020903)
335363.00   4902979.00      156.32979  (00011901)
          335363.00   4902999.00      190.48703  (99013005)
335363.00   4903019.00      230.87045  (99123022)
          335363.00   4903039.00      261.90558  (99123104)
335363.00   4903058.50      267.46579  (00020308)
          335363.00   4903078.50      247.21091  (98010108)
335363.00   4903098.50      213.83775  (96020402)
          335363.00   4903118.50      184.93748  (96020107)
335363.00   4903138.00      158.40088  (00120820)
          335363.00   4903158.00      137.89182  (98022305)
335363.00   4903178.00      124.35848  (96020407)
          335363.00   4903198.00      111.18590  (99013004)
335363.00   4903217.50      100.39162  (00011907)
          335363.00   4903237.50       90.83278  (00121501)
335363.00   4903257.50       85.36082  (96020108)
          335363.00   4903277.50       79.04734  (00021222)
335382.88   4902780.50       66.32951  (98020721)
          335382.88   4902800.50       69.35364  (00120823)
335382.88   4902820.00       74.29417  (96020324)
          335382.88   4902840.00       78.56549  (97010104)
335382.88   4902860.00       83.21114  (96020401)
          335382.88   4902880.00       89.08852  (96020401)
335382.88   4902899.50       94.81853  (96012824)
          335382.88   4902919.50      105.14234  (99123103)
335382.88   4902939.50      115.96230  (98011501)
          335382.88   4902959.50      131.72913  (98011203)
335382.88   4902979.00      151.22429  (00011901)
          335382.88   4902999.00      175.56500  (98020906)
335382.88   4903019.00      203.36394  (99123022)
          335382.88   4903039.00      220.39896  (99123104)
335382.88   4903058.50      228.44470  (96010221)
          335382.88   4903078.50      216.99878  (98011204)
335382.88   4903098.50      190.48019  (00013007)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  47
CONC                            DFAULT ELEV   FLGPOL

                         *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335382.88   4903118.50      174.35033  (00021301)
335382.88   4903138.00      157.04135  (96020107)
       335382.88   4903158.00      136.79689  (00120820)
335382.88   4903178.00      122.47055  (98022305)
       335382.88   4903198.00      111.71734  (96020407)
335382.88   4903217.50      101.19193  (99121908)
       335382.88   4903237.50       93.39946  (00011907)
335382.88   4903257.50       83.14922  (00121501)
       335382.88   4903277.50       77.10303  (00121501)
335402.75   4902780.50       65.11810  (96020324)
       335402.75   4902800.50       68.88627  (97010104)
335402.75   4902820.00       72.37896  (96021507)
       335402.75   4902840.00       76.78856  (96020401)
335402.75   4902860.00       81.44538  (96020401)
       335402.75   4902880.00       85.19685  (98011209)
335402.75   4902899.50       94.31348  (96012824)
       335402.75   4902919.50      101.54336  (99022704)
335402.75   4902939.50      114.09389  (97020903)
       335402.75   4902959.50      126.59910  (96010623)
335402.75   4902979.00      139.53732  (00011901)
       335402.75   4902999.00      161.74393  (98020906)
335402.75   4903019.00      180.07318  (99123022)
       335402.75   4903039.00      192.78424  (96010718)
335402.75   4903058.50      190.22343  (99123021)
       335402.75   4903078.50      192.51483  (99121905)
335402.75   4903098.50      181.54381  (98010108)
       335402.75   4903118.50      164.77034  (96020402)
335402.75   4903138.00      147.54149  (99021503)
       335402.75   4903158.00      134.46841  (96020107)
335402.75   4903178.00      119.38442  (00120820)
       335402.75   4903198.00      108.69495  (98022305)
335402.75   4903217.50      100.03535  (99012603)
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       335402.75   4903237.50       91.36836  (99121908)
335402.75   4903257.50       84.74281  (99013004)
       335402.75   4903277.50       79.05143  (00011907)
335422.62   4902780.50       64.40016  (97010104)
       335422.62   4902800.50       67.28381  (96021507)
335422.62   4902820.00       71.10332  (96020401)
       335422.62   4902840.00       74.63158  (96020401)
335422.62   4902860.00       77.99313  (98011209)
       335422.62   4902880.00       85.78603  (00120919)
335422.62   4902899.50       91.90602  (99123103)
       335422.62   4902919.50       99.38020  (98011501)
335422.62   4902939.50      109.59425  (98011203)
       335422.62   4902959.50      119.51352  (98011424)
335422.62   4902979.00      130.50386  (96021402)
       335422.62   4902999.00      147.82089  (00021304)
335422.62   4903019.00      160.48499  (99121902)
       335422.62   4903039.00      170.33939  (96010718)
335422.62   4903058.50      170.63922  (00021303)
       335422.62   4903078.50      172.02692  (00020308)
335422.62   4903098.50      163.12451  (96021403)
       335422.62   4903118.50      148.86856  (00013007)
335422.62   4903138.00      139.56076  (96020402)
       335422.62   4903158.00      127.81419  (99021503)
335422.62   4903178.00      116.26987  (96020107)
       335422.62   4903198.00      105.23067  (00120820)
335422.62   4903217.50       96.68378  (98022305)
       335422.62   4903237.50       89.13524  (99012603)
335422.62   4903257.50       84.26413  (96020407)
       335422.62   4903277.50       77.63199  (96021522)
335442.50   4902780.50       62.34112  (96021507)
       335442.50   4902800.50       66.14694  (96020401)
335442.50   4902820.00       68.63996  (98020921)
       335442.50   4902840.00       71.70188  (98011209)
335442.50   4902860.00       77.89210  (96012824)
       335442.50   4902880.00       83.50544  (99123103)
335442.50   4902899.50       88.02612  (98011501)
       335442.50   4902919.50       96.82759  (97020903)
335442.50   4902939.50      104.95129  (96010623)
       335442.50   4902959.50      114.43613  (00011901)
335442.50   4902979.00      122.44446  (96021402)
       335442.50   4902999.00      134.99147  (99012606)
335442.50   4903019.00      144.23038  (99121902)
       335442.50   4903039.00      150.93384  (96010220)
335442.50   4903058.50      154.06779  (00021303)
       335442.50   4903078.50      151.90033  (96010221)
335442.50   4903098.50      145.19614  (96012823)
       335442.50   4903118.50      140.18457  (98010108)
335442.50   4903138.00      124.27000  (96020402)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  48
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335442.50   4903158.00      117.97359  (00021301)
335442.50   4903178.00      110.26746  (99021503)
       335442.50   4903198.00      101.41301  (96020107)
335442.50   4903217.50       93.65488  (00120820)
       335442.50   4903237.50       86.13181  (98022305)
335442.50   4903257.50       79.15789  (98022305)
       335442.50   4903277.50       76.95372  (96020407)
335462.38   4902780.50       61.55451  (96020401)
       335462.38   4902800.50       63.49581  (98020921)
335462.38   4902820.00       66.16969  (98011209)
       335462.38   4902840.00       70.61388  (96012824)
335462.38   4902860.00       75.25168  (99123103)
       335462.38   4902880.00       79.08360  (99022704)
335462.38   4902899.50       85.19482  (98011501)
       335462.38   4902919.50       92.74927  (00020404)
335462.38   4902939.50       99.07379  (98011424)
       335462.38   4902959.50      106.01088  (00011901)
335462.38   4902979.00      114.94695  (99013005)
       335462.38   4902999.00      123.49278  (99012606)
335462.38   4903019.00      130.44328  (99121902)
       335462.38   4903039.00      135.60843  (96010220)
335462.38   4903058.50      135.99835  (00021303)
       335462.38   4903078.50      135.41542  (96010221)
335462.38   4903098.50      133.45355  (99121905)
       335462.38   4903118.50      128.19162  (96020404)
335462.38   4903138.00      120.14289  (00013007)
       335462.38   4903158.00      113.89297  (96020402)
335462.38   4903178.00      104.30541  (00021301)
       335462.38   4903198.00       95.66370  (96020107)
335462.38   4903217.50       89.63288  (96020107)
       335462.38   4903237.50       83.96989  (00120820)
335462.38   4903257.50       77.04235  (98022305)
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       335462.38   4903277.50       73.16049  (98022305)
335482.25   4902780.50       58.86749  (96021707)
       335482.25   4902800.50       61.30837  (98011209)
335482.25   4902820.00       63.89526  (96012824)
       335482.25   4902840.00       69.13794  (96012824)
335482.25   4902860.00       72.98489  (99123103)
       335482.25   4902880.00       77.46690  (98011501)
335482.25   4902899.50       83.11987  (97020903)
       335482.25   4902919.50       87.86376  (96010623)
335482.25   4902939.50       92.71268  (98011424)
       335482.25   4902959.50       94.35529  (00011901)
335482.25   4902979.00      107.38644  (99013005)
       335482.25   4902999.00      112.55045  (99012606)
335482.25   4903019.00      118.67109  (99121902)
       335482.25   4903039.00      122.88588  (96020403)
335482.25   4903058.50      124.16418  (99123104)
       335482.25   4903078.50      117.51056  (99123021)
335482.25   4903098.50      121.94840  (00020308)
       335482.25   4903118.50      114.73414  (96012823)
335482.25   4903138.00      112.50526  (98010108)
       335482.25   4903158.00       98.94081  (96011404)
335482.25   4903178.00       99.51661  (96020402)
       335482.25   4903198.00       92.39002  (98022707)
335482.25   4903217.50       86.90202  (96020107)
       335482.25   4903237.50       80.64133  (98020918)
335482.25   4903257.50       75.85147  (00120820)
       335482.25   4903277.50       69.60030  (00120820)
334985.38   4903327.50       49.02132  (98020621)
       334985.38   4903377.50       44.76142  (00120901)
335035.12   4903327.50       49.95795  (00120901)
       335035.12   4903377.50       46.93038  (96021602)
335084.84   4903327.50       53.97369  (96010720)
       335084.84   4903377.50       48.09628  (96021405)
335134.59   4903327.50       57.40600  (97012702)
       335134.59   4903377.50       51.23059  (97012702)
335184.34   4903327.50       59.77274  (00120921)
       335184.34   4903377.50       53.15775  (00120921)
335234.06   4903327.50       62.22196  (00121518)
       335234.06   4903377.50       54.99132  (00121518)
335283.81   4903327.50       63.96107  (96021404)
       335283.81   4903377.50       56.57082  (96021404)
335333.56   4903327.50       66.50438  (98020907)
       335333.56   4903377.50       56.89107  (00121505)
335383.28   4903327.50       66.34821  (00021302)
       335383.28   4903377.50       54.57412  (98021102)
335433.03   4903327.50       65.73997  (00011907)
       335433.03   4903377.50       54.07576  (00121501)
335482.78   4903327.50       62.70913  (96020407)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  49
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335482.78   4903377.50       54.60339  (96021522)
335532.50   4903327.50       57.17159  (00120820)
       335532.50   4903377.50       51.34901  (99012603)
335582.25   4903327.50       52.69836  (98020918)
       335582.25   4903377.50       47.85391  (00120820)
335532.25   4903277.50       66.11098  (96020107)
       335532.25   4903228.00       74.85167  (00021301)
335532.25   4903178.00       84.30310  (00013007)
       335532.25   4903128.00       93.37593  (99121905)
335532.25   4903078.50       98.09205  (00021303)
       335532.25   4903029.00       96.80328  (99123024)
335532.25   4902979.00       89.58961  (98020906)
       335532.25   4902929.00       79.59860  (00011901)
335532.25   4902879.50       71.15204  (97020903)
       335532.25   4902830.00       60.74637  (99123103)
335532.25   4902780.00       53.90603  (96012824)
       335532.25   4902730.00       49.39799  (96021707)
335532.25   4902680.50       44.21186  (96021507)
       335582.25   4903277.50       60.06781  (99021503)
335582.25   4903228.00       65.26698  (96020402)
       335582.25   4903178.00       74.07448  (96020404)
335582.25   4903128.00       79.23411  (00020308)
       335582.25   4903078.50       79.78438  (99123104)
335582.25   4903029.00       79.66011  (99123024)
       335582.25   4902979.00       75.71600  (00021304)
335582.25   4902929.00       65.77110  (00011901)
       335582.25   4902879.50       62.91942  (96010623)
335582.25   4902830.00       56.30931  (98011501)
       335582.25   4902780.00       51.61715  (99123103)
335582.25   4902730.00       42.65281  (00120919)
       335582.25   4902680.50       42.21321  (96021707)
335482.25   4902730.50       53.12260  (96021507)
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       335482.25   4902680.50       48.32761  (96020324)
335432.50   4902730.50       55.68300  (00120823)
       335432.50   4902680.50       50.27312  (98020905)
335382.78   4902730.50       58.28921  (96020323)
       335382.78   4902680.50       52.38374  (98020624)
335333.03   4902730.50       61.72159  (00120802)
       335333.03   4902680.50       54.62482  (97020902)
335283.28   4902730.50       64.06392  (96021502)
       335283.28   4902680.50       56.22514  (96021502)
335233.56   4902730.50       67.39662  (97010106)
       335233.56   4902680.50       58.92710  (97010106)
335183.81   4902730.50       67.98058  (97122205)
       335183.81   4902680.50       59.61293  (99022720)
335134.06   4902730.50       70.75497  (98120803)
       335134.06   4902680.50       61.51727  (97012705)
335084.34   4902730.50       69.80573  (98021506)
       335084.34   4902680.50       61.39536  (97010107)
335034.59   4902730.50       68.04697  (98021021)
       335034.59   4902680.50       59.72977  (97012703)
334984.84   4902730.50       57.19614  (00011507)
       334984.84   4902680.50       53.02484  (00011507)
334935.12   4902730.50       57.71470  (98021106)
       334935.12   4902680.50       47.16453  (00010105)
334885.38   4902730.50       54.95584  (96010723)
       334885.38   4902680.50       47.89993  (98021106)
334935.38   4902780.50       66.22959  (96010723)
       334935.38   4902830.00       76.61417  (98012624)
334935.38   4902880.00       78.42174  (97013003)
       334935.38   4902930.00       87.96626  (97010108)
334935.38   4902979.50       78.54826  (99090401)
       334935.38   4903029.00       85.61427  (98012703)
334935.38   4903079.00       79.10196  (98122902)
       334935.38   4903129.00       71.79861  (98020620)
334935.38   4903178.50       63.43843  (00012305)
       334935.38   4903228.00       53.63291  (96011603)
334935.38   4903278.00       50.27028  (00012502)
       334935.38   4903328.00       43.73343  (99020602)
334935.38   4903377.50       42.72120  (98020621)
       334885.38   4902780.50       56.86753  (98012624)
334885.38   4902830.00       49.64791  (96011202)
       334885.38   4902880.00       64.55347  (97013003)
334885.38   4902930.00       74.07063  (00121520)
       334885.38   4902979.50       66.74458  (96121406)
334885.38   4903029.00       72.42809  (98012703)
       334885.38   4903079.00       66.27427  (98021602)
334885.38   4903129.00       62.26217  (99121909)
       334885.38   4903178.50       57.98769  (00012504)
334885.38   4903228.00       51.09000  (00012305)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  50
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       334885.38   4903278.00       47.79125  (96011603)
334885.38   4903328.00       43.46426  (00012502)
       334885.38   4903377.50       37.23501  (99020602)
334885.38   4903477.50       33.61917  (00021803)
       334885.38   4903577.50       25.06030  (96100101)
334885.38   4903677.50       25.46790  (96021602)
       334885.38   4903777.50       22.12921  (96010222)
334885.38   4903877.50       19.71274  (96021405)
       334985.12   4903477.50       37.55721  (96021602)
334985.12   4903577.50       31.26358  (96010222)
       334985.12   4903677.50       27.02717  (96021405)
334985.12   4903777.50       23.54239  (97012702)
       334985.12   4903877.50       20.32233  (00021802)
335084.84   4903477.50       40.28914  (97012702)
       335084.84   4903577.50       32.32932  (00021802)
335084.84   4903677.50       28.28640  (99020823)
       335084.84   4903777.50       22.75499  (00120921)
335084.84   4903877.50       21.40941  (00120921)
       335184.59   4903477.50       42.33783  (99013002)
335184.59   4903577.50       34.47422  (98122706)
       335184.59   4903677.50       29.47093  (98122706)
335184.59   4903777.50       24.96562  (98122706)
       335184.59   4903877.50       21.07790  (98122706)
335284.34   4903477.50       44.02911  (96021404)
       335284.34   4903577.50       34.91940  (96012022)
335284.34   4903677.50       28.99262  (96012022)
       335284.34   4903777.50       24.93278  (96021603)
335284.34   4903877.50       21.89228  (96021603)
       335384.06   4903477.50       44.08804  (98020907)
335384.06   4903577.50       35.64373  (00121505)
       335384.06   4903677.50       28.39378  (97121616)
335384.06   4903777.50       25.47882  (99022322)
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       335384.06   4903877.50       21.84681  (99022322)
335483.81   4903477.50       40.87392  (96020108)
       335483.81   4903577.50       34.84299  (98021102)
335483.81   4903677.50       28.84765  (96011602)
       335483.81   4903777.50       23.83274  (96011602)
335483.81   4903877.50       21.69161  (98020907)
       335583.56   4903477.50       39.86398  (96020407)
335583.56   4903577.50       32.94252  (00011907)
       335583.56   4903677.50       26.72625  (96020108)
335583.56   4903777.50       23.61051  (00021302)
       335583.56   4903877.50       19.57004  (98021102)
335683.28   4903477.50       35.28944  (00120820)
       335683.28   4903577.50       30.41935  (99012603)
335683.28   4903677.50       26.21741  (96021522)
       335683.28   4903777.50       21.41548  (00121501)
335683.28   4903877.50       19.29409  (96020108)
       335783.03   4903477.50       31.30909  (96020107)
335783.03   4903577.50       27.36539  (00120820)
       335783.03   4903677.50       22.84229  (99012603)
335783.03   4903777.50       21.34281  (99121908)
       335783.03   4903877.50       19.27882  (00011907)
335882.78   4903477.50       27.06816  (00021301)
       335882.78   4903577.50       24.97642  (96020107)
335882.78   4903677.50       22.02605  (00120820)
       335882.78   4903777.50       19.18804  (98022305)
335882.78   4903877.50       18.04439  (96020407)
       335982.50   4903477.50       23.25326  (96020402)
335982.50   4903577.50       21.86390  (98022707)
       335982.50   4903677.50       20.00954  (96020107)
335982.50   4903777.50       18.22918  (00120820)
       335982.50   4903877.50       16.60097  (98022305)
336082.25   4903477.50       21.09822  (00013007)
       336082.25   4903577.50       19.75750  (96020402)
336082.25   4903677.50       18.40976  (99021503)
       336082.25   4903777.50       16.19287  (96020107)
336082.25   4903877.50       15.42765  (00120820)
       335682.25   4903377.50       40.07735  (99021503)
335682.25   4903278.00       45.15675  (96011404)
       335682.25   4903178.00       55.49731  (99121905)
335682.25   4903078.00       55.86380  (99123104)
       335682.25   4902978.50       55.87744  (99012606)
335682.25   4902879.00       49.79310  (00011901)
       335682.25   4902779.00       42.04682  (98011501)
335682.25   4902679.00       37.53854  (96012824)
       335682.25   4902579.50       31.97308  (96021707)
335682.25   4902480.00       28.28321  (96021507)
       335682.25   4902380.00       24.87528  (96020324)
335682.25   4902280.00       21.60904  (98020721)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  51
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335682.25   4902180.50       19.64078  (96020405)
335782.25   4903377.50       35.57751  (96020402)
       335782.25   4903278.00       39.82997  (96020404)
335782.25   4903178.00       43.30267  (96010221)
       335782.25   4903078.00       44.97649  (96010718)
335782.25   4902978.50       41.90459  (00011823)
       335782.25   4902879.00       36.73536  (99011223)
335782.25   4902779.00       36.81506  (98011203)
       335782.25   4902679.00       31.59777  (99022704)
335782.25   4902579.50       27.93236  (96012824)
       335782.25   4902480.00       25.33008  (96021707)
335782.25   4902380.00       22.05093  (96021507)
       335782.25   4902280.00       20.17425  (97010104)
335782.25   4902180.50       18.24652  (00120823)
       335882.25   4903377.50       28.81801  (00013007)
335882.25   4903278.00       32.71429  (96012823)
       335882.25   4903178.00       32.80450  (99123021)
335882.25   4903078.00       36.05693  (96010220)
       335882.25   4902978.50       35.08450  (00011823)
335882.25   4902879.00       32.68478  (96021402)
       335882.25   4902779.00       30.71422  (00120918)
335882.25   4902679.00       27.62822  (98020904)
       335882.25   4902579.50       25.64406  (99123103)
335882.25   4902480.00       20.24263  (96012824)
       335882.25   4902380.00       20.70340  (96021707)
335882.25   4902280.00       18.22648  (99013006)
       335882.25   4902180.50       17.37383  (97010104)
335982.25   4903377.50       26.10300  (00021305)
       335982.25   4903278.00       28.22603  (97020905)
335982.25   4903178.00       28.08125  (00021303)
       335982.25   4903078.00       29.83072  (96020403)
335982.25   4902978.50       29.51634  (00011823)
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       335982.25   4902879.00       27.93068  (99013005)
335982.25   4902779.00       25.95006  (00011901)
       335982.25   4902679.00       24.86729  (00020404)
335982.25   4902579.50       22.35441  (98011501)
       335982.25   4902480.00       20.20304  (99123103)
335982.25   4902380.00       16.53387  (99022007)
       335982.25   4902280.00       17.34229  (96021707)
335982.25   4902180.50       15.94095  (99013006)
       336082.25   4903377.50       22.26683  (96021403)
336082.25   4903278.00       23.67167  (00020308)
       336082.25   4903178.00       24.88334  (00021303)
336082.25   4903078.00       25.50458  (96010624)
       336082.25   4902978.50       25.04353  (00011823)
336082.25   4902879.00       24.15646  (99013005)
       336082.25   4902779.00       22.45245  (00011901)
336082.25   4902679.00       21.93204  (96010623)
       336082.25   4902579.50       20.17764  (98020904)
336082.25   4902480.00       18.02126  (99022704)
       336082.25   4902380.00       17.29992  (96012824)
336082.25   4902280.00       14.41471  (99022007)
       336082.25   4902180.50       14.82230  (96021707)
335582.25   4902580.50       36.11592  (97010104)
       335582.25   4902480.50       30.23458  (00120823)
335582.25   4902380.50       26.93478  (96020405)
       335582.25   4902280.50       22.68285  (96020106)
335582.25   4902180.50       20.32524  (98011206)
       335482.50   4902580.50       39.66487  (96020405)
335482.50   4902480.50       32.87051  (96020106)
       335482.50   4902380.50       27.87292  (97121618)
335482.50   4902280.50       24.79892  (00120802)
       335482.50   4902180.50       21.69305  (97020902)
335382.78   4902580.50       42.97888  (00120802)
       335382.78   4902480.50       35.28502  (97122207)
335382.78   4902380.50       30.00843  (00020406)
       335382.78   4902280.50       25.55495  (98020822)
335382.78   4902180.50       22.07917  (97122108)
       335283.03   4902580.50       44.23668  (96010119)
335283.03   4902480.50       35.55725  (98021105)
       335283.03   4902380.50       30.36245  (98021105)
335283.03   4902280.50       26.06069  (98021105)
       335283.03   4902180.50       22.50500  (98021105)
335183.28   4902580.50       47.17006  (96020406)
       335183.28   4902480.50       37.40759  (98020623)
335183.28   4902380.50       30.06612  (96021508)
       335183.28   4902280.50       26.16392  (96021508)
335183.28   4902180.50       22.72200  (96021508)
       335083.56   4902580.50       46.45287  (98120803)
335083.56   4902480.50       37.03870  (99021105)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  52
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)               X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       335083.56   4902380.50       30.30857  (98120502)
335083.56   4902280.50       25.79187  (97122209)
       335083.56   4902180.50       21.85583  (97122205)
334983.81   4902580.50       44.63525  (97012703)
       334983.81   4902480.50       36.27039  (97010107)
334983.81   4902380.50       30.25862  (98020622)
       334983.81   4902280.50       25.14330  (98120803)
334983.81   4902180.50       22.10402  (99021105)
       334884.06   4902580.50       40.58091  (00011507)
334884.06   4902480.50       31.78185  (98021021)
       334884.06   4902380.50       26.43950  (97012703)
334884.06   4902280.50       24.32110  (97010107)
       334884.06   4902180.50       20.78509  (98120503)
334784.34   4902580.50       34.87000  (98021106)
       334784.34   4902480.50       29.19101  (00011507)
334784.34   4902380.50       26.14002  (98021021)
       334784.34   4902280.50       23.25831  (96021503)
334784.34   4902180.50       18.78643  (98021506)
       334684.59   4902580.50       30.84565  (96010723)
334684.59   4902480.50       26.94115  (98021106)
       334684.59   4902380.50       20.92003  (00011507)
334684.59   4902280.50       18.86206  (00011507)
       334684.59   4902180.50       17.83365  (98021021)
334584.84   4902580.50       25.07794  (98012624)
       334584.84   4902480.50       24.75140  (96010723)
334584.84   4902380.50       21.63242  (98021106)
       334584.84   4902280.50       17.00114  (00092901)
334584.84   4902180.50       17.53044  (00011507)
       334485.12   4902580.50       21.62999  (96011202)
334485.12   4902480.50       19.41083  (97010216)
       334485.12   4902380.50       19.24829  (96010723)
334485.12   4902280.50       17.87397  (98021106)
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       334485.12   4902180.50       14.55687  (00010105)
334385.38   4902580.50       13.10358  (97051502)
       334385.38   4902480.50       20.02228  (98012624)
334385.38   4902380.50       15.98293  (97010216)
       334385.38   4902280.50       14.85013  (96010723)
334385.38   4902180.50       15.09780  (98021106)
       334785.38   4902680.50       37.11787  (97010216)
334785.38   4902780.00       33.38100  (97042702)
       334785.38   4902880.00       53.44357  (97010108)
334785.38   4902980.00       49.97782  (96121406)
       334785.38   4903079.50       51.48582  (96012523)
334785.38   4903179.00       45.34492  (96012023)
       334785.38   4903279.00       40.48701  (00012305)
334785.38   4903379.00       34.30628  (96011603)
       334785.38   4903478.50       27.67242  (99020602)
334785.38   4903578.00       25.06631  (98020621)
       334785.38   4903678.00       22.64175  (00120901)
334785.38   4903778.00       18.68271  (96021602)
       334785.38   4903877.50       18.61590  (96010720)
334685.38   4902680.50       35.33175  (98012624)
       334685.38   4902780.00       37.95486  (97013003)
334685.38   4902880.00       41.62630  (00121520)
       334685.38   4902980.00       37.49752  (96121406)
334685.38   4903079.50       40.63580  (96012523)
       334685.38   4903179.00       38.71234  (97020823)
334685.38   4903279.00       34.94568  (00012504)
       334685.38   4903379.00       27.90287  (99120303)
334685.38   4903478.50       24.70119  (99120307)
       334685.38   4903578.00       21.71505  (99020602)
334685.38   4903678.00       21.62830  (98020621)
       334685.38   4903778.00       19.59632  (00120901)
334685.38   4903877.50       15.10866  (96122907)
       334585.38   4902680.50       19.41742  (97051502)
334585.38   4902780.00       31.69749  (00012505)
       334585.38   4902880.00       29.60647  (98011921)
334585.38   4902980.00       29.36318  (96100520)
       334585.38   4903079.50       31.07835  (98123116)
334585.38   4903179.00       28.89117  (96022205)
       334585.38   4903279.00       29.49570  (98020620)
334585.38   4903379.00       27.10523  (00012305)
       334585.38   4903478.50       22.05959  (96011603)
334585.38   4903578.00       20.78442  (00012502)
       334585.38   4903678.00       17.69667  (99120224)
334585.38   4903778.00       18.41134  (98020621)
       334585.38   4903877.50       16.53036  (00021803)
334485.38   4902680.50       24.01579  (97013003)
       334485.38   4902780.00       27.14577  (97010108)
334485.38   4902880.00       24.00281  (96111605)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  53
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       334485.38   4902980.00       24.42383  (96100520)
334485.38   4903079.50       27.06497  (98123116)
       334485.38   4903179.00       26.74694  (98122902)
334485.38   4903279.00       24.81894  (96012023)
       334485.38   4903379.00       23.78342  (00012504)
334485.38   4903478.50       18.68049  (96122303)
       334485.38   4903578.00       20.13580  (96011603)
334485.38   4903678.00       18.07208  (00012502)
       334485.38   4903778.00       14.81982  (99120224)
334485.38   4903877.50       15.59911  (98020621)
       334385.38   4902680.50       19.99115  (97013003)
334385.38   4902780.00       21.68243  (97010108)
       334385.38   4902880.00       20.10624  (98091406)
334385.38   4902980.00       20.59731  (96100520)
       334385.38   4903079.50       23.38940  (98123116)
334385.38   4903179.00       22.76155  (98021602)
       334385.38   4903279.00       21.79343  (97020823)
334385.38   4903379.00       20.02031  (98021022)
       334385.38   4903478.50       19.29091  (00012305)
334385.38   4903578.00       16.47252  (99120303)
       334385.38   4903678.00       16.85621  (96011603)
334385.38   4903778.00       15.68838  (00012502)
       334385.38   4903877.50       12.63375  (99120224)
334385.38   4904044.00       12.23638  (98020621)
       334385.38   4904211.00       11.31013  (00120901)
334385.38   4904377.50        8.38768  (96100101)
       334385.38   4904544.00        9.12261  (96021602)
334385.38   4904711.00        7.61441  (97120905)
       334385.38   4904877.50        7.40942  (96010222)
334578.00   4904044.00       12.10425  (96100101)
       334578.00   4904211.00       12.49497  (96021602)
334578.00   4904377.50       10.50466  (97120905)
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       334578.00   4904544.00        8.62502  (96021405)
334578.00   4904711.00        8.57424  (96021405)
       334578.00   4904877.50        7.61851  (99021521)
334770.66   4904044.00       15.49474  (96010222)
       334770.66   4904211.00       13.40257  (96021405)
334770.66   4904377.50       11.59339  (99021521)
       334770.66   4904544.00       10.02176  (97012702)
334770.66   4904711.00        8.03349  (00021802)
       334770.66   4904877.50        8.11883  (99020823)
334963.28   4904044.00       15.95182  (99020823)
       334963.28   4904211.00       13.82225  (99020823)
334963.28   4904377.50       10.89899  (00120921)
       334963.28   4904544.00       10.59634  (00120921)
334963.28   4904711.00        9.23350  (00120921)
       334963.28   4904877.50        8.22057  (99013002)
335155.91   4904044.00       17.62224  (98122706)
       335155.91   4904211.00       14.30198  (98122706)
335155.91   4904377.50       11.56322  (98122706)
       335155.91   4904544.00        9.53597  (00010201)
335155.91   4904711.00        8.15751  (00010201)
       335155.91   4904877.50        7.29965  (00121518)
335348.53   4904044.00       17.93979  (96021404)
       335348.53   4904211.00       14.37909  (96021404)
335348.53   4904377.50       12.09832  (96012022)
       335348.53   4904544.00       10.56959  (96012022)
335348.53   4904711.00        9.19936  (96012022)
       335348.53   4904877.50        8.01291  (96012022)
335541.19   4904044.00       17.41782  (98020907)
       335541.19   4904211.00       14.00433  (00121505)
335541.19   4904377.50       11.76733  (97121616)
       335541.19   4904544.00       10.21764  (99022322)
335541.19   4904711.00        9.51153  (99022322)
       335541.19   4904877.50        8.22682  (96020104)
335733.81   4904044.00       16.23086  (96020108)
       335733.81   4904211.00       13.48729  (98021102)
335733.81   4904377.50       11.62434  (96011602)
       335733.81   4904544.00        9.79541  (96011602)
335733.81   4904711.00        9.20508  (98020907)
       335733.81   4904877.50        8.24488  (00121505)
335926.44   4904044.00       14.85561  (96021522)
       335926.44   4904211.00       12.12180  (00121501)
335926.44   4904377.50       10.98754  (96020108)
       335926.44   4904544.00        9.55073  (00021222)
335926.44   4904711.00        8.28420  (98021102)
       335926.44   4904877.50        7.59962  (96020109)
336119.09   4904044.00       13.11429  (98022305)
       336119.09   4904211.00       11.61120  (96020407)
336119.09   4904377.50       10.47369  (99013004)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  54
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       336119.09   4904544.00        8.71598  (00121501)
336119.09   4904711.00        7.62987  (00123001)
       336119.09   4904877.50        7.66384  (00013008)
336311.72   4904044.00       11.85905  (00011904)
       336311.72   4904211.00       10.19861  (98022305)
336311.72   4904377.50        9.68685  (99012603)
       336311.72   4904544.00        8.80969  (99121908)
336311.72   4904711.00        8.03835  (00011907)
       336311.72   4904877.50        6.79163  (00121501)
336504.34   4904044.00        9.82365  (99021503)
       336504.34   4904211.00        9.42181  (00011904)
336504.34   4904377.50        8.13235  (00120820)
       336504.34   4904544.00        7.25543  (97010404)
336504.34   4904711.00        7.60513  (96020407)
       336504.34   4904877.50        6.95780  (96021522)
336696.97   4904044.00        8.85575  (00021301)
       336696.97   4904211.00        7.74416  (99021503)
336696.97   4904377.50        7.88129  (98020918)
       336696.97   4904544.00        7.37462  (00120820)
336696.97   4904711.00        6.94785  (98022305)
       336696.97   4904877.50        6.67140  (99012603)
336889.62   4904044.00        7.82943  (96020402)
       336889.62   4904211.00        7.67972  (00021301)
336889.62   4904377.50        6.48188  (97010323)
       336889.62   4904544.00        6.75042  (98020918)
336889.62   4904711.00        6.51408  (00120820)
       336889.62   4904877.50        6.06729  (98022305)
337082.25   4904044.00        6.84155  (00013007)
       337082.25   4904211.00        7.11375  (96020402)
337082.25   4904377.50        6.49008  (00021301)
       337082.25   4904544.00        5.64252  (96020107)
337082.25   4904711.00        5.86178  (98020918)
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       337082.25   4904877.50        5.55819  (00120820)
336248.91   4903877.50       13.77496  (96020107)
       336248.91   4903685.00       15.65061  (96020402)
336248.91   4903492.00       17.71790  (96020404)
       336248.91   4903299.50       18.99198  (96010221)
336248.91   4903107.00       19.89136  (96010220)
       336248.91   4902914.50       19.59296  (99012606)
336248.91   4902721.50       18.18071  (00011901)
       336248.91   4902529.00       16.79462  (97020903)
336248.91   4902336.50       14.37513  (99123103)
       336248.91   4902143.50       11.24628  (99022007)
336248.91   4901951.00       11.55561  (96020401)
       336248.91   4901758.50       10.07603  (96123122)
336248.91   4901566.00        9.04891  (96020324)
       336248.91   4901373.00        7.14156  (98020721)
336248.91   4901180.50        7.17736  (98020905)
       336415.59   4903877.50       12.01950  (00021301)
336415.59   4903685.00       12.51140  (96011404)
       336415.59   4903492.00       14.62088  (96012823)
336415.59   4903299.50       15.00942  (99123021)
       336415.59   4903107.00       16.32157  (96020403)
336415.59   4902914.50       15.48263  (99012606)
       336415.59   4902721.50       13.41591  (99011223)
336415.59   4902529.00       13.90994  (97121619)
       336415.59   4902336.50       12.79547  (98011501)
336415.59   4902143.50       10.79520  (96012824)
       336415.59   4901951.00        9.96136  (98011209)
336415.59   4901758.50        9.44435  (96020401)
       336415.59   4901566.00        8.40876  (96021507)
336415.59   4901373.00        7.54328  (96020324)
       336415.59   4901180.50        6.70846  (00120823)
336582.25   4903877.50       10.92696  (96020402)
       336582.25   4903685.00       11.82000  (98010108)
336582.25   4903492.00       12.82975  (97020905)
       336582.25   4903299.50       13.10631  (00021303)
336582.25   4903107.00       13.68019  (96010624)
       336582.25   4902914.50       12.14086  (00011823)
336582.25   4902721.50       12.44584  (96021402)
       336582.25   4902529.00       12.15217  (98011424)
336582.25   4902336.50       11.36066  (98020904)
       336582.25   4902143.50        9.35178  (99022704)
336582.25   4901951.00        9.31605  (96012824)
       336582.25   4901758.50        8.37836  (98011209)
336582.25   4901566.00        7.84728  (96020401)
       336582.25   4901373.00        7.11493  (96021507)
336582.25   4901180.50        6.33963  (98021018)
       336748.91   4903877.50        9.04819  (96011404)
336748.91   4903685.00       10.51448  (98011204)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  55
CONC                            DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       336748.91   4903492.00       11.13873  (00020308)
336748.91   4903299.50       11.45088  (00021303)
       336748.91   4903107.00       11.46187  (96010624)
336748.91   4902914.50       10.98927  (00011823)
       336748.91   4902721.50       10.51765  (96021402)
336748.91   4902529.00       10.12222  (00011901)
       336748.91   4902336.50        9.97465  (98011203)
336748.91   4902143.50        9.24925  (98011501)
       336748.91   4901951.00        8.56199  (99123103)
336748.91   4901758.50        6.66433  (99090101)
       336748.91   4901566.00        6.70517  (96021707)
336748.91   4901373.00        6.61339  (96020401)
       336748.91   4901180.50        6.09675  (96021507)
336915.59   4903877.50        8.85398  (98010108)
       336915.59   4903685.00        9.15761  (96012823)
336915.59   4903492.00       10.04882  (96010221)
       336915.59   4903299.50        9.86406  (99123104)
336915.59   4903107.00        9.63788  (96020403)
       336915.59   4902914.50        9.86077  (00011823)
336915.59   4902721.50        9.81455  (00122403)
       336915.59   4902529.00        9.20563  (00011901)
336915.59   4902336.50        8.94326  (96010623)
       336915.59   4902143.50        8.22532  (98020904)
336915.59   4901951.00        7.41748  (99022704)
       336915.59   4901758.50        6.85748  (96012824)
336915.59   4901566.00        5.68961  (99092522)
       336915.59   4901373.00        6.07114  (96021707)
336915.59   4901180.50        5.75960  (99013006)
       337082.25   4903877.50        7.92671  (96020404)
337082.25   4903685.00        8.27676  (99121905)
       337082.25   4903492.00        7.44630  (96010221)
337082.25   4903299.50        8.73169  (99123104)
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       337082.25   4903107.00        8.59892  (99123024)
337082.25   4902914.50        8.81827  (00011823)
       337082.25   4902721.50        8.35092  (99013005)
337082.25   4902529.00        7.55174  (99011223)
       337082.25   4902336.50        7.91717  (98011424)
337082.25   4902143.50        7.55391  (97020903)
       337082.25   4901951.00        7.11195  (98011501)
337082.25   4901758.50        6.58330  (99123103)
       337082.25   4901566.00        6.24823  (96012824)
337082.25   4901373.00        5.25906  (99022007)
       337082.25   4901180.50        5.37659  (96021707)
336082.25   4902014.00       12.82784  (96021507)
       336082.25   4901847.00       11.60043  (96020324)
336082.25   4901680.50        9.90208  (00120823)
       336082.25   4901514.00        9.28582  (98020905)
336082.25   4901347.00        8.30373  (96020323)
       336082.25   4901180.50        7.27450  (96020106)
335889.62   4902014.00       14.61988  (00120823)
       335889.62   4901847.00       12.79938  (98020905)
335889.62   4901680.50       10.47279  (96020323)
       335889.62   4901514.00        9.87475  (98020624)
335889.62   4901347.00        8.67468  (97121618)
       335889.62   4901180.50        7.85299  (99121906)
335696.97   4902014.00       15.88263  (96020106)
       335696.97   4901847.00       13.57959  (97121618)
335696.97   4901680.50       11.90561  (96010719)
       335696.97   4901514.00       10.20296  (97020902)
335696.97   4901347.00        9.20285  (97122207)
       335696.97   4901180.50        7.80372  (00021805)
335504.34   4902014.00       17.38786  (97122207)
       335504.34   4901847.00       14.57221  (00020406)
335504.34   4901680.50       12.50619  (98020822)
       335504.34   4901514.00       10.83506  (97122108)
335504.34   4901347.00        9.12414  (96021502)
       335504.34   4901180.50        8.44416  (96021502)
335311.72   4902014.00       17.55797  (98021105)
       335311.72   4901847.00       14.93146  (98021105)
335311.72   4901680.50       12.73295  (98021105)
       335311.72   4901514.00       10.91341  (98021105)
335311.72   4901347.00        9.61506  (99022005)
       335311.72   4901180.50        8.55980  (99022005)
335119.09   4902014.00       18.37796  (98020623)
       335119.09   4901847.00       14.61219  (00120824)
335119.09   4901680.50       11.90069  (96021508)
       335119.09   4901514.00       10.75894  (96021508)
335119.09   4901347.00        9.59532  (96021508)
       335119.09   4901180.50        8.49774  (96021508)
334926.44   4902014.00       17.72034  (97012705)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  56
CONC                         DFAULT ELEV   FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):      LANDFILL,

                                             *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                        ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       334926.44   4901847.00       14.69227  (98020923)
334926.44   4901680.50       12.46149  (98120502)
       334926.44   4901514.00       10.63690  (97122209)
334926.44   4901347.00        9.04190  (97122205)
       334926.44   4901180.50        8.19159  (97122205)
334733.81   4902014.00       16.70459  (98021506)
       334733.81   4901847.00       13.72954  (98120503)
334733.81   4901680.50       11.60399  (98120803)
       334733.81   4901514.00       10.37000  (97012705)
334733.81   4901347.00        9.19869  (99021105)
       334733.81   4901180.50        8.09338  (98020923)
334541.19   4902014.00       14.90830  (98021021)
       334541.19   4901847.00       13.09034  (97012703)
334541.19   4901680.50       11.19440  (98021506)
       334541.19   4901514.00       10.07834  (97010107)
334541.19   4901347.00        8.60138  (98020622)
       334541.19   4901180.50        7.53712  (98120803)
334348.53   4902014.00       11.29599  (00092901)
       334348.53   4901847.00       10.25982  (00011507)
334348.53   4901680.50        9.54757  (98021021)
       334348.53   4901514.00        9.40090  (97012703)
334348.53   4901347.00        7.86214  (98021506)
       334348.53   4901180.50        7.26159  (97010107)
334155.91   4902014.00       10.62144  (98021106)
       334155.91   4901847.00        9.52849  (00010105)
334155.91   4901680.50        9.62041  (00011507)
       334155.91   4901514.00        8.28424  (98021021)
334155.91   4901347.00        7.40222  (96021503)
       334155.91   4901180.50        7.17468  (97012703)
333963.28   4902014.00       10.08190  (96010723)
       333963.28   4901847.00        8.15374  (98021106)
333963.28   4901680.50        7.61247  (00010105)
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          333963.28   4901514.00         7.15478  (00011507)
333963.28   4901347.00         6.26479  (00011507)
          333963.28   4901180.50         6.69767  (98021021)
333770.66   4902014.00         7.47945  (98121824)
          333770.66   4901847.00         8.50955  (96010723)
333770.66   4901680.50         6.55834  (99120421)
          333770.66   4901514.00         6.01295  (98021106)
333770.66   4901347.00         5.69275  (97111801)
          333770.66   4901180.50         6.29463  (00011507)
333578.00   4902014.00         7.95343  (98012624)
          333578.00   4901847.00         6.55244  (97010216)
333578.00   4901680.50         7.25089  (96010723)
          333578.00   4901514.00         5.59571  (99120421)
333578.00   4901347.00         5.62345  (98021106)
          333578.00   4901180.50         5.02725  (00010105)
333385.38   4902014.00         5.06233  (97051502)
          333385.38   4901847.00         7.04923  (98012624)
333385.38   4901680.50         5.84196  (97010216)
          333385.38   4901514.00         6.24498  (96010723)
333385.38   4901347.00         4.84237  (99120421)
          333385.38   4901180.50         5.15953  (98021106)
334218.72   4902180.50        13.75136  (96010723)
          334218.72   4902373.00        15.73347  (98012624)
334218.72   4902566.00        16.23933  (97013003)
          334218.72   4902758.50        18.47540  (00121520)
334218.72   4902951.00        16.31618  (96121406)
          334218.72   4903143.50        18.75896  (96012523)
334218.72   4903336.50        17.04895  (99121909)
          334218.72   4903529.00        14.70926  (00012504)
334218.72   4903721.50        12.13123  (00092902)
          334218.72   4903914.50        12.36535  (00012502)
334218.72   4904107.00         9.82064  (99120224)
          334218.72   4904299.50         9.33453  (00021306)
334218.72   4904492.00         8.17680  (00120901)
          334218.72   4904685.00         6.73682  (00090924)
334218.72   4904877.50         7.20778  (96021602)
          334052.03   4902180.50        10.39442  (97010216)
334052.03   4902373.00         9.47756  (97042702)
          334052.03   4902566.00        12.46497  (00012505)
334052.03   4902758.50        13.60551  (98011921)
          334052.03   4902951.00        13.34534  (96100520)
334052.03   4903143.50        14.75867  (96012523)
          334052.03   4903336.50        14.23341  (97020823)
334052.03   4903529.00        13.35754  (98021022)
          334052.03   4903721.50        11.19668  (00012305)
334052.03   4903914.50        11.39541  (96011603)
          334052.03   4904107.00        10.18435  (00012502)
334052.03   4904299.50         7.83958  (99120224)
```

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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  57
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       334052.03   4904492.00        7.55185  (00021306)
334052.03   4904685.00        7.46354  (00120901)
       334052.03   4904877.50        5.87711  (96100101)
333885.38   4902180.50       10.84273  (98012624)
       333885.38   4902373.00        8.27758  (97111803)
333885.38   4902566.00       12.33846  (00012505)
       333885.38   4902758.50       11.08156  (96111605)
333885.38   4902951.00       11.21860  (96100520)
       333885.38   4903143.50       11.76810  (98123116)
333885.38   4903336.50       11.63961  (98122902)
       333885.38   4903529.00       11.92332  (98020620)
333885.38   4903721.50       10.51766  (97020322)
       333885.38   4903914.50        9.10768  (99120303)
333885.38   4904107.00        8.61526  (96011201)
       333885.38   4904299.50        8.52158  (99020602)
333885.38   4904492.00        6.62991  (98020621)
       333885.38   4904685.00        6.28589  (00021306)
333885.38   4904877.50        6.70818  (00120901)
       333718.72   4902180.50        6.95987  (97042702)
333718.72   4902373.00        9.90614  (97013003)
       333718.72   4902566.00       10.66459  (97010108)
333718.72   4902758.50        9.36101  (99090322)
       333718.72   4902951.00        9.52915  (96100520)
333718.72   4903143.50       10.71622  (98123116)
       333718.72   4903336.50       10.78865  (98122902)
333718.72   4903529.00       10.12943  (99121909)
       333718.72   4903721.50        9.88332  (00012504)
333718.72   4903914.50        8.25669  (96122303)
       333718.72   4904107.00        8.10957  (99120907)
333718.72   4904299.50        7.13841  (99120307)
       333718.72   4904492.00        6.77787  (99020602)
333718.72   4904685.00        5.92285  (98020621)
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       333718.72   4904877.50        5.79223  (96012524)
333552.03   4902180.50        4.91726  (97111803)
       333552.03   4902373.00        7.35603  (00012505)
333552.03   4902566.00        8.88772  (00121520)
       333552.03   4902758.50        8.10277  (98091406)
333552.03   4902951.00        8.22921  (96100520)
       333552.03   4903143.50        9.59080  (98123116)
333552.03   4903336.50        9.35436  (98021602)
       333552.03   4903529.00        9.00586  (97020823)
333552.03   4903721.50        7.92619  (99120302)
       333552.03   4903914.50        8.23239  (97020322)
333552.03   4904107.00        7.11626  (99120303)
       333552.03   4904299.50        7.28738  (96011603)
333552.03   4904492.00        6.44607  (00012502)
       333552.03   4904685.00        5.49200  (99102806)
333552.03   4904877.50        5.50065  (98020621)
       333385.38   4902180.50        6.72019  (97013003)
333385.38   4902373.00        8.15121  (00012505)
       333385.38   4902566.00        8.29359  (00121520)
333385.38   4902758.50        7.34552  (97091704)
       333385.38   4902951.00        7.22313  (96100520)
333385.38   4903143.50        8.52165  (98123116)
       333385.38   4903336.50        8.17089  (96010909)
333385.38   4903529.00        8.17099  (97020823)
       333385.38   4903721.50        8.01761  (98020620)
333385.38   4903914.50        7.41991  (00012504)
       333385.38   4904107.00        6.49879  (96122303)
333385.38   4904299.50        5.82325  (00092902)
       333385.38   4904492.00        5.78936  (96011201)
333385.38   4904685.00        6.09048  (00012502)
       333385.38   4904877.50        5.15952  (99102806)
333385.38   4905376.50        4.83861  (00021306)
       333385.38   4905876.00        3.60582  (96100101)
333385.38   4906375.00        3.26286  (96021602)
       333385.38   4906874.00        2.74730  (97120905)
333385.38   4907373.50        2.35308  (96021405)
       333385.38   4907872.50        2.32132  (96021405)
333863.38   4905376.50        5.50773  (96022206)
       333863.38   4905876.00        4.54471  (97120905)
333863.38   4906375.00        4.04931  (96021405)
       333863.38   4906874.00        3.01124  (99021521)
333863.38   4907373.50        2.66462  (97012702)
       333863.38   4907872.50        2.34317  (00021802)
334341.34   4905376.50        5.50195  (96021405)
       334341.34   4905876.00        5.17891  (97012702)
334341.34   4906375.00        3.90389  (99020823)
       334341.34   4906874.00        3.35820  (99020823)
334341.34   4907373.50        2.43229  (00092004)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  58
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       334341.34   4907872.50        2.54654  (00120921)
334819.34   4905376.50        6.17256  (00120921)
       334819.34   4905876.00        4.89215  (99013108)
334819.34   4906375.00        4.02284  (99013002)
       334819.34   4906874.00        3.42227  (99120304)
334819.34   4907373.50        3.28311  (98122706)
       334819.34   4907872.50        2.63035  (98122706)
335297.34   4905376.50        6.26946  (97121623)
       335297.34   4905876.00        4.95442  (97121623)
335297.34   4906375.00        4.11222  (97121623)
       335297.34   4906874.00        3.63235  (97121623)
335297.34   4907373.50        3.31002  (97121623)
       335297.34   4907872.50        2.95567  (97121623)
335775.34   4905376.50        5.87086  (97121616)
       335775.34   4905876.00        4.71054  (99022322)
335775.34   4906375.00        3.84372  (96020104)
       335775.34   4906874.00        3.27521  (98020619)
335775.34   4907373.50        2.94366  (96021404)
       335775.34   4907872.50        2.94598  (96021404)
336253.31   4905376.50        5.63568  (98021102)
       336253.31   4905876.00        4.53896  (96011602)
336253.31   4906375.00        3.60834  (98020907)
       336253.31   4906874.00        3.23729  (00121505)
336253.31   4907373.50        2.91674  (97121616)
       336253.31   4907872.50        2.28813  (97121616)
336731.31   4905376.50        5.61210  (00011907)
       336731.31   4905876.00        3.83461  (00123001)
336731.31   4906375.00        3.31311  (98021102)
       336731.31   4906874.00        2.78784  (96022308)
336731.31   4907373.50        2.79822  (96011602)
       336731.31   4907872.50        2.36952  (98020907)
337209.31   4905376.50        4.13903  (98022305)
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       337209.31   4905876.00        3.82645  (99121908)
337209.31   4906375.00        2.81680  (99100724)
       337209.31   4906874.00        2.71965  (00123001)
337209.31   4907373.50        2.47345  (00013008)
       337209.31   4907872.50        2.12918  (98021102)
337687.28   4905376.50        4.06712  (00011904)
       337687.28   4905876.00        3.40178  (98022305)
337687.28   4906375.00        2.86791  (96020407)
       337687.28   4906874.00        2.76012  (00011907)
337687.28   4907373.50        2.37109  (00121501)
       337687.28   4907872.50        2.08081  (96020108)
338165.28   4905376.50        3.29555  (99021503)
       338165.28   4905876.00        3.10725  (00011904)
338165.28   4906375.00        2.85390  (98022305)
       338165.28   4906874.00        2.58037  (96020407)
338165.28   4907373.50        2.30890  (96021522)
       338165.28   4907872.50        1.90615  (00011907)
338643.28   4905376.50        2.83536  (97022319)
       338643.28   4905876.00        2.64073  (96020107)
338643.28   4906375.00        2.50996  (00011904)
       338643.28   4906874.00        2.35109  (98022305)
338643.28   4907373.50        2.27134  (99012603)
       338643.28   4907872.50        1.99483  (99121908)
339121.28   4905376.50        2.49729  (99012023)
       339121.28   4905876.00        2.45103  (00021301)
339121.28   4906375.00        2.37797  (96020107)
       339121.28   4906874.00        2.08500  (00011904)
339121.28   4907373.50        1.99530  (98022305)
       339121.28   4907872.50        1.91794  (99012603)
339599.25   4905376.50        2.34894  (00013007)
       339599.25   4905876.00        2.29251  (96020402)
339599.25   4906375.00        2.10711  (99021503)
       339599.25   4906874.00        1.98037  (96020107)
339599.25   4907373.50        1.71385  (00011904)
       339599.25   4907872.50        1.68996  (00010202)
340077.25   4905376.50        2.12387  (00021305)
       340077.25   4905876.00        1.86418  (96011404)
340077.25   4906375.00        1.78615  (97022319)
       340077.25   4906874.00        1.84450  (99021503)
340077.25   4907373.50        1.61690  (99022719)
       340077.25   4907872.50        1.55943  (00120820)
337581.41   4904877.50        4.67226  (99021503)
       337581.41   4904399.50        4.79832  (96011404)
337581.41   4903921.50        5.82700  (98020920)
       337581.41   4903443.50        6.09848  (00021303)
337581.41   4902965.50        6.39942  (99123022)
       337581.41   4902487.50        5.73791  (96021402)
337581.41   4902009.50        5.53284  (97121619)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  59
CONC                         DFAULT ELEV   FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       337581.41   4901531.50        4.78027  (99022704)
337581.41   4901053.50        3.71061  (99090101)
       337581.41   4900575.50        3.80048  (98020921)
337581.41   4900097.50        3.32924  (96123122)
       337581.41   4899619.50        2.91020  (96020324)
337581.41   4899141.50        2.30038  (98020721)
       337581.41   4898663.50        2.31806  (96020405)
337581.41   4898185.50        1.76698  (96020323)
       338080.59   4904877.50        3.97746  (96020402)
338080.59   4904399.50        4.38412  (00021305)
       338080.59   4903921.50        4.76920  (00020308)
338080.59   4903443.50        4.82329  (99123104)
       338080.59   4902965.50        4.97745  (99123022)
338080.59   4902487.50        4.68973  (99013005)
       338080.59   4902009.50        4.44734  (98011424)
338080.59   4901531.50        4.01881  (98020904)
       338080.59   4901053.50        3.73471  (99123103)
338080.59   4900575.50        2.81240  (99092522)
       338080.59   4900097.50        2.97048  (98020921)
338080.59   4899619.50        2.54923  (96021019)
       338080.59   4899141.50        2.33327  (98021018)
338080.59   4898663.50        2.14315  (00120823)
       338080.59   4898185.50        1.91256  (98020721)
338579.75   4904877.50        3.09062  (00013007)
       338579.75   4904399.50        3.55713  (96012823)
338579.75   4903921.50        3.60775  (96010221)
       338579.75   4903443.50        3.54043  (97120502)
338579.75   4902965.50        3.98480  (99123022)
       338579.75   4902487.50        3.61401  (99013005)
338579.75   4902009.50        3.72671  (00011901)
       338579.75   4901531.50        3.50234  (98011203)
338579.75   4901053.50        3.13123  (98011501)
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          338579.75   4900575.50         2.55640  (99123103)
 338579.75   4900097.50         2.25425  (99022007)
          338579.75   4899619.50         2.35808  (98020921)
 338579.75   4899141.50         1.99446  (96021019)
          338579.75   4898663.50         1.98098  (97010104)
 338579.75   4898185.50         1.82155  (96020324)
          339078.91   4904877.50         2.93220  (00021305)
 339078.91   4904399.50         3.07693  (99121905)
          339078.91   4903921.50         3.06858  (99123021)
 339078.91   4903443.50         3.27288  (96010718)
          339078.91   4902965.50         3.30088  (99123022)
 339078.91   4902487.50         3.25330  (96020322)
          339078.91   4902009.50         2.81355  (99011223)
 339078.91   4901531.50         2.92196  (00120918)
          339078.91   4901053.50         2.81011  (98020904)
 339078.91   4900575.50         2.43350  (99022704)
          339078.91   4900097.50         2.27292  (96012824)
 339078.91   4899619.50         1.93637  (99022007)
          339078.91   4899141.50         1.97536  (96021707)
 339078.91   4898663.50         1.78113  (99013006)
          339078.91   4898185.50         1.67343  (96021507)
 339578.09   4904877.50         2.38200  (96021403)
          339578.09   4904399.50         2.65290  (00020308)
 339578.09   4903921.50         2.60861  (00021303)
          339578.09   4903443.50         2.80664  (96010718)
 339578.09   4902965.50         2.80186  (99123022)
          339578.09   4902487.50         2.76893  (00021304)
 339578.09   4902009.50         2.31090  (96021402)
          339578.09   4901531.50         2.29153  (98120401)
 339578.09   4901053.50         2.40884  (98011203)
          339578.09   4900575.50         2.19682  (98011501)
 339578.09   4900097.50         1.91193  (99123103)
          339578.09   4899619.50         2.00118  (96012824)
 339578.09   4899141.50         1.67173  (99022007)
          339578.09   4898663.50         1.71127  (96021707)
 339578.09   4898185.50         1.60687  (99013006)
          340077.25   4904877.50         2.24493  (98020920)
 340077.25   4904399.50         2.33165  (96010221)
          340077.25   4903921.50         2.36185  (00021303)
 340077.25   4903443.50         2.48119  (96010220)
          340077.25   4902965.50         2.39464  (99123022)
 340077.25   4902487.50         2.40397  (99012606)
          340077.25   4902009.50         2.25028  (96021402)
 340077.25   4901531.50         2.25473  (00011901)
          340077.25   4901053.50         2.15758  (96010623)
 340077.25   4900575.50         2.04494  (98020904)
          340077.25   4900097.50         1.71468  (99022704)
 340077.25   4899619.50         1.82284  (99123103)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  60
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       340077.25   4899141.50        1.60605  (96012824)
340077.25   4898663.50        1.45942  (99022007)
       340077.25   4898185.50        1.48865  (96021707)
337082.25   4900681.50        4.44083  (97121617)
       337082.25   4900182.00        3.81213  (00120823)
337082.25   4899683.00        3.27260  (98020905)
       337082.25   4899184.00        2.35076  (96020323)
337082.25   4898684.50        2.46764  (98020624)
       337082.25   4898185.50        2.13326  (97121618)
336604.25   4900681.50        5.14792  (98020721)
       336604.25   4900182.00        3.64010  (96020323)
336604.25   4899683.00        3.46085  (98011206)
       336604.25   4899184.00        2.91386  (96010719)
336604.25   4898684.50        2.52745  (00120802)
       336604.25   4898185.50        2.26630  (97020902)
336126.28   4900681.50        5.60037  (97121618)
       336126.28   4900182.00        4.42705  (00120802)
336126.28   4899683.00        3.73494  (97122207)
       336126.28   4899184.00        3.11201  (00021805)
336126.28   4898684.50        2.64628  (00020406)
       336126.28   4898185.50        2.29795  (97122108)
335648.28   4900681.50        6.13137  (97122108)
       335648.28   4900182.00        4.77904  (96021502)
335648.28   4899683.00        3.52329  (96021502)
       335648.28   4899184.00        3.12325  (96010119)
335648.28   4898684.50        2.55062  (96010119)
       335648.28   4898185.50        2.12106  (97121005)
335170.28   4900681.50        6.30975  (97010106)
       335170.28   4900182.00        4.79654  (97010106)
335170.28   4899683.00        3.76521  (97010106)
       335170.28   4899184.00        3.03647  (97010106)
335170.28   4898684.50        2.49705  (97010106)
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       335170.28   4898185.50        2.12541  (97021421)
334692.28   4900681.50        6.01854  (98120502)
       334692.28   4900182.00        4.30082  (97122205)
334692.28   4899683.00        3.78349  (99022720)
       334692.28   4899184.00        3.23606  (96020406)
334692.28   4898684.50        2.71978  (98020623)
       334692.28   4898185.50        2.30366  (98020623)
334214.31   4900681.50        5.57148  (98120503)
       334214.31   4900182.00        4.47080  (98120803)
334214.31   4899683.00        3.69703  (99021105)
       334214.31   4899184.00        3.08998  (98020923)
334214.31   4898684.50        2.61431  (98120502)
       334214.31   4898185.50        2.26337  (97122209)
333736.31   4900681.50        4.81938  (96012902)
       333736.31   4900182.00        3.88671  (98021506)
333736.31   4899683.00        3.44971  (98120503)
       333736.31   4899184.00        2.88895  (98020622)
333736.31   4898684.50        2.36761  (98120803)
       333736.31   4898185.50        2.20477  (99021105)
333258.31   4900681.50        3.85014  (00011507)
       333258.31   4900182.00        3.74401  (98021021)
333258.31   4899683.00        3.25136  (97012703)
       333258.31   4899184.00        2.78798  (98021506)
333258.31   4898684.50        2.42290  (97010107)
       333258.31   4898185.50        2.13095  (98020622)
332780.34   4900681.50        3.68613  (98021106)
       332780.34   4900182.00        2.86912  (97111801)
332780.34   4899683.00        2.50369  (96111406)
       332780.34   4899184.00        2.48367  (96012902)
332780.34   4898684.50        1.87261  (97012703)
       332780.34   4898185.50        2.07099  (98021506)
332302.34   4900681.50        3.31276  (96010723)
       332302.34   4900182.00        2.93888  (98021106)
332302.34   4899683.00        2.27662  (97111801)
       332302.34   4899184.00        2.02114  (96111406)
332302.34   4898684.50        1.97008  (98021021)
       332302.34   4898185.50        1.93473  (97012703)
331824.34   4900681.50        2.29301  (00050224)
       331824.34   4900182.00        2.58945  (96010723)
331824.34   4899683.00        2.37093  (98021106)
       331824.34   4899184.00        1.86572  (00092901)
331824.34   4898684.50        1.89080  (00011507)
       331824.34   4898185.50        1.79454  (98021021)
331346.34   4900681.50        2.42466  (96011202)
       331346.34   4900182.00        2.15248  (97010216)
331346.34   4899683.00        1.91111  (96022203)
       331346.34   4899184.00        1.91559  (98021106)
331346.34   4898684.50        1.58173  (00092901)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  61
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       331346.34   4898185.50        1.71134  (00011507)
330868.38   4900681.50        1.53459  (97051502)
       330868.38   4900182.00        1.97771  (98012624)
330868.38   4899683.00        1.73448  (00010122)
       330868.38   4899184.00        1.47478  (99120421)
330868.38   4898684.50        1.57824  (98021106)
       330868.38   4898185.50        1.36095  (00092901)
330390.38   4900681.50        1.20688  (97111803)
       330390.38   4900182.00        1.72868  (96011202)
330390.38   4899683.00        1.43561  (96050403)
       330390.38   4899184.00        1.64020  (96010723)
330390.38   4898684.50        1.33849  (99120421)
       330390.38   4898185.50        1.31186  (98021106)
332886.22   4901180.50        4.23405  (96010723)
       332886.22   4901658.50        4.49384  (96011202)
332886.22   4902136.50        4.93659  (00012505)
       332886.22   4902614.50        5.25163  (99090322)
332886.22   4903092.50        6.52286  (98012703)
       332886.22   4903570.50        5.90851  (98122902)
332886.22   4904048.50        5.65966  (98021022)
       332886.22   4904526.50        4.63818  (99120303)
332886.22   4905004.50        4.23829  (99120307)
       332886.22   4905482.50        3.60009  (99120224)
332886.22   4905960.50        3.01999  (00021306)
       332886.22   4906438.50        2.63774  (99120819)
332886.22   4906916.50        2.42882  (00090924)
       332886.22   4907394.50        2.82849  (96010720)
332886.22   4907872.50        2.56509  (97120905)
       332387.03   4901180.50        3.72466  (98012624)
332387.03   4901658.50        2.84131  (97111803)
       332387.03   4902136.50        4.58076  (97010108)
332387.03   4902614.50        4.10213  (99092702)
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       332387.03   4903092.50        5.06050  (98012703)
332387.03   4903570.50        4.77590  (98021602)
       332387.03   4904048.50        4.21136  (96012023)
332387.03   4904526.50        4.12257  (97020322)
       332387.03   4905004.50        3.48939  (00092902)
332387.03   4905482.50        2.91488  (00012502)
       332387.03   4905960.50        2.66592  (99120224)
332387.03   4906438.50        2.52118  (96012524)
       332387.03   4906916.50        2.70836  (00120901)
332387.03   4907394.50        2.37520  (96100101)
       332387.03   4907872.50        2.42797  (96022206)
331887.88   4901180.50        2.31123  (97051502)
       331887.88   4901658.50        3.17732  (97013003)
331887.88   4902136.50        3.55986  (00121520)
       331887.88   4902614.50        3.37667  (99090401)
331887.88   4903092.50        4.19240  (98012703)
       331887.88   4903570.50        3.62478  (96010909)
331887.88   4904048.50        3.43287  (99121909)
       331887.88   4904526.50        3.57795  (98021022)
331887.88   4905004.50        2.77539  (96122303)
       331887.88   4905482.50        2.78639  (96011603)
331887.88   4905960.50        2.52575  (00012502)
       331887.88   4906438.50        2.37467  (99120224)
331887.88   4906916.50        2.87922  (98020621)
       331887.88   4907394.50        2.71417  (00021803)
331887.88   4907872.50        2.12524  (99120819)
       331388.72   4901180.50        1.82806  (97111803)
331388.72   4901658.50        2.97760  (00012505)
       331388.72   4902136.50        2.84572  (98011921)
331388.72   4902614.50        2.79101  (97101324)
       331388.72   4903092.50        3.32111  (98012703)
331388.72   4903570.50        2.80587  (96012523)
       331388.72   4904048.50        2.95514  (97020823)
331388.72   4904526.50        2.94329  (98020620)
       331388.72   4905004.50        2.53808  (97020322)
331388.72   4905482.50        2.27914  (99120303)
       331388.72   4905960.50        2.45072  (96011603)
331388.72   4906438.50        2.46630  (00012502)
       331388.72   4906916.50        2.21216  (99120224)
331388.72   4907394.50        2.41718  (98020621)
       331388.72   4907872.50        2.07423  (00021306)
330889.53   4901180.50        2.39841  (97013003)
       330889.53   4901658.50        2.65263  (97010108)
330889.53   4902136.50        2.29117  (96111605)
       330889.53   4902614.50        2.47723  (96121406)
330889.53   4903092.50        2.75307  (98012703)
       330889.53   4903570.50        2.69351  (96012523)
330889.53   4904048.50        2.40754  (96022205)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  62
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       330889.53   4904526.50        2.46112  (96012023)
330889.53   4905004.50        2.37202  (00012504)
       330889.53   4905482.50        2.24531  (00012305)
330889.53   4905960.50        2.14864  (97090102)
       330889.53   4906438.50        2.18726  (96011201)
330889.53   4906916.50        2.36875  (00012502)
       330889.53   4907394.50        1.91437  (99102806)
330889.53   4907872.50        1.91444  (98020621)
       330390.38   4901180.50        1.77234  (98101304)
330390.38   4901658.50        1.86986  (97010108)
       330390.38   4902136.50        1.97867  (99090322)
330390.38   4902614.50        2.15851  (96121406)
       330390.38   4903092.50        2.39378  (98012703)
330390.38   4903570.50        2.26863  (96012523)
       330390.38   4904048.50        2.26150  (98122902)
330390.38   4904526.50        2.06099  (99121909)
       330390.38   4905004.50        1.86805  (99120302)
330390.38   4905482.50        1.98702  (99120305)
       330390.38   4905960.50        1.79829  (97113003)
330390.38   4906438.50        1.97210  (00092902)
       330390.38   4906916.50        1.89421  (96011201)
330390.38   4907394.50        2.11623  (00012502)
       330390.38   4907872.50        1.67127  (99102806)
330390.38   4908811.50        1.98707  (96012524)
       330390.38   4909750.00        1.92953  (00120901)
330390.38   4910689.00        1.23086  (96052524)
       330390.38   4911628.00        1.43947  (96021602)
330390.38   4912566.50        1.00359  (97120905)
       330390.38   4913505.50        1.19185  (96010222)
330390.38   4914444.50        0.80912  (96021405)
       330390.38   4915383.50        0.94994  (96021405)
330390.38   4916322.00        0.86646  (00103103)
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       330390.38   4917261.00        0.90534  (99021521)
330390.38   4918200.00        0.71720  (97012702)
       330390.38   4919138.50        0.79382  (00021802)
330390.38   4920077.50        0.63790  (97090205)
       331385.47   4908811.50        1.83101  (96122907)
331385.47   4909750.00        1.94441  (96022206)
       331385.47   4910689.00        1.47955  (97120905)
331385.47   4911628.00        1.29811  (97090201)
       331385.47   4912566.50        1.39304  (96021405)
331385.47   4913505.50        1.07890  (00103103)
       331385.47   4914444.50        1.10418  (99021521)
331385.47   4915383.50        1.04686  (00021802)
       331385.47   4916322.00        0.78396  (97090205)
331385.47   4917261.00        0.83460  (98120324)
       331385.47   4918200.00        0.85815  (99020823)
331385.47   4919138.50        0.66263  (99020823)
       331385.47   4920077.50        0.65289  (98091421)
332380.53   4908811.50        2.01164  (97120905)
       332380.53   4909750.00        1.68999  (96021405)
332380.53   4910689.00        1.57220  (00103103)
       332380.53   4911628.00        1.60322  (97012702)
332380.53   4912566.50        1.46332  (00021802)
       332380.53   4913505.50        1.10513  (98120324)
332380.53   4914444.50        1.11690  (99020823)
       332380.53   4915383.50        0.88755  (98091421)
332380.53   4916322.00        0.89900  (00092004)
       332380.53   4917261.00        0.73538  (96042902)
332380.53   4918200.00        0.73320  (00120921)
       332380.53   4919138.50        0.79154  (00120921)
332380.53   4920077.50        0.65404  (00120921)
       333375.62   4908811.50        2.31496  (97012702)
333375.62   4909750.00        1.61433  (98120324)
       333375.62   4910689.00        1.81805  (99020823)
333375.62   4911628.00        1.43234  (00092004)
       333375.62   4912566.50        1.20881  (96032820)
333375.62   4913505.50        1.35839  (00120921)
       333375.62   4914444.50        1.07646  (96011123)
333375.62   4915383.50        0.97927  (99013108)
       333375.62   4916322.00        1.02215  (99013002)
333375.62   4917261.00        0.87922  (99013002)
       333375.62   4918200.00        0.84242  (96022217)
333375.62   4919138.50        0.71546  (96022217)
       333375.62   4920077.50        0.64982  (99120304)
334370.72   4908811.50        2.34159  (99013108)
       334370.72   4909750.00        1.85972  (99013108)
334370.72   4910689.00        1.41869  (99120304)
       334370.72   4911628.00        1.30735  (98122706)
334370.72   4912566.50        1.53579  (98122706)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  63
CONC                         DFAULT ELEV   FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):      LANDFILL,

                                             *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                        ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       334370.72   4913505.50        1.31979  (98122706)
334370.72   4914444.50        1.07836  (98122706)
       334370.72   4915383.50        0.91939  (00010201)
334370.72   4916322.00        0.96728  (00010201)
       334370.72   4917261.00        0.82851  (00010201)
334370.72   4918200.00        0.63753  (00010201)
       334370.72   4919138.50        0.57479  (96060202)
334370.72   4920077.50        0.52022  (96060202)
       335365.81   4908811.50        1.87796  (97121623)
335365.81   4909750.00        1.97376  (97121623)
       335365.81   4910689.00        1.59665  (97121623)
335365.81   4911628.00        1.37754  (97121623)
       335365.81   4912566.50        1.23806  (97121623)
335365.81   4913505.50        1.43162  (97121623)
       335365.81   4914444.50        1.05088  (97121623)
335365.81   4915383.50        1.12180  (97121623)
       335365.81   4916322.00        1.00500  (97121623)
335365.81   4917261.00        0.90393  (99020603)
       335365.81   4918200.00        0.84796  (99020603)
335365.81   4919138.50        0.79336  (99020603)
       335365.81   4920077.50        0.74604  (99020603)
336360.88   4908811.50        2.19455  (99022322)
       336360.88   4909750.00        1.89112  (99022322)
336360.88   4910689.00        1.26273  (98020619)
       336360.88   4911628.00        1.24237  (98020619)
336360.88   4912566.50        1.13665  (96021404)
       336360.88   4913505.50        1.07959  (96021404)
336360.88   4914444.50        0.95809  (96021404)
       336360.88   4915383.50        0.81454  (00020324)
336360.88   4916322.00        0.99996  (00020324)
       336360.88   4917261.00        0.88394  (96012022)
336360.88   4918200.00        0.84922  (96012022)
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       336360.88   4919138.50        0.67738  (96012022)
336360.88   4920077.50        0.54417  (96012022)
       337355.97   4908811.50        1.98392  (96020109)
337355.97   4909750.00        1.43668  (98093020)
       337355.97   4910689.00        1.58781  (00121505)
337355.97   4911628.00        1.07161  (97121616)
       337355.97   4912566.50        1.09482  (97121616)
337355.97   4913505.50        0.77370  (99022322)
       337355.97   4914444.50        0.93039  (99022322)
337355.97   4915383.50        0.86042  (99022322)
       337355.97   4916322.00        0.92121  (96020104)
337355.97   4917261.00        0.87809  (98020619)
       337355.97   4918200.00        0.88424  (98020619)
337355.97   4919138.50        0.71857  (98020619)
       337355.97   4920077.50        0.47923  (00103121)
338351.06   4908811.50        1.61432  (00121501)
       338351.06   4909750.00        1.69417  (00013008)
338351.06   4910689.00        1.28920  (98021102)
       338351.06   4911628.00        1.19730  (96020109)
338351.06   4912566.50        0.96863  (96011602)
       338351.06   4913505.50        0.96553  (98020907)
338351.06   4914444.50        0.93742  (00121505)
       338351.06   4915383.50        0.73255  (00121505)
338351.06   4916322.00        0.74530  (97121616)
       338351.06   4917261.00        0.76981  (97121616)
338351.06   4918200.00        0.67830  (99052202)
       338351.06   4919138.50        0.65131  (00052205)
338351.06   4920077.50        0.75238  (99022322)
       339346.16   4908811.50        1.63596  (99121908)
339346.16   4909750.00        1.45106  (00011907)
       339346.16   4910689.00        1.20220  (00121501)
339346.16   4911628.00        1.13056  (00021222)
       339346.16   4912566.50        1.07833  (98021102)
339346.16   4913505.50        1.04856  (96022308)
       339346.16   4914444.50        0.85690  (96020109)
339346.16   4915383.50        0.75296  (96011602)
       339346.16   4916322.00        0.57527  (98093020)
339346.16   4917261.00        0.91439  (98020907)
       339346.16   4918200.00        0.90674  (00121505)
339346.16   4919138.50        0.67035  (00050304)
       339346.16   4920077.50        0.56478  (97121616)
340341.22   4908811.50        1.40907  (98022305)
       340341.22   4909750.00        1.45335  (96020407)
340341.22   4910689.00        1.29339  (96021522)
       340341.22   4911628.00        0.97166  (99100724)
340341.22   4912566.50        0.86367  (00121501)
       340341.22   4913505.50        1.31929  (96020108)
340341.22   4914444.50        1.05511  (96122910)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  64
CONC                            DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       340341.22   4915383.50        0.92757  (98021102)
340341.22   4916322.00        0.64840  (96022308)
       340341.22   4917261.00        0.61506  (96020109)
340341.22   4918200.00        0.60724  (96011602)
       340341.22   4919138.50        0.61596  (96032806)
340341.22   4920077.50        0.56854  (98093020)
       341336.31   4908811.50        1.33623  (00011904)
341336.31   4909750.00        1.19240  (00010202)
       341336.31   4910689.00        1.17587  (99012603)
341336.31   4911628.00        1.08916  (99121908)
       341336.31   4912566.50        0.91320  (99013004)
341336.31   4913505.50        0.85090  (98030724)
       341336.31   4914444.50        0.93747  (00110303)
341336.31   4915383.50        0.97218  (96020108)
       341336.31   4916322.00        0.85607  (00013008)
341336.31   4917261.00        0.89097  (98021102)
       341336.31   4918200.00        0.44984  (98042606)
341336.31   4919138.50        0.48988  (96022308)
       341336.31   4920077.50        0.67450  (96020109)
342331.41   4908811.50        1.09016  (97010323)
       342331.41   4909750.00        1.18409  (00011904)
342331.41   4910689.00        0.90356  (00010202)
       342331.41   4911628.00        0.88059  (97010404)
342331.41   4912566.50        0.91107  (96020407)
       342331.41   4913505.50        0.82803  (96021522)
342331.41   4914444.50        0.87822  (00011907)
       342331.41   4915383.50        0.82418  (98030724)
342331.41   4916322.00        0.76540  (00110303)
       342331.41   4917261.00        0.70263  (96020108)
342331.41   4918200.00        0.79233  (00013008)
       342331.41   4919138.50        0.48074  (98021102)
342331.41   4920077.50        0.48572  (98021102)
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       343326.47   4908811.50        1.04220  (00021301)
343326.47   4909750.00        0.88832  (97092705)
       343326.47   4910689.00        0.97526  (00011904)
343326.47   4911628.00        0.81862  (00120820)
       343326.47   4912566.50        0.77149  (98022305)
343326.47   4913505.50        0.77377  (99012603)
       343326.47   4914444.50        0.71509  (99121908)
343326.47   4915383.50        0.69717  (99013004)
       343326.47   4916322.00        0.74390  (99100724)
343326.47   4917261.00        0.70978  (00121501)
       343326.47   4918200.00        0.70912  (00110303)
343326.47   4919138.50        0.62286  (00123001)
       343326.47   4920077.50        0.48674  (00013008)
344321.56   4908811.50        0.96581  (96020402)
       344321.56   4909750.00        0.91367  (98022707)
344321.56   4910689.00        0.82031  (96020107)
       344321.56   4911628.00        0.81746  (00011904)
344321.56   4912566.50        0.76742  (00120820)
       344321.56   4913505.50        0.75444  (98022305)
344321.56   4914444.50        0.67698  (99012603)
       344321.56   4915383.50        0.59159  (96020407)
344321.56   4916322.00        0.61069  (96021522)
       344321.56   4917261.00        0.73475  (99013004)
344321.56   4918200.00        0.67221  (99100724)
       344321.56   4919138.50        0.63958  (00121501)
344321.56   4920077.50        0.53949  (00110303)
       345316.66   4908811.50        0.84608  (96011404)
345316.66   4909750.00        0.82446  (97121507)
       345316.66   4910689.00        0.83901  (98022707)
345316.66   4911628.00        0.78348  (96020107)
       345316.66   4912566.50        0.70941  (00011904)
345316.66   4913505.50        0.70604  (00120820)
       345316.66   4914444.50        0.64028  (98022305)
345316.66   4915383.50        0.55669  (97010404)
       345316.66   4916322.00        0.59712  (96020407)
345316.66   4917261.00        0.67951  (99121908)
       345316.66   4918200.00        0.68304  (96021522)
345316.66   4919138.50        0.72923  (00011907)
       345316.66   4920077.50        0.52465  (99100724)
346311.75   4908811.50        0.82186  (00013007)
       346311.75   4909750.00        0.73127  (99012023)
346311.75   4910689.00        0.68925  (97022319)
       346311.75   4911628.00        0.74919  (99021503)
346311.75   4912566.50        0.70911  (96020107)
       346311.75   4913505.50        0.63135  (00011904)
346311.75   4914444.50        0.62782  (00120820)
       346311.75   4915383.50        0.53064  (00010202)
346311.75   4916322.00        0.46976  (00112419)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  65
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       346311.75   4917261.00        0.66869  (99012603)
346311.75   4918200.00        0.63456  (96090121)
       346311.75   4919138.50        0.52697  (96021522)
346311.75   4920077.50        0.59324  (99013004)
       347306.81   4908811.50        0.74430  (00021305)
347306.81   4909750.00        0.63769  (99091902)
       347306.81   4910689.00        0.69750  (96020402)
347306.81   4911628.00        0.64334  (00021301)
       347306.81   4912566.50        0.64493  (99021503)
347306.81   4913505.50        0.63531  (96020107)
       347306.81   4914444.50        0.55840  (00011904)
347306.81   4915383.50        0.55068  (00120820)
       347306.81   4916322.00        0.47580  (00010202)
347306.81   4917261.00        0.44378  (98022305)
       347306.81   4918200.00        0.50347  (99012603)
347306.81   4919138.50        0.65214  (96020407)
       347306.81   4920077.50        0.48837  (99013001)
348301.91   4908811.50        0.70138  (96021403)
       348301.91   4909750.00        0.70458  (98010108)
348301.91   4910689.00        0.59557  (96011404)
       348301.91   4911628.00        0.62563  (96020402)
348301.91   4912566.50        0.66410  (00021301)
       348301.91   4913505.50        0.52265  (97010323)
348301.91   4914444.50        0.56452  (96020107)
       348301.91   4915383.50        0.50029  (98020918)
348301.91   4916322.00        0.47855  (00120820)
       348301.91   4917261.00        0.40543  (00010202)
348301.91   4918200.00        0.44944  (98022305)
       348301.91   4919138.50        0.39378  (97010404)
348301.91   4920077.50        0.47788  (96020407)
       349297.00   4908811.50        0.53761  (96012823)
349297.00   4909750.00        0.57761  (00021305)
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          349297.00   4910689.00         0.54448  (00013007)
349297.00   4911628.00         0.50547  (99012023)
          349297.00   4912566.50         0.53165  (97121507)
349297.00   4913505.50         0.53820  (98022707)
          349297.00   4914444.50         0.47317  (97010323)
349297.00   4915383.50         0.62968  (96020107)
          349297.00   4916322.00         0.45279  (98020918)
349297.00   4917261.00         0.41416  (00120820)
          349297.00   4918200.00         0.33874  (00040224)
349297.00   4919138.50         0.41959  (98022305)
          349297.00   4920077.50         0.33999  (97010404)
350292.09   4908811.50         0.55638  (98020920)
          350292.09   4909750.00         0.50568  (98011204)
350292.09   4910689.00         0.54326  (98010108)
          350292.09   4911628.00         0.51321  (96011404)
350292.09   4912566.50         0.49966  (96020402)
          350292.09   4913505.50         0.45679  (97022319)
350292.09   4914444.50         0.48959  (98022707)
          350292.09   4915383.50         0.50622  (97010323)
350292.09   4916322.00         0.56969  (96020107)
          350292.09   4917261.00         0.41022  (98020918)
350292.09   4918200.00         0.35834  (00120820)
          350292.09   4919138.50         0.31118  (00040224)
350292.09   4920077.50         0.36772  (98022305)
          351287.16   4908811.50         0.57374  (99121905)
351287.16   4909750.00         0.48240  (97120423)
          351287.16   4910689.00         0.44312  (00021305)
351287.16   4911628.00         0.48672  (00013007)
          351287.16   4912566.50         0.44823  (99012023)
351287.16   4913505.50         0.49311  (96020402)
          351287.16   4914444.50         0.43575  (00021301)
351287.16   4915383.50         0.47399  (99021503)
          351287.16   4916322.00         0.49478  (00110305)
351287.16   4917261.00         0.38551  (96020107)
          351287.16   4918200.00         0.37431  (98020918)
351287.16   4919138.50         0.31551  (00090622)
          351287.16   4920077.50         0.31485  (00120820)
352282.25   4908811.50         0.63584  (97020905)
          352282.25   4909750.00         0.47804  (96012823)
352282.25   4910689.00         0.46395  (98011204)
          352282.25   4911628.00         0.45839  (98010108)
352282.25   4912566.50         0.39616  (99091902)
          352282.25   4913505.50         0.37834  (97101801)
352282.25   4914444.50         0.41166  (97121507)
          352282.25   4915383.50         0.42511  (00021301)
352282.25   4916322.00         0.41564  (99021503)
          352282.25   4917261.00         0.33559  (97092705)
352282.25   4918200.00         0.33755  (96020107)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  66
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       352282.25   4919138.50        0.34440  (98020918)
352282.25   4920077.50        0.29273  (00090622)
       341016.09   4907872.50        1.33046  (96020107)
341016.09   4906877.50        1.51568  (97121507)
       341016.09   4905882.50        1.66235  (00021305)
341016.09   4904887.00        1.82972  (00020308)
       341016.09   4903892.00        1.90070  (99123104)
341016.09   4902897.00        1.91937  (99123022)
       341016.09   4901902.00        1.65408  (00122403)
341016.09   4900907.00        1.71727  (98011424)
       341016.09   4899912.00        1.33431  (97101904)
341016.09   4898916.50        1.40328  (99123103)
       341016.09   4897921.50        1.10676  (99022007)
341016.09   4896926.50        1.10826  (96020401)
       341016.09   4895931.50        1.00515  (96021507)
341016.09   4894936.50        0.87087  (96020324)
       341016.09   4893941.00        0.82891  (00120823)
341016.09   4892946.00        0.79111  (98020721)
       341016.09   4891951.00        0.69387  (96020405)
341016.09   4890956.00        0.52655  (99102905)
       341016.09   4889961.00        0.54415  (96020106)
341016.09   4888966.00        0.53932  (98011206)
       341016.09   4887970.50        0.51342  (97121618)
341016.09   4886975.50        0.41640  (99121906)
       341016.09   4885980.50        0.43778  (99121906)
341954.94   4907872.50        1.28625  (00021301)
       341954.94   4906877.50        1.29818  (96011404)
341954.94   4905882.50        1.41145  (97120423)
       341954.94   4904887.00        1.55868  (96010221)
341954.94   4903892.00        1.43895  (97120502)
       341954.94   4902897.00        1.56933  (99123022)
341954.94   4901902.00        1.45616  (99013005)
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       341954.94   4900907.00        1.40781  (00011901)
341954.94   4899912.00        1.34732  (00020404)
       341954.94   4898916.50        1.13811  (99022704)
341954.94   4897921.50        1.02847  (96012824)
       341954.94   4896926.50        0.91830  (99022007)
341954.94   4895931.50        0.90519  (96020401)
       341954.94   4894936.50        0.79849  (96021019)
341954.94   4893941.00        0.78995  (97010104)
       341954.94   4892946.00        0.67199  (00120823)
341954.94   4891951.00        0.55285  (97102606)
       341954.94   4890956.00        0.58654  (98020905)
341954.94   4889961.00        0.53292  (96020323)
       341954.94   4888966.00        0.44078  (99102905)
341954.94   4887970.50        0.50162  (96020106)
       341954.94   4886975.50        0.46290  (98020624)
341954.94   4885980.50        0.40874  (97121618)
       342893.78   4907872.50        1.15097  (96020402)
342893.78   4906877.50        1.23182  (98010108)
       342893.78   4905882.50        1.28101  (99121905)
342893.78   4904887.00        1.20168  (99123021)
       342893.78   4903892.00        1.29221  (96010718)
342893.78   4902897.00        1.30447  (99123022)
       342893.78   4901902.00        1.27507  (96020322)
342893.78   4900907.00        1.09511  (99011223)
       342893.78   4899912.00        1.15975  (96010623)
342893.78   4898916.50        0.91344  (97101904)
       342893.78   4897921.50        0.79065  (96111820)
342893.78   4896926.50        0.89238  (96012824)
       342893.78   4895931.50        0.82408  (98011209)
342893.78   4894936.50        0.76905  (96020401)
       342893.78   4893941.00        0.68789  (96021019)
342893.78   4892946.00        0.67383  (97010104)
       342893.78   4891951.00        0.60530  (96020324)
342893.78   4890956.00        0.51494  (00120823)
       342893.78   4889961.00        0.51444  (98020721)
342893.78   4888966.00        0.50297  (98020905)
       342893.78   4887970.50        0.49590  (96020323)
342893.78   4886975.50        0.37967  (99102905)
       342893.78   4885980.50        0.40844  (96020106)
343832.62   4907872.50        0.95057  (96011404)
       343832.62   4906877.50        1.11838  (98011204)
343832.62   4905882.50        1.15963  (00020308)
       343832.62   4904887.00        1.05064  (97120501)
343832.62   4903892.00        1.10910  (96010718)
       343832.62   4902897.00        1.13064  (99123022)
343832.62   4901902.00        1.08498  (00021304)
       343832.62   4900907.00        0.90414  (97101105)
343832.62   4899912.00        1.02265  (98011424)
```

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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  67
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       343832.62   4898916.50        0.98467  (97020903)
343832.62   4897921.50        0.85595  (98011501)
       343832.62   4896926.50        0.82418  (99123103)
343832.62   4895931.50        0.64734  (96012021)
       343832.62   4894936.50        0.70752  (98011209)
343832.62   4893941.00        0.66272  (96020401)
       343832.62   4892946.00        0.56699  (96021019)
343832.62   4891951.00        0.55636  (97121617)
       343832.62   4890956.00        0.51609  (96020324)
343832.62   4889961.00        0.49332  (00120823)
       343832.62   4888966.00        0.42153  (97102606)
343832.62   4887970.50        0.46628  (98020721)
       343832.62   4886975.50        0.44348  (96020405)
343832.62   4885980.50        0.40910  (96020323)
       344771.47   4907872.50        0.97764  (98010108)
344771.47   4906877.50        0.99570  (96012823)
       344771.47   4905882.50        0.94240  (96022306)
344771.47   4904887.00        0.98830  (00021303)
       344771.47   4903892.00        0.98128  (96010220)
344771.47   4902897.00        0.96306  (99123022)
       344771.47   4901902.00        0.93682  (00021304)
344771.47   4900907.00        0.87502  (96021402)
       344771.47   4899912.00        0.85435  (00110202)
344771.47   4898916.50        0.88125  (97121619)
       344771.47   4897921.50        0.71071  (97101904)
344771.47   4896926.50        0.68976  (99022704)
       344771.47   4895931.50        0.59857  (98100406)
344771.47   4894936.50        0.56551  (99090101)
       344771.47   4893941.00        0.57007  (98011209)
344771.47   4892946.00        0.56645  (96020401)
       344771.47   4891951.00        0.46571  (96021019)
344771.47   4890956.00        0.48532  (97121617)
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          344771.47   4889961.00          0.48568  (98021018)
344771.47   4888966.00          0.42193  (97101822)
          344771.47   4887970.50          0.41138  (00120823)
344771.47   4886975.50          0.38117  (98020721)
          344771.47   4885980.50          0.39581  (98020905)
345710.31   4907872.50          0.90363  (96020404)
          345710.31   4906877.50          0.88552  (99121905)
345710.31   4905882.50          0.81138  (96010221)
          345710.31   4904887.00          0.74900  (00021303)
345710.31   4903892.00          0.85735  (96010220)
          345710.31   4902897.00          0.90002  (99123022)
345710.31   4901902.00          1.01471  (99012606)
          345710.31   4900907.00          0.82969  (96021402)
345710.31   4899912.00          0.83439  (00011901)
          345710.31   4898916.50          0.76158  (00120918)
345710.31   4897921.50          0.75228  (97020903)
          345710.31   4896926.50          0.68590  (98011501)
345710.31   4895931.50          0.56283  (99123103)
          345710.31   4894936.50          0.60640  (00120919)
345710.31   4893941.00          0.49550  (99092522)
          345710.31   4892946.00          0.46512  (99090105)
345710.31   4891951.00          0.50016  (96020401)
          345710.31   4890956.00          0.38025  (96021019)
345710.31   4889961.00          0.48505  (96021507)
          345710.31   4888966.00          0.45704  (97010104)
345710.31   4887970.50          0.43938  (96020324)
          345710.31   4886975.50          0.40743  (00120823)
345710.31   4885980.50          0.30993  (97100706)
          346649.19   4907872.50          0.78261  (97120423)
346649.19   4906877.50          0.80999  (97020905)
          346649.19   4905882.50          0.67546  (00090703)
346649.19   4904887.00          0.76073  (99123104)
          346649.19   4903892.00          0.80066  (96020403)
346649.19   4902897.00          0.91426  (99123022)
          346649.19   4901902.00          0.89445  (99012606)
346649.19   4900907.00          0.82986  (99013005)
          346649.19   4899912.00          0.74078  (99011223)
346649.19   4898916.50          0.71007  (98011424)
          346649.19   4897921.50          0.67026  (98011203)
346649.19   4896926.50          0.56632  (97101904)
          346649.19   4895931.50          0.58344  (99022704)
346649.19   4894936.50          0.56883  (99123103)
          346649.19   4893941.00          0.51585  (96012824)
346649.19   4892946.00          0.44027  (99022007)
          346649.19   4891951.00          0.41451  (97111204)
346649.19   4890956.00          0.45408  (96020401)
          346649.19   4889961.00          0.37925  (99013006)
346649.19   4888966.00          0.43291  (96021507)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  68
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       346649.19   4887970.50        0.41347  (97010104)
346649.19   4886975.50        0.37588  (96020324)
       346649.19   4885980.50        0.31213  (97101822)
347588.03   4907872.50        0.74411  (98020920)
       347588.03   4906877.50        0.64398  (00020308)
347588.03   4905882.50        0.68731  (99123021)
       347588.03   4904887.00        0.81449  (99123104)
347588.03   4903892.00        0.87192  (96010624)
       347588.03   4902897.00        0.83380  (99123022)
347588.03   4901902.00        0.72099  (99012606)
       347588.03   4900907.00        0.76042  (99013005)
347588.03   4899912.00        0.61102  (97101105)
       347588.03   4898916.50        0.53822  (00110202)
347588.03   4897921.50        0.60781  (96010623)
       347588.03   4896926.50        0.60190  (97020903)
347588.03   4895931.50        0.55944  (98011501)
       347588.03   4894936.50        0.38595  (99022704)
347588.03   4893941.00        0.40771  (98112824)
       347588.03   4892946.00        0.41810  (96012021)
347588.03   4891951.00        0.41952  (99022007)
       347588.03   4890956.00        0.39023  (96021707)
347588.03   4889961.00        0.42304  (96020401)
       347588.03   4888966.00        0.37341  (99013006)
347588.03   4887970.50        0.38080  (96123122)
       347588.03   4886975.50        0.36237  (97121617)
347588.03   4885980.50        0.33120  (98021018)
       348526.88   4907872.50        0.59282  (99121905)
348526.88   4906877.50        0.62357  (96010221)
       348526.88   4905882.50        0.68979  (97120501)
348526.88   4904887.00        0.64564  (97101923)
       348526.88   4903892.00        0.76480  (96010624)
348526.88   4902897.00        0.73965  (99123022)
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          348526.88   4901902.00         0.60382  (97101819)
348526.88   4900907.00         0.62812  (98120402)
          348526.88   4899912.00         0.47940  (97101105)
348526.88   4898916.50         0.59643  (00011901)
          348526.88   4897921.50         0.57947  (00120918)
348526.88   4896926.50         0.53224  (00020404)
          348526.88   4895931.50         0.45697  (97101904)
348526.88   4894936.50         0.44195  (99022704)
          348526.88   4893941.00         0.43863  (99123103)
348526.88   4892946.00         0.40843  (97111203)
          348526.88   4891951.00         0.37201  (99090101)
348526.88   4890956.00         0.37606  (99022007)
          348526.88   4889961.00         0.38009  (96021707)
348526.88   4888966.00         0.37714  (96020401)
          348526.88   4887970.50         0.34878  (99013006)
348526.88   4886975.50         0.33255  (96021019)
          348526.88   4885980.50         0.32269  (97121617)
349465.72   4907872.50         0.59935  (97020905)
          349465.72   4906877.50         0.60632  (96010221)
349465.72   4905882.50         0.68746  (00021303)
          349465.72   4904887.00         0.59366  (97120502)
349465.72   4903892.00         0.65656  (96010624)
          349465.72   4902897.00         0.63593  (99121902)
349465.72   4901902.00         0.58312  (96010502)
          349465.72   4900907.00         0.58129  (96020322)
349465.72   4899912.00         0.53483  (96021402)
          349465.72   4898916.50         0.47081  (97090204)
349465.72   4897921.50         0.51403  (98011424)
          349465.72   4896926.50         0.51251  (97121619)
349465.72   4895931.50         0.48951  (97020903)
          349465.72   4894936.50         0.46099  (98011501)
349465.72   4893941.00         0.41711  (99022704)
          349465.72   4892946.00         0.42594  (99123103)
349465.72   4891951.00         0.41858  (00120919)
          349465.72   4890956.00         0.33839  (99090101)
349465.72   4889961.00         0.36317  (98011209)
          349465.72   4888966.00         0.36715  (96021707)
349465.72   4887970.50         0.34680  (96020401)
          349465.72   4886975.50         0.31452  (99013006)
349465.72   4885980.50         0.30246  (96021019)
          350404.56   4907872.50         0.63399  (00020308)
350404.56   4906877.50         0.53270  (00090703)
          350404.56   4905882.50         0.63290  (00021303)
350404.56   4904887.00         0.56238  (97120502)
          350404.56   4903892.00         0.56070  (96010624)
350404.56   4902897.00         0.61507  (99121902)
          350404.56   4901902.00         0.53319  (96010502)
350404.56   4900907.00         0.56163  (96020322)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  69
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       350404.56   4899912.00        0.51125  (96021402)
350404.56   4898916.50        0.47813  (99011223)
       350404.56   4897921.50        0.44037  (98120401)
350404.56   4896926.50        0.48657  (96010623)
       350404.56   4895931.50        0.48286  (00020404)
350404.56   4894936.50        0.39599  (97101904)
       350404.56   4893941.00        0.37419  (97101804)
350404.56   4892946.00        0.32200  (96111820)
       350404.56   4891951.00        0.33532  (97040304)
350404.56   4890956.00        0.36730  (96012824)
       350404.56   4889961.00        0.32277  (99092522)
350404.56   4888966.00        0.36130  (98011209)
       350404.56   4887970.50        0.32795  (96021707)
350404.56   4886975.50        0.30920  (96020401)
       350404.56   4885980.50        0.29747  (99013006)
351343.41   4907872.50        0.53236  (96022306)
       351343.41   4906877.50        0.54028  (99123021)
351343.41   4905882.50        0.49051  (96090203)
       351343.41   4904887.00        0.54155  (96010718)
351343.41   4903892.00        0.50388  (96020403)
       351343.41   4902897.00        0.53784  (99121902)
351343.41   4901902.00        0.49816  (96010502)
       351343.41   4900907.00        0.51823  (00021304)
351343.41   4899912.00        0.45257  (98011210)
       351343.41   4898916.50        0.42444  (97101105)
351343.41   4897921.50        0.44750  (00011901)
       351343.41   4896926.50        0.45342  (00120918)
351343.41   4895931.50        0.45473  (98011203)
       351343.41   4894936.50        0.42286  (98020904)
351343.41   4893941.00        0.37898  (98011501)
       351343.41   4892946.00        0.39120  (99022704)
351343.41   4891951.00        0.37749  (99123103)
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       351343.41   4890956.00        0.33330  (98100406)
351343.41   4889961.00        0.32517  (96012021)
       351343.41   4888966.00        0.29975  (99092522)
351343.41   4887970.50        0.31556  (98011209)
       351343.41   4886975.50        0.30464  (96021707)
351343.41   4885980.50        0.28875  (96020401)
       352282.25   4907872.50        0.54704  (96010221)
352282.25   4906877.50        0.52281  (99123021)
       352282.25   4905882.50        0.51094  (99123104)
352282.25   4904887.00        0.52095  (96010718)
       352282.25   4903892.00        0.45634  (96092406)
352282.25   4902897.00        0.50812  (99121902)
       352282.25   4901902.00        0.48813  (96010502)
352282.25   4900907.00        0.50375  (00021304)
       352282.25   4899912.00        0.45428  (99013005)
352282.25   4898916.50        0.38909  (97101105)
       352282.25   4897921.50        0.44009  (00011901)
352282.25   4896926.50        0.43258  (98011424)
       352282.25   4895931.50        0.42117  (97121619)
352282.25   4894936.50        0.40346  (00020404)
       352282.25   4893941.00        0.35372  (97101904)
352282.25   4892946.00        0.35520  (98011501)
       352282.25   4891951.00        0.28370  (99022704)
352282.25   4890956.00        0.35750  (99123103)
       352282.25   4889961.00        0.32585  (96012824)
352282.25   4888966.00        0.26442  (96012021)
       352282.25   4887970.50        0.26204  (99022007)
352282.25   4886975.50        0.28773  (98011209)
       352282.25   4885980.50        0.28756  (96021707)
340077.25   4897246.50        1.25107  (96021019)
       340077.25   4896308.00        1.11863  (98021018)
340077.25   4895369.00        0.93792  (00120823)
       340077.25   4894430.00        0.89765  (98020905)
340077.25   4893491.50        0.89697  (96020323)
       340077.25   4892552.50        0.72325  (96020106)
340077.25   4891613.50        0.73624  (98020624)
       340077.25   4890674.50        0.62982  (97121618)
340077.25   4889736.00        0.48909  (96101204)
       340077.25   4888797.00        0.54507  (99121906)
340077.25   4887858.00        0.52294  (00120802)
       340077.25   4886919.50        0.46401  (98021107)
340077.25   4885980.50        0.45509  (97020902)
       339082.16   4897246.50        1.37995  (00120823)
339082.16   4896308.00        1.25622  (98020721)
       339082.16   4895369.00        1.08308  (96020323)
339082.16   4894430.00        0.94726  (96020106)
       339082.16   4893491.50        0.88256  (98011206)
339082.16   4892552.50        0.77671  (97121618)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  70
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       339082.16   4891613.50        0.76939  (99121906)
339082.16   4890674.50        0.68366  (98021107)
       339082.16   4889736.00        0.64458  (97020902)
339082.16   4888797.00        0.53580  (97122207)
       339082.16   4887858.00        0.44954  (97120907)
339082.16   4886919.50        0.44230  (00021805)
       339082.16   4885980.50        0.43022  (00021805)
338087.09   4897246.50        1.50442  (96020323)
       338087.09   4896308.00        1.37015  (98020624)
338087.09   4895369.00        1.09645  (97121618)
       338087.09   4894430.00        1.01511  (00120802)
338087.09   4893491.50        0.86528  (97020902)
       338087.09   4892552.50        0.90261  (97122207)
338087.09   4891613.50        0.77585  (97120907)
       338087.09   4890674.50        0.73487  (00021805)
338087.09   4889736.00        0.67277  (00020406)
       338087.09   4888797.00        0.59153  (98020822)
338087.09   4887858.00        0.50284  (98020822)
       338087.09   4886919.50        0.47067  (97122108)
338087.09   4885980.50        0.41039  (97122108)
       337092.00   4897246.50        1.76049  (00120802)
337092.00   4896308.00        1.42610  (97122207)
       337092.00   4895369.00        1.16500  (00021805)
337092.00   4894430.00        1.06961  (00020406)
       337092.00   4893491.50        0.93420  (98020822)
337092.00   4892552.50        0.87818  (97122108)
       337092.00   4891613.50        0.82459  (96021705)
337092.00   4890674.50        0.73194  (96021502)
       337092.00   4889736.00        0.67908  (96021502)
337092.00   4888797.00        0.56871  (96021502)
       337092.00   4887858.00        0.50100  (97121006)
337092.00   4886919.50        0.43878  (96010119)
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        337092.00   4885980.50         0.42451  (96010119)
336096.91   4897246.50         1.81357  (96021502)
        336096.91   4896308.00         1.41294  (96021502)
336096.91   4895369.00         1.20979  (96010119)
        336096.91   4894430.00         1.03932  (96010119)
336096.91   4893491.50         0.85298  (97121005)
        336096.91   4892552.50         0.74157  (97121005)
336096.91   4891613.50         0.66381  (96121407)
        336096.91   4890674.50         0.64768  (96121407)
336096.91   4889736.00         0.62892  (98021105)
        336096.91   4888797.00         0.60065  (98021105)
336096.91   4887858.00         0.54316  (98021105)
        336096.91   4886919.50         0.49132  (98021105)
336096.91   4885980.50         0.44586  (98021105)
        335101.81   4897246.50         1.81691  (97010106)
335101.81   4896308.00         1.42627  (97010106)
        335101.81   4895369.00         1.15291  (97021421)
335101.81   4894430.00         0.98157  (97021421)
        335101.81   4893491.50         0.85186  (97021421)
335101.81   4892552.50         0.74900  (97021421)
        335101.81   4891613.50         0.68466  (97021421)
335101.81   4890674.50         0.59413  (97021421)
        335101.81   4889736.00         0.53406  (97021421)
335101.81   4888797.00         0.49013  (97021421)
        335101.81   4887858.00         0.47826  (97021421)
335101.81   4886919.50         0.42936  (98011922)
        335101.81   4885980.50         0.38859  (97021421)
334106.75   4897246.50         1.63362  (97122209)
        334106.75   4896308.00         1.43325  (97122205)
334106.75   4895369.00         1.24547  (96020406)
        334106.75   4894430.00         1.06754  (96020406)
334106.75   4893491.50         0.93992  (98020623)
        334106.75   4892552.50         0.75127  (00120824)
334106.75   4891613.50         0.64489  (97102004)
        334106.75   4890674.50         0.55989  (98040724)
334106.75   4889736.00         0.65060  (96021508)
        334106.75   4888797.00         0.57355  (96021508)
334106.75   4887858.00         0.50215  (96021508)
        334106.75   4886919.50         0.47230  (96021508)
334106.75   4885980.50         0.43634  (96021508)
        333111.66   4897246.50         1.69779  (98120803)
333111.66   4896308.00         1.42659  (97012705)
        333111.66   4895369.00         1.16069  (98020923)
333111.66   4894430.00         1.01429  (99021103)
        333111.66   4893491.50         0.89841  (98120502)
333111.66   4892552.50         0.77559  (97122209)
        333111.66   4891613.50         0.68236  (97122205)
333111.66   4890674.50         0.76278  (97122205)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  71
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       333111.66   4889736.00        0.76226  (99022720)
333111.66   4888797.00        0.65865  (96020406)
       333111.66   4887858.00        0.61927  (96020406)
333111.66   4886919.50        0.54316  (96020406)
       333111.66   4885980.50        0.52489  (98020623)
332116.56   4897246.50        1.30011  (98101305)
       332116.56   4896308.00        1.35718  (97010107)
332116.56   4895369.00        1.15111  (98020622)
       332116.56   4894430.00        1.00397  (98120803)
332116.56   4893491.50        0.90320  (97012705)
       332116.56   4892552.50        0.77157  (99021105)
332116.56   4891613.50        0.70899  (98020923)
       332116.56   4890674.50        0.66353  (99021103)
332116.56   4889736.00        0.72994  (98120502)
       332116.56   4888797.00        0.63868  (97122209)
332116.56   4887858.00        0.57532  (97122209)
       332116.56   4886919.50        0.49042  (99121910)
332116.56   4885980.50        0.48450  (97122205)
       331121.47   4897246.50        1.36940  (98021021)
331121.47   4896308.00        1.20536  (96012902)
       331121.47   4895369.00        0.90273  (98101305)
331121.47   4894430.00        0.90606  (97010107)
       331121.47   4893491.50        0.79904  (98120503)
331121.47   4892552.50        0.73127  (98020622)
       331121.47   4891613.50        0.69087  (98120803)
331121.47   4890674.50        0.63399  (97012705)
       331121.47   4889736.00        0.67228  (99021105)
331121.47   4888797.00        0.58256  (97010409)
       331121.47   4887858.00        0.59081  (98020923)
331121.47   4886919.50        0.51076  (99021103)
       331121.47   4885980.50        0.46253  (99021103)
330126.41   4897246.50        1.05745  (00092901)
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       330126.41   4896308.00        0.96138  (97010410)
330126.41   4895369.00        0.78619  (98021021)
       330126.41   4894430.00        0.90185  (97012703)
330126.41   4893491.50        0.67770  (98101305)
       330126.41   4892552.50        0.65961  (98022807)
330126.41   4891613.50        0.66400  (98120503)
       330126.41   4890674.50        0.59595  (98020622)
330126.41   4889736.00        0.49328  (98020622)
       330126.41   4888797.00        0.62942  (98120803)
330126.41   4887858.00        0.54053  (97012705)
       330126.41   4886919.50        0.52081  (97012705)
330126.41   4885980.50        0.47980  (99021105)
       329131.31   4897246.50        1.04309  (98021106)
329131.31   4896308.00        0.87065  (00092901)
       329131.31   4895369.00        0.91363  (00011507)
329131.31   4894430.00        0.82109  (98021021)
       329131.31   4893491.50        0.70529  (96012902)
329131.31   4892552.50        0.63634  (97012703)
       329131.31   4891613.50        0.53671  (98101305)
329131.31   4890674.50        0.54816  (98021506)
       329131.31   4889736.00        0.66975  (97010107)
329131.31   4888797.00        0.54787  (98120503)
       329131.31   4887858.00        0.56545  (98020622)
329131.31   4886919.50        0.45333  (98120803)
       329131.31   4885980.50        0.47022  (98120803)
328136.22   4897246.50        1.01748  (96010723)
       328136.22   4896308.00        0.85659  (98021106)
328136.22   4895369.00        0.78177  (00010105)
       328136.22   4894430.00        0.73976  (00011507)
328136.22   4893491.50        0.61556  (97010410)
       328136.22   4892552.50        0.57656  (98021021)
328136.22   4891613.50        0.60313  (96012902)
       328136.22   4890674.50        0.44867  (99032721)
328136.22   4889736.00        0.46992  (98101305)
       328136.22   4888797.00        0.57359  (98021506)
328136.22   4887858.00        0.55894  (97010107)
       328136.22   4886919.50        0.49464  (98120503)
328136.22   4885980.50        0.43149  (98020622)
       327141.16   4897246.50        0.77365  (97010216)
327141.16   4896308.00        0.79483  (96010723)
       327141.16   4895369.00        0.74936  (98021106)
327141.16   4894430.00        0.65519  (00010105)
       327141.16   4893491.50        0.53914  (97111801)
327141.16   4892552.50        0.51506  (99102902)
       327141.16   4891613.50        0.55122  (98021021)
327141.16   4890674.50        0.43127  (96031905)
       327141.16   4889736.00        0.59452  (97012703)
327141.16   4888797.00        0.43899  (99032721)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  72
CONC                            DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       327141.16   4887858.00        0.44394  (98101305)
327141.16   4886919.50        0.48145  (98021506)
       327141.16   4885980.50        0.44793  (97010107)
326146.06   4897246.50        0.80457  (98012624)
       326146.06   4896308.00        0.66320  (97010216)
326146.06   4895369.00        0.63551  (96022203)
       326146.06   4894430.00        0.62101  (98021106)
326146.06   4893491.50        0.52956  (00010105)
       326146.06   4892552.50        0.49567  (97111801)
326146.06   4891613.50        0.52296  (00011507)
       326146.06   4890674.50        0.40972  (96111406)
326146.06   4889736.00        0.46457  (98021021)
       326146.06   4888797.00        0.47440  (96012902)
326146.06   4887858.00        0.48003  (97012703)
       326146.06   4886919.50        0.37738  (97101406)
326146.06   4885980.50        0.36950  (98101305)
       325150.97   4897246.50        0.59639  (00040304)
325150.97   4896308.00        0.58907  (98121824)
       325150.97   4895369.00        0.51508  (00010122)
325150.97   4894430.00        0.53558  (96022203)
       325150.97   4893491.50        0.53300  (98021106)
325150.97   4892552.50        0.43978  (00030724)
       325150.97   4891613.50        0.42041  (00092901)
325150.97   4890674.50        0.47735  (00011507)
       325150.97   4889736.00        0.39415  (97010410)
325150.97   4888797.00        0.42376  (98021021)
       325150.97   4887858.00        0.32947  (96031905)
325150.97   4886919.50        0.41579  (96012902)
       325150.97   4885980.50        0.41369  (97012703)
324155.88   4897246.50        0.40796  (98020124)
       324155.88   4896308.00        0.60070  (96011202)
324155.88   4895369.00        0.47137  (96050403)
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          324155.88   4894430.00           0.51801  (00010122)
324155.88   4893491.50           0.44217  (96022203)
          324155.88   4892552.50           0.46479  (98021106)
324155.88   4891613.50           0.38758  (00030724)
          324155.88   4890674.50           0.39641  (00092901)
324155.88   4889736.00           0.37702  (00011507)
          324155.88   4888797.00           0.35321  (99102902)
324155.88   4887858.00           0.30021  (96111406)
          324155.88   4886919.50           0.37075  (98021021)
324155.88   4885980.50           0.32255  (96031905)
          323160.81   4897246.50           0.34907  (96010716)
323160.81   4896308.00           0.44621  (97051502)
          323160.81   4895369.00           0.55773  (98012624)
323160.81   4894430.00           0.44928  (97010216)
          323160.81   4893491.50           0.45775  (00010122)
323160.81   4892552.50           0.38475  (99051601)
          323160.81   4891613.50           0.40892  (98021106)
323160.81   4890674.50           0.34096  (00030724)
          323160.81   4889736.00           0.35464  (00092901)
323160.81   4888797.00           0.32667  (97111801)
          323160.81   4887858.00           0.36461  (00011507)
323160.81   4886919.50           0.32190  (97010410)
          323160.81   4885980.50           0.35052  (98021021)
322165.72   4897246.50           0.49886  (97013003)
          322165.72   4896308.00           0.28793  (98020124)
322165.72   4895369.00           0.45124  (96011202)
          322165.72   4894430.00           0.44849  (98121824)
322165.72   4893491.50           0.42917  (97010216)
          322165.72   4892552.50           0.44424  (96010723)
322165.72   4891613.50           0.34710  (99051601)
          322165.72   4890674.50           0.36635  (98021106)
322165.72   4889736.00           0.30129  (00030724)
          322165.72   4888797.00           0.34535  (00010105)
322165.72   4887858.00           0.32278  (97111801)
          322165.72   4886919.50           0.35344  (00011507)
322165.72   4885980.50           0.27975  (96111406)
          321170.62   4897246.50           0.50443  (97013003)
321170.62   4896308.00           0.29856  (96010716)
          321170.62   4895369.00           0.34113  (97051502)
321170.62   4894430.00           0.43637  (98012624)
          321170.62   4893491.50           0.35900  (00050224)
321170.62   4892552.50           0.35011  (97010216)
          321170.62   4891613.50           0.41188  (96010723)
321170.62   4890674.50           0.31249  (99051601)
          321170.62   4889736.00           0.33292  (98021106)
321170.62   4888797.00           0.27163  (00030724)
          321170.62   4887858.00           0.33162  (00010105)
321170.62   4886919.50           0.30157  (97111801)
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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  73
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       321170.62   4885980.50        0.29778  (00011507)
320175.53   4897246.50        0.36952  (98101304)
       320175.53   4896308.00        0.39809  (97111803)
320175.53   4895369.00        0.24145  (99100220)
       320175.53   4894430.00        0.34462  (97042702)
320175.53   4893491.50        0.41540  (98012624)
       320175.53   4892552.50        0.32293  (96050403)
320175.53   4891613.50        0.29057  (00010122)
       320175.53   4890674.50        0.36476  (96010723)
320175.53   4889736.00        0.28145  (99051601)
       320175.53   4888797.00        0.31669  (98021106)
320175.53   4887858.00        0.24280  (00030724)
       320175.53   4886919.50        0.30629  (00010105)
320175.53   4885980.50        0.26085  (00092901)
       319180.47   4897246.50        0.42830  (00012505)
319180.47   4896308.00        0.44474  (97013003)
       319180.47   4895369.00        0.25586  (96010716)
319180.47   4894430.00        0.26324  (97051502)
       319180.47   4893491.50        0.36199  (96011202)
319180.47   4892552.50        0.34902  (98121824)
       319180.47   4891613.50        0.30371  (97010216)
319180.47   4890674.50        0.31063  (00010122)
       319180.47   4889736.00        0.31678  (96010723)
319180.47   4888797.00        0.26814  (99120421)
       319180.47   4887858.00        0.28785  (98021106)
319180.47   4886919.50        0.23007  (98021106)
       319180.47   4885980.50        0.27632  (00010105)
318185.38   4897246.50        0.44831  (00012505)
       318185.38   4896308.00        0.36200  (97091703)
318185.38   4895369.00        0.34672  (97111803)
       318185.38   4894430.00        0.21222  (99100220)
318185.38   4893491.50        0.28023  (97051502)
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318185.38	4892552.50	0.34770	(98012624)
318185.38	4891613.50	0.28229	(00050224)
318185.38	4890674.50	0.30898	(97010216)
318185.38	4889736.00	0.30265	(00010122)
318185.38	4888797.00	0.28634	(96022203)
318185.38	4887858.00	0.25367	(99120421)
318185.38	4886919.50	0.26445	(98021106)
318185.38	4885980.50	0.22514	(98021106)
329451.53	4898185.50	1.19612	(96010723)
329451.53	4899180.50	1.28185	(98121824)
329451.53	4900175.50	0.91350	(99100220)
329451.53	4901171.00	1.67269	(97010108)
329451.53	4902166.00	1.56818	(99092702)
329451.53	4903161.00	1.82907	(98012703)
329451.53	4904156.00	1.82811	(98021602)
329451.53	4905151.00	1.72282	(98020620)
329451.53	4906146.00	1.87821	(97020322)
329451.53	4907141.50	1.94095	(99120907)
329451.53	4908136.50	1.74526	(00012502)
329451.53	4909131.50	1.28141	(99120224)
329451.53	4910126.50	1.40701	(00102301)
329451.53	4911121.50	1.14641	(00120901)
329451.53	4912117.00	1.04916	(96100101)
329451.53	4913112.00	1.19573	(96022206)
329451.53	4914107.00	1.00233	(96010720)
329451.53	4915102.00	0.96996	(97120905)
329451.53	4916097.00	0.87961	(97090201)
329451.53	4917092.00	0.85070	(96021405)
329451.53	4918087.50	0.52629	(96021405)
329451.53	4919082.50	0.70724	(00103103)
329451.53	4920077.50	0.73943	(99021521)
328512.69	4898185.50	1.02032	(97010216)
328512.69	4899180.50	0.99359	(97042702)
328512.69	4900175.50	1.33639	(97013003)
328512.69	4901171.00	1.17456	(99032722)
328512.69	4902166.00	1.28287	(99090401)
328512.69	4903161.00	1.55913	(98012703)
328512.69	4904156.00	1.54179	(96010909)
328512.69	4905151.00	1.74658	(99121909)
328512.69	4906146.00	1.77224	(00012504)
328512.69	4907141.50	1.33383	(97113003)
328512.69	4908136.50	1.46016	(96011603)
328512.69	4909131.50	1.33216	(00012502)
328512.69	4910126.50	1.03546	(99120224)
328512.69	4911121.50	1.23444	(96012524)
328512.69	4912117.00	1.21208	(00120901)
328512.69	4913112.00	0.96991	(96122907)
328512.69	4914107.00	0.97846	(00090924)

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                     ***
***        09:46:50
**MODELOPTs:
PAGE  74
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       328512.69   4915102.00        1.00452  (96021602)
328512.69   4916097.00        0.71057  (96010720)
       328512.69   4917092.00        0.72231  (97120905)
328512.69   4918087.50        0.73026  (97090201)
       328512.69   4919082.50        0.60033  (96021405)
328512.69   4920077.50        0.65273  (96021405)
       327573.84   4898185.50        1.03198  (98012624)
327573.84   4899180.50        0.62197  (99100220)
       327573.84   4900175.50        1.03683  (98101304)
327573.84   4901171.00        1.18832  (00121520)
       327573.84   4902166.00        1.11129  (97101324)
327573.84   4903161.00        1.40794  (98012703)
       327573.84   4904156.00        1.29170  (99123110)
327573.84   4905151.00        1.48406  (97020823)
       327573.84   4906146.00        1.27752  (97101202)
327573.84   4907141.50        1.36193  (97020322)
       327573.84   4908136.50        1.08593  (99120303)
327573.84   4909131.50        1.04152  (96011201)
       327573.84   4910126.50        1.38229  (99020602)
327573.84   4911121.50        1.10029  (99120224)
       327573.84   4912117.00        1.13890  (96012524)
327573.84   4913112.00        1.13889  (00021803)
       327573.84   4914107.00        0.76017  (99120819)
327573.84   4915102.00        0.75183  (97052705)
       327573.84   4916097.00        0.78601  (96022206)
327573.84   4917092.00        0.60454  (96021602)
       327573.84   4918087.50        0.48745  (97120905)
327573.84   4919082.50        0.64761  (96010222)
       327573.84   4920077.50        0.62099  (97090201)
326635.00   4898185.50        0.69090  (97042702)
       326635.00   4899180.50        0.82280  (97013003)
326635.00   4900175.50        0.94535  (00012505)
```

```
          326635.00   4901171.00          0.87829  (98011921)
326635.00   4902166.00          1.02272  (96121406)
          326635.00   4903161.00          1.28885  (98012703)
326635.00   4904156.00          1.35396  (96012523)
          326635.00   4905151.00          1.23464  (96022205)
326635.00   4906146.00          1.10470  (97102006)
          326635.00   4907141.50          1.17764  (00012504)
326635.00   4908136.50          0.95671  (96122303)
          326635.00   4909131.50          0.92240  (99120907)
326635.00   4910126.50          1.07144  (99120307)
          326635.00   4911121.50          1.20968  (99020602)
326635.00   4912117.00          0.94092  (99120224)
          326635.00   4913112.00          0.76422  (98020621)
326635.00   4914107.00          0.96581  (00021306)
          326635.00   4915102.00          0.78963  (00120901)
326635.00   4916097.00          0.52182  (96100101)
          326635.00   4917092.00          0.48386  (00090924)
326635.00   4918087.50          0.61695  (96022206)
          326635.00   4919082.50          0.69795  (96010720)
326635.00   4920077.50          0.48054  (97120905)
          325696.16   4898185.50          0.45169  (99100220)
325696.16   4899180.50          0.73337  (97091703)
          325696.16   4900175.50          0.89920  (97010108)
325696.16   4901171.00          0.86448  (96111605)
          325696.16   4902166.00          1.03043  (96121406)
325696.16   4903161.00          1.24686  (98012703)
          325696.16   4904156.00          1.21978  (96012523)
325696.16   4905151.00          1.10877  (98122902)
          325696.16   4906146.00          1.12199  (99121909)
325696.16   4907141.50          1.03104  (98021022)
          325696.16   4908136.50          1.02105  (97020322)
325696.16   4909131.50          0.87399  (99120303)
          325696.16   4910126.50          1.17426  (96011603)
325696.16   4911121.50          0.88529  (99120307)
          325696.16   4912117.00          0.75783  (99020602)
325696.16   4913112.00          0.63266  (99120224)
          325696.16   4914107.00          0.67456  (98020621)
325696.16   4915102.00          0.59784  (00021306)
          325696.16   4916097.00          0.61150  (00120901)
325696.16   4917092.00          0.53421  (96122907)
          325696.16   4918087.50          0.51400  (96052524)
325696.16   4919082.50          0.58747  (00090924)
          325696.16   4920077.50          0.67517  (96021602)
324757.31   4898185.50          0.56253  (97111803)
          324757.31   4899180.50          0.69902  (98101304)
324757.31   4900175.50          0.71980  (99032722)
          324757.31   4901171.00          0.78229  (99090322)
324757.31   4902166.00          0.91373  (96121406)
```

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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  75
CONC                         DFAULT ELEV   FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       324757.31   4903161.00        1.04400  (98012703)
324757.31   4904156.00        0.96242  (96012523)
       324757.31   4905151.00        0.99610  (98122902)
324757.31   4906146.00        0.98332  (97020823)
       324757.31   4907141.50        0.97011  (98020620)
324757.31   4908136.50        0.86170  (98021509)
       324757.31   4909131.50        0.89565  (96122303)
324757.31   4910126.50        0.93717  (97090102)
       324757.31   4911121.50        0.92880  (96011201)
324757.31   4912117.00        0.78192  (00102218)
       324757.31   4913112.00        0.58160  (99020602)
324757.31   4914107.00        0.53746  (99120224)
       324757.31   4915102.00        0.62768  (98020621)
324757.31   4916097.00        0.62646  (00102301)
       324757.31   4917092.00        0.70706  (00021803)
324757.31   4918087.50        0.62421  (99120819)
       324757.31   4919082.50        0.59747  (96100101)
324757.31   4920077.50        0.49865  (96052524)
       323818.44   4898185.50        0.66809  (97013003)
323818.44   4899180.50        0.76399  (00012505)
       323818.44   4900175.50        0.85182  (00121520)
323818.44   4901171.00        0.70910  (98091406)
       323818.44   4902166.00        0.76527  (96121406)
323818.44   4903161.00        0.94894  (98012703)
       323818.44   4904156.00        0.81182  (98111806)
323818.44   4905151.00        0.90981  (98021602)
       323818.44   4906146.00        0.86255  (97020823)
323818.44   4907141.50        0.76880  (96012023)
       323818.44   4908136.50        0.86705  (98021022)
323818.44   4909131.50        1.00311  (97020322)
       323818.44   4910126.50        0.84856  (97113003)
323818.44   4911121.50        0.68805  (00092902)
```

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       323818.44   4912117.00        0.57780  (96011201)
323818.44   4913112.00        0.62797  (00012502)
       323818.44   4914107.00        0.51905  (00110224)
323818.44   4915102.00        0.53882  (99120224)
       323818.44   4916097.00        0.74851  (98020621)
323818.44   4917092.00        0.56881  (00102301)
       323818.44   4918087.50        0.68084  (00021803)
323818.44   4919082.50        0.55753  (99120819)
       323818.44   4920077.50        0.57507  (96122907)
322879.59   4898185.50        0.53328  (97091703)
       322879.59   4899180.50        0.73639  (97010108)
322879.59   4900175.50        0.70070  (98011921)
       322879.59   4901171.00        0.64470  (97091704)
322879.59   4902166.00        0.67822  (96112501)
       322879.59   4903161.00        0.83740  (98012703)
322879.59   4904156.00        0.69475  (96090322)
       322879.59   4905151.00        0.80684  (96010909)
322879.59   4906146.00        0.75736  (96022205)
       322879.59   4907141.50        0.78021  (99121909)
322879.59   4908136.50        0.82191  (99120302)
       322879.59   4909131.50        0.85193  (98021509)
322879.59   4910126.50        0.74173  (96122303)
       322879.59   4911121.50        0.60415  (99120303)
322879.59   4912117.00        0.59711  (96011603)
       322879.59   4913112.00        0.48899  (99101001)
322879.59   4914107.00        0.59589  (00012502)
       322879.59   4915102.00        0.46044  (99092801)
322879.59   4916097.00        0.43290  (99120224)
       322879.59   4917092.00        0.49559  (98020621)
322879.59   4918087.50        0.39192  (00102301)
       322879.59   4919082.50        0.44830  (00021306)
322879.59   4920077.50        0.42784  (00120901)
       321940.75   4898185.50        0.54301  (98101304)
321940.75   4899180.50        0.55966  (97010108)
       321940.75   4900175.50        0.54255  (97111522)
321940.75   4901171.00        0.61617  (97091704)
       321940.75   4902166.00        0.60205  (96112501)
321940.75   4903161.00        0.75519  (98012703)
       321940.75   4904156.00        0.63823  (96090322)
321940.75   4905151.00        0.67964  (99123110)
       321940.75   4906146.00        0.61085  (96022205)
321940.75   4907141.50        0.65470  (99121909)
       321940.75   4908136.50        0.79752  (98020620)
321940.75   4909131.50        0.69099  (00012504)
       321940.75   4910126.50        0.65349  (97020322)
321940.75   4911121.50        0.50294  (97113003)
       321940.75   4912117.00        0.49309  (97090102)
321940.75   4913112.00        0.58225  (96011603)
```

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 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  76
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       321940.75   4914107.00        0.49970  (99120307)
321940.75   4915102.00        0.52769  (00012502)
       321940.75   4916097.00        0.40763  (99102806)
321940.75   4917092.00        0.44674  (99120224)
       321940.75   4918087.50        0.50794  (98020621)
321940.75   4919082.50        0.50937  (96012524)
       321940.75   4920077.50        0.59023  (00021306)
321001.91   4898185.50        0.57233  (00012505)
       321001.91   4899180.50        0.49712  (99032722)
321001.91   4900175.50        0.55023  (96111605)
       321001.91   4901171.00        0.54694  (99090401)
321001.91   4902166.00        0.56068  (96100520)
       321001.91   4903161.00        0.64849  (98012703)
321001.91   4904156.00        0.63140  (98123116)
       321001.91   4905151.00        0.58917  (99123110)
321001.91   4906146.00        0.67291  (98122902)
       321001.91   4907141.50        0.69470  (97020823)
321001.91   4908136.50        0.56835  (96012023)
       321001.91   4909131.50        0.57930  (99120302)
321001.91   4910126.50        0.52142  (99120305)
       321001.91   4911121.50        0.53934  (00012305)
321001.91   4912117.00        0.49523  (99120303)
       321001.91   4913112.00        0.50965  (00092902)
321001.91   4914107.00        0.48035  (96011201)
       321001.91   4915102.00        0.44394  (99120307)
321001.91   4916097.00        0.50654  (99020602)
       321001.91   4917092.00        0.47750  (99102806)
321001.91   4918087.50        0.46309  (97042705)
       321001.91   4919082.50        0.49632  (98020621)
321001.91   4920077.50        0.53720  (96012524)
       320063.06   4898185.50        0.49452  (97010108)
320063.06   4899180.50        0.57530  (00121520)
```

320063.06	4900175.50	0.50114	(96111605)
320063.06	4901171.00	0.52054	(99090401)
320063.06	4902166.00	0.51316	(96100520)
320063.06	4903161.00	0.61434	(98012703)
320063.06	4904156.00	0.60987	(98123116)
320063.06	4905151.00	0.52107	(96012523)
320063.06	4906146.00	0.62203	(98122902)
320063.06	4907141.50	0.55776	(97020823)
320063.06	4908136.50	0.56464	(96012023)
320063.06	4909131.50	0.50598	(97101202)
320063.06	4910126.50	0.55380	(00012504)
320063.06	4911121.50	0.52563	(97020322)
320063.06	4912117.00	0.39242	(96122303)
320063.06	4913112.00	0.42801	(99120303)
320063.06	4914107.00	0.44881	(99120907)
320063.06	4915102.00	0.40742	(96011201)
320063.06	4916097.00	0.46957	(00102218)
320063.06	4917092.00	0.58987	(99020602)
320063.06	4918087.50	0.50339	(99102806)
320063.06	4919082.50	0.44057	(97042705)
320063.06	4920077.50	0.46402	(99092802)
319124.22	4898185.50	0.49657	(97010108)
319124.22	4899180.50	0.49968	(00121520)
319124.22	4900175.50	0.46971	(99090322)
319124.22	4901171.00	0.45419	(99090401)
319124.22	4902166.00	0.50388	(96100520)
319124.22	4903161.00	0.57407	(98012703)
319124.22	4904156.00	0.58264	(98123116)
319124.22	4905151.00	0.56226	(96012523)
319124.22	4906146.00	0.58624	(98021602)
319124.22	4907141.50	0.51639	(96022205)
319124.22	4908136.50	0.50543	(99121909)
319124.22	4909131.50	0.53543	(98020620)
319124.22	4910126.50	0.50864	(98021022)
319124.22	4911121.50	0.46522	(99120305)
319124.22	4912117.00	0.48906	(00012305)
319124.22	4913112.00	0.41782	(97113003)
319124.22	4914107.00	0.41788	(00092902)
319124.22	4915102.00	0.45773	(96011603)
319124.22	4916097.00	0.45650	(99101001)
319124.22	4917092.00	0.49509	(00102218)
319124.22	4918087.50	0.53958	(99020602)
319124.22	4919082.50	0.49170	(99102806)
319124.22	4920077.50	0.41409	(97042705)
318185.38	4898185.50	0.33871	(97010108)
318185.38	4899180.50	0.43575	(98011921)
318185.38	4900175.50	0.40518	(98091406)
318185.38	4901171.00	0.44789	(97101324)

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  77
CONC                        DFAULT ELEV   FLGPOL

                             *** THE   1ST HIGHEST  1-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      LANDFILL,

                                            *** DISCRETE CARTESIAN
RECEPTOR POINTS ***

                                       ** CONC OF ODOUR    IN OU/M**3
**

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       318185.38   4902166.00        0.45651  (96100520)
318185.38   4903161.00        0.53040  (98012703)
       318185.38   4904156.00        0.54357  (98123116)
318185.38   4905151.00        0.55555  (96012523)
       318185.38   4906146.00        0.50154  (96010909)
318185.38   4907141.50        0.43318  (96022205)
       318185.38   4908136.50        0.43476  (97020823)
318185.38   4909131.50        0.44197  (96012023)
       318185.38   4910126.50        0.44392  (99120302)
318185.38   4911121.50        0.48024  (00012504)
       318185.38   4912117.00        0.46499  (97020322)
318185.38   4913112.00        0.38023  (96122303)
       318185.38   4914107.00        0.51659  (99120303)
318185.38   4915102.00        0.35981  (00092902)
       318185.38   4916097.00        0.44384  (96011603)
318185.38   4917092.00        0.40243  (99120307)
       318185.38   4918087.50        0.45683  (00012502)
318185.38   4919082.50        0.52576  (99020602)
       318185.38   4920077.50        0.47170  (99102806)
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  78
CONC                        DFAULT ELEV   FLGPOL

                                               *** THE SUMMARY OF HIGHEST
1-HR RESULTS ***


                                       ** CONC OF ODOUR    IN OU/M**3
**

                                                     DATE
NETWORK
GROUP ID                         AVERAGE CONC     (YYMMDDHH)
RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)     OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH  1ST HIGH VALUE IS     588.86316  ON 00012505: AT (
335184.12,  4902999.00,    150.48,    150.48,      1.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

```
 *** AERMOD - VERSION 07026 ***    *** 12 OU/s/m^2 elevated option
***        09/21/09
                                   ***
***        09:46:50
**MODELOPTs:
PAGE  79
CONC                         DFAULT ELEV   FLGPOL


*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of           22 Warning Message(s)
A Total of          739 Informational Message(s)

A Total of           10 Calm Hours Identified

A Total of          729 Missing Hours Identified (  1.66 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
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APPENDIX D

"STATISTICAL ANALYSIS OF HISTORIC MONITORING DATA AT THE RICHMOND LANDFILL, NAPANEE, ONTARIO,"

MAY 26, 2006

EXCELLENCE IN
ENVIRONMENTAL
CONSULTING
SERVICES

XCG File #1-664-38-03
May 26, 2006

STATISTICAL ANALYSIS OF HISTORIC MONITORING DATA AT THE RICHMOND LANDFILL, NAPANEE, ONTARIO

Prepared for:
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APPENDICES

1. PROJECT BACKGROUND AND SCOPE OF WORK

In January 2006 the Mohawks of the Bay of Quinte (MBQ) obtained funding from Health Canada to undertake a project under the Environmental Contaminants Program. The project involved completing a series of tasks, which were focused on assessing current impacts and potential future impacts on the Tyendinaga Mohawk Territory (TMT) arising from the Richmond Landfill site, which is a landfill site owned by Waste Management of Canada (WM), located near the northeast corner of the TMT.

There are plans to expand the Richmond Landfill site from one that currently is licensed to receive 125,000 tonnes of waste per year to one that would be licensed to receive 750,000 tonnes of waste per year. This would result in a large increase in the footprint occupied by the landfill site, from the current 16.2 ha to 109.5 ha.

For a number of reasons, the Mohawks of the Bay of Quinte (MBQ) are concerned about potential impacts on the TMT from the landfill site. These reasons include:

- The landfill site is located near the headwaters of two creeks that flow through the TMT, and these creeks are used for a variety of purposes by TMT residents, including fishing and recreation;
- The landfill site is located in an area with fractured limestone bedrock located very near the ground surface, and is upgradient of the TMT in terms of the direction of regional groundwater flow; there is potential for groundwater quality impacts in aquifers that are used by TMT residents for their drinking water supplies.

One of the tasks to be completed as part of this project was a statistical analyses of historical groundwater, surface water, and leachate data collected during routine monitoring of the landfill site by WM's consultants, in order to evaluate the potential for impacts on the TMT. This report describes the methodology used in completing this task and presents the results.

Section 1.1 provides background information relating to previous work conducted to examine surface water and groundwater quality on and around the Richmond Landfill site, and briefly describes how WM historical surface water and groundwater data were examined in this study. Section 1.2 explains the reason for carrying out a separate examination of tritium data collected by WM from groundwater sampling during the period from 1998 to 2000, and briefly outlines the scope of work for this component of the study. Section 1.3 lists the sources of information for the data used in this study.

Section 2 of this report presents the methodology for the statistical analyses. Section 3 presents the results of the statistical analyses. Section 4 provides a discussion of the results. Conclusions and recommendations are included in Section 5. Study limitations are included in Section 6.

1.1 Surface Water and Groundwater Quality

XCG has conducted a number of studies examining surface water and groundwater quality in the area of the Richmond Landfill site, during the period from 2000 to the present. The majority of these studies have focused on new surface water and groundwater quality information collected by XCG, rather than examining historical water quality data generated by WM. However, in 2000, XCG conducted a preliminary review of surface water, groundwater, and leachate quality data from annual monitoring reports completed by Waste Management's consultants for the Richmond Landfill. Preliminary analysis of these reports supported the conclusion that the landfill was having a statistically significant impact on water quality in the area (see XCG's report entitled "Water, Leachate, and Sediment Sampling Program, Richmond Landfill Site," dated November 21, 2000).

In order to better evaluate the impact that the landfill operation has historically had on surface water and groundwater quality in the area, XCG examined historic WM surface water and groundwater data in greater detail. Comprehensive statistical analyses were conducted to evaluate the significance of the historic observations and identify locations with particularly high concentrations of contaminants.

1.2 Analysis of Tritium Data

In WM's annual monitoring report for 1999, dated March 2000, tritium was used as a tracer in order to better identify leachate impacts in groundwater samples from monitoring wells on the landfill site. *Table D-5: Richmond Landfill Isotope Data 1998-2000* from the *Detailed Background Report to Discussion Paper #5* (Part B – Appendices) includes data for ^{3}H (tritium) levels at various monitoring wells located on the Richmond Landfill site, duplicated in Appendix B of this report. This tritium data is from sampling conducted during the period from 1998 to 2000.

Since tritium is not characteristic of the poor quality groundwater found on the site, and since it is present in the leachate at much higher levels (about two to three orders of magnitude higher) than in background groundwater, it is a better leachate indicator than other more commonly used leachate indicators, such as chloride and iron. For this reason, XCG included in this study a focused statistical examination of the tritium data in order to develop an understanding of what tritium activity levels may be considered, according to widely accepted statistical methods, to be indicative of a probable (based on 95% confidence) leachate impact.

1.3 Sources of Data

All of the surface water and groundwater quality data used by XCG in this report were extracted from hard copies of Waste Management's Annual Monitoring Reports from 1998 to 2004 on the Richmond Landfill. All tritium data were extracted from an electronic copy of Discussion Paper #5 relating to the Richmond Landfill Environmental Assessment. The specific references used are cited below:

- "*2004 Annual Monitoring Report, Waste Management of Canada Corporation Richmond Landfill, Town of Greater Napanee, Ontario*", Water and Earth Science Associates Ltd., C-B2964-4-V.2, March 2005.

- "*2003 Annual Monitoring Report, Waste Management of Canada Corporation Richmond Landfill, Town of Greater Napanee, Ontario*", Water and Earth Science Associates Ltd., C-B2524-4, March 2004.

- "*Detailed Background Report to Discussion paper #5, Final, Part B – Appendices, Hydrogeology Baseline Conditions, Richmond Landfill Expansion Environmental Assessment*", Waste Management of Canada Corporation, September 2005.

2. METHODOLOGY

2.1 Data Entry

Historic water quality data from the sources listed in Section 1.3 were entered into Microsoft Excel through a combination of manual and automatic entry using optical character recognition (OCR) software. Data entered using both approaches were manually reviewed to ensure accuracy. Data points shown as non-detectable (ND) were substituted with concentration values equal to one half (1/2) of the method detection limit (MDL). If the MDL was not specified by WM, ND values were approximated as one half (1/2) of the lowest value observed for that parameter over all monitoring locations within the aquifer being analyzed. The MDL for tritium was assumed to be the lowest measurement: 0.8 TU.[*]

2.2 Statistical Analysis

2.2.1 Tests for Normality

Most of the water quality data extracted from the WM Annual Monitoring Reports were not suitable for analysis using parametric methods. For almost all parameters included in XCG's analyses, data did not appear to be normally distributed, was of small (less than 100 points) sample size, was of different sample sizes, and was left-censored[**] due to method detection limits (MDL). For these reasons, XCG used non-parametric statistical tests in lieu of parametric testing. Non-parametric tests do not require that the data be normally distributed.

2.2.2 Statistical Tests

To make accurate comparisons, two tests were performed using the Analyze-It extension for Microsoft Excel. For data grouped by water type (surface water, overburden groundwater, intermediate bedrock groundwater) and then by parameter, comparative descriptive statistics were first calculated. Secondly, as a non-parametric equivalent to the 1-way between-subject analysis of variance (ANOVA) for normally distributed data, the Kruskal-Wallis 1-way ANOVA test was used to formally check for a difference between the medians[†] of water quality data grouped by parameter and location. The outputs of each of these automated tests are summarized in Table 2-1.

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[*] One tritium unit equals 1 tritium atom in 10^{18} hydrogen atoms.

[**] Censored observations can adversely affect the shape of the distribution of a sample. Instead of the observations being normally distributed, the distribution will be sharply cut-off at the minimum or maximum measurable limit of the range. (Analyze-It, 2006)

[†] The median of groupings of measurements was used in XCG's analysis as a more representative indication of statistical central location than the average or mean. Since the median is the 50th percentile, it is more suited to censored data than an average, which could be skewed by a MDL.

Table 2-1 Summary of Statistical Tests Used by XCG and Outputs of Each Test

Test	Outputs
Comparative Descriptive Statistics	• Number of samples • Mean • Standard deviation • Standard error • 95% Confidence interval of mean • Median • Inter Quartile Range (IQR) • 95% Confidence interval of median
Kruskal-Wallis 1-way ANOVA	• Number of samples • Rank sum • Mean rank • Kruskal-Wallis statistic and associated p-value • Bonferroni Contrasts • Difference, and associated p-value

The statistical outputs primarily focused on in XCG's analysis were the medians of each sample and the p-values associated with the differences in medians reported by the Kruskal-Wallis ANOVA. A p-value is a measure of the probability of observing a sample as extreme value (type I error). By convention, a p-value less than 0.05 (95% significance) is "statistically significant", and a p-value less than 0.01 (99% significance) is "statistically *highly* significant" (Graphpad, 1999). Results noted as "significant" or "highly significant" in this report refer to these statistically verified levels of significance.

2.3 Selection and Categorization of Monitoring Locations

Data from the WM Annual Monitoring Reports included records for monitoring locations with varying ages, quantities of data, and types of parameters sampled. Because of these variations, XCG carefully selected monitoring locations with sufficient data to perform meaningful analysis. XCG's analyses of surface water quality included data from all nine surface water monitoring locations used by WM (termed S1 through S9), as listed in Appendix D of the 2004 WM Annual Monitoring Report. Locations used in XCG's analyses of groundwater quality were limited to wells reported as part of WM's 2004 Groundwater Monitoring Program (according to Table 1, 2004 Annual Monitoring Report). Of these locations, only parameters measured at monitoring wells with at least eight points and with the most recent data (measured within the last 10 years) were considered. Because of this limitation, approximately half the monitoring wells were excluded from the analysis.

All data available in DP#5 relating to the Richmond Landfill EA was included in the analysis of tritium concentrations.

2.3.1 Classification of Background Data

To establish groupings of surface and groundwater parameter measurements to be compared in statistical tests, monitoring locations for surface water, overburden/bedrock interface aquifer, and intermediate bedrock aquifer were considered separately.

Surface water monitoring locations were further categorized as upstream or downstream, consistent with WM's classification in its 2004 Annual Monitoring Report (see Table 2-2).

Overburden/bedrock interface unit and intermediate bedrock unit wells were identified as such based on Table 1 of the 2004 Annual Monitoring Report for the Richmond Landfill, prepared by WM's consultant Water and Earth Science Associates Ltd.

Overburden and intermediate bedrock groundwater wells were classified as either background or down-gradient of the landfill, based on reference to contour maps of the overburden/bedrock interface and intermediate bedrock unit potentiometric surfaces (Figures 2 through 5 from the 2004 WM Annual Monitoring Report). Locations that appeared to be situated up-gradient or cross-gradient with respect to the waste mound were included in the grouping of background data to be used as a control group of measurements. All other wells were considered to be potentially influenced by the landfill, and were compared individually against the grouping of background measurements, summarized in Table 2-2.

Table 2-2 Categorization of Surface and Groundwater Monitoring Locations

	Monitoring Locations Collectively Considered "Upstream" or "Background"	"Downstream" or "Down Gradient" Monitoring Locations Individually Compared to "Background" Control Group
Surface Water: Marysville Creek	S1, S2	S6, S7, S3
Surface Water: Beechwood Ditch	S5	S9, S8, S4[*]
Overburden Aquifer	M10-3, M12, M14, M28, M49-2, M58-3	M19, M23, M3A-3, M35, M39, M46, M47-2, M47-3, M5-3, M50-3, M51-3, M52-3, M6-3, M9-3, OW1, OW4, OW54-s, OW55-s, OW56-s, OW57
Intermediate Bedrock Aquifer	M3A-1, M48-2, M48-3[**], M5-2, OW56-d, OW56-i, OW55-d, OW55-i	M10-2, M49-1, M50-2, M51-2, M52-2, M53-3, M6-2, M9-2, OW54-d, OW54-i

Table 2-3 Categorization of Groundwater Monitoring Locations for Analysis of Tritium

Relative Gradient	Up-Gradient to Cross-Gradient	Down-Gradient
Monitoring Wells	M47-1, M55-1[†], M55-2[†], M69-1, M69-2, M69-3, M69-4, M72, M73, M74, M76, M77, M79	2055, M47-3, M5-3[†], M50-1, M50-2, M50-3, M51-2, M51-3, M52-2, M52-3, M6-1, M6-2, M6-3[†], M71, M75, M78, M9R-1, M9-2, M9-3

2.4 Selection of Parameters for Analysis

The WM Annual Monitoring Reports included data for more than 50 inorganic and organic parameters for water and leachate samples, listed in Table 2 of the 2004 Annual Monitoring Report. For most parameters, data were not reported for all dates or for all monitoring locations. In this report, parameters from WM's data were only considered if enough samples were reported to perform meaningful statistical analysis. A summary of

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[*] Surface water monitoring location S4 is located upstream of S8, but in close proximity to the intersection of the drainage ditch from the south storm water retention pond and Beechwood Ditch, which is downstream of S5 and S9. S4 was treated separately in the analysis of surface water quality, but demonstrated statistically significant increases in certain parameters compared to S5, so is included here as a "downstream" location.

[**] In XCG's report of May 23, 2006, entitled "Review of Waste Management of Canada Response to Comments on EA, Richmond Landfill Site, Napanee, Ontario," XCG makes the argument that M48-2 (and M48-3) may be downgradient of the waste mound, based on historic water level measurements made in monitoring wells on the site. However, for the purposes of this analysis XCG has classified wells based on the premise that WM's interpretation of potentiometric surface contours, shown in the 2004 Annual Monitoring Report, is correct.

[†] Indicates a monitoring location with duplicate tritium measurements.

the parameters included in the statistical analyses of surface water, overburden groundwater, and intermediate bedrock groundwater is included in Table 2-4.

Table 2-4 List of Parameters Included in Analyses of Surface Water, Overburden Groundwater, and Intermediate Bedrock Groundwater

Water Type	Parameters Included
Surface Water	Alkalinity, Aluminum, Ammonia, Biochemical oxygen demand, Chloride, Chromium, Conductivity, Copper, Hardness, Iron, Nitrate, pH, Phenols, Total Dissolved Solids, Total Kjeldahl Nitrogen, Total Organic Carbon, Total Phosphate, Total Suspended Solids, Turbidity, Zinc
Groundwater (Overburden and Intermediate Bedrock)	Alkalinity, Aluminum, Ammonia, Biochemical oxygen demand, Calcium, Chemical Oxygen Demand, Chloride, Conductivity, Dissolved Organic Carbon, Hardness, Iron, Magnesium, Nitrate, pH, Potassium, Silver, Sodium, Sulphate, Total Kjeldahl Nitrogen, Total Organic Carbon

In its 2004 and 2003 annual monitoring reports, Waste Management reported that elevated levels of certain water quality parameters, summarized in Table 2-5, characterized samples of raw leachate from the landfill. Focus was given to the first six of these parameters in the following statistical analyses, and comparative box plots for each parameter listed here for each of surface water, overburden groundwater, and intermediate bedrock groundwater sites are included in Appendix A.

Table 2-5 Water Quality Parameters Characteristic of Raw Leachate from the Richmond Landfill

Parameter	Specified Elevated Ranges (Least and Greatest from 2003 and 2004 Reports)
Ammonia	1 to 541 mg/L
Biochemical oxygen demand	1 to 1000 mg/L
Chemical Oxygen Demand	575 to 2320 mg/L
Chloride	748 to 1050 mg/L
Conductivity	1660 to 11500 µS/cm
Iron	0.1 to 39.7 mg/L
BTEX[*]	>700mg/L

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[*] Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) were not included in XCG's analysis because organic surface water data was largely censored and only available for select monitoring locations and dates.

3. RESULTS OF STATISTICAL ANALYSES

3.1 Surface Water

Statistical analysis of water quality parameters in surface water revealed that for most parameters, there was no significant difference between upstream monitoring locations at Marysville Creek and Beechwood Ditch (S1, S2, and S5). The two exceptions to this finding were upstream pH, which was significantly greater in Beechwood Ditch than in Marysville Creek, and upstream turbidity, which was also significantly greater in Beechwood Ditch than in Marysville Creek.

Five parameters that WM reported as characteristic of leachate (see Table 2-5) were included in the surface water analysis: ammonia, chloride, conductivity, biochemical oxygen demand, and iron. Examination of data for Marysville Creek did not reveal a statistical difference between upstream (S1 and S2) locations and downstream locations (S3, S6, S7) for these or any other parameter included in XCG's analysis.

However, in Beechwood Ditch, four of the five parameters identified as characteristic of leachate were greater in downstream locations (S8 and S9) than the upstream monitoring location (S5) to a high level of statistical significance. The south stormwater retention pond between S8 and S9 did appear to have some effect, in that a decrease in the maximum levels of some parameters was observed. However, none of the overall parameter medians were statistically significantly lower downstream of the pond (S8) than upstream of the pond (S9). Box-plots of select parameters at surface water monitoring locations are included in Appendix A. Table 3-1 includes a summary of ammonia, chloride, conductivity, and iron observed at locations upstream (S5) and downstream of the stormwater retention pond in Beechwood Ditch.

Table 3-1 Summary of Statistics for Parameters Characteristic of Leachate Observed at Upstream and Downstream Locations in Beechwood Ditch

Parameter	Upstream Median (S5)	Downstream Median (S8)	% Difference in Medians	Level of Significance of Difference in Medians
Ammonia mg/L	0.035	1.080	3,000	99.48%
Chloride mg/L	14.5	81.5	460	100.00%
Conductivity µS/cm	444	893	100	99.96%
Iron mg/L	0.180	1.088	200.00	99.08%

In addition to the parameters listed in Table 2.5, which were found at greater levels downstream in Beechwood Ditch relative to upstream locations, five other parameters not included in Table 2.5 were also greater at downstream locations than upstream locations. Alkalinity, hardness, total dissolved solids, total Kjeldahl nitrogen, and total organic carbon were statistically demonstrated to have higher concentrations downstream than upstream, to a level of significance of at least 95%. Detailed statistical results generated by the Analyze-It extension for Microsoft Excel are included in Appendix C for all parameters considered in XCG's analysis of surface water quality.

3.2 Groundwater

3.2.1 Overburden

Statistical analyses of 20 water quality parameters in overburden groundwater were performed. A series of Kruskal-Wallis ANOVA tests revealed significant differences between overburden background data and a large number of wells located down-gradient of the landfill. Four of the monitoring locations; OW4, M6-3, M50-3, and M47-2 demonstrated very distinct differences from background data. Of the 20 tested parameters, OW4 had 18 parameters with medians greater than background and M6-3 had 16 parameters with medians greater than background, all to a high degree of statistical significance (99%+). Wells M50-3 and M47-2 both had 12 of 20 parameters with medians significantly greater than background. OW4, M50-3 and M47-2 all showed significantly greater medians than background for ammonia, biochemical oxygen demand, chemical oxygen demand, chloride, conductivity, and iron - parameters characteristic of leachate. Table 3-3 is a colour-coded summary of the p-values of the Bonferroni contrasts against overburden background data. The table highlights which parameters were significantly greater than background for which wells. All differences in parameter medians with background data were positive – that is, the parameter medians calculated for down-gradient wells were in all cases greater than the parameter medians calculated for background data. Detailed statistical results generated by the Analyze-It extension for Microsoft Excel are included in Appendix D for all parameters considered in XCG's analysis of overburden groundwater quality.

3.2.2 Intermediate Bedrock

Statistical analyses of 20 water quality parameters in intermediate bedrock groundwater were performed. Two of the monitoring locations, M6-2 and M50-2, demonstrated very distinct differences from background data. Of the 20 tested parameters, M6-2 had 15 parameters with medians greater than background, five of which were ammonia, chemical oxygen demand, chloride, conductivity and iron – parameters characteristic of leachate. M50-2 had 12 parameters with medians greater than background, three of which were ammonia, biochemical oxygen demand, and chloride. Table 3-4 is a colour-coded summary of the p-values of the Bonferroni contrasts against intermediate bedrock background data. All differences in parameter medians with background data were positive – that is, the parameter medians calculated for down-gradient wells were in all cases greater than the parameter medians calculated for background data. The table highlights which parameters were significantly greater than background for which wells. Detailed statistical results generated by the Analyze-It extension for Microsoft Excel are included in Appendix E for all parameters considered in XCG's analysis of intermediate bedrock groundwater quality.

3.3 Tritium

Analysis of the tritium data was difficult because the data designated as background seemed to be composed of two sub-populations of "young" and "old" groundwater, suggested by many data points near 1 TU or greater than 10 TU, but none between 1.4 TU and 8 TU. This difference may be explained by elevations in tritium known to occur in groundwater recharged since the beginning of fallout from nuclear weapons and testing.

For these reasons, background data was considered two ways; all together, or only "young groundwater", which comprised a portion of background data with greater levels of tritium. For each of these three groupings of background data, two separate approaches were used to determine the degree of dissimilarity between tritium levels from background and down gradient monitoring locations.

In the first method, it was assumed that the tritium was at least fairly approximated by a normal distribution. The upper bound of 95% and 99% one-tailed confidence intervals were calculated for each grouping, and are summarized below in Table 3-2. A confidence interval represents a range in which 95% (or 99%) of random measurements will fall within, based on the mean and variance of a population. Thus, the upper bound of the confidence interval indicates the tritium level above which less than 5% (or 1%) of tritium samples are expected to be measured.

In a second approach, background data was not treated as a normal distribution. For each grouping of background data, summary statistics (25th percentile or first quartile, median, and 75th percentile or third quartile) were calculated to determine the interquartile range (IQR) and inner and outer fence[*] values, which are conventionally used to identify outliers. Measurements past the inner fence range are considered outliers, and measurements past the outer fence range are considered far or extreme outliers. The upper limit of the inner and outer fence ranges calculated for each background grouping are summarized in Table 3-2.

Table 3-2 Summary of Upper Confidence and Outlier Bounds for Background Tritium Data

Background Grouping	Assume Normally Distributed, One-Tailed 95% Confidence Boundary	Assume Normally Distributed, One-Tailed 99% Confidence Boundary	Assume Non-Normally Distributed, Upper Outlier Limit	Assume Non-Normally Distributed, Upper Extreme Outlier Limit
All Background	23.82	29.94	40.35	64.2
High Background	25.38	29.11	24.375	30.75

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[*] The inner fence is defined as one and a half times the interquartile range (1.5 IQR) less than the first quartile (25th percentile) or greater than the third quartile (75th percentile). The outer fence is defined as three times the interquartile range (3 IQR) less than the first quartile (25th percentile) or greater than the third quartile (75th percentile).

The four samples with the greatest tritium levels (from wells M6-3, M9-2, and M9-R) were identified as outliers – two of them extreme outliers – as shown by the box plot of all tritium data in Figure 3-A.

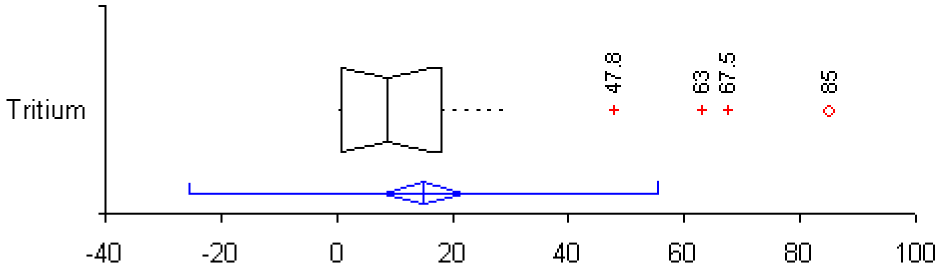

Figure 3-A Box-plot of all tritium data generated by Analyze-It extension for Microsoft Excel

Table 3-3 ***Summary of the p-values of the Bonferroni Contrasts of Down Gradient Overburden Wells Versus Background Data. Red highlighted cells indicate differences with a 99% or greater level of significance (statistically highly significant) and yellow highlighted cells indicate differences with a 95% or greater level of significance (statistically significant). Blue highlighted parameters are those listed in Table 2-5 as characteristic of leachate from the Richmond Landfill.***

	Overburden Groundwater Quality Parameter / Level of Significance of Difference with Background																						
Monitoring Location:	Alkalinity	Aluminum	Ammonia	Biochemical Oxygen Demand	Calcium	Chemical Oxygen Demand	Chloride	Conductivity	Dissolved Organic Carbon	Hardness	Iron	Magnesium	Nitrate	pH	Potassium	Silver	Sodium	Sulphate	Total Kjeldahl Nitrogen	Total Organic Carbon	**# Highly Significant (99%+) Differences**	**# Significant (95%+) Differences**	**Total # Significant Differences**
OW4	100.00%	0.00%	100.00%	100.00%	99.97%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.98%	99.98%	100.00%	0.00%	100.00%	99.99%	100.00%	99.99%	18	0	18
M6-3	100.00%	99.60%	100.00%	0.00%	99.99%	100.00%	100.00%	100.00%	99.99%	100.00%	0.00%	100.00%	99.99%	100.00%	100.00%	0.00%	100.00%	95.87%	100.00%	99.82%	16	1	17
M50-3	0.00%	0.00%	100.00%	99.02%	89.32%	99.90%	100.00%	100.00%	0.00%	99.88%	99.98%	99.90%	99.28%	53.53%	100.00%	0.00%	100.00%	0.00%	100.00%	0.00%	12	0	12
M47-2	0.00%	0.00%	100.00%	99.98%	20.71%	100.00%	100.00%	100.00%	0.00%	98.28%	99.89%	99.71%	99.84%	0.00%	100.00%	0.00%	100.00%	0.00%	100.00%	0.00%	11	1	12
OW55-s	0.00%	0.00%	100.00%	61.52%	92.28%	100.00%	100.00%	100.00%	0.00%	99.97%	96.29%	100.00%	0.00%	0.00%	100.00%	0.00%	100.00%	99.95%	100.00%	0.00%	10	1	11
M52-3	99.91%	0.00%	99.89%	100.00%	0.00%	90.82%	99.99%	100.00%	79.99%	0.00%	97.66%	0.00%	0.00%	0.00%	99.44%	0.00%	100.00%	98.29%	98.41%	26.89%	7	3	10
OW1	99.96%	0.00%	100.00%	100.00%	0.00%	100.00%	90.05%	99.89%	82.83%	0.00%	0.00%	49.66%	100.00%	0.00%	99.72%	0.00%	99.99%	0.00%	100.00%	0.00%	9	0	9
OW56-s	98.08%	61.11%	0.00%	0.00%	100.00%	0.00%	100.00%	100.00%	0.00%	99.66%	0.00%	0.00%	0.00%	99.96%	100.00%	0.00%	100.00%	100.00%	0.00%	0.00%	8	1	9
OW54-s	99.77%	100.00%	70.80%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	99.97%	94.66%	100.00%	100.00%	0.00%	96.51%	100.00%	0.00%	0.00%	8	1	9
OW57	99.98%	0.00%	78.63%	14.06%	100.00%	0.00%	99.58%	0.00%	0.00%	100.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	98.52%	100.00%	0.00%	0.00%	8	1	9
M3A-3	0.00%	96.76%	99.99%	98.86%	99.96%	96.76%	31.08%	0.00%	29.06%	99.02%	0.00%	97.44%	0.00%	100.00%	0.00%	0.00%	17.72%	0.00%	99.88%	35.63%	5	4	9
M46	99.92%	24.90%	99.96%	37.16%	98.80%	0.00%	0.00%	96.91%	0.00%	91.18%	95.52%	0.00%	99.84%	0.00%	82.70%	0.00%	99.98%	0.00%	99.77%	0.00%	5	3	8
M47-3	0.00%	98.36%	0.00%	98.65%	96.70%	99.88%	0.00%	0.00%	98.22%	38.91%	92.33%	0.00%	97.63%	96.51%	0.00%	0.00%	98.56%	0.00%	0.00%	35.34%	1	7	8
M4-3	92.14%	0.00%	99.17%	99.59%	73.23%	81.96%	0.00%	0.00%	84.88%	0.00%	99.48%	0.00%	99.93%	0.00%	100.00%	0.00%	0.00%	99.67%	96.02%	93.68%	6	1	7
M5-3	99.70%	0.00%	100.00%	100.00%	93.47%	26.77%	0.00%	87.17%	0.00%	0.00%	76.88%	0.00%	99.74%	0.00%	46.28%	0.00%	99.87%	0.00%	99.98%	0.00%	6	0	6
M9-3	0.00%	0.00%	100.00%	0.00%	0.00%	70.26%	53.09%	0.00%	0.00%	0.00%	25.69%	0.00%	99.94%	0.00%	99.34%	0.00%	0.00%	0.00%	99.93%	0.00%	4	0	4
M35	99.95%	0.00%	0.00%	0.00%	28.57%	0.00%	0.00%	96.00%	56.24%	96.21%	0.00%	99.98%	43.86%	0.00%	4.78%	0.00%	0.00%	92.06%	0.00%	0.00%	2	2	4
M51-3	99.58%	64.56%	99.34%	0.00%	0.00%	0.00%	73.92%	97.20%	0.00%	0.00%	42.15%	0.00%	56.14%	0.00%	0.00%	0.00%	97.15%	27.54%	93.35%	0.00%	2	2	4
M39	70.76%	0.00%	0.00%	0.00%	0.00%	0.00%	58.58%	68.27%	95.47%	0.00%	0.00%	0.00%	95.19%	0.00%	0.00%	0.00%	0.00%	97.25%	0.00%	14.78%	0	3	3
M23	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	34.20%	0.00%	0.00%	0.00%	0.00%	0.00%	99.10%	0.00%	0.00%	0.00%	31.69%	0.00%	0.00%	0.00%	1	0	1
M19	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	58.28%	93.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0	0

Table 3-4 Summary of the p-values of the Bonferroni Contrasts of Down Gradient Intermediate Bedrock Wells Versus Background Data. Red highlighted cells indicate differences with a 99% or greater level of significance (statistically highly significant) and yellow highlighted cells indicate differences with a 95% or greater level of significance (statistically significant). Blue highlighted parameters are those listed in Table 2-5 as characteristic of leachate from the Richmond Landfill.

	Intermediate Bedrock Groundwater Quality Parameter / Level of Significance of Difference with Background																					
Monitoring Location:	Alkalinity	Aluminum	Ammonia	Biological Oxygen Demand	Calcium	Chemical Oxygen Demand	Chloride	Conductivity	Dissolved Organic Carbon	Hardness	Iron	Magnesium	Nitrate	pH	Potassium	Silver	Sodium	Sulphate	Total Kjeldahl Nitrogen	Total Organic Carbon	**# Highly Significant (99%+) Differences**	**# Significant (95%+) Differences**	**Total # Significant Differences**
M6-2	0.00%	61.46%	99.88%	0.00%	99.96%	99.78%	99.58%	99.93%	99.16%	95.65%	99.98%	92.86%	51.77%	100.00%	99.98%	0.00%	99.79%	99.19%	99.98%	99.73%	14	1	15
M50-2	93.79%	0.00%	99.50%	99.86%	99.81%	96.40%	99.03%	98.70%	0.00%	97.33%	19.76%	99.60%	0.00%	96.11%	75.82%	0.00%	99.18%	92.63%	99.70%	0.00%	8	4	12
OW54-d	98.10%	0.00%	97.83%	99.55%	52.92%	99.98%	100.00%	100.00%	0.00%	66.67%	88.28%	92.72%	0.00%	0.00%	99.99%	0.00%	100.00%	99.57%	86.70%	0.00%	9	2	11
OW54-I	99.99%	30.71%	91.10%	98.96%	94.84%	99.98%	100.00%	100.00%	0.00%	86.16%	99.29%	87.77%	97.76%	60.60%	99.73%	0.00%	100.00%	0.00%	59.32%	0.00%	9	2	11
M10-2	93.25%	0.00%	96.74%	0.00%	99.94%	96.45%	100.00%	99.89%	91.77%	99.93%	0.00%	99.98%	98.24%	94.90%	0.00%	0.00%	98.13%	0.00%	17.17%	74.39%	6	4	10
M9-2	0.00%	0.00%	99.49%	0.00%	0.00%	24.75%	99.82%	100.00%	0.00%	0.00%	64.86%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	98.96%	98.32%	37.33%	7	2	9
M49-1	0.00%	0.00%	99.99%	42.31%	99.95%	65.60%	77.21%	93.72%	96.07%	99.99%	0.00%	100.00%	0.00%	98.75%	100.00%	0.00%	0.00%	0.00%	99.92%	0.00%	7	2	9
M53-3	99.15%	0.00%	95.50%	0.00%	0.00%	91.28%	95.64%	0.00%	64.95%	0.00%	0.00%	0.00%	99.08%	0.00%	49.51%	0.00%	0.00%	99.12%	89.12%	0.00%	5	2	7
M51-2	99.95%	0.00%	0.00%	0.00%	100.00%	54.35%	0.00%	0.00%	67.37%	100.00%	0.00%	99.92%	0.00%	98.32%	98.68%	0.00%	0.00%	75.13%	0.00%	42.82%	5	2	7
M52-2	93.90%	0.00%	0.00%	0.00%	99.50%	0.00%	0.00%	24.45%	93.26%	99.94%	0.00%	99.64%	0.00%	95.09%	78.66%	0.00%	0.00%	82.49%	0.00%	0.00%	4	1	5

4. DISCUSSION

4.1 Surface Water

Statistical tests performed by XCG reported significantly elevated levels of ammonia, chloride, conductivity, iron, alkalinity, hardness, total dissolved solids, total Kjeldahl nitrogen, and total organic carbon in downstream locations (S8 and S9) compared to the upstream monitoring location (S5) in Beechwood Ditch. These results are contrary to the 2004 WM Annual Monitoring Report, which reported that the landfill was not impacting surface water quality. WM's conclusion was based on the fact that exceedances of Provincial Water Quality Objectives (PWQO) were observed in both upstream and downstream samples, but no consideration was given to the magnitude of increases in downstream contamination relative to upstream. While some parameters have been historically above PWQO's at the upstream location, XCG's analysis suggests that surface water leaving the landfill has higher contaminant concentrations, to a high level of statistical significance, than observed at the upstream location.

XCG's data analysis also brings into question the effectiveness of the stormwater retention ponds responsible for intercepting leachate in surface water and pumping it back to the landfill. WM has indicated that they have made improvements to the ponds and that the refurbished south retention pond has been effective at intercepting leachate before draining into Beechwood Ditch. However, based on the 2004 WM Annual Monitoring Report, not enough data is yet available to verify whether WM's changes have, in fact, demonstrated a statistically significant decrease in surface water contamination. Various changes have been made to the pond and to the method of operating the pond over the last five to seven years. Since the changes were made samples taken in 2004 downstream of the south retention pond have shown decreases in most parameters, but also slight increases in aluminum, chromium, and phosphorus.

Statistical tests of surface water quality data performed by XCG reported no significant impact on Marysville Creek. However, analysis of overburden groundwater quality data suggests that Marysville Creek could potentially be contaminated by groundwater entering the creekbed, for example in the area near where Marysville Creek crosses County Road 10, where evidence of groundwater infiltrating into the creekbed has been found in the past.

4.2 Overburden Groundwater

Based on contour maps of the overburden/bedrock interface potentiometric surface in the 2003 and 2004 WM Annual Monitoring Reports, groundwater in the overburden aquifer below the landfill property generally flowed toward two "basins" north-west and south-west of the waste mound. The north-west basin is centered below the west, downstream half of Marysville Creek that flows through the landfill site. The results of XCG's statistical analyses are consistent with this flow pattern. Monitoring wells OW4, M6-3, M50-3, and M47-2 are all situated down-gradient of the waste mound. They had, respectively, 18, 16, 12, and 12 of 20 parameters that tested greater than background levels to a level of high statistical significance.

The above findings indicate that leachate impacts are present in the groundwater in the overburden/bedrock interface aquifer in a number of locations, primarily to the north and east of the waste mound. These impacts have the potential either to enter the surface water of Marysville Creek, to flow off-site in the shallow aquifer unit towards the west, or to migrate downwards through vertical fractures to the intermediate bedrock aquifer.

4.3 Intermediate Bedrock Groundwater

Based on contour maps of the intermediate bedrock interface potentiometric surface in the 2003 and 2004 WM Annual Monitoring Reports, the general direction of flow in this aquifer below the landfill property is towards the south. There is evidence of components of the flow going towards the southwest and southeast.

XCG's statistical analysis of ten intermediate bedrock monitoring wells compared to background data revealed statistically significant differences in parameter medians at all ten locations. Four of these, OW54-d, OW54-i, M10-2, and M9-2, are located directly south of the landfill, and showed greater levels of chloride and conductivity at a high degree of significance. Some of these four wells also showed significantly greater levels of ammonia, biochemical oxygen demand, chemical oxygen demand, and iron. Two other wells, M6-2 and M50-2, had the greatest number of parameters that were significantly greater than background. Respectively, these monitoring locations are situated to the north and east of the landfill. The locations of M6-2 and M50-2 are not down-gradient of the landfill according to the general flow direction trend in the intermediate aquifer, but it is suspected that local variations in the flow patterns may be responsible for the greater-than-background contamination measured in these wells. Some of the historic water level data measured in these monitoring wells support this view.

The above findings indicate that leachate impacts are present in the groundwater in the intermediate aquifer in a number of locations, to the south, north and east of the waste mound. This evidence suggests that there is a hydraulic connection between the overburden/bedrock interface aquifer and the intermediate bedrock aquifer. The impacts in the intermediate bedrock aquifer have the potential to flow off-site in the intermediate aquifer towards the south, southwest, and southeast.

5. CONCLUSIONS

5.1 Leachate Effects on Surface Water

Statistical analysis of historic WM surface water data demonstrated significantly elevated levels of ammonia, chloride, conductivity, iron, alkalinity, hardness, total dissolved solids, total Kjeldahl nitrogen, and total organic carbon in downstream locations compared to the upstream monitoring location (S5) in Beechwood Ditch. Although it is recognized that some water quality parameters have been historically above PWQO's, even at upstream monitoring locations, XCG's analysis suggests that surface water leaving the landfill has been impacted, to a level of high statistical significance.

XCG's analysis did not reveal a statistically significant impact on Marysville Creek. However, analysis of overburden groundwater quality data suggests that Marysville Creek could potentially be contaminated by infiltrating groundwater from the overburden/bedrock interface aquifer.

5.2 Leachate Effects on Groundwater

The results of XCG's analysis of WM's historic groundwater data are consistent with the flow patterns predicted by XCG based on WM's contour maps of the overburden/bedrock interface and intermediate bedrock unit potentiometric surfaces. Water quality parameters including ammonia, biochemical oxygen demand, chemical oxygen demand, chloride, conductivity, and iron in a number of monitoring wells situated down-gradient of the waste mound tested greater than background levels to a high degree of statistical significance.

Based on XCG's findings, leachate impacts are present in the groundwater in the overburden/bedrock interface aquifer in a number of locations, primarily to the north and east of the waste mound. These impacts have the potential to either to enter the surface water of Marysville Creek, to flow off-site in the shallow aquifer unit towards the west, or to migrate downwards through vertical fractures to the intermediate aquifer.

XCG's findings indicate that leachate impacts are present in the groundwater in the intermediate aquifer in a number of locations, to the south, north and east of the waste mound. This evidence suggests that there is a hydraulic connection between the overburden/bedrock interface aquifer and the intermediate bedrock aquifer. The impacts in the intermediate bedrock aquifer have the potential to flow off-site in the intermediate aquifer towards the south, southwest, and southeast.

5.3 Use of Tritium as a Leachate Indicator

Tritium data from monitoring wells categorized as background was used to calculate the upper limit of the inner and outer fence ranges, 40.35 TU and 64.2 TU, respectively. The value 40.35 TU is considered to be representative of the threshold tritium level at which a probable leachate impact exists, based on typical background tritium concentrations in the area. Any value greater than this level would be considered to be an "outlier" with respect to typical background tritium levels. The value 64.2 TU is considered to be representative of the threshold at which the existence of a leachate impact is highly probable. Any value greater than this level would be considered to be a “far outlier”.

Four tritium samples from wells M6-3, M9-2, and M9-R were above the inner fence limit and identified as outliers, and of those four samples, two were also above the outer fence and identified as far outliers. Two of the locations, M6 and M9, that these four samples were taken from are down-gradient of the landfill waste mound and also located close to the main path of runoff to Marysville Creek and to the south leachate pond, respectively.

6. LIMITATIONS

It should be noted that conditions between and beyond sampling locations for this investigation may become apparent during future investigations or on-site work. As such XCG cannot be held responsible for environmental conditions at the site that were not apparent at the time of this investigation. In addition, the data reviewed by XCG was collected by others and, for the purposes of this study, was assumed to be accurate. XCG cannot be held responsible for any errors in the data used in this study.

The scope of this report is limited to the matters expressly covered. This report was prepared for the sole benefit of the Mohawks of the Bay of Quinte, and may not be relied upon by any other person or entity without the written authorization of XCG Consultants Ltd. Any use or reuse of this document (or the findings, conclusions, or recommendations represented herein) by parties other than the Mohawks of the Bay of Quinte is at the sole risk of those parties.

Should you have any questions or require any further information, please do not hesitate to contact the undersigned.

Yours truly,

XCG CONSULTANTS LTD.

Kevin Shipley, M.A.Sc., P.Eng., CEA, CEAS, QPRA
Partner

APPENDIX A

SUMMARY COMPARATIVE STATISTICS

SUMMARY COMPARATIVE STATISTICS: BOX PLOTS

Box-plots graphically show the central location and degree of dispersion of the observations from a sample. The blue diamond shows the mean of each grouping (central horizontal line inside the diamond) and a 95% confidence interval about the mean (between bottom and top tips of the diamond), and the blue notched lines show the parametric percentile range. The black box shows the lower quartile (25th percentile), median, and upper quartile (75th percentile), and the notches on the box represent a 95% confidence interval about the median. (In some cases, the notches of the black box extend past the quartiles – this is an indication that the confidence interval is wider than the IQR.) The dashed lines extend to the value closest to but within the inner fences (1.5 times the inter-quartile range), and the red crosses and circles represent outliers and extreme outliers, respectively. Since all of the samples considered in this report were treated as non-normal distributions, the black box-plots and confidence intervals represented by dashed black lines are the most relevant parts of the following diagrams.

A.1 Surface Water Box Plots

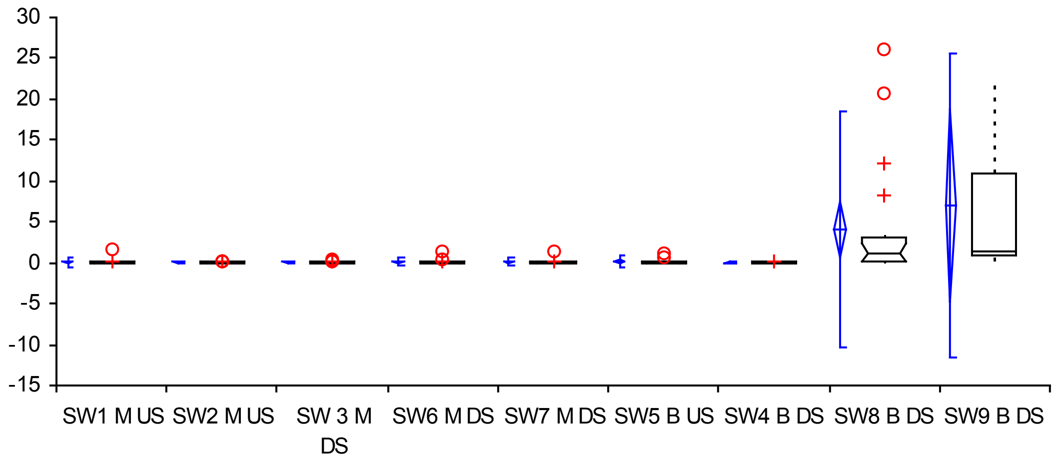

Figure A-1: Box-plots of ammonia in upstream and downstream monitoring locations in Marysville Creek and Beechwood Ditch on the Waste Management Richmond Landfill property.

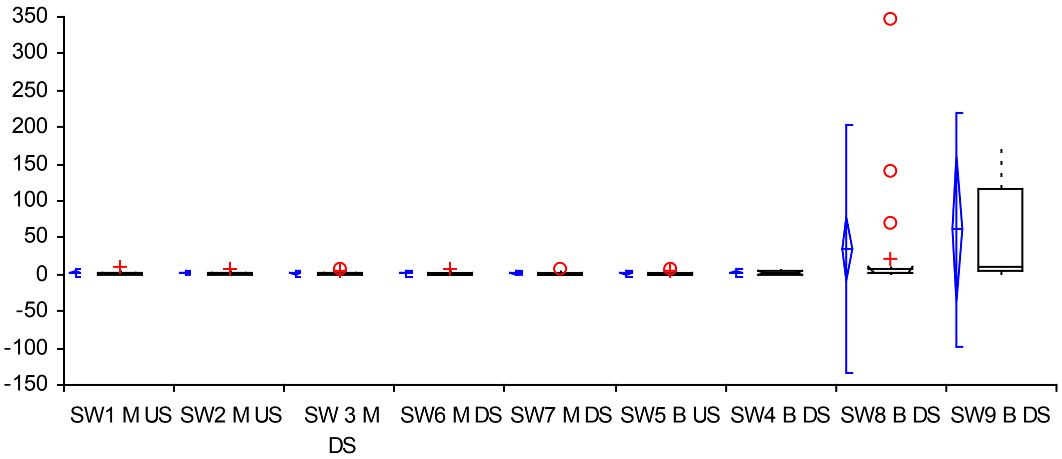

***Figure A-2:** Box-plots of biochemical oxygen demand in upstream and downstream monitoring locations in Marysville Creek and Beechwood Ditch on the Waste Management Richmond Landfill property.*

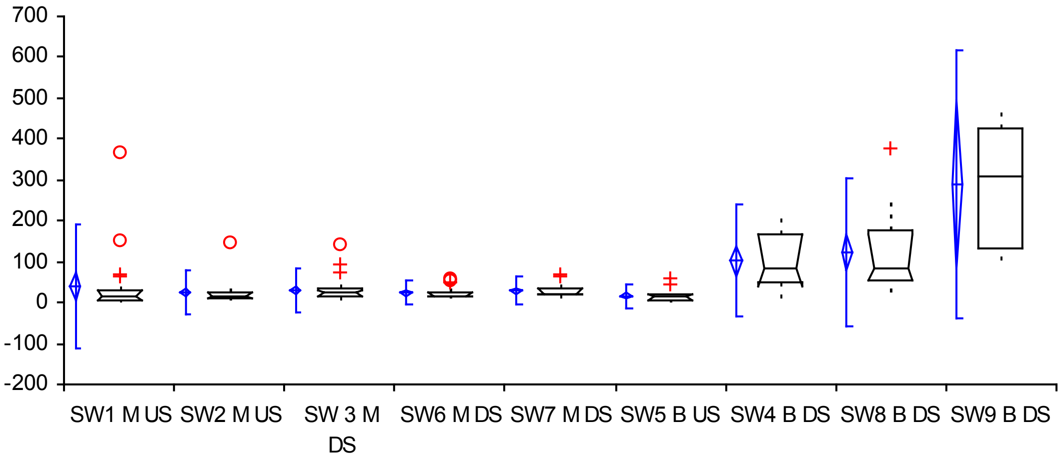

***Figure A-3:** Box-plots of chloride in upstream and downstream monitoring locations in Marysville Creek and Beechwood Ditch on the Waste Management Richmond Landfill property.*

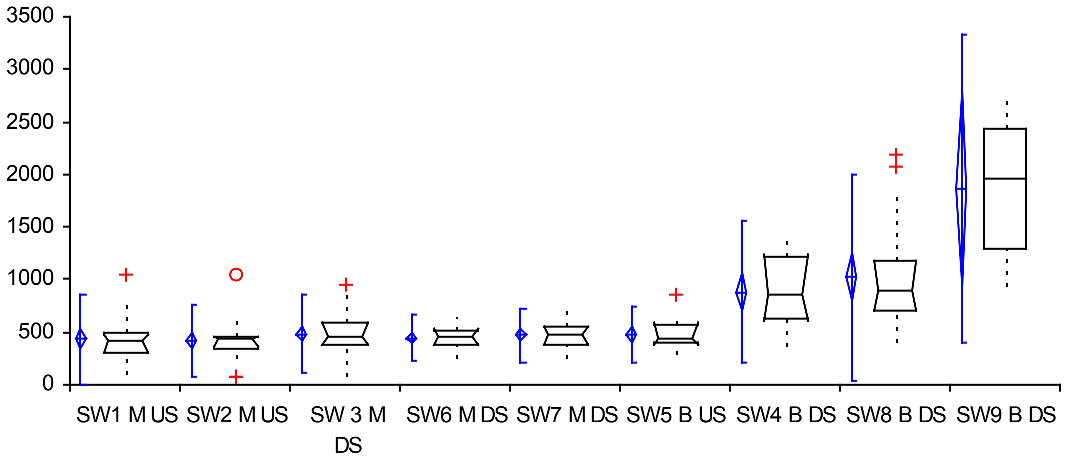

Figure A-4: Box-plots of conductivity in upstream and downstream monitoring locations in Marysville Creek and Beechwood Ditch on the Waste Management Richmond Landfill property.

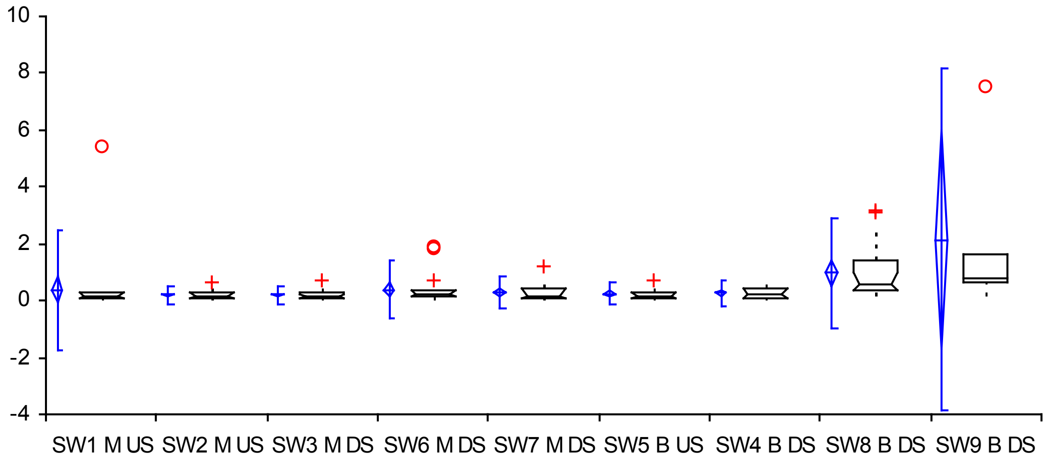

Figure A-5: Box-plots of iron in upstream and downstream monitoring locations in Marysville Creek and Beechwood Ditch on the Waste Management Richmond Landfill property.

A.2 Overburden Box Plots

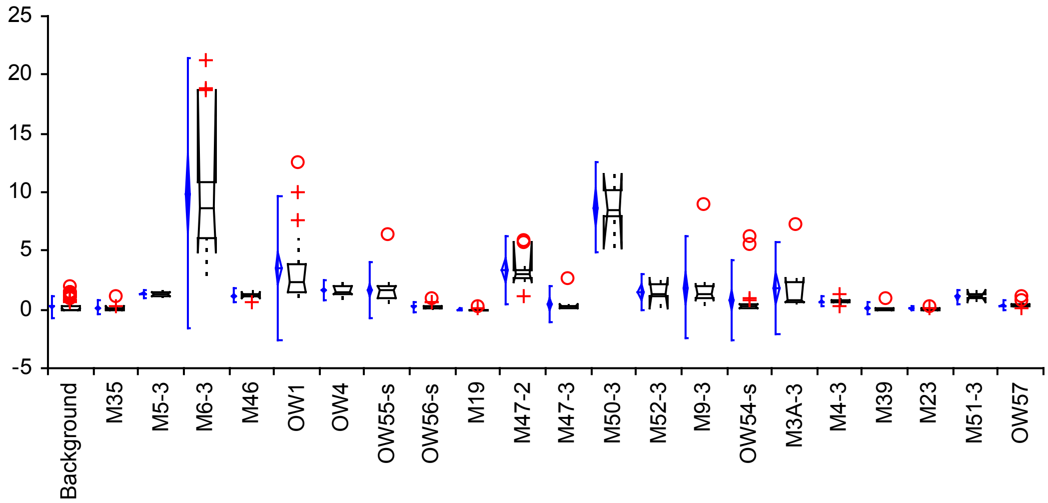

Figure A-6: Box-plots of ammonia in background and down-gradient monitoring locations in the overburden aquifer below the Waste Management Richmond Landfill property.

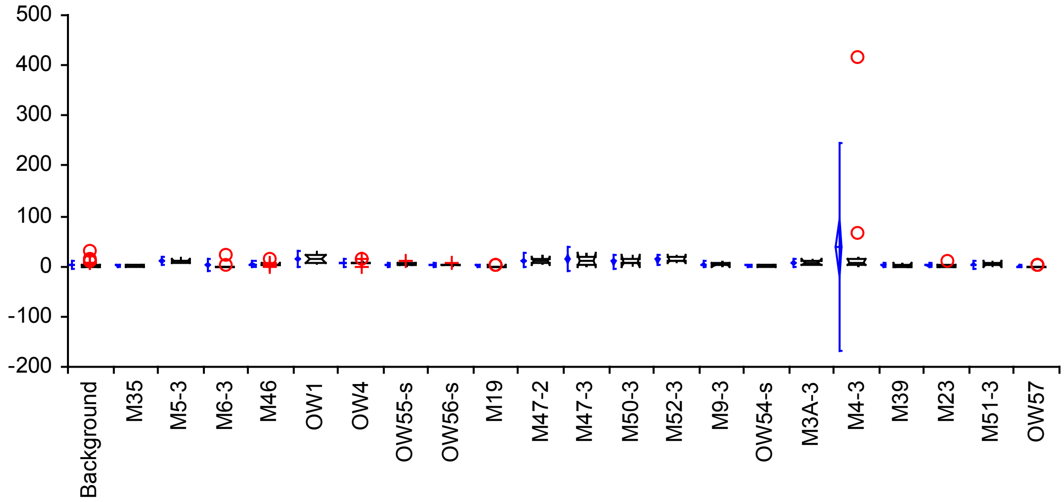

Figure A-7: Box-plots of biochemical oxygen demand in background and down-gradient monitoring locations in the overburden aquifer below the Waste Management Richmond Landfill property.

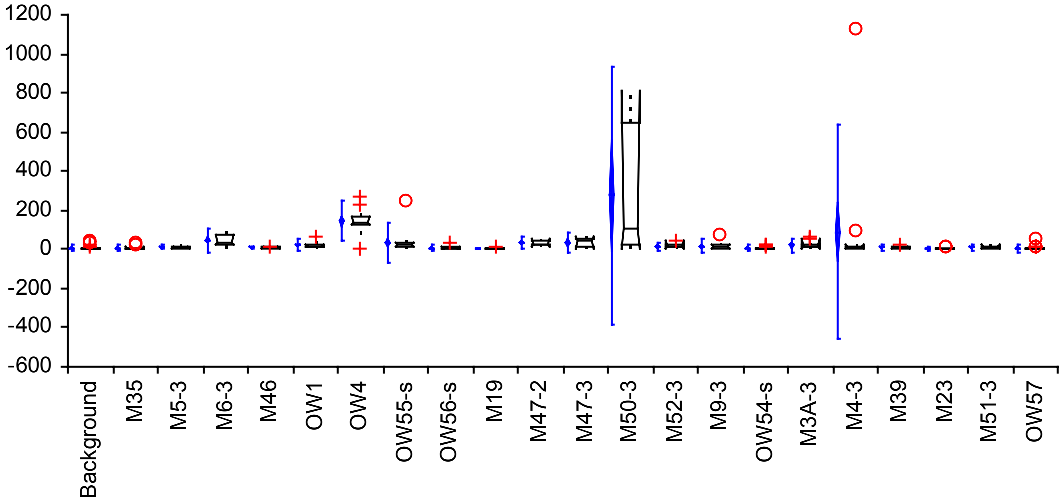

Figure A-8: Box-plots of chemical oxygen demand in background and down-gradient monitoring locations in the overburden aquifer below the Waste Management Richmond Landfill property.

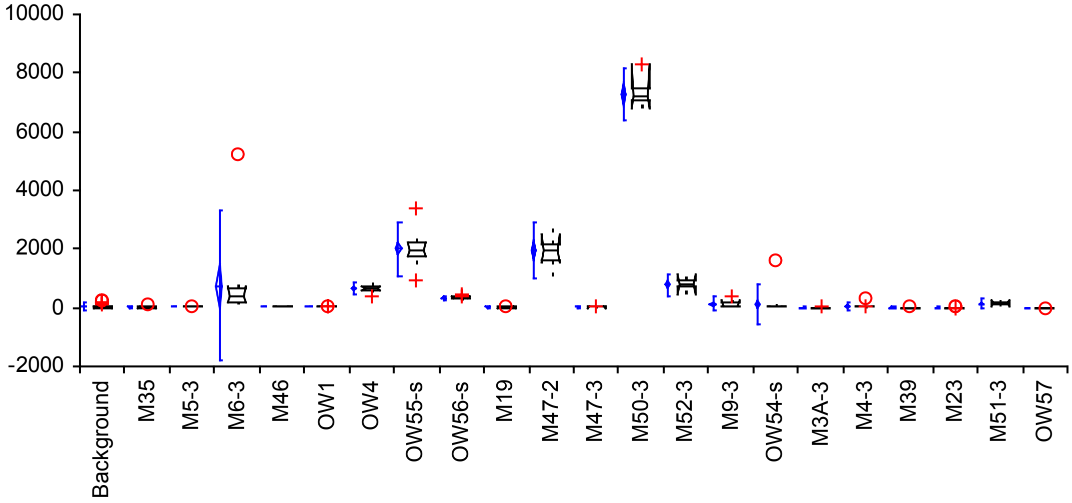

Figure A-9: Box-plots of chloride in background and down-gradient monitoring locations in the overburden aquifer below the Waste Management Richmond Landfill property.

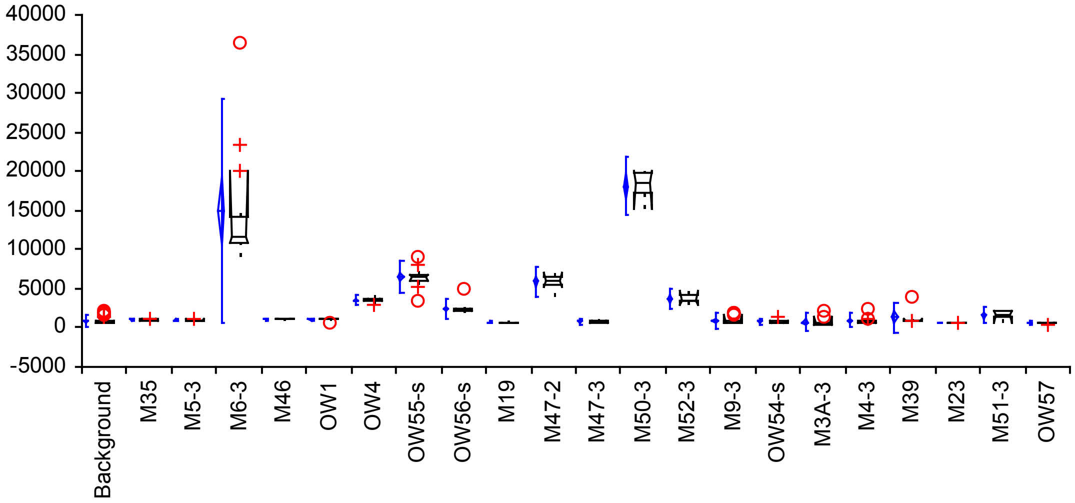

Figure A-10:   Box-plots of conductivity in background and down-gradient monitoring locations in the overburden aquifer below the Waste Management Richmond Landfill property.

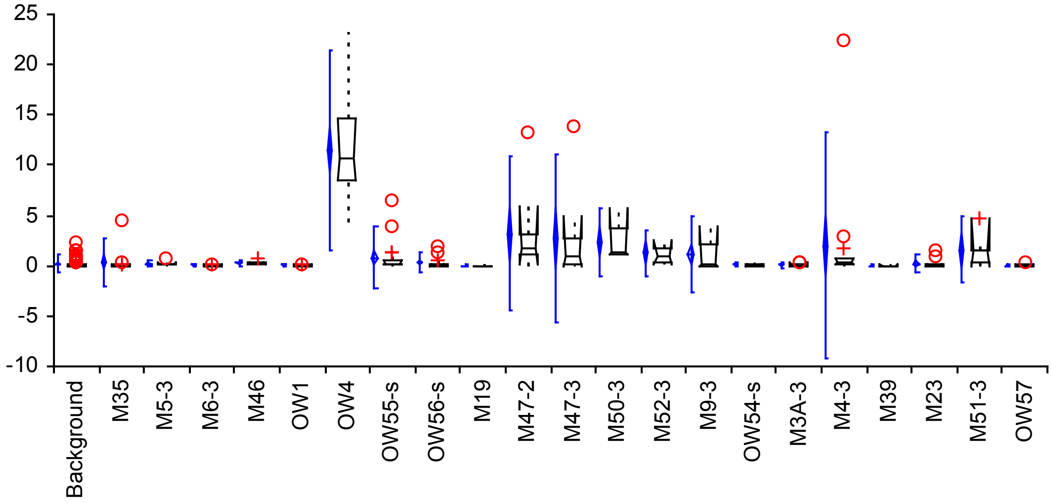

Figure A-11:   Box-plots of iron in background and down-gradient monitoring locations in the overburden aquifer below the Waste Management Richmond Landfill property.

A.3 Intermediate Bedrock Box Plots

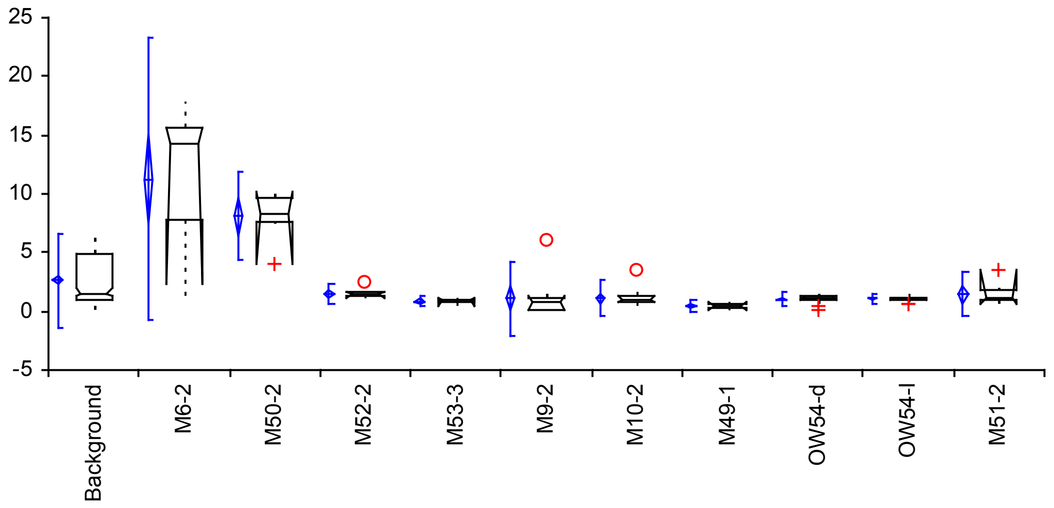

Figure A-12: Box-plots of ammonia in background and down-gradient monitoring locations in the intermediate bedrock aquifer below the Waste Management Richmond Landfill property.

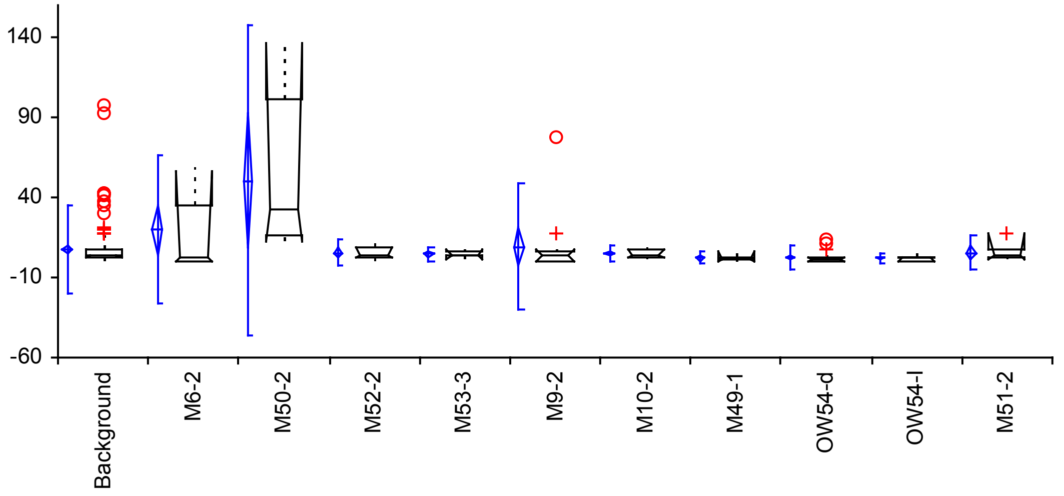

Figure A-13: Box-plots of biochemical oxygen demand in background and down-gradient monitoring locations in the intermediate bedrock aquifer below the Waste Management Richmond Landfill property.

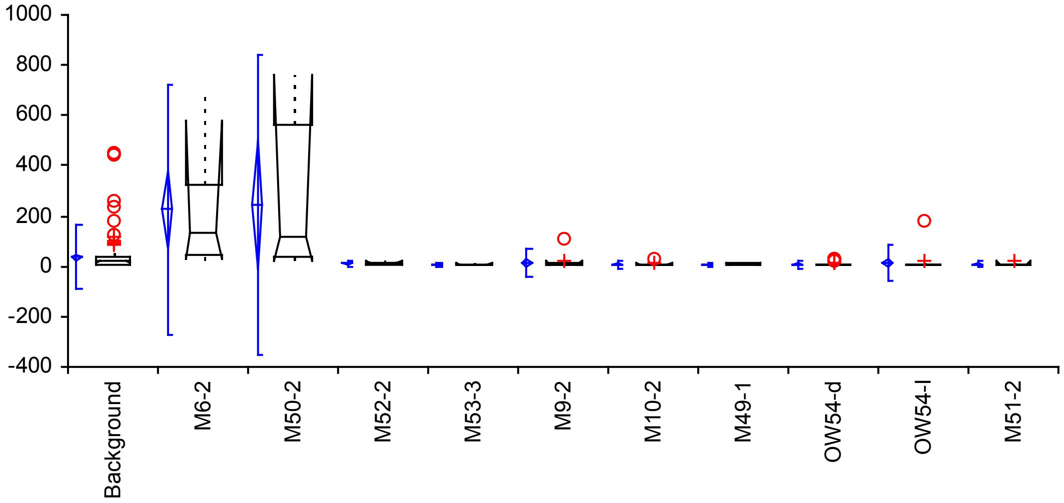

Figure A-14: Box-plots of chemical oxygen demand in background and down-gradient monitoring locations in the intermediate bedrock aquifer below the Waste Management Richmond Landfill property.

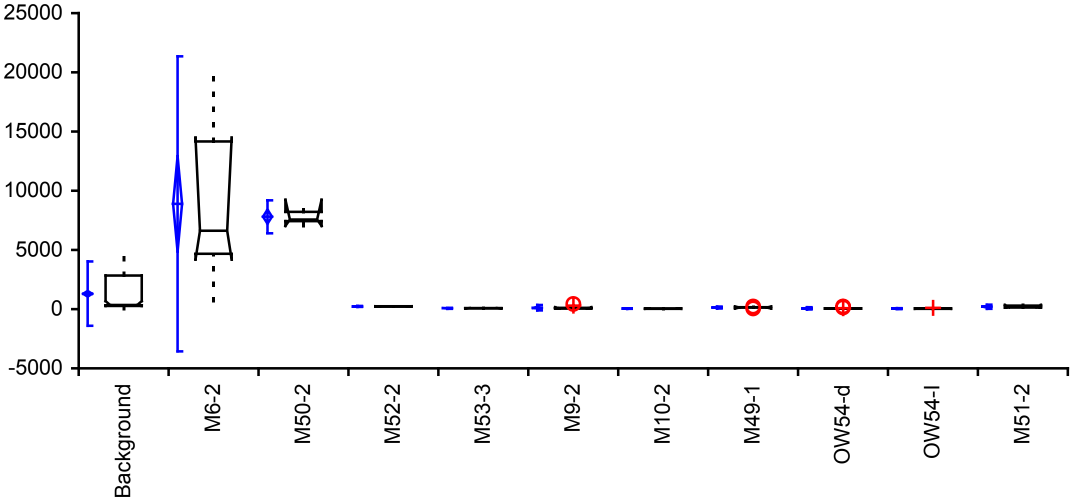

Figure A-15: Box-plots of chloride in background and down-gradient monitoring locations in the intermediate bedrock aquifer below the Waste Management Richmond Landfill property.

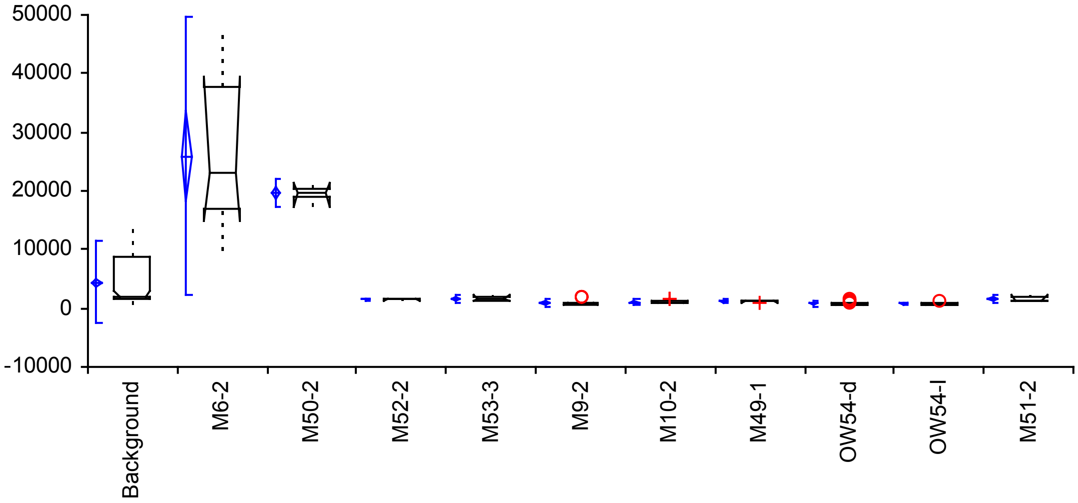

Figure A-16: Box-plots of conductivity in background and down-gradient monitoring locations in the intermediate bedrock aquifer below the Waste Management Richmond Landfill property.

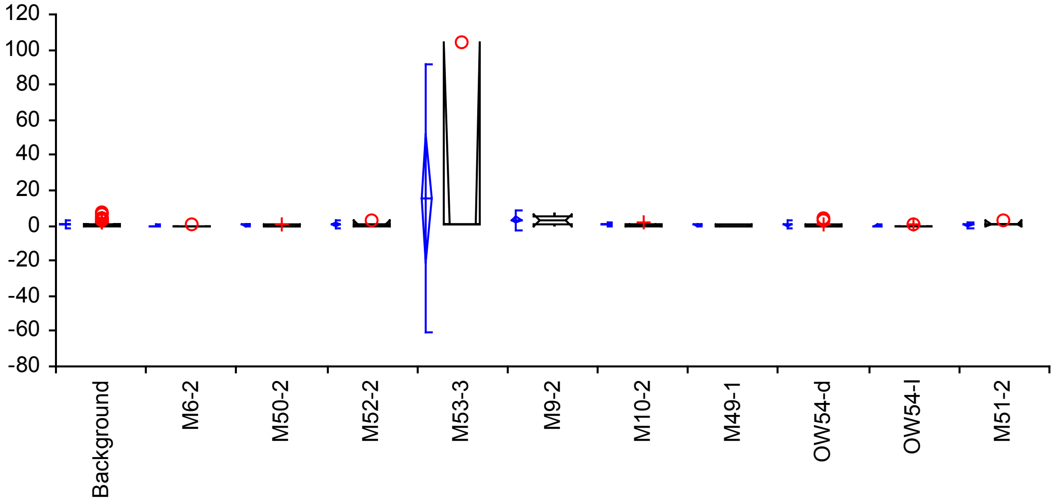

Figure A-17: Box-plots of iron in background and down-gradient monitoring locations in the intermediate bedrock aquifer below the Waste Management Richmond Landfill property.

APPENDIX B

RICHMOND LANDFILL ISOTOPE DATA

Table B-1: Excerpt from Table D-5: Richmond Landfill Isotope Data 1998-2000 from the Detailed Background Report to Discussion Paper #5 (Part B – Appendices).

Monitor ID	Aquifer	Location	Gradient	Monitor Depth	Year	Tritium (^{3}H)
M69-1	D	Far N	Far Up-Gradient	48.14	1998	
M69-1	D	Far N	Far Up-Gradient	48.14	1998	
M69-1	D	Far N	Far Up-Gradient	48.14	1998	nd
M69-2	D	Far N	Far Up-Gradient	29.7	1998	
M69-2	D	Far N	Far Up-Gradient	29.7	1998	13
M69-3	I	Far N	Far Up-Gradient	15.39	1998	
M69-3	I	Far N	Far Up-Gradient	15.39	1998	
M69-3	I	Far N	Far Up-Gradient	15.39	1998	8
M69-4	OB	Far N	Far Up-Gradient	1.74	1998	
M69-4	OB	Far N	Far Up-Gradient	1.74	1998	27
M55-1	D	NNW	Up-Gradient	60.96	1998	nd
M55-1	D	NNW	Up-Gradient	60.96	1999	0.8
M55-2	D	NNW	Up-Gradient	30.48	1998	nd
M55-2	D	NNW	Up-Gradient	30.48	1999	1.4
M73	D	Just W	Up-Gradient	21.4	2000	14
M47-1	D	NE Corner	Up-Gradient	33.1	1999	1.2
M72	D	Just W	Up-Gradient	21.2	2000	15
M74	I	Just W	Up-Gradient	11	2000	nd
M50-2	I	Just NEE	Up-Gradient	15.5	1999	0.8
M47-3	OB/BR	NE Corner	Up-Gradient	4.45	1999	24.1
M51-2	OB/BR	E	Up-Gradient	14	1999	0.8
M51-3	OB/BR	E	Up-Gradient	8.99	1999	1.3
M52-3	OB/BR	SE	Up-Gradient	8	1998	9.3
M52-2	I	SE	Mid-Gradient	14.5	1999	0.8
M50-1	D	NEE	Mid-Gradient	28	1999	0.9
M76	I	Just E	Mid-Gradient	13.3	2000	18
M77	I	Just E	Mid-Gradient	8.25	2000	18
M79	I	Just E	Mid-Gradient	8.2	2000	18
M5-3	OB/BR	N	Mid-Gradient	8.25	1998	
M5-3	OB/BR	N	Mid-Gradient	8.25	1998	
M5-3	OB/BR	N	Mid-Gradient	8.25	1998	
M5-3	OB/BR	N	Mid-Gradient	8.25	1998	nd
M5-3	OB/BR	N	Mid-Gradient	8.25	1999	0.8
M50-3	OB/BR	NEE	Mid-Gradient	10.9	1999	0.8
M6-3	OB/BR	Just N	Mid-Gradient	7.06	1998	
M6-3	OB/BR	Just N	Mid-Lower-Gradient	7.06	1998	63
M6-3	OB/BR	Just N	Mid-Lower-Gradient	7.06	1999	85
M9-2	I	Just S	Down-Gradient	24.3	1999	67.5
M78	I	Just S	Down-Gradient	7.7	2000	6
2055	D	Just S	Down-Gradient	33.8	1999	30.2
M9R-1	D	Just S	Down-Gradient	31.2	1999	47.8
M71	D	Just S	Down-Gradient	22.2	2000	14
M6-1	D	N	Down-Gradient	31.3	1999	0.8
M6-2	I	Just N	Down-Gradient	24.66	1999	16.3
M75	I	N	Down-Gradient	8.1	2000	12
M9-3	OB/BR	Just S	Down-Gradient	12.85	1999	16.1

APPENDIX C

ANALYZE-IT STATISTICAL OUTPUT: SURFACE WATER

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Alkalinity by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	3 May 2006

n 119 (cases excluded: 30 due to missing values)

Alkalinity by Location	n	Rank sum	Mean rank
SW1 M US	23	1266.0	55.04
SW2 M US	26	1489.5	57.29
SW 3 M DS	29	1932.5	66.64
SW6 M DS	21	1260.0	60.00
SW7 M DS	20	1192.0	59.60

Kruskal-Wallis statistic 1.71

p 0.7885 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	-2.245	1.0000
SW1 M US v SW 3 M DS	-11.594	1.0000
SW1 M US v SW6 M DS	-4.957	1.0000
SW1 M US v SW7 M DS	-4.557	1.0000
SW2 M US v SW 3 M DS	-9.349	1.0000
SW2 M US v SW6 M DS	-2.712	1.0000
SW2 M US v SW7 M DS	-2.312	1.0000
SW 3 M DS v SW6 M DS	6.638	1.0000
SW 3 M DS v SW7 M DS	7.038	1.0000
SW6 M DS v SW7 M DS	0.400	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Aluminum by Location: SW2 M US, SW6 M DS, SW1 M US, SW7 M DS, SW3 M DS
Performed by	XCG
Date	16 May 2006

n	86	(cases excluded: 18 due to missing values)

Aluminum by Location	n	Rank sum	Mean rank
SW2 M US	17	615.5	36.21
SW6 M DS	18	885.0	49.17
SW1 M US	14	670.5	47.89
SW7 M DS	19	806.5	42.45
SW3 M DS	18	763.5	42.42

Kruskal-Wallis statistic	2.90	
p	0.5748	(chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW2 M US v SW6 M DS	-12.961	1.0000
SW2 M US v SW1 M US	-11.687	1.0000
SW2 M US v SW7 M DS	-6.241	1.0000
SW2 M US v SW3 M DS	-6.211	1.0000
SW6 M DS v SW1 M US	1.274	1.0000
SW6 M DS v SW7 M DS	6.719	1.0000
SW6 M DS v SW3 M DS	6.750	1.0000
SW1 M US v SW7 M DS	5.445	1.0000
SW1 M US v SW3 M DS	5.476	1.0000
SW7 M DS v SW3 M DS	0.031	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Ammonia by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	3 May 2006

n 124 (cases excluded: 30 due to missing values)

Ammonia by Location	n	Rank sum	Mean rank
SW1 M US	24	1571.5	65.48
SW2 M US	27	1662.0	61.56
SW 3 M DS	30	1890.0	63.00
SW6 M DS	22	1393.5	63.34
SW7 M DS	21	1233.0	58.71

Kruskal-Wallis statistic 0.46

p 0.9769 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	3.924	1.0000
SW1 M US v SW 3 M DS	2.479	1.0000
SW1 M US v SW6 M DS	2.138	1.0000
SW1 M US v SW7 M DS	6.765	1.0000
SW2 M US v SW 3 M DS	-1.444	1.0000
SW2 M US v SW6 M DS	-1.785	1.0000
SW2 M US v SW7 M DS	2.841	1.0000
SW 3 M DS v SW6 M DS	-0.341	1.0000
SW 3 M DS v SW7 M DS	4.286	1.0000
SW6 M DS v SW7 M DS	4.627	1.0000

analysed with: Analyse-it + General 1.73

Test Kruskal-Wallis ANOVA

Comparison Biochemical Oxygen Demand by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 I

Performed by Andrew Chong **Date** 4 May 2006

n 93 (cases excluded: 21 due to missing values)

al Oxygen Demand by Location	n	Rank sum	Mean rank
SW1 M US	17	872.0	51.29
SW2 M US	19	890.5	46.87
SW 3 M DS	20	939.0	46.95
SW6 M DS	19	857.0	45.11
SW7 M DS	18	812.5	45.14

Kruskal-Wallis statistic 0.69

p 0.9531 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	4.426	1.0000
SW1 M US v SW 3 M DS	4.344	1.0000
SW1 M US v SW6 M DS	6.189	1.0000
SW1 M US v SW7 M DS	6.155	1.0000
SW2 M US v SW 3 M DS	-0.082	1.0000
SW2 M US v SW6 M DS	1.763	1.0000
SW2 M US v SW7 M DS	1.730	1.0000
SW 3 M DS v SW6 M DS	1.845	1.0000
SW 3 M DS v SW7 M DS	1.811	1.0000
SW6 M DS v SW7 M DS	-0.034	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Chloride by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	4 May 2006

n 124 (cases excluded: 30 due to missing values)

Chloride by Location	n	Rank sum	Mean rank
SW1 M US	24	1262.0	52.58
SW2 M US	27	1518.0	56.22
SW 3 M DS	30	2125.5	70.85
SW6 M DS	22	1330.0	60.45
SW7 M DS	21	1514.5	72.12

Kruskal-Wallis statistic 5.85

p 0.2107 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	-3.639	1.0000
SW1 M US v SW 3 M DS	-18.267	0.6347
SW1 M US v SW6 M DS	-7.871	1.0000
SW1 M US v SW7 M DS	-19.536	0.6889
SW2 M US v SW 3 M DS	-14.628	1.0000
SW2 M US v SW6 M DS	-4.232	1.0000
SW2 M US v SW7 M DS	-15.897	1.0000
SW 3 M DS v SW6 M DS	10.395	1.0000
SW 3 M DS v SW7 M DS	-1.269	1.0000
SW6 M DS v SW7 M DS	-11.665	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Chromium by Location: SW1 M US, SW2 M US, SW3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	4 May 2006

n 103 (cases excluded: 21 due to missing values)

Chromium by Location	n	Rank sum	Mean rank
SW1 M US	18	1014.5	56.36
SW2 M US	20	1036.0	51.80
SW3 M DS	23	1228.5	53.41
SW6 M DS	21	1025.0	48.81
SW7 M DS	21	1052.0	50.10

Kruskal-Wallis statistic 1.24

p 0.8713 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	4.561	1.0000
SW1 M US v SW3 M DS	2.948	1.0000
SW1 M US v SW6 M DS	7.552	1.0000
SW1 M US v SW7 M DS	6.266	1.0000
SW2 M US v SW3 M DS	-1.613	1.0000
SW2 M US v SW6 M DS	2.990	1.0000
SW2 M US v SW7 M DS	1.705	1.0000
SW3 M DS v SW6 M DS	4.604	1.0000
SW3 M DS v SW7 M DS	3.318	1.0000
SW6 M DS v SW7 M DS	-1.286	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Conductivity by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	4 May 2006

n 123 (cases excluded: 31 due to missing values)

Conductivity by Location	n	Rank sum	Mean rank
SW1 M US	24	1344.0	56.00
SW2 M US	27	1456.5	53.94
SW 3 M DS	29	1983.0	68.38
SW6 M DS	22	1391.0	63.23
SW7 M DS	21	1451.5	69.12

Kruskal-Wallis statistic 3.85

p 0.4266 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	2.056	1.0000
SW1 M US v SW 3 M DS	-12.379	1.0000
SW1 M US v SW6 M DS	-7.227	1.0000
SW1 M US v SW7 M DS	-13.119	1.0000
SW2 M US v SW 3 M DS	-14.435	1.0000
SW2 M US v SW6 M DS	-9.283	1.0000
SW2 M US v SW7 M DS	-15.175	1.0000
SW 3 M DS v SW6 M DS	5.152	1.0000
SW 3 M DS v SW7 M DS	-0.740	1.0000
SW6 M DS v SW7 M DS	-5.892	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Copper by Location: SW1 M US, SW2 M US, SW3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	4 May 2006

n 34 (cases excluded: 11 due to missing values)

Copper by Location	n	Rank sum	Mean rank
SW1 M US	8	144.5	18.06
SW2 M US	6	101.5	16.92
SW3 M DS	8	127.5	15.94
SW6 M DS	6	105.0	17.50
SW7 M DS	6	116.5	19.42

Kruskal-Wallis statistic 0.50

p 0.9735 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	1.146	1.0000
SW1 M US v SW3 M DS	2.125	1.0000
SW1 M US v SW6 M DS	0.563	1.0000
SW1 M US v SW7 M DS	-1.354	1.0000
SW2 M US v SW3 M DS	0.979	1.0000
SW2 M US v SW6 M DS	-0.583	1.0000
SW2 M US v SW7 M DS	-2.500	1.0000
SW3 M DS v SW6 M DS	-1.563	1.0000
SW3 M DS v SW7 M DS	-3.479	1.0000
SW6 M DS v SW7 M DS	-1.917	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Hardness by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	3 May 2006

n 84 (cases excluded: 20 due to missing values)

Hardness by Location	n	Rank sum	Mean rank
SW1 M US	16	575.0	35.94
SW2 M US	17	637.5	37.50
SW 3 M DS	19	895.5	47.13
SW6 M DS	16	690.5	43.16
SW7 M DS	16	771.5	48.22

Kruskal-Wallis statistic	3.45	
p	0.4856	(chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	-1.563	1.0000
SW1 M US v SW 3 M DS	-11.194	1.0000
SW1 M US v SW6 M DS	-7.219	1.0000
SW1 M US v SW7 M DS	-12.281	1.0000
SW2 M US v SW 3 M DS	-9.632	1.0000
SW2 M US v SW6 M DS	-5.656	1.0000
SW2 M US v SW7 M DS	-10.719	1.0000
SW 3 M DS v SW6 M DS	3.975	1.0000
SW 3 M DS v SW7 M DS	-1.087	1.0000
SW6 M DS v SW7 M DS	-5.063	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Iron by Location: SW1 M US, SW2 M US, SW3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	4 May 2006

n 118 (cases excluded: 36 due to missing values)

Iron by Location	n	Rank sum	Mean rank
SW1 M US	24	1380.5	57.52
SW2 M US	24	1329.0	55.38
SW3 M DS	28	1580.0	56.43
SW6 M DS	21	1439.0	68.52
SW7 M DS	21	1292.5	61.55

Kruskal-Wallis statistic 2.19

p 0.7001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	2.146	1.0000
SW1 M US v SW3 M DS	1.092	1.0000
SW1 M US v SW6 M DS	-11.003	1.0000
SW1 M US v SW7 M DS	-4.027	1.0000
SW2 M US v SW3 M DS	-1.054	1.0000
SW2 M US v SW6 M DS	-13.149	1.0000
SW2 M US v SW7 M DS	-6.173	1.0000
SW3 M DS v SW6 M DS	-12.095	1.0000
SW3 M DS v SW7 M DS	-5.119	1.0000
SW6 M DS v SW7 M DS	6.976	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Nitrate by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	3 May 2006

n 119 (cases excluded: 30 due to missing values)

Nitrate by Location	n	Rank sum	Mean rank
SW1 M US	23	1418.0	61.65
SW2 M US	25	1416.0	56.64
SW 3 M DS	29	1778.0	61.31
SW6 M DS	21	1268.0	60.38
SW7 M DS	21	1260.0	60.00

Kruskal-Wallis statistic 0.57

p 0.9658 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	5.012	1.0000
SW1 M US v SW 3 M DS	0.342	1.0000
SW1 M US v SW6 M DS	1.271	1.0000
SW1 M US v SW7 M DS	1.652	1.0000
SW2 M US v SW 3 M DS	-4.670	1.0000
SW2 M US v SW6 M DS	-3.741	1.0000
SW2 M US v SW7 M DS	-3.360	1.0000
SW 3 M DS v SW6 M DS	0.929	1.0000
SW 3 M DS v SW7 M DS	1.310	1.0000
SW6 M DS v SW7 M DS	0.381	1.0000

analysed with: Analyse-it + General 1.73

Test Kruskal-Wallis ANOVA

Comparison pH by Location: SW1 M US, SW 3 M DS, SW2 M US, SW6 M DS, SW7 M DS

Performed by Andrew Chong **Date** 3 May 2006

n 123 (cases excluded: 31 due to missing values)

pH by Location	n	Rank sum	Mean rank
SW1 M US	24	1237.0	51.54
SW 3 M DS	30	2152.5	71.75
SW2 M US	26	1401.5	53.90
SW6 M DS	22	1385.5	62.98
SW7 M DS	21	1449.5	69.02

Kruskal-Wallis statistic 6.49

p 0.1657 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW 3 M DS	-20.208	0.3847
SW1 M US v SW2 M US	-2.362	1.0000
SW1 M US v SW6 M DS	-11.436	1.0000
SW1 M US v SW7 M DS	-17.482	1.0000
SW 3 M DS v SW2 M US	17.846	0.6173
SW 3 M DS v SW6 M DS	8.773	1.0000
SW 3 M DS v SW7 M DS	2.726	1.0000
SW2 M US v SW6 M DS	-9.073	1.0000
SW2 M US v SW7 M DS	-15.120	1.0000
SW6 M DS v SW7 M DS	-6.047	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Phenols by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	3 May 2006

n 123 (cases excluded: 31 due to missing values)

Phenols by Location	n	Rank sum	Mean rank
SW1 M US	24	1714.0	71.42
SW2 M US	26	1626.0	62.54
SW 3 M DS	30	1787.0	59.57
SW6 M DS	22	1315.0	59.77
SW7 M DS	21	1184.0	56.38

Kruskal-Wallis statistic 6.75

p 0.1500 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	8.878	1.0000
SW1 M US v SW 3 M DS	11.850	1.0000
SW1 M US v SW6 M DS	11.644	1.0000
SW1 M US v SW7 M DS	15.036	1.0000
SW2 M US v SW 3 M DS	2.972	1.0000
SW2 M US v SW6 M DS	2.766	1.0000
SW2 M US v SW7 M DS	6.158	1.0000
SW 3 M DS v SW6 M DS	-0.206	1.0000
SW 3 M DS v SW7 M DS	3.186	1.0000
SW6 M DS v SW7 M DS	3.392	1.0000

analysed with: Analyse-it + General 1.73

Test Kruskal-Wallis ANOVA

Comparison Total Dissolved Solids by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS

Performed by Andrew Chong **Date** 3 May 2006

n 64 (cases excluded: 15 due to missing values)

al Dissolved Solids by Location	n	Rank sum	Mean rank
SW1 M US	10	223.0	22.30
SW2 M US	13	373.5	28.73
SW 3 M DS	14	552.5	39.46
SW6 M DS	14	461.0	32.93
SW7 M DS	13	470.0	36.15

Kruskal-Wallis statistic 6.01

p 0.1987 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	-6.431	1.0000
SW1 M US v SW 3 M DS	-17.164	0.2598
SW1 M US v SW6 M DS	-10.629	1.0000
SW1 M US v SW7 M DS	-13.854	0.7690
SW2 M US v SW 3 M DS	-10.734	1.0000
SW2 M US v SW6 M DS	-4.198	1.0000
SW2 M US v SW7 M DS	-7.423	1.0000
SW 3 M DS v SW6 M DS	6.536	1.0000
SW 3 M DS v SW7 M DS	3.310	1.0000
SW6 M DS v SW7 M DS	-3.225	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Total Kjeldahl Nitrogen by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	3 May 2006

n 106 (cases excluded: 18 due to missing values)

al Kjeldahl Nitrogen by Location	n	Rank sum	Mean rank
SW1 M US	18	979.5	54.42
SW2 M US	21	1065.5	50.74
SW 3 M DS	24	1065.5	44.40
SW6 M DS	22	1385.5	62.98
SW7 M DS	21	1175.0	55.95

Kruskal-Wallis statistic 4.52

p 0.3406 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	3.679	1.0000
SW1 M US v SW 3 M DS	10.021	1.0000
SW1 M US v SW6 M DS	-8.561	1.0000
SW1 M US v SW7 M DS	-1.536	1.0000
SW2 M US v SW 3 M DS	6.342	1.0000
SW2 M US v SW6 M DS	-12.239	1.0000
SW2 M US v SW7 M DS	-5.214	1.0000
SW 3 M DS v SW6 M DS	-18.581	0.4059
SW 3 M DS v SW7 M DS	-11.557	1.0000
SW6 M DS v SW7 M DS	7.025	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Total Organic Carbon by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	3 May 2006

n 115 (cases excluded: 29 due to missing values)

tal Organic Carbon by Location	**n**	**Rank sum**	**Mean rank**
SW1 M US	22	1232.5	56.02
SW2 M US	25	1488.5	59.54
SW 3 M DS	28	1435.5	51.27
SW6 M DS	20	1271.5	63.58
SW7 M DS	20	1242.0	62.10

Kruskal-Wallis statistic 2.13

p 0.7111 (chisqr approximation, corrected for ties)

Bonferroni

Contrast	**Difference**	**p**
SW1 M US v SW2 M US	-3.517	1.0000
SW1 M US v SW 3 M DS	4.755	1.0000
SW1 M US v SW6 M DS	-7.552	1.0000
SW1 M US v SW7 M DS	-6.077	1.0000
SW2 M US v SW 3 M DS	8.272	1.0000
SW2 M US v SW6 M DS	-4.035	1.0000
SW2 M US v SW7 M DS	-2.560	1.0000
SW 3 M DS v SW6 M DS	-12.307	1.0000
SW 3 M DS v SW7 M DS	-10.832	1.0000
SW6 M DS v SW7 M DS	1.475	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Total Phosphate by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	4 May 2006

n 107 (cases excluded: 27 due to missing values)

Total Phosphate by Location	n	Rank sum	Mean rank
SW1 M US	21	1169.5	55.69
SW2 M US	25	1435.0	57.40
SW 3 M DS	26	1243.0	47.81
SW6 M DS	18	1008.5	56.03
SW7 M DS	17	922.0	54.24

Kruskal-Wallis statistic 1.49

p 0.8283 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	-1.710	1.0000
SW1 M US v SW 3 M DS	7.883	1.0000
SW1 M US v SW6 M DS	-0.337	1.0000
SW1 M US v SW7 M DS	1.455	1.0000
SW2 M US v SW 3 M DS	9.592	1.0000
SW2 M US v SW6 M DS	1.372	1.0000
SW2 M US v SW7 M DS	3.165	1.0000
SW 3 M DS v SW6 M DS	-8.220	1.0000
SW 3 M DS v SW7 M DS	-6.428	1.0000
SW6 M DS v SW7 M DS	1.792	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Total Suspended Solids by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	4 May 2006

n 55 (cases excluded: 14 due to missing values)

l Suspended Solids by Location	n	Rank sum	Mean rank
SW1 M US	10	308.5	30.85
SW2 M US	11	222.5	20.23
SW 3 M DS	13	392.0	30.15
SW6 M DS	11	354.0	32.18
SW7 M DS	10	263.0	26.30

Kruskal-Wallis statistic 4.05

p 0.3999 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	10.623	1.0000
SW1 M US v SW 3 M DS	0.696	1.0000
SW1 M US v SW6 M DS	-1.332	1.0000
SW1 M US v SW7 M DS	4.550	1.0000
SW2 M US v SW 3 M DS	-9.927	1.0000
SW2 M US v SW6 M DS	-11.955	0.8012
SW2 M US v SW7 M DS	-6.073	1.0000
SW 3 M DS v SW6 M DS	-2.028	1.0000
SW 3 M DS v SW7 M DS	3.854	1.0000
SW6 M DS v SW7 M DS	5.882	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Turbidity by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	3 May 2006

n 92 (cases excluded: 17 due to missing values)

Turbidity by Location	n	Rank sum	Mean rank
SW1 M US	16	759.0	47.44
SW2 M US	19	633.5	33.34
SW 3 M DS	20	990.0	49.50
SW6 M DS	19	1001.5	52.71
SW7 M DS	18	894.0	49.67

Kruskal-Wallis statistic 6.17

p 0.1867 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	14.095	1.0000
SW1 M US v SW 3 M DS	-2.063	1.0000
SW1 M US v SW6 M DS	-5.273	1.0000
SW1 M US v SW7 M DS	-2.229	1.0000
SW2 M US v SW 3 M DS	-16.158	0.5891
SW2 M US v SW6 M DS	-19.368	0.2537
SW2 M US v SW7 M DS	-16.325	0.6307
SW 3 M DS v SW6 M DS	-3.211	1.0000
SW 3 M DS v SW7 M DS	-0.167	1.0000
SW6 M DS v SW7 M DS	3.044	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Zinc by Location: SW1 M US, SW2 M US, SW 3 M DS, SW6 M DS, SW7 M DS
Performed by	Andrew Chong
Date	4 May 2006

n 98 (cases excluded: 26 due to missing values)

Zinc by Location	n	Rank sum	Mean rank
SW1 M US	17	825.0	48.53
SW2 M US	19	911.0	47.95
SW 3 M DS	22	1248.5	56.75
SW6 M DS	20	910.0	45.50
SW7 M DS	20	956.5	47.83

Kruskal-Wallis statistic	8.75	
p	0.0677	(chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW1 M US v SW2 M US	0.582	1.0000
SW1 M US v SW 3 M DS	-8.221	1.0000
SW1 M US v SW6 M DS	3.029	1.0000
SW1 M US v SW7 M DS	0.704	1.0000
SW2 M US v SW 3 M DS	-8.803	1.0000
SW2 M US v SW6 M DS	2.447	1.0000
SW2 M US v SW7 M DS	0.122	1.0000
SW 3 M DS v SW6 M DS	11.250	1.0000
SW 3 M DS v SW7 M DS	8.925	1.0000
SW6 M DS v SW7 M DS	-2.325	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Alkalinity by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	3 May 2006

n 56 (cases excluded: 60 due to missing values)

Alkalinity by Location	**n**	**Rank sum**	**Mean rank**
SW5 B US	16	295.5	18.47
SW4 B DS	15	477.5	31.83
SW8 B DS	20	592.5	29.63
SW9 B DS	5	230.5	46.10

Kruskal-Wallis statistic 12.61

p 0.0056 (chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
SW5 B US v SW4 B DS	-13.365	0.1356
SW5 B US v SW8 B DS	-11.156	0.2485
SW5 B US v SW9 B DS	-27.631	0.0057
SW4 B DS v SW8 B DS	2.208	1.0000
SW4 B DS v SW9 B DS	-14.267	0.5417
SW8 B DS v SW9 B DS	-16.475	0.2601

Test	**Kruskal-Wallis ANOVA**
Comparison	Aluminum by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	4 May 2006

n 50 (cases excluded: 30 due to missing values)

Aluminum by Location	n	Rank sum	Mean rank
SW5 B US	14	299.5	21.39
SW4 B DS	12	204.0	17.00
SW8 B DS	19	617.0	32.47
SW9 B DS	5	154.5	30.90

Kruskal-Wallis statistic 10.24

p 0.0167 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW5 B US v SW4 B DS	4.393	1.0000
SW5 B US v SW8 B DS	-11.081	0.1855
SW5 B US v SW9 B DS	-9.507	1.0000
SW4 B DS v SW8 B DS	-15.474	0.0240
SW4 B DS v SW9 B DS	-13.900	0.4394
SW8 B DS v SW9 B DS	1.574	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Ammonia by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	3 May 2006

n 57 (cases excluded: 63 due to missing values)

Ammonia by Location	n	Rank sum	Mean rank
SW5 B US	16	351.0	21.94
SW4 B DS	16	264.0	16.50
SW8 B DS	20	809.5	40.48
SW9 B DS	5	228.5	45.70

Kruskal-Wallis statistic 27.02

p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW5 B US v SW4 B DS	5.438	1.0000
SW5 B US v SW8 B DS	-18.538	0.0052
SW5 B US v SW9 B DS	-23.763	0.0312
SW4 B DS v SW8 B DS	-23.975	<0.0001
SW4 B DS v SW9 B DS	-29.200	0.0036
SW8 B DS v SW9 B DS	-5.225	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Biochemical Oxygen Demand by Location: SW9 B DS, SW8 B DS, SW5 B US, SW4 B DS
Performed by	Andrew Chong
Date	4 May 2006

n 52 (cases excluded: 36 due to missing values)

al Oxygen Demand by Location	n	Rank sum	Mean rank
SW9 B DS	5	193.0	38.60
SW8 B DS	18	572.5	31.81
SW5 B US	14	278.0	19.86
SW4 B DS	15	334.5	22.30

Kruskal-Wallis statistic	9.66	
p	0.0217	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	Difference	p
SW9 B DS v SW8 B DS	6.794	1.0000
SW9 B DS v SW5 B US	18.743	0.1056
SW9 B DS v SW4 B DS	16.300	0.2236
SW8 B DS v SW5 B US	11.948	0.1616
SW8 B DS v SW4 B DS	9.506	0.4368
SW5 B US v SW4 B DS	-2.443	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Chloride by Location: SW9 B DS, SW8 B DS, SW4 B DS, SW5 B US
Performed by	Andrew Chong
Date	4 May 2006

n 57 (cases excluded: 63 due to missing values)

Chloride by Location	n	Rank sum	Mean rank
SW9 B DS	5	244.0	48.80
SW8 B DS	20	719.0	35.95
SW4 B DS	16	519.5	32.47
SW5 B US	16	170.5	10.66

Kruskal-Wallis statistic 30.86

p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW9 B DS v SW8 B DS	12.850	0.7292
SW9 B DS v SW4 B DS	16.331	0.3288
SW9 B DS v SW5 B US	38.144	<0.0001
SW8 B DS v SW4 B DS	3.481	1.0000
SW8 B DS v SW5 B US	25.294	<0.0001
SW4 B DS v SW5 B US	21.813	0.0012

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Chromium by Location: SW9 B DS, SW8 B DS, SW4 B DS, SW5 B US
Performed by	Andrew Chong

Date 4 May 2006

n 55 (cases excluded: 41 due to missing values)

Chromium by Location	n	Rank sum	Mean rank
SW9 B DS	5	176.0	35.20
SW8 B DS	19	533.0	28.05
SW4 B DS	16	452.5	28.28
SW5 B US	15	378.5	25.23

Kruskal-Wallis statistic 2.27

p 0.5178 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW9 B DS v SW8 B DS	7.147	1.0000
SW9 B DS v SW4 B DS	6.919	1.0000
SW9 B DS v SW5 B US	9.967	1.0000
SW8 B DS v SW4 B DS	-0.229	1.0000
SW8 B DS v SW5 B US	2.819	1.0000
SW4 B DS v SW5 B US	3.048	1.0000

analysed with: Analyse-it + General 1.73

Test | **Kruskal-Wallis ANOVA**

Comparison | Conductivity by Location: SW9 B DS, SW8 B DS, SW4 B DS, SW5 B US

Performed by | Andrew Chong | **Date** | 4 May 2006

n | 57 (cases excluded: 63 due to missing values)

Conductivity by Location	n	Rank sum	Mean rank
SW9 B DS	5	250.0	50.00
SW8 B DS	20	694.0	34.70
SW4 B DS	16	510.0	31.88
SW5 B US	16	199.0	12.44

Kruskal-Wallis statistic | 26.77

p | <0.0001 (chisqr approximation)

Bonferroni Contrast	Difference	p
SW9 B DS v SW8 B DS	15.300	0.3915
SW9 B DS v SW4 B DS	18.125	0.1984
SW9 B DS v SW5 B US	37.563	<0.0001
SW8 B DS v SW4 B DS	2.825	1.0000
SW8 B DS v SW5 B US	22.263	0.0004
SW4 B DS v SW5 B US	19.438	0.0056

Test	**Kruskal-Wallis ANOVA**
Comparison	Copper by Location: SW8 B DS, SW4 B DS, SW5 B US
Performed by	Andrew Chong
Date	4 May 2006

n 16 (cases excluded: 11 due to missing values)

Copper by Location	**n**	**Rank sum**	**Mean rank**
SW8 B DS	5	55.0	11.00
SW4 B DS	7	49.0	7.00
SW5 B US	4	32.0	8.00

Kruskal-Wallis statistic 2.31

p 0.3148 (chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
SW8 B DS v SW4 B DS	4.000	0.4540
SW8 B DS v SW5 B US	3.000	1.0000
SW4 B DS v SW5 B US	-1.000	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Hardness by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	3 May 2006

n 35 (cases excluded: 45 due to missing values)

Hardness by Location	n	Rank sum	Mean rank
SW5 B US	11	121.0	11.00
SW4 B DS	9	211.0	23.44
SW8 B DS	14	263.0	18.79
SW9 B DS	1	35.0	35.00

Kruskal-Wallis statistic 10.51

p 0.0147 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW5 B US v SW4 B DS	-12.444	0.0414
SW5 B US v SW8 B DS	-7.786	0.3559
SW5 B US v SW9 B DS	-24.000	0.1496
SW4 B DS v SW8 B DS	4.659	1.0000
SW4 B DS v SW9 B DS	-11.556	1.0000
SW8 B DS v SW9 B DS	-16.214	0.7580

Test Kruskal-Wallis ANOVA

Comparison Iron by Location: SW9 B DS, SW8 B DS, SW4 B DS, SW5 B US

Performed by Andrew Chong

Date 4 May 2006

n 56 (cases excluded: 64 due to missing values)

Iron by Location	n	Rank sum	Mean rank
SW9 B DS	5	208.5	41.70
SW8 B DS	20	755.0	37.75
SW4 B DS	16	331.0	20.69
SW5 B US	15	301.5	20.10

Kruskal-Wallis statistic 17.37

p 0.0006 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW9 B DS v SW8 B DS	3.950	1.0000
SW9 B DS v SW4 B DS	21.013	0.0715
SW9 B DS v SW5 B US	21.600	0.0620
SW8 B DS v SW4 B DS	17.063	0.0109
SW8 B DS v SW5 B US	17.650	0.0092
SW4 B DS v SW5 B US	0.587	1.0000

analysed with: Analyse-it + General 1.73

Test | **Kruskal-Wallis ANOVA**

Comparison | Nitrate by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS

Performed by | Andrew Chong | **Date** | 3 May 2006

n 56 (cases excluded: 60 due to missing values)

Nitrate by Location	n	Rank sum	Mean rank
SW5 B US	16	534.0	33.38
SW4 B DS	15	314.5	20.97
SW8 B DS	20	610.5	30.53
SW9 B DS	5	137.0	27.40

Kruskal-Wallis statistic 5.51

p 0.1378 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW5 B US v SW4 B DS	12.408	0.2056
SW5 B US v SW8 B DS	2.850	1.0000
SW5 B US v SW9 B DS	5.975	1.0000
SW4 B DS v SW8 B DS	-9.558	0.5172
SW4 B DS v SW9 B DS	-6.433	1.0000
SW8 B DS v SW9 B DS	3.125	1.0000

analysed with: Analyse-it + General 1.73

Test Kruskal-Wallis ANOVA

Comparison pH by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS

Performed by Andrew Chong **Date** 3 May 2006

n 57 (cases excluded: 63 due to missing values)

pH by Location	n	Rank sum	Mean rank
SW5 B US	16	602.5	37.66
SW4 B DS	16	461.5	28.84
SW8 B DS	20	447.0	22.35
SW9 B DS	5	142.0	28.40

Kruskal-Wallis statistic 7.58

p 0.0556 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW5 B US v SW4 B DS	8.813	0.7990
SW5 B US v SW8 B DS	15.306	0.0358
SW5 B US v SW9 B DS	9.256	1.0000
SW4 B DS v SW8 B DS	6.494	1.0000
SW4 B DS v SW9 B DS	0.444	1.0000
SW8 B DS v SW9 B DS	-6.050	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Phenols by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	3 May 2006

n 57 (cases excluded: 63 due to missing values)

Phenols by Location	n	Rank sum	Mean rank
SW5 B US	16	411.5	25.72
SW4 B DS	16	414.5	25.91
SW8 B DS	20	652.5	32.63
SW9 B DS	5	174.5	34.90

Kruskal-Wallis statistic 5.12

p 0.1630 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW5 B US v SW4 B DS	-0.188	1.0000
SW5 B US v SW8 B DS	-6.906	1.0000
SW5 B US v SW9 B DS	-9.181	1.0000
SW4 B DS v SW8 B DS	-6.719	1.0000
SW4 B DS v SW9 B DS	-8.994	1.0000
SW8 B DS v SW9 B DS	-2.275	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Total Dissolved Solids by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	3 May 2006

n 37 (cases excluded: 23 due to missing values)

al Dissolved Solids by Location	**n**	**Rank sum**	**Mean rank**
SW5 B US	9	64.5	7.17
SW4 B DS	9	190.5	21.17
SW8 B DS	14	292.5	20.89
SW9 B DS	5	155.5	31.10

Kruskal-Wallis statistic 17.80

p 0.0005 (chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
SW5 B US v SW4 B DS	-14.000	0.0365
SW5 B US v SW8 B DS	-13.726	0.0180
SW5 B US v SW9 B DS	-23.933	0.0004
SW4 B DS v SW8 B DS	0.274	1.0000
SW4 B DS v SW9 B DS	-9.933	0.5995
SW8 B DS v SW9 B DS	-10.207	0.4218

Test	**Kruskal-Wallis ANOVA**
Comparison	Total Kjeldahl Nitrogen by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	3 May 2006

n 56 (cases excluded: 40 due to missing values)

l Kjeldahl Nitrogen by Location	**n**	**Rank sum**	**Mean rank**
SW5 B US	16	437.5	27.34
SW4 B DS	15	218.5	14.57
SW8 B DS	20	713.0	35.65
SW9 B DS	5	227.0	45.40

Kruskal-Wallis statistic	20.24	
p	0.0002	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
SW5 B US v SW4 B DS	12.777	0.1756
SW5 B US v SW8 B DS	-8.306	0.7735
SW5 B US v SW9 B DS	-18.056	0.1842
SW4 B DS v SW8 B DS	-21.083	0.0009
SW4 B DS v SW9 B DS	-30.833	0.0015
SW8 B DS v SW9 B DS	-9.750	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Total Organic Carbon by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	3 May 2006

n 52 (cases excluded: 60 due to missing values)

tal Organic Carbon by Location	n	Rank sum	Mean rank
SW5 B US	15	384.5	25.63
SW4 B DS	14	212.0	15.14
SW8 B DS	18	564.5	31.36
SW9 B DS	5	217.0	43.40

Kruskal-Wallis statistic 15.99

p 0.0011 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW5 B US v SW4 B DS	10.490	0.3750
SW5 B US v SW8 B DS	-5.728	1.0000
SW5 B US v SW9 B DS	-17.767	0.1392
SW4 B DS v SW8 B DS	-16.218	0.0160
SW4 B DS v SW9 B DS	-28.257	0.0021
SW8 B DS v SW9 B DS	-12.039	0.6965

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
Comparison	Total Phosphate by Location: SW9 B DS, SW8 B DS, SW4 B DS, SW5 B US
Performed by	Andrew Chong
Date	4 May 2006

n 49 (cases excluded: 55 due to missing values)

Total Phosphate by Location	n	Rank sum	Mean rank
SW9 B DS	5	178.5	35.70
SW8 B DS	17	454.5	26.74
SW4 B DS	13	238.0	18.31
SW5 B US	14	354.0	25.29

Kruskal-Wallis statistic 5.95

p 0.1143 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW9 B DS v SW8 B DS	8.965	1.0000
SW9 B DS v SW4 B DS	17.392	0.1243
SW9 B DS v SW5 B US	10.414	0.9709
SW8 B DS v SW4 B DS	8.428	0.6565
SW8 B DS v SW5 B US	1.450	1.0000
SW4 B DS v SW5 B US	-6.978	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Total Suspended Solids by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	4 May 2006

n 26 (cases excluded: 26 due to missing values)

l Suspended Solids by Location	n	Rank sum	Mean rank
SW5 B US	8	91.5	11.44
SW4 B DS	8	94.5	11.81
SW8 B DS	9	141.0	15.67
SW9 B DS	1	24.0	24.00

Kruskal-Wallis statistic	3.58	
p	0.3103	(chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW5 B US v SW4 B DS	-0.375	1.0000
SW5 B US v SW8 B DS	-4.229	1.0000
SW5 B US v SW9 B DS	-12.563	0.7290
SW4 B DS v SW8 B DS	-3.854	1.0000
SW4 B DS v SW9 B DS	-12.188	0.7981
SW8 B DS v SW9 B DS	-8.333	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Turbidity by Location: SW5 B US, SW4 B DS, SW8 B DS, SW9 B DS
Performed by	Andrew Chong
Date	3 May 2006

n 49 (cases excluded: 35 due to missing values)

Turbidity by Location	n	Rank sum	Mean rank
SW5 B US	14	285.0	20.36
SW4 B DS	14	283.0	20.21
SW8 B DS	17	514.0	30.24
SW9 B DS	4	143.0	35.75

Kruskal-Wallis statistic 7.60

p 0.0550 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW5 B US v SW4 B DS	0.143	1.0000
SW5 B US v SW8 B DS	-9.878	0.3325
SW5 B US v SW9 B DS	-15.393	0.3445
SW4 B DS v SW8 B DS	-10.021	0.3119
SW4 B DS v SW9 B DS	-15.536	0.3308
SW8 B DS v SW9 B DS	-5.515	1.0000

Test	**Kruskal-Wallis ANOVA**
Comparison	Zinc by Location: SW9 B DS, SW8 B DS, SW4 B DS, SW5 B US
Performed by	Andrew Chong

Date 4 May 2006

n 54 (cases excluded: 42 due to missing values)

Zinc by Location	n	Rank sum	Mean rank
SW9 B DS	5	208.0	41.60
SW8 B DS	19	605.0	31.84
SW4 B DS	15	363.5	24.23
SW5 B US	15	308.5	20.57

Kruskal-Wallis statistic 12.05

p 0.0072 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
SW9 B DS v SW8 B DS	9.758	1.0000
SW9 B DS v SW4 B DS	17.367	0.1953
SW9 B DS v SW5 B US	21.033	0.0577
SW8 B DS v SW4 B DS	7.609	0.9686
SW8 B DS v SW5 B US	11.275	0.2279
SW4 B DS v SW5 B US	3.667	1.0000

APPENDIX D

ANALYZE-IT STATISTICAL OUTPUT: OVERBURDEN GROUND WATER

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**
Alkalinity
Comparison Alkalinity by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M
Performed by Andy Chong **Date** 26 May 2006

n 373

Alkalinity by Location	**n**	**Rank sum**	**Mean rank**
Background	70	10184.5	145.49
M35	15	4126.0	275.07
M5-3	14	3716.5	265.46
M6-3	14	4773.0	340.93
M46	10	2958.0	295.80
OW1	21	5462.0	260.10
OW4	21	7298.5	347.55
OW55-s	22	3797.5	172.61
OW56-s	21	4923.0	234.43
M19	14	1503.0	107.36
M47-2	10	1638.0	163.80
M47-3	10	1847.0	184.70
M50-3	8	767.5	95.94
M52-3	8	2481.0	310.13
M9-3	15	1988.5	132.57
OW54-s	21	877.5	41.79
M3A-3	10	886.0	88.60
M4-3	15	3516.5	234.43
M39	9	2154.5	239.39
M23	14	1813.5	129.54
M51-3	8	2361.5	295.19
OW57	23	677.5	29.46

Kruskal-Wallis statistic 267.84
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M35 v Background	129.574	0.0005
M5-3 v Background	119.971	0.0030
M6-3 v Background	195.436	<0.0001
M46 v Background	150.307	0.0008
OW1 v Background	114.602	0.0004
OW4 v Background	202.055	<0.0001
OW55-s v Background	27.121	1.0000
OW56-s v Background	88.936	0.0192
M19 v Background	-38.136	1.0000
M47-2 v Background	18.307	1.0000
M47-3 v Background	39.207	1.0000
M50-3 v Background	-49.555	1.0000
M52-3 v Background	164.632	0.0009
M9-3 v Background	-12.926	1.0000

Test	**Kruskal-Wallis ANOVA** Alkalinity	
Comparison	Alkalinity by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M	
Performed by	Andy Chong	**Date** 26 May 2006

OW54-s v Background	-103.707	0.0023
M3A-3 v Background	-56.893	1.0000
M4-3 v Background	88.940	0.0786
M39 v Background	93.896	0.2924
M23 v Background	-15.957	1.0000
M51-3 v Background	149.695	0.0042
OW57 v Background	-116.036	0.0002

Test	**Kruskal-Wallis ANOVA** Aluminum
Comparison	Aluminum by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M
Performed by	Andy Chong
Date	25 May 2006

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Aluminum by Location	**n**	**Rank sum**	**Mean rank**
Background	66	9459.5	143.33
M35	13	1866.5	143.58
M5-3	13	1842.5	141.73
M6-3	13	3377.0	259.77
M46	10	2166.5	216.65
OW1	21	3419.5	162.83
OW4	21	3629.5	172.83
OW55-s	21	3801.5	181.02
OW56-s	21	4285.0	204.05
M19	13	1826.0	140.46
M47-2	10	1909.0	190.90
M47-3	10	2606.5	260.65
M50-3	8	1103.0	137.88
M52-3	6	1150.0	191.67
M9-3	14	1983.0	141.64
OW54-s	20	5771.0	288.55
M3A-3	11	2744.0	249.45
M4-3	14	2301.0	164.36
M39	9	1631.5	181.28
M23	13	1663.0	127.92
M51-3	7	1687.5	241.07
OW57	22	3323.0	151.05

Kruskal-Wallis statistic 88.61
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M35 v Background	0.251	1.0000
M5-3 v Background	-1.595	1.0000
M6-3 v Background	116.443	0.0040
M46 v Background	73.324	0.7510
OW1 v Background	19.508	1.0000
OW4 v Background	29.508	1.0000
OW55-s v Background	37.698	1.0000
OW56-s v Background	60.722	0.3889
M19 v Background	-2.864	1.0000
M47-2 v Background	47.574	1.0000
M47-3 v Background	117.324	0.0164
M50-3 v Background	-5.451	1.0000
M52-3 v Background	48.341	1.0000
M9-3 v Background	-1.683	1.0000

Test **Kruskal-Wallis ANOVA**
Aluminum
Comparison Aluminum by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19,
Performed by Andy Chong **Date** 25 May 2006

OW54-s v Background	145.224	<0.0001
M3A-3 v Background	106.129	0.0324
M4-3 v Background	21.031	1.0000
M39 v Background	37.952	1.0000
M23 v Background	-15.403	1.0000
M51-3 v Background	97.746	0.3544
OW57 v Background	7.720	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Ammonia		
Comparison	Ammonia by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M		
Performed by	Andy Chong	**Date**	25 May 2006

n	372

Ammonia by Location	**n**	**Rank sum**	**Mean rank**
Background	70	6368.5	90.98
M35	14	1245.0	88.93
M5-3	14	3690.5	263.61
M6-3	14	4986.5	356.18
M46	10	2465.0	246.50
OW1	21	6452.5	307.26
OW4	21	5909.0	281.38
OW55-s	21	5547.5	264.17
OW56-s	21	2492.0	118.67
M19	14	746.0	53.29
M47-2	10	3249.5	324.95
M47-3	10	1533.5	153.35
M50-3	8	2866.0	358.25
M52-3	8	2029.5	253.69
M9-3	13	3307.0	254.38
OW54-s	21	3292.5	156.79
M3A-3	11	2745.0	249.55
M4-3	16	3145.0	196.56
M39	10	783.5	78.35
M23	14	1019.0	72.79
M51-3	8	1885.0	235.63
OW57	23	3620.0	157.39

Kruskal-Wallis statistic	277.17	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M35 v Background	-2.050	1.0000
M5-3 v Background	172.629	<0.0001
M6-3 v Background	265.200	<0.0001
M46 v Background	155.521	0.0004
OW1 v Background	216.283	<0.0001
OW4 v Background	190.402	<0.0001
OW55-s v Background	173.188	<0.0001
OW56-s v Background	27.688	1.0000
M19 v Background	-37.693	1.0000
M47-2 v Background	233.971	<0.0001
M47-3 v Background	62.371	1.0000
M50-3 v Background	267.271	<0.0001
M52-3 v Background	162.709	0.0011
M9-3 v Background	163.406	<0.0001

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**		
	Ammonia		
Comparison	Ammonia by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M		
Performed by	Andy Chong	**Date**	25 May 2006

OW54-s v Background	65.807	0.2920
M3A-3 v Background	158.567	0.0001
M4-3 v Background	105.584	0.0083
M39 v Background	-12.629	1.0000
M23 v Background	-18.193	1.0000
M51-3 v Background	144.646	0.0066
OW57 v Background	66.413	0.2137

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**
Biochemical Oxygen Demand
Comparison Biochemical Oxygen Demand by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55
Performed by Andy Chong **Date** 25 May 2006

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al Oxygen Demand by Location	**n**	**Rank sum**	**Mean rank**
Background	66	8563.0	129.74
M35	13	1560.5	120.04
M5-3	14	4184.0	298.86
M6-3	14	1244.0	88.86
M46	10	2070.5	207.05
OW1	21	6489.0	309.00
OW4	21	5534.0	263.52
OW55-s	21	4027.0	191.76
OW56-s	21	3476.5	165.55
M19	14	1214.5	86.75
M47-2	10	2862.0	286.20
M47-3	10	2512.5	251.25
M50-3	8	2138.0	267.25
M52-3	8	2536.0	317.00
M9-3	13	2348.5	180.65
OW54-s	20	2921.0	146.05
M3A-3	11	2727.5	247.95
M4-3	15	3624.0	241.60
M39	9	1220.0	135.56
M23	14	1610.0	115.00
M51-3	8	1511.0	188.88
OW57	22	1692.5	76.93

Kruskal-Wallis statistic 187.40
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M35 v Background	-9.704	1.0000
M5-3 v Background	169.115	<0.0001
M6-3 v Background	-40.885	1.0000
M46 v Background	77.308	0.6284
OW1 v Background	179.258	<0.0001
OW4 v Background	133.781	<0.0001
OW55-s v Background	62.019	0.3848
OW56-s v Background	35.805	1.0000
M19 v Background	-42.992	1.0000
M47-2 v Background	156.458	0.0002
M47-3 v Background	121.508	0.0135
M50-3 v Background	137.508	0.0098
M52-3 v Background	187.258	<0.0001
M9-3 v Background	50.911	1.0000

Test **Kruskal-Wallis ANOVA**

Biochemical Oxygen Demand

Comparison Biochemical Oxygen Demand by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55

Performed by Andy Chong **Date** 25 May 2006

OW54-s v Background	16.308	1.0000
M3A-3 v Background	118.212	0.0114
M4-3 v Background	111.858	0.0041
M39 v Background	5.813	1.0000
M23 v Background	-14.742	1.0000
M51-3 v Background	59.133	1.0000
OW57 v Background	-52.811	0.8594

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Calcium
Comparison	Calcium by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M4
Performed by	Andy Chong
Date	25 May 2006

n	365

Calcium by Location	**n**	**Rank sum**	**Mean rank**
Background	71	15159.5	213.51
M35	14	2073.5	148.11
M5-3	14	1712.0	122.29
M6-3	14	4983.5	355.96
M46	10	907.5	90.75
OW1	21	3571.5	170.07
OW4	21	6881.0	327.67
OW55-s	21	6082.5	289.64
OW56-s	21	1508.5	71.83
M19	13	2990.5	230.04
M47-2	10	2875.5	287.55
M47-3	10	1008.5	100.85
M50-3	8	2590.0	323.75
M52-3	6	1023.0	170.50
M9-3	15	2649.5	176.63
OW54-s	20	1084.0	54.20
M3A-3	11	733.0	66.64
M4-3	15	2082.5	138.83
M39	9	1984.5	220.50
M23	13	3534.5	271.88
M51-3	6	864.0	144.00
OW57	22	496.0	22.55

Kruskal-Wallis statistic	282.68	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M35 v Background	-65.407	0.7143
M5-3 v Background	-91.228	0.0653
M6-3 v Background	142.450	<0.0001
M46 v Background	-122.764	0.0120
OW1 v Background	-43.443	1.0000
OW4 v Background	114.153	0.0003
OW55-s v Background	76.129	0.0772
OW56-s v Background	-141.681	<0.0001
M19 v Background	16.524	1.0000
M47-2 v Background	74.036	0.7929
M47-3 v Background	-112.664	0.0330
M50-3 v Background	110.236	0.1068
M52-3 v Background	-43.014	1.0000
M9-3 v Background	-36.881	1.0000

Test **Kruskal-Wallis ANOVA**
Calcium
Comparison Calcium by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M4
Performed by Andy Chong **Date** 25 May 2006

OW54-s v Background	-159.314	<0.0001
M3A-3 v Background	-146.878	0.0004
M4-3 v Background	-74.681	0.2677
M39 v Background	6.986	1.0000
M23 v Background	58.371	1.0000
M51-3 v Background	-69.514	1.0000
OW57 v Background	-190.969	<0.0001

Test **Kruskal-Wallis ANOVA**
Chemical Oxygen Demand
Comparison Chemical Oxygen Demand by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s,
Performed by Andy Chong **Date** 25 May 2006

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al Oxygen Demand by Location	n	Rank sum	Mean rank
Background	67	8122.0	121.22
M35	14	1925.0	137.50
M5-3	14	2623.0	187.36
M6-3	15	4425.0	295.00
M46	10	1643.5	164.35
OW1	21	5193.5	247.31
OW4	21	7111.0	338.62
OW55-s	21	5439.5	259.02
OW56-s	21	2882.5	137.26
M19	13	1138.0	87.54
M47-2	10	2984.0	298.40
M47-3	10	2665.0	266.50
M50-3	8	2271.5	283.94
M52-3	8	1879.5	234.94
M9-3	15	2939.5	195.97
OW54-s	21	2498.0	118.95
M3A-3	11	2542.0	231.09
M4-3	16	3187.5	199.22
M39	10	1613.5	161.35
M23	13	1453.5	111.81
M51-3	8	1337.0	167.13
OW57	22	2391.0	108.68

Kruskal-Wallis statistic 176.15
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M35 v Background	16.276	1.0000
M5-3 v Background	66.133	0.7323
M6-3 v Background	173.776	<0.0001
M46 v Background	43.126	1.0000
OW1 v Background	126.086	<0.0001
OW4 v Background	217.395	<0.0001
OW55-s v Background	137.800	<0.0001
OW56-s v Background	16.038	1.0000
M19 v Background	-33.685	1.0000
M47-2 v Background	177.176	<0.0001
M47-3 v Background	145.276	0.0012
M50-3 v Background	162.714	0.0010
M52-3 v Background	113.714	0.0918
M9-3 v Background	74.743	0.2974

Test	**Kruskal-Wallis ANOVA** Chemical Oxygen Demand	
Comparison	Chemical Oxygen Demand by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s,	
Performed by	Andy Chong	**Date** 25 May 2006

OW54-s v Background	-2.271	1.0000
M3A-3 v Background	109.867	0.0324
M4-3 v Background	77.995	0.1804
M39 v Background	40.126	1.0000
M23 v Background	-9.416	1.0000
M51-3 v Background	45.901	1.0000
OW57 v Background	-12.542	1.0000

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**
Chloride
Comparison Chloride by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M4
Performed by Andy Chong **Date** 25 May 2006

n 371

Chloride by Location	**n**	**Rank sum**	**Mean rank**
Background	70	9581.5	136.88
M35	14	1049.5	74.96
M5-3	14	2563.5	183.11
M6-3	14	4014.5	286.75
M46	10	1771.5	177.15
OW1	21	4457.0	212.24
OW4	21	6526.0	310.76
OW55-s	22	7622.0	346.45
OW56-s	21	5935.5	282.64
M19	14	1461.5	104.39
M47-2	10	3458.5	345.85
M47-3	10	1492.5	149.25
M50-3	8	2940.0	367.50
M52-3	8	2548.0	318.50
M9-3	14	2920.5	208.61
OW54-s	21	3760.0	179.05
M3A-3	10	595.0	59.50
M4-3	15	2066.5	137.77
M39	9	435.0	48.33
M23	14	970.0	69.29
M51-3	8	1895.5	236.94
OW57	23	942.0	40.96

Kruskal-Wallis statistic 297.75
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M35 v Background	-61.914	1.0000
M5-3 v Background	46.229	1.0000
M6-3 v Background	149.871	<0.0001
M46 v Background	40.271	1.0000
OW1 v Background	75.360	0.0995
OW4 v Background	173.883	<0.0001
OW55-s v Background	209.576	<0.0001
OW56-s v Background	145.764	<0.0001
M19 v Background	-32.486	1.0000
M47-2 v Background	208.971	<0.0001
M47-3 v Background	12.371	1.0000
M50-3 v Background	230.621	<0.0001
M52-3 v Background	181.621	0.0001
M9-3 v Background	71.729	0.4691

Test	**Kruskal-Wallis ANOVA** Chloride	
Comparison	Chloride by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M4	
Performed by	Andy Chong	**Date** 25 May 2006

OW54-s v Background	42.169	1.0000
M3A-3 v Background	-77.379	0.6892
M4-3 v Background	0.888	1.0000
M39 v Background	-88.545	0.4142
M23 v Background	-67.593	0.6580
M51-3 v Background	100.059	0.2608
OW57 v Background	-95.922	0.0042

Test	**Kruskal-Wallis ANOVA** Conductivity
Comparison	Conductivity by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19
Performed by	Andy Chong
Date	25 May 2006

n 371

Conductivity by Location	**n**	**Rank sum**	**Mean rank**
Background	70	7381.5	105.45
M35	14	2841.0	202.93
M5-3	14	2681.5	191.54
M6-3	14	5014.0	358.14
M46	10	2207.5	220.75
OW1	21	4482.0	213.43
OW4	21	6341.5	301.98
OW55-s	22	7343.0	333.77
OW56-s	21	5781.0	275.29
M19	14	1253.5	89.54
M47-2	10	3300.0	330.00
M47-3	10	1457.5	145.75
M50-3	8	2916.0	364.50
M52-3	8	2416.5	302.06
M9-3	14	1469.5	104.96
OW54-s	21	2557.5	121.79
M3A-3	10	579.0	57.90
M4-3	15	2436.0	162.40
M39	9	1779.5	197.72
M23	14	1191.0	85.07
M51-3	8	1871.0	233.88
OW57	23	1706.0	74.17

Kruskal-Wallis statistic 291.19

p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M35 v Background	97.479	0.0400
M5-3 v Background	86.086	0.1283
M6-3 v Background	252.693	<0.0001
M46 v Background	115.300	0.0309
OW1 v Background	107.979	0.0011
OW4 v Background	196.526	<0.0001
OW55-s v Background	228.323	<0.0001
OW56-s v Background	169.836	<0.0001
M19 v Background	-15.914	1.0000
M47-2 v Background	224.550	<0.0001
M47-3 v Background	40.300	1.0000
M50-3 v Background	259.050	<0.0001
M52-3 v Background	196.613	<0.0001
M9-3 v Background	-0.486	1.0000

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**
Conductivity
Comparison Conductivity by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19
Performed by Andy Chong **Date** 25 May 2006

OW54-s v Background	16.336	1.0000
M3A-3 v Background	-47.550	1.0000
M4-3 v Background	56.950	1.0000
M39 v Background	92.272	0.3173
M23 v Background	-20.379	1.0000
M51-3 v Background	128.425	0.0280
OW57 v Background	-31.276	1.0000

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**

Dissolved Organic Carbon

Comparison Dissolved Organic Carbon by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s,

Performed by Andy Chong **Date** 25 May 2006

n	237

ed Organic Carbon by Location	**n**	**Rank sum**	**Mean rank**
Background	45	4155.0	92.33
M35	8	1225.0	153.13
M5-3	7	684.0	97.71
M6-3	8	1731.0	216.38
M46	7	684.0	97.71
OW1	14	2069.5	147.82
OW4	14	2972.5	212.32
OW55-s	12	1229.0	102.42
OW56-s	14	1051.0	75.07
M19	8	521.0	65.13
M47-2	7	637.0	91.00
M47-3	8	1441.0	180.13
M50-3	6	597.0	99.50
M52-3	6	1017.5	169.58
M9-3	7	828.0	118.29
OW54-s	14	1080.0	77.14
M3A-3	6	933.5	155.58
M4-3	10	1567.5	156.75
M39	7	1244.5	177.79
M23	8	470.5	58.81
M51-3	6	903.5	150.58
OW57	15	1161.0	77.40

Kruskal-Wallis statistic	105.56	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M35 v Background	60.792	0.4376
M5-3 v Background	5.381	1.0000
M6-3 v Background	124.042	<0.0001
M46 v Background	5.381	1.0000
OW1 v Background	55.488	0.1717
OW4 v Background	119.988	<0.0001
OW55-s v Background	10.083	1.0000
OW56-s v Background	-17.262	1.0000
M19 v Background	-27.208	1.0000
M47-2 v Background	-1.333	1.0000
M47-3 v Background	87.792	0.0178
M50-3 v Background	7.167	1.0000
M52-3 v Background	77.250	0.2001
M9-3 v Background	25.952	1.0000

Test **Kruskal-Wallis ANOVA**
Dissolved Organic Carbon

Comparison Dissolved Organic Carbon by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s,

Performed by Andy Chong **Date** 25 May 2006

OW54-s v Background	-15.190	1.0000
M3A-3 v Background	63.250	0.7094
M4-3 v Background	64.417	0.1512
M39 v Background	85.452	0.0453
M23 v Background	-33.521	1.0000
M51-3 v Background	58.250	1.0000
OW57 v Background	-14.933	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA**
	Hardness
Comparison	Hardness by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M
Performed by	Andy Chong
Date	25 May 2006

n 367

Hardness by Location	n	Rank sum	Mean rank
Background	66	12379.0	187.56
M35	14	3989.5	284.96
M5-3	14	1873.5	133.82
M6-3	14	4816.0	344.00
M46	10	845.0	84.50
OW1	21	3490.5	166.21
OW4	21	6792.5	323.45
OW55-s	22	6614.5	300.66
OW56-s	21	1834.5	87.36
M19	14	3205.0	228.93
M47-2	10	3080.0	308.00
M47-3	10	1090.0	109.00
M50-3	8	2779.5	347.44
M52-3	8	1465.5	183.19
M9-3	14	2167.5	154.82
OW54-s	21	952.5	45.36
M3A-3	10	615.5	61.55
M4-3	15	2340.5	156.03
M39	9	1980.5	220.06
M23	14	3369.0	240.64
M51-3	8	1072.0	134.00
OW57	23	775.5	33.72

Kruskal-Wallis statistic 281.85
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M35 v Background	97.404	0.0379
M5-3 v Background	-53.739	1.0000
M6-3 v Background	156.439	<0.0001
M46 v Background	-103.061	0.0882
OW1 v Background	-21.346	1.0000
OW4 v Background	135.892	<0.0001
OW55-s v Background	113.098	0.0003
OW56-s v Background	-100.203	0.0034
M19 v Background	41.368	1.0000
M47-2 v Background	120.439	0.0172
M47-3 v Background	-78.561	0.6109
M50-3 v Background	159.877	0.0012
M52-3 v Background	-4.373	1.0000
M9-3 v Background	-32.739	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Hardness
Comparison	Hardness by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M
Performed by	Andy Chong
Date	25 May 2006

OW54-s v Background	-142.203	<0.0001
M3A-3 v Background	-126.011	0.0098
M4-3 v Background	-31.527	1.0000
M39 v Background	32.495	1.0000
M23 v Background	53.082	1.0000
M51-3 v Background	-53.561	1.0000
OW57 v Background	-153.843	<0.0001

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**
Iron

Comparison Iron by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M47-2,

Performed by Andy Chong **Date** 25 May 2006

n 360 (cases excluded: 1 due to missing values)

Iron by Location	n	Rank sum	Mean rank
Background	67	9102.5	135.86
M35	14	1622.5	115.89
M5-3	14	2990.5	213.61
M6-3	14	1664.0	118.86
M46	10	2442.0	244.20
OW1	21	3039.0	144.71
OW4	21	7287.5	347.02
OW55-s	21	4562.0	217.24
OW56-s	21	3883.0	184.90
M19	13	1001.5	77.04
M47-2	10	2782.0	278.20
M47-3	10	2384.0	238.40
M50-3	8	2472.0	309.00
M52-3	6	1682.5	280.42
M9-3	15	2976.0	198.40
OW54-s	20	3192.0	159.60
M3A-3	10	1612.5	161.25
M4-3	15	3671.5	244.77
M39	9	1009.0	112.11
M23	13	1991.5	153.19
M51-3	6	1401.5	233.58
OW57	22	2211.0	100.50

Kruskal-Wallis statistic 157.42
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M35 v Background	-19.965	1.0000
M5-3 v Background	77.749	0.2312
M6-3 v Background	-17.001	1.0000
M46 v Background	108.342	0.0448
OW1 v Background	8.856	1.0000
OW4 v Background	211.166	<0.0001
OW55-s v Background	81.380	0.0371
OW56-s v Background	49.047	1.0000
M19 v Background	-58.820	1.0000
M47-2 v Background	142.342	0.0011
M47-3 v Background	102.542	0.0767
M50-3 v Background	173.142	0.0002
M52-3 v Background	144.558	0.0234
M9-3 v Background	62.542	0.7431

Test	**Kruskal-Wallis ANOVA**	
	Iron	
Comparison	Iron by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M47-2,	
Performed by	Andy Chong	**Date** 25 May 2006
OW54-s v Background	23.742	1.0000
M3A-3 v Background	25.392	1.0000
M4-3 v Background	108.908	0.0052
M39 v Background	-23.747	1.0000
M23 v Background	17.334	1.0000
M51-3 v Background	97.725	0.5785
OW57 v Background	-35.358	1.0000

Test	**Kruskal-Wallis ANOVA** Magnesium
Comparison	Magnesium by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19,
Performed by	Andy Chong **Date** 25 May 2006

n 365

Magnesium by Location	n	Rank sum	Mean rank
Background	71	12173.0	171.45
M35	14	4330.0	309.29
M5-3	14	2229.0	159.21
M6-3	14	211.0	15.07
M46	10	1197.5	119.75
OW1	21	4843.0	230.62
OW4	21	7101.5	338.17
OW55-s	21	6777.5	322.74
OW56-s	21	2568.5	122.31
M19	13	3192.5	245.58
M47-2	10	3071.5	307.15
M47-3	10	1225.0	122.50
M50-3	8	2654.0	331.75
M52-3	6	1282.0	213.67
M9-3	15	2832.5	188.83
OW54-s	20	1096.0	54.80
M3A-3	11	669.5	60.86
M4-3	15	3149.5	209.97
M39	9	2187.0	243.00
M23	13	2138.0	164.46
M51-3	6	1060.5	176.75
OW57	22	806.0	36.64

Kruskal-Wallis statistic	283.35	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M35 v Background	137.835	0.0002
M5-3 v Background	-12.236	1.0000
M6-3 v Background	-156.379	<0.0001
M46 v Background	-51.701	1.0000
OW1 v Background	59.168	0.5034
OW4 v Background	166.716	<0.0001
OW55-s v Background	151.287	<0.0001
OW56-s v Background	-49.141	1.0000
M19 v Background	74.126	0.4172
M47-2 v Background	135.699	0.0029
M47-3 v Background	-48.951	1.0000
M50-3 v Background	160.299	0.0010
M52-3 v Background	42.216	1.0000
M9-3 v Background	17.383	1.0000

Test	**Kruskal-Wallis ANOVA** Magnesium	
Comparison	Magnesium by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19,	
Performed by	Andy Chong	**Date** 25 May 2006

OW54-s v Background	-116.651	0.0003
M3A-3 v Background	-110.587	0.0256
M4-3 v Background	38.516	1.0000
M39 v Background	71.549	1.0000
M23 v Background	-6.989	1.0000
M51-3 v Background	5.299	1.0000
OW57 v Background	-134.814	<0.0001

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**
Nitrate
Comparison Nitrate by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M47
Performed by Andy Chong **Date** 25 May 2006

n 371

Nitrate by Location	n	Rank sum	Mean rank
Background	70	16854.0	240.77
M35	14	2397.0	171.21
M5-3	14	1681.5	120.11
M6-3	14	1365.0	97.50
M46	10	975.0	97.50
OW1	21	2280.0	108.57
OW4	21	2579.5	122.83
OW55-s	22	4732.0	215.09
OW56-s	21	5603.0	266.81
M19	14	4669.0	333.50
M47-2	10	975.0	97.50
M47-3	10	1227.0	122.70
M50-3	8	780.0	97.50
M52-3	8	1479.5	184.94
M9-3	14	1530.5	109.32
OW54-s	21	6747.5	321.31
M3A-3	10	1823.5	182.35
M4-3	15	1705.5	113.70
M39	9	1124.5	124.94
M23	14	4919.0	351.36
M51-3	8	1186.5	148.31
OW57	23	2371.5	103.11

Kruskal-Wallis statistic 247.96
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M35 v Background	-69.557	0.5614
M5-3 v Background	-120.664	0.0026
M6-3 v Background	-143.271	0.0001
M46 v Background	-143.271	0.0016
OW1 v Background	-132.200	<0.0001
OW4 v Background	-117.938	0.0002
OW55-s v Background	-25.681	1.0000
OW56-s v Background	26.038	1.0000
M19 v Background	92.729	0.0660
M47-2 v Background	-143.271	0.0016
M47-3 v Background	-118.071	0.0237
M50-3 v Background	-143.271	0.0072
M52-3 v Background	-55.834	1.0000
M9-3 v Background	-131.450	0.0006

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Nitrate	
Comparison	Nitrate by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M47	
Performed by	Andy Chong	**Date** 25 May 2006

OW54-s v Background	80.538	0.0534
M3A-3 v Background	-58.421	1.0000
M4-3 v Background	-127.071	0.0007
M39 v Background	-115.827	0.0481
M23 v Background	110.586	0.0090
M51-3 v Background	-92.459	0.4386
OW57 v Background	-137.663	<0.0001

Test	**Kruskal-Wallis ANOVA** pH
Comparison	pH by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M47-2,
Performed by	Andy Chong
Date	25 May 2006

n 368

pH by Location	n	Rank sum	Mean rank
Background	67	9898.5	147.74
M35	14	2576.5	184.04
M5-3	14	1796.5	128.32
M6-3	14	5061.0	361.50
M46	10	1904.0	190.40
OW1	21	2404.0	114.48
OW4	21	598.0	28.48
OW55-s	22	3469.0	157.68
OW56-s	21	5491.0	261.48
M19	14	1799.5	128.54
M47-2	10	1111.5	111.15
M47-3	10	2611.5	261.15
M50-3	8	453.5	56.69
M52-3	8	1331.0	166.38
M9-3	14	2239.0	159.93
OW54-s	21	6608.5	314.69
M3A-3	10	3301.0	330.10
M4-3	15	2963.0	197.53
M39	9	1411.0	156.78
M23	14	1493.0	106.64
M51-3	8	1761.0	220.13
OW57	23	7614.0	331.04

Kruskal-Wallis statistic	246.81	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M35 v Background	36.297	1.0000
M5-3 v Background	-19.417	1.0000
M6-3 v Background	213.761	<0.0001
M46 v Background	42.661	1.0000
OW1 v Background	-33.263	1.0000
OW4 v Background	-119.263	0.0002
OW55-s v Background	9.943	1.0000
OW56-s v Background	113.737	0.0004
M19 v Background	-19.203	1.0000
M47-2 v Background	-36.589	1.0000
M47-3 v Background	113.411	0.0349
M50-3 v Background	-91.051	0.4647
M52-3 v Background	18.636	1.0000
M9-3 v Background	12.190	1.0000

Test	**Kruskal-Wallis ANOVA**	
	pH	
Comparison	pH by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M47-2,	
Performed by	Andy Chong	**Date** 25 May 2006

OW54-s v Background	166.952	<0.0001
M3A-3 v Background	182.361	<0.0001
M4-3 v Background	49.795	1.0000
M39 v Background	9.039	1.0000
M23 v Background	-41.096	1.0000
M51-3 v Background	72.386	1.0000
OW57 v Background	183.305	<0.0001

Test	**Kruskal-Wallis ANOVA** Potassium		
Comparison	Potassium by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19,		
Performed by	Andy Chong	**Date**	25 May 2006

n	358

Potassium by Location	n	Rank sum	Mean rank
Background	67	6526.0	97.40
M35	14	511.5	36.54
M5-3	13	2176.5	167.42
M6-3	14	4921.0	351.50
M46	10	1901.0	190.10
OW1	21	4123.5	196.36
OW4	21	4941.5	235.31
OW55-s	21	6491.0	309.10
OW56-s	21	4981.5	237.21
M19	13	1719.5	132.27
M47-2	9	2812.0	312.44
M47-3	10	1326.0	132.60
M50-3	8	2525.0	315.63
M52-3	6	1548.5	258.08
M9-3	15	3058.0	203.87
OW54-s	20	4957.0	247.85
M3A-3	11	1495.5	135.95
M4-3	15	4611.5	307.43
M39	9	322.0	35.78
M23	12	785.0	65.42
M51-3	6	1092.0	182.00
OW57	22	1435.5	65.25

Kruskal-Wallis statistic	284.95	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	Difference	p
M35 v Background	-60.867	0.9522
M5-3 v Background	70.020	0.5372
M6-3 v Background	254.097	<0.0001
M46 v Background	92.697	0.1730
OW1 v Background	98.954	0.0028
OW4 v Background	137.907	<0.0001
OW55-s v Background	211.692	<0.0001
OW56-s v Background	139.811	<0.0001
M19 v Background	34.866	1.0000
M47-2 v Background	215.041	<0.0001
M47-3 v Background	35.197	1.0000
M50-3 v Background	218.222	<0.0001
M52-3 v Background	160.680	0.0056
M9-3 v Background	106.464	0.0066

Test	**Kruskal-Wallis ANOVA**
	Potassium
Comparison	Potassium by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19,
Performed by	Andy Chong **Date** 25 May 2006

OW54-s v Background	150.447	<0.0001
M3A-3 v Background	38.552	1.0000
M4-3 v Background	210.030	<0.0001
M39 v Background	-61.625	1.0000
M23 v Background	-31.986	1.0000
M51-3 v Background	84.597	1.0000
OW57 v Background	-32.153	1.0000

Test	**Kruskal-Wallis ANOVA** Silver
Comparison	Silver by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M47-
Performed by	Andy Chong **Date** 25 May 2006

n	362

Silver by Location	**n**	**Rank sum**	**Mean rank**
Background	67	12686.5	189.35
M35	14	2624.0	187.43
M5-3	14	2173.5	155.25
M6-3	14	2523.0	180.21
M46	10	1651.5	165.15
OW1	21	3725.0	177.38
OW4	21	3829.0	182.33
OW55-s	21	4220.5	200.98
OW56-s	21	3467.5	165.12
M19	14	1995.0	142.50
M47-2	10	1989.5	198.95
M47-3	10	1848.0	184.80
M50-3	8	1861.5	232.69
M52-3	6	1308.0	218.00
M9-3	15	2983.0	198.87
OW54-s	19	3453.0	181.74
M3A-3	11	1809.5	164.50
M4-3	15	2320.0	154.67
M39	9	1801.5	200.17
M23	13	2459.5	189.19
M51-3	7	1342.0	191.71
OW57	22	3632.0	165.09

Kruskal-Wallis statistic	20.48	
p	0.4914	(chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M35 v Background	-1.922	1.0000
M5-3 v Background	-34.101	1.0000
M6-3 v Background	-9.136	1.0000
M46 v Background	-24.201	1.0000
OW1 v Background	-11.970	1.0000
OW4 v Background	-7.017	1.0000
OW55-s v Background	11.625	1.0000
OW56-s v Background	-24.232	1.0000
M19 v Background	-46.851	1.0000
M47-2 v Background	9.599	1.0000
M47-3 v Background	-4.551	1.0000
M50-3 v Background	43.337	1.0000
M52-3 v Background	28.649	1.0000
M9-3 v Background	9.516	1.0000

Test **Kruskal-Wallis ANOVA**
Silver
Comparison Silver by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M47-
Performed by Andy Chong **Date** 25 May 2006

OW54-s v Background	-7.614	1.0000
M3A-3 v Background	-24.851	1.0000
M4-3 v Background	-34.684	1.0000
M39 v Background	10.816	1.0000
M23 v Background	-0.158	1.0000
M51-3 v Background	2.364	1.0000
OW57 v Background	-24.260	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Sodium		
Comparison	Sodium by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M4		
Performed by	Andy Chong	**Date**	25 May 2006

n	362

Sodium by Location	**n**	**Rank sum**	**Mean rank**
Background	68	5604.0	82.41
M35	14	1464.5	104.61
M5-3	14	2876.5	205.46
M6-3	14	4444.0	317.43
M46	10	2405.5	240.55
OW1	21	4251.5	202.45
OW4	21	5652.5	269.17
OW55-s	21	7116.0	338.86
OW56-s	21	6051.0	288.14
M19	13	487.5	37.50
M47-2	10	3345.0	334.50
M47-3	10	2027.5	202.75
M50-3	8	2796.0	349.50
M52-3	6	1884.0	314.00
M9-3	15	1721.0	114.73
OW54-s	20	3322.5	166.13
M3A-3	11	1678.0	152.55
M4-3	15	1914.0	127.60
M39	9	1394.5	154.94
M23	13	191.0	14.69
M51-3	6	1351.0	225.17
OW57	22	3725.5	169.34

Kruskal-Wallis statistic	303.92	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M35 v Background	22.195	1.0000
M5-3 v Background	123.053	0.0013
M6-3 v Background	235.017	<0.0001
M46 v Background	158.138	0.0002
OW1 v Background	120.041	<0.0001
OW4 v Background	186.755	<0.0001
OW55-s v Background	256.445	<0.0001
OW56-s v Background	205.731	<0.0001
M19 v Background	-44.912	1.0000
M47-2 v Background	252.088	<0.0001
M47-3 v Background	120.338	0.0144
M50-3 v Background	267.088	<0.0001
M52-3 v Background	231.588	<0.0001
M9-3 v Background	32.322	1.0000

Test **Kruskal-Wallis ANOVA**
Sodium
Comparison Sodium by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M4
Performed by Andy Chong **Date** 25 May 2006

OW54-s v Background	83.713	0.0349
M3A-3 v Background	70.134	0.8228
M4-3 v Background	45.188	1.0000
M39 v Background	72.533	1.0000
M23 v Background	-67.719	0.6831
M51-3 v Background	142.755	0.0285
OW57 v Background	86.929	0.0148

Test **Kruskal-Wallis ANOVA**
Sulphate
Comparison Sulphate by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M
Performed by Andy Chong **Date** 25 May 2006

n 364

Sulphate by Location	**n**	**Rank sum**	**Mean rank**
Background	66	9960.0	150.91
M35	14	3368.0	240.57
M5-3	13	1518.0	116.77
M6-3	14	771.0	55.07
M46	10	1454.5	145.45
OW1	21	3617.5	172.26
OW4	21	673.5	32.07
OW55-s	22	5737.0	260.77
OW56-s	21	6732.5	320.60
M19	14	2546.0	181.86
M47-2	10	1111.5	111.15
M47-3	10	2145.5	214.55
M50-3	7	669.5	95.64
M52-3	8	2262.5	282.81
M9-3	14	2431.0	173.64
OW54-s	21	6091.5	290.07
M3A-3	10	1823.0	182.30
M4-3	15	557.5	37.17
M39	9	2439.5	271.06
M23	13	1331.5	102.42
M51-3	8	1873.5	234.19
OW57	23	7315.5	318.07

Kruskal-Wallis statistic 250.80
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M35 v Background	89.662	0.0794
M5-3 v Background	-34.140	1.0000
M6-3 v Background	-95.838	0.0413
M46 v Background	-5.459	1.0000
OW1 v Background	21.353	1.0000
OW4 v Background	-118.838	0.0001
OW55-s v Background	109.864	0.0005
OW56-s v Background	169.686	<0.0001
M19 v Background	30.948	1.0000
M47-2 v Background	-39.759	1.0000
M47-3 v Background	63.641	1.0000
M50-3 v Background	-55.266	1.0000
M52-3 v Background	131.903	0.0171
M9-3 v Background	22.734	1.0000

Test	**Kruskal-Wallis ANOVA** Sulphate
Comparison	Sulphate by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW56-s, M19, M
Performed by	Andy Chong
Date	25 May 2006

OW54-s v Background	139.162	<0.0001
M3A-3 v Background	31.391	1.0000
M4-3 v Background	-113.742	0.0033
M39 v Background	120.146	0.0275
M23 v Background	-48.486	1.0000
M51-3 v Background	83.278	0.7246
OW57 v Background	167.156	<0.0001

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**
TotalKjeldahlNitrogen
Comparison Total Kjeldahl Nitrogen by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW
Performed by Andy Chong **Date** 25 May 2006

n 340

l Kjeldahl Nitrogen by Location	n	Rank sum	Mean rank
Background	60	5511.5	91.86
M35	13	842.5	64.81
M5-3	13	2923.0	224.85
M6-3	13	4210.5	323.88
M46	9	2049.5	227.72
OW1	20	5328.5	266.43
OW4	20	5856.5	292.83
OW55-s	20	4564.0	228.20
OW56-s	20	2302.0	115.10
M19	13	603.0	46.38
M47-2	9	2431.0	270.11
M47-3	9	1440.0	160.00
M50-3	7	2283.0	326.14
M52-3	6	1401.5	233.58
M9-3	12	2649.0	220.75
OW54-s	19	2373.0	124.89
M3A-3	11	2438.5	221.68
M4-3	15	2700.0	180.00
M39	9	857.0	95.22
M23	13	951.0	73.15
M51-3	7	1454.0	207.71
OW57	22	2801.0	127.32

Kruskal-Wallis statistic 239.13
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M35 v Background	-27.051	1.0000
M5-3 v Background	132.988	0.0002
M6-3 v Background	232.026	<0.0001
M46 v Background	135.864	0.0023
OW1 v Background	174.567	<0.0001
OW4 v Background	200.967	<0.0001
OW55-s v Background	136.342	<0.0001
OW56-s v Background	23.242	1.0000
M19 v Background	-45.474	1.0000
M47-2 v Background	178.253	<0.0001
M47-3 v Background	68.142	1.0000
M50-3 v Background	234.285	<0.0001
M52-3 v Background	141.725	0.0159
M9-3 v Background	128.892	0.0007

Test	**Kruskal-Wallis ANOVA**
	TotalKjeldahlNitrogen
Comparison	Total Kjeldahl Nitrogen by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW
Performed by	Andy Chong
Date	25 May 2006

OW54-s v Background	33.036	1.0000
M3A-3 v Background	129.823	0.0012
M4-3 v Background	88.142	0.0398
M39 v Background	3.364	1.0000
M23 v Background	-18.704	1.0000
M51-3 v Background	115.856	0.0665
OW57 v Background	35.460	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** TotalOrganicCarbon
Comparison	Total Organic Carbon by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW5
Performed by	Andy Chong
Date	25 May 2006

n	180

tal Organic Carbon by Location	**n**	**Rank sum**	**Mean rank**
Background	27	1831.5	67.83
M35	7	737.0	105.29
M5-3	9	651.0	72.33
M6-3	7	1083.0	154.71
M46	4	236.5	59.13
OW1	10	936.0	93.60
OW4	10	1560.5	156.05
OW55-s	11	822.5	74.77
OW56-s	11	619.5	56.32
M19	7	363.5	51.93
M47-2	4	334.0	83.50
M47-3	4	512.5	128.13
M50-3	4	282.0	70.50
M52-3	4	507.0	126.75
M9-3	8	660.5	82.56
OW54-s	11	861.5	78.32
M3A-3	6	712.0	118.67
M4-3	9	1146.0	127.33
M39	4	500.0	125.00
M23	7	467.0	66.71
M51-3	4	408.0	102.00
OW57	12	1058.5	88.21

Kruskal-Wallis statistic	59.47	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M35 v Background	37.452	1.0000
M5-3 v Background	4.500	1.0000
M6-3 v Background	86.881	0.0018
M46 v Background	-8.708	1.0000
OW1 v Background	25.767	1.0000
OW4 v Background	88.217	0.0001
OW55-s v Background	6.939	1.0000
OW56-s v Background	-11.515	1.0000
M19 v Background	-15.905	1.0000
M47-2 v Background	15.667	1.0000
M47-3 v Background	60.292	0.6466
M50-3 v Background	2.667	1.0000
M52-3 v Background	58.917	0.7311
M9-3 v Background	14.729	1.0000

Test	**Kruskal-Wallis ANOVA**
	TotalOrganicCarbon
Comparison	Total Organic Carbon by Location: Background, M35, M5-3, M6-3, M46, OW1, OW4, OW55-s, OW
Performed by	Andy Chong
Date	25 May 2006

OW54-s v Background	10.485	1.0000
M3A-3 v Background	50.833	0.6437
M4-3 v Background	59.500	0.0632
M39 v Background	57.167	0.8522
M23 v Background	-1.119	1.0000
M51-3 v Background	34.167	1.0000
OW57 v Background	20.375	1.0000

APPENDIX E

ANALYZE-IT STATISTICAL OUTPUT: INTERMEDIATE BEDROCK GROUND WATER

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Alkalinity
Comparison	Alkalinity by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, OV
Performed by	Andy Chong
Date	26 May 2006

n 255

Alkalinity by Location	**n**	**Rank sum**	**Mean rank**
Background	129	16653.5	129.10
M6-2	12	1868.0	155.67
M50-2	8	444.5	55.56
M52-2	9	1789.5	198.83
M53-3	7	1572.0	224.57
M9-2	14	1387.0	99.07
M10-2	15	2754.0	183.60
M49-1	8	1298.5	162.31
OW54-d	24	1876.0	78.17
OW54-l	21	1092.0	52.00
M51-2	8	1905.0	238.13

Kruskal-Wallis statistic	93.24	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	26.570	1.0000
M50-2 v Background	-73.534	0.0621
M52-2 v Background	69.736	0.0610
M53-3 v Background	95.475	0.0085
M9-2 v Background	-30.025	1.0000
M10-2 v Background	54.503	0.0675
M49-1 v Background	33.216	1.0000
OW54-d v Background	-50.930	0.0190
OW54-l v Background	-77.097	<0.0001
M51-2 v Background	109.028	0.0005

Test	**Kruskal-Wallis ANOVA** Aluminum
Comparison	Aluminum by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, O
Performed by	Andy Chong
Date	26 May 2006

n	247

Aluminum by Location	**n**	**Rank sum**	**Mean rank**
Background	128	14996.5	117.16
M6-2	10	1657.0	165.70
M50-2	8	920.5	115.06
M52-2	7	1111.0	158.71
M53-3	7	916.0	130.86
M9-2	13	1440.0	110.77
M10-2	12	1385.0	115.42
M49-1	8	1226.5	153.31
OW54-d	24	2529.0	105.38
OW54-I	22	3236.5	147.11
M51-2	8	1210.0	151.25

Kruskal-Wallis statistic	19.27	
p	0.0369	(chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	48.540	0.3854
M50-2 v Background	-2.098	1.0000
M52-2 v Background	41.554	1.0000
M53-3 v Background	13.697	1.0000
M9-2 v Background	-6.391	1.0000
M10-2 v Background	-1.743	1.0000
M49-1 v Background	36.152	1.0000
OW54-d v Background	-11.785	1.0000
OW54-I v Background	29.953	0.6929
M51-2 v Background	34.090	1.0000

Test	**Kruskal-Wallis ANOVA** Ammonia
Comparison	Ammonia by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, O
Performed by	Andy Chong
Date	26 May 2006

n	256

Ammonia by Location	**n**	**Rank sum**	**Mean rank**
Background	130	18781.0	144.47
M6-2	12	2766.0	230.50
M50-2	8	1907.0	238.38
M52-2	9	1325.5	147.28
M53-3	7	440.0	62.86
M9-2	13	904.5	69.58
M10-2	15	1276.0	85.07
M49-1	8	173.0	21.63
OW54-d	24	2257.0	94.04
OW54-l	22	2196.0	99.82
M51-2	8	870.0	108.75

Kruskal-Wallis statistic	91.65	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	86.031	0.0012
M50-2 v Background	93.906	0.0050
M52-2 v Background	2.809	1.0000
M53-3 v Background	-81.612	0.0450
M9-2 v Background	-74.892	0.0051
M10-2 v Background	-59.403	0.0326
M49-1 v Background	-122.844	<0.0001
OW54-d v Background	-50.428	0.0217
OW54-l v Background	-44.651	0.0890
M51-2 v Background	-35.719	1.0000

analysed with: Analyse-it + General 1.73

Test Kruskal-Wallis ANOVA
Biochemical Oxygen Demand
Comparison Biochemical Oxygen Demand by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2,
Performed by Andy Chong **Date** 26 May 2006

n 251

al Oxygen Demand by Location	n	Rank sum	Mean rank
Background	128	17148.0	133.97
M6-2	11	1450.0	131.82
M50-2	8	1877.5	234.69
M52-2	9	1310.0	145.56
M53-3	7	1016.0	145.14
M9-2	14	1630.5	116.46
M10-2	14	2012.0	143.71
M49-1	8	670.0	83.75
OW54-d	23	1754.0	76.26
OW54-I	21	1636.0	77.90
M51-2	8	1122.0	140.25

Kruskal-Wallis statistic 45.41
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M6-2 v Background	-2.151	1.0000
M50-2 v Background	100.719	0.0014
M52-2 v Background	11.587	1.0000
M53-3 v Background	11.174	1.0000
M9-2 v Background	-17.504	1.0000
M10-2 v Background	9.746	1.0000
M49-1 v Background	-50.219	0.5769
OW54-d v Background	-57.708	0.0045
OW54-I v Background	-56.064	0.0104
M51-2 v Background	6.281	1.0000

Test Kruskal-Wallis ANOVA
Calcium
Comparison Calcium by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, OW
Performed by Andy Chong **Date** 26 May 2006

n 253

Calcium by Location	**n**	**Rank sum**	**Mean rank**
Background	129	18193.0	141.03
M6-2	11	2585.0	235.00
M50-2	8	1925.0	240.63
M52-2	7	295.5	42.21
M53-3	7	948.0	135.43
M9-2	14	2187.5	156.25
M10-2	15	908.0	60.53
M49-1	8	261.5	32.69
OW54-d	24	2609.5	108.73
OW54-l	22	2064.0	93.82
M51-2	8	154.0	19.25

Kruskal-Wallis statistic 108.77
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	93.969	0.0004
M50-2 v Background	99.594	0.0019
M52-2 v Background	-98.817	0.0050
M53-3 v Background	-5.602	1.0000
M9-2 v Background	15.219	1.0000
M10-2 v Background	-80.498	0.0006
M49-1 v Background	-108.344	0.0005
OW54-d v Background	-32.302	0.4708
OW54-l v Background	-47.213	0.0516
M51-2 v Background	-121.781	<0.0001

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**
Chemical Oxygen Demand
Comparison Chemical Oxygen Demand by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M4
Performed by Andy Chong **Date** 26 May 2006

n 254

al Oxygen Demand by Location	**n**	**Rank sum**	**Mean rank**
Background	129	18777.5	145.56
M6-2	13	2918.0	224.46
M50-2	8	1788.0	223.50
M52-2	9	1028.0	114.22
M53-3	7	495.5	70.79
M9-2	14	1523.0	108.79
M10-2	14	1194.0	85.29
M49-1	8	711.5	88.94
OW54-d	23	1709.5	74.33
OW54-l	21	1503.5	71.60
M51-2	8	736.5	92.06

Kruskal-Wallis statistic 83.35
p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M6-2 v Background	78.900	0.0022
M50-2 v Background	77.938	0.0360
M52-2 v Background	-31.340	1.0000
M53-3 v Background	-74.776	0.0872
M9-2 v Background	-36.776	0.7525
M10-2 v Background	-60.276	0.0355
M49-1 v Background	-56.625	0.3440
OW54-d v Background	-71.236	0.0002
OW54-l v Background	-73.967	0.0002
M51-2 v Background	-53.500	0.4565

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Chloride
Comparison	Chloride by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, OW
Performed by	Andy Chong
Date	26 May 2006

n	255

Chloride by Location	**n**	**Rank sum**	**Mean rank**
Background	129	20358.0	157.81
M6-2	12	2836.0	236.33
M50-2	8	1972.0	246.50
M52-2	9	1123.0	124.78
M53-3	7	533.5	76.21
M9-2	14	1121.0	80.07
M10-2	15	549.0	36.60
M49-1	8	773.0	96.63
OW54-d	24	1546.5	64.44
OW54-l	21	878.5	41.83
M51-2	8	949.5	118.69

Kruskal-Wallis statistic	148.10	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	78.519	0.0042
M50-2 v Background	88.686	0.0097
M52-2 v Background	-33.036	1.0000
M53-3 v Background	-81.600	0.0436
M9-2 v Background	-77.743	0.0018
M10-2 v Background	-121.214	<0.0001
M49-1 v Background	-61.189	0.2279
OW54-d v Background	-93.376	<0.0001
OW54-l v Background	-115.981	<0.0001
M51-2 v Background	-39.126	1.0000

Test	**Kruskal-Wallis ANOVA** Conductivity
Comparison	Conductivity by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d,
Performed by	Andy Chong
Date	26 May 2006

n 253 (cases excluded: 1 due to missing values)

Conductivity by Location	**n**	**Rank sum**	**Mean rank**
Background	128	19984.0	156.13
M6-2	12	2930.5	244.21
M50-2	8	1935.0	241.88
M52-2	9	1001.5	111.28
M53-3	7	885.5	126.50
M9-2	14	854.0	61.00
M10-2	15	1181.0	78.73
M49-1	8	666.0	83.25
OW54-d	23	965.0	41.96
OW54-l	21	794.5	37.83
M51-2	8	934.0	116.75

Kruskal-Wallis statistic	154.36	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M6-2 v Background	88.083	0.0007
M50-2 v Background	85.750	0.0130
M52-2 v Background	-44.847	0.7555
M53-3 v Background	-29.625	1.0000
M9-2 v Background	-95.125	<0.0001
M10-2 v Background	-77.392	0.0011
M49-1 v Background	-72.875	0.0628
OW54-d v Background	-114.168	<0.0001
OW54-l v Background	-118.292	<0.0001
M51-2 v Background	-39.375	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Dissolved Organic Carbon
Comparison	Dissolved Organic Carbon by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M4
Performed by	Andy Chong
Date	26 May 2006

n 165

ved Organic Carbon by Location	n	Rank sum	Mean rank
Background	80	5570.0	69.63
M6-2	6	823.0	137.17
M50-2	6	387.5	64.58
M52-2	8	941.0	117.63
M53-3	6	673.5	112.25
M9-2	8	701.0	87.63
M10-2	8	931.5	116.44
M49-1	7	867.5	123.93
OW54-d	15	1215.0	81.00
OW54-l	15	908.0	60.53
M51-2	6	677.0	112.83

Kruskal-Wallis statistic 36.28

p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M6-2 v Background	67.542	0.0084
M50-2 v Background	-5.042	1.0000
M52-2 v Background	48.000	0.0674
M53-3 v Background	42.625	0.3505
M9-2 v Background	18.000	1.0000
M10-2 v Background	46.813	0.0823
M49-1 v Background	54.304	0.0393
OW54-d v Background	11.375	1.0000
OW54-l v Background	-9.092	1.0000
M51-2 v Background	43.208	0.3263

Test	**Kruskal-Wallis ANOVA** Hardness
Comparison	Hardness by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, O\
Performed by	Andy Chong
Date	26 May 2006

n 254

Hardness by Location	**n**	**Rank sum**	**Mean rank**
Background	129	18708.5	145.03
M6-2	12	2499.0	208.25
M50-2	7	1614.5	230.64
M52-2	9	390.0	43.33
M53-3	7	940.0	134.29
M9-2	14	2100.0	150.00
M10-2	15	983.5	65.57
M49-1	8	203.0	25.38
OW54-d	24	2646.5	110.27
OW54-l	21	2152.0	102.48
M51-2	8	148.0	18.50

Kruskal-Wallis statistic	96.31	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M6-2 v Background	63.223	0.0435
M50-2 v Background	85.616	0.0267
M52-2 v Background	-101.694	0.0006
M53-3 v Background	-10.741	1.0000
M9-2 v Background	4.973	1.0000
M10-2 v Background	-79.460	0.0007
M49-1 v Background	-119.652	<0.0001
OW54-d v Background	-34.756	0.3333
OW54-l v Background	-42.551	0.1384
M51-2 v Background	-126.527	<0.0001

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Iron
Comparison	Iron by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, OW54-I,
Performed by	Andy Chong
Date	26 May 2006

n 251 (cases excluded: 2 due to missing values)

Iron by Location	**n**	**Rank sum**	**Mean rank**
Background	127	17730.0	139.61
M6-2	11	450.0	40.91
M50-2	8	746.5	93.31
M52-2	7	751.5	107.36
M53-3	7	1301.5	185.93
M9-2	14	2557.5	182.68
M10-2	15	2071.5	138.10
M49-1	8	793.5	99.19
OW54-d	24	2373.0	98.88
OW54-l	22	1822.0	82.82
M51-2	8	1029.0	128.63

Kruskal-Wallis statistic 47.66

p <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	-98.697	0.0002
M50-2 v Background	-46.294	0.8024
M52-2 v Background	-32.249	1.0000
M53-3 v Background	46.322	1.0000
M9-2 v Background	43.072	0.3514
M10-2 v Background	-1.506	1.0000
M49-1 v Background	-40.419	1.0000
OW54-d v Background	-40.731	0.1172
OW54-l v Background	-56.788	0.0071
M51-2 v Background	-10.981	1.0000

Test	**Kruskal-Wallis ANOVA** Magnesium		
Comparison	Magnesium by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d,		
Performed by	Andy Chong	**Date**	26 May 2006

n 253

Magnesium by Location	**n**	**Rank sum**	**Mean rank**
Background	129	19598.5	151.93
M6-2	11	991.0	90.09
M50-2	8	1970.0	246.25
M52-2	7	354.0	50.57
M53-3	7	954.5	136.36
M9-2	14	1709.5	122.11
M10-2	15	988.5	65.90
M49-1	8	181.5	22.69
OW54-d	24	2598.5	108.27
OW54-l	22	2412.0	109.64
M51-2	8	373.0	46.63

Kruskal-Wallis statistic	86.05	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M6-2 v Background	-61.835	0.0714
M50-2 v Background	94.324	0.0040
M52-2 v Background	-101.355	0.0036
M53-3 v Background	-15.569	1.0000
M9-2 v Background	-29.819	1.0000
M10-2 v Background	-86.026	0.0002
M49-1 v Background	-129.239	<0.0001
OW54-d v Background	-43.656	0.0728
OW54-l v Background	-42.290	0.1223
M51-2 v Background	-105.301	0.0008

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Nitrate
Comparison	Nitrate by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, OW5
Performed by	Andy Chong
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Nitrate by Location	**n**	**Rank sum**	**Mean rank**
Background	129	14785.0	114.61
M6-2	12	1903.0	158.58
M50-2	8	938.5	117.31
M52-2	9	1146.0	127.33
M53-3	7	1466.0	209.43
M9-2	14	1578.0	112.71
M10-2	15	2663.0	177.53
M49-1	8	965.0	120.63
OW54-d	24	2743.0	114.29
OW54-I	21	3521.0	167.67
M51-2	8	931.5	116.44

Kruskal-Wallis statistic	61.53	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	43.971	0.4823
M50-2 v Background	2.700	1.0000
M52-2 v Background	12.721	1.0000
M53-3 v Background	94.816	0.0092
M9-2 v Background	-1.898	1.0000
M10-2 v Background	62.921	0.0176
M49-1 v Background	6.013	1.0000
OW54-d v Background	-0.321	1.0000
OW54-I v Background	53.054	0.0224
M51-2 v Background	1.825	1.0000

Test	**Kruskal-Wallis ANOVA** pH
Comparison	pH by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, OW54-I,
Performed by	Andy Chong
Date	26 May 2006

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pH by Location	n	Rank sum	Mean rank
Background	129	13942.5	108.08
M6-2	12	2993.0	249.42
M50-2	8	244.0	30.50
M52-2	9	1616.5	179.61
M53-3	7	894.0	127.71
M9-2	14	1191.5	85.11
M10-2	15	2466.5	164.43
M49-1	8	1558.5	194.81
OW54-d	24	3173.0	132.21
OW54-I	21	3020.5	143.83
M51-2	8	1540.0	192.50

Kruskal-Wallis statistic	82.45	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M6-2 v Background	141.335	<0.0001
M50-2 v Background	-77.581	0.0389
M52-2 v Background	71.530	0.0491
M53-3 v Background	19.633	1.0000
M9-2 v Background	-22.974	1.0000
M10-2 v Background	56.352	0.0510
M49-1 v Background	86.731	0.0125
OW54-d v Background	24.127	1.0000
OW54-I v Background	35.752	0.3940
M51-2 v Background	84.419	0.0168

Test | **Kruskal-Wallis ANOVA**

Potassium

Comparison | Potassium by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, O

Performed by | Andy Chong **Date** | 26 May 2006

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Potassium by Location	**n**	**Rank sum**	**Mean rank**
Background	128	18812.0	146.97
M6-2	11	2695.0	245.00
M50-2	8	1651.0	206.38
M52-2	7	576.5	82.36
M53-3	7	644.5	92.07
M9-2	14	723.5	51.68
M10-2	14	2049.5	146.39
M49-1	8	148.0	18.50
OW54-d	23	1681.0	73.09
OW54-l	22	1895.5	86.16
M51-2	8	498.5	62.31

Kruskal-Wallis statistic | 113.61

p | <0.0001 (chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	98.031	0.0002
M50-2 v Background	59.406	0.2418
M52-2 v Background	-64.612	0.2134
M53-3 v Background	-54.897	0.5049
M9-2 v Background	-95.290	<0.0001
M10-2 v Background	-0.576	1.0000
M49-1 v Background	-128.469	<0.0001
OW54-d v Background	-73.882	<0.0001
OW54-l v Background	-60.810	0.0027
M51-2 v Background	-84.656	0.0132

Test	**Kruskal-Wallis ANOVA** Silver		
Comparison	Silver by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, OW54		
Performed by	Andy Chong	**Date**	26 May 2006

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Silver by Location	**n**	**Rank sum**	**Mean rank**
Background	129	15963.5	123.75
M6-2	10	1537.5	153.75
M50-2	8	1176.0	147.00
M52-2	7	804.5	114.93
M53-3	7	920.5	131.50
M9-2	14	1818.0	129.86
M10-2	15	1837.0	122.47
M49-1	8	919.5	114.94
OW54-d	24	3095.5	128.98
OW54-l	21	2634.5	125.45
M51-2	8	919.5	114.94

Kruskal-Wallis statistic	5.27	
p	0.8723	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	**Difference**	**p**
M6-2 v Background	30.002	1.0000
M50-2 v Background	23.252	1.0000
M52-2 v Background	-8.819	1.0000
M53-3 v Background	7.752	1.0000
M9-2 v Background	6.109	1.0000
M10-2 v Background	-1.281	1.0000
M49-1 v Background	-8.811	1.0000
OW54-d v Background	5.231	1.0000
OW54-l v Background	1.704	1.0000
M51-2 v Background	-8.811	1.0000

analysed with: Analyse-it + General 1.73

Test	**Kruskal-Wallis ANOVA** Sodium
Comparison	Sodium by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, OW
Performed by	Andy Chong
Date	26 May 2006

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Sodium by Location	n	Rank sum	Mean rank
Background	129	19771.5	153.27
M6-2	11	2620.0	238.18
M50-2	8	1937.0	242.13
M52-2	7	1010.0	144.29
M53-3	7	894.5	127.79
M9-2	14	292.5	20.89
M10-2	15	1371.5	91.43
M49-1	8	957.0	119.63
OW54-d	23	852.0	37.04
OW54-l	22	919.0	41.77
M51-2	8	1253.0	156.63

Kruskal-Wallis statistic	162.44	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni **Contrast**	Difference	p
M6-2 v Background	84.914	0.0021
M50-2 v Background	88.858	0.0082
M52-2 v Background	-8.982	1.0000
M53-3 v Background	-25.482	1.0000
M9-2 v Background	-132.375	<0.0001
M10-2 v Background	-61.834	0.0187
M49-1 v Background	-33.642	1.0000
OW54-d v Background	-116.224	<0.0001
OW54-l v Background	-111.495	<0.0001
M51-2 v Background	3.358	1.0000

Test	**Kruskal-Wallis ANOVA** Sulphate		
Comparison	Sulphate by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1, OW54-d, OW		
Performed by	Andy Chong	**Date**	26 May 2006

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Sulphate by Location	**n**	**Rank sum**	**Mean rank**
Background	128	16920.5	132.19
M6-2	12	2478.0	206.50
M50-2	8	1631.5	203.94
M52-2	9	648.0	72.00
M53-3	7	1589.5	227.07
M9-2	14	901.0	64.36
M10-2	15	2331.5	155.43
M49-1	8	857.5	107.19
OW54-d	24	1791.5	74.65
OW54-l	21	2659.0	126.62
M51-2	8	577.0	72.13

Kruskal-Wallis statistic	71.16	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	74.309	0.0081
M50-2 v Background	71.746	0.0737
M52-2 v Background	-60.191	0.1751
M53-3 v Background	94.880	0.0088
M9-2 v Background	-67.834	0.0104
M10-2 v Background	23.242	1.0000
M49-1 v Background	-25.004	1.0000
OW54-d v Background	-57.546	0.0043
OW54-l v Background	-5.572	1.0000
M51-2 v Background	-60.066	0.2487

Test	**Kruskal-Wallis ANOVA**
	Total Kjeldahl Nitrogen
Comparison	Total Kjeldahl Nitrogen by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1
Performed by	Andy Chong
Date	26 May 2006

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l Kjeldahl Nitrogen by Location	**n**	**Rank sum**	**Mean rank**
Background	122	15797.0	129.48
M6-2	11	2433.0	221.18
M50-2	8	1763.0	220.38
M52-2	8	1083.0	135.38
M53-3	6	337.0	56.17
M9-2	11	675.5	61.41
M10-2	14	1341.0	95.79
M49-1	7	167.0	23.86
OW54-d	23	2087.0	90.74
OW54-l	21	2020.0	96.19
M51-2	7	737.5	105.36

Kruskal-Wallis statistic	78.96	
p	<0.0001	(chisqr approximation, corrected for ties)

Bonferroni Contrast	**Difference**	**p**
M6-2 v Background	91.698	0.0002
M50-2 v Background	90.891	0.0030
M52-2 v Background	5.891	1.0000
M53-3 v Background	-73.317	0.1088
M9-2 v Background	-68.075	0.0168
M10-2 v Background	-33.698	0.8283
M49-1 v Background	-105.626	0.0008
OW54-d v Background	-38.744	0.1330
OW54-l v Background	-33.293	0.4068
M51-2 v Background	-24.126	1.0000

analysed with: Analyse-it + General 1.73

Test **Kruskal-Wallis ANOVA**
Total Organic Carbon
Comparison Total Organic Carbon by Location: Background, M6-2, M50-2, M52-2, M53-3, M9-2, M10-2, M49-1,
Performed by Andy Chong **Date** 26 May 2006

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tal Organic Carbon by Location	n	Rank sum	Mean rank
Background	62	3217.5	51.90
M6-2	8	805.0	100.63
M50-2	3	208.5	69.50
M52-2	4	289.0	72.25
M53-3	2	144.0	72.00
M9-2	7	548.5	78.36
M10-2	6	515.5	85.92
M49-1	4	320.0	80.00
OW54-d	12	642.5	53.54
OW54-l	11	588.0	53.45
M51-2	4	347.5	86.88

Kruskal-Wallis statistic 23.50
p 0.0091 (chisqr approximation, corrected for ties)

Bonferroni Contrast	Difference	p
M6-2 v Background	48.730	0.0027
M50-2 v Background	17.605	1.0000
M52-2 v Background	20.355	1.0000
M53-3 v Background	20.105	1.0000
M9-2 v Background	26.462	0.6267
M10-2 v Background	34.022	0.2561
M49-1 v Background	28.105	1.0000
OW54-d v Background	1.647	1.0000
OW54-l v Background	1.559	1.0000
M51-2 v Background	34.980	0.5718

APPENDIX E

"GROUNDWATER INVESTIGATION, VICINITY OF RICHMOND LANDFILL, NAPANEE, ONTARIO,"

MAY 24, 2006

EXCELLENCE IN
ENVIRONMENTAL
CONSULTING
SERVICES

XCG File # 1-664-38-04

May 24, 2006

GROUNDWATER INVESTIGATION
VICINITY OF RICHMOND LANDFILL
NAPANEE, ONTARIO

Prepared for:

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1. BACKGROUND

In January 2006 the Mohawks of the Bay of Quinte (MBQ) obtained funding from Health Canada to undertake a project under the Environmental Contaminants Program. The project involved completing a series of tasks, which were focussed on assessing current impacts and potential future impacts on the Tyendinaga Mohawk Territory (TMT) arising from the Richmond Landfill site, which is a landfill site owned by Waste Management of Canada (WM), located near the northeast corner of the TMT.

There are plans to expand the Richmond Landfill site from one that currently is licensed to receive 125,000 tonnes of waste per year to one that would be licensed to receive 750,000 tonnes of waste per year. This would result in a large increase in the footprint occupied by the landfill site, from the current 16.2 ha to 109.5 ha.

For a number of reasons, the Mohawks of the Bay of Quinte (MBQ) are concerned about potential impacts on the TMT from the landfill site. These reasons include:

- The landfill site is located near the headwaters of two creeks that flow through the TMT, and these creeks are used for a variety of purposes by TMT residents, including fishing and recreation;
- The landfill site is located in an area with fractured limestone bedrock located very near the ground surface, and is upgradient of the TMT in terms of the direction of regional groundwater flow; there is potential for groundwater quality impacts in aquifers that are used by TMT residents for their drinking water supplies.

One of the tasks to be completed as part of this project was the installation and sampling of monitoring wells at off-property locations near the boundaries of the landfill site. This report describes the work done under this task and presents the results.

Extensive past hydrogeological investigations have been conducted by WM's consultants on the Richmond Landfill site property. Through these investigations, WM has developed an understanding of the hydrogeology of the site, based on groundwater occurrence in three zones:

- the overburden/shallow bedrock interface zone (to depths of 10 m below bedrock surface);
- the intermediate bedrock (depths of less than 30 m);
- the deep bedrock (depths of greater than 30 m).

For consistency with WM terminology, XCG has used the same descriptions of the hydrogeologic units in this report.

2. SCOPE OF WORK

The scope of work for this project is described below:

- XCG obtained permission from property owners (both municipalities responsible for the road allowances and private land owners) prior to any activities being conducted on their properties.
- XCG co-ordinated the mobilization and demobilization of all personnel and equipment required to complete the work. Prior to the subsurface investigation, utility locates were carried out in all areas where subsurface work was conducted.
- Two boreholes were advanced and monitoring wells installed within the road allowance on the north side of Beechwood Road, west of the entrance to the landfill site. The two wells were installed in this location to intercept the shallow groundwater (overburden/bedrock interface unit).
- Two boreholes were advanced and monitoring wells installed within the road allowance on the north side of Beechwood Road, east of the entrance to the landfill site. Both of these wells was advanced into the intermediate groundwater aquifer, with one being at a deeper level within this aquifer than the other.
- Two boreholes were advanced and monitoring wells installed within the road allowance on the west side of County Road 10, north of the intersection with Beechwood Road. Both of these wells was advanced into the intermediate groundwater aquifer, with one being at a deeper level within this aquifer than the other.
- Soil sampling was not completed as part of the monitoring well installations.
- Groundwater samples were collected from each monitoring well and analyzed for metals (Sb, Al, As, Ba, Be, B(HWS), Ca, Cd, Cr(total, VI), Co, Cu, Fe, Pb, Hg, K, Mg, Mo, Na, Ni, Se, Ag, Tl, V and Zn), hardness, BOD5, alkalinity, ammonia, anions (Cl, NO2, NO3, SO4), COD, DOC, TOC, pH, conductivity, phenolics water (4-AAP), TKN, benzene, toluene, ethylbenzene, and xylenes (BTEX), volatile organic compounds (VOC), and tritium.
- For the purpose of quality assurance and quality control (QA/QC), one blind duplicate sample of groundwater was analyzed for all parameters.

3. FIELD INVESTIGATION METHODOLOGY

The monitoring well installation activities were conducted during the week of March 27 to March 31, 2006. Monitoring well development and sampling was completed during the period from April 1 to May 10, 2006. XCG field activities were overseen by Mr. Dale White, and were conducted using XCG's standard field protocols. This section outlines the methodology used for the groundwater investigation. It includes a summary of the sampling and analytical program, and an outline of the quality assurance and quality control (QA/QC) program.

3.1 Property Owner Permission

The required permission to conduct the scope of work for this project was obtained before any field investigations commenced. Mr. White met on-site with Mr. Vern Amey of the Town of Napanee on March 15, 2006. The locations of all proposed well installations along Beechwood Road were indicated to Mr. Amey, and permission was obtained at that time to proceed with the installation of four groundwater wells. Mr. White met on-site with Mr. John Farrell of Tyendinaga Township on March 27, 2006. The proposed well installation locations along the western edge of County Road 10 were discussed with Mr. Farrell. Mr. Farrell indicated that there were no concerns regarding the proposed locations but that formal permission was required through a council resolution. This council resolution was obtained by XCG before commencing work on the County Road 10 road allowance.

Mr. Paul Martin owns the adjacent property to the east of the landfill. XCG met with Mr. Martin and obtained permission to collect groundwater samples from existing monitoring wells located along the western boundary of his property.

A site plan showing the sampling locations used in this investigation is included in Appendix A.

3.2 Shallow Groundwater Well Installation

Prior to commencement of any subsurface investigation activity, all public utility service locates were obtained by XCG. G.E.T. Drilling Ltd. (Napanee, Ontario) was contracted to install two shallow groundwater wells (MW01-06-S and MW02-06-S) within the road allowance of Beechwood Road on March 27, 2006.

Monitoring wells MW01-06-S and MW02-06-S were constructed in boreholes advanced using a hand-operated Pionjar fitted with split spoons. Soil sampling was performed at 0.61 metre intervals using a 0.60 metre long, 0.05 metre diameter split spoon sampler. Both MW01-06-S and MW02-06-S were advanced to a depth of 1.8 metres (to refusal) . Well installations were completed with standard 5 cm diameter monitoring wells, each consisting of flush threaded 0.9 metres of PVC slotted screen and PVC riser extending to an elevation approximately 1 metre above the ground surface. End caps were fitted on both ends of each monitoring well. Above grade locking well covers were installed to protect the wells from damage.

3.3 Intermediate Groundwater Monitoring Well Installation

Prior to commencement of any subsurface investigation and activity, all public utility service locates were obtained by XCG. George Downing Estate Drilling Ltd. (Calumet, Quebec) was contracted to install four monitoring wells (MW03-06-D, MW04-06-I, MW05-06-D, and MW05-06-I) within the road allowances of Beechwood Road and County Road 10 the week of March 27, 2006.

Each of the four monitoring wells were drilled into the limestone bedrock and the screens installed to capture groundwater from two levels within the intermediate bedrock aquifer.

The four intermediate aquifer monitoring wells were installed using a track mounted CME 75 drill rig equipped with rock coring equipment. The overburden material at each location was drilled using 0.2 metre (8 inch) diameter hollow stem auger. The augers were advanced until refusal on bedrock was achieved. To continue borehole advancement, HQ casing was advanced 0.3 m (1 foot) into the bedrock. Rock coring was then used to advance the borehole to the desired depth. Rock cores were collected using an HQ rock coring bit 1.5 metres (5 feet) in length. Immediately upon it being brought to the surface, each rock core was logged to determine the rock quality designation (RQD) for that section. The RQD is defined as the cumulative length of core pieces longer than 10 cm in a run divided by the total length of the core run. An RQD of <25% is considered to be very poor quality rock, while an RQD of 90-100% is considered to be excellent.

Rock drilling requires coring water to be supplied to the drill rig for bit cooling and lubrication. Coring water for all drilling activity was supplied by a water truck. The coring water used was municipal drinking water provided by the water truck operator. All coring water used as part of drilling operations was captured within the drilled overburden section of the monitoring well, and pumped to a stainless steel container truck located on-site. Scott’s Environmental emptied the container truck daily by use of a vacuum truck, and the waste coring water was returned to Scott’s treatment facility for disposal.

Well installations were completed with standard 5 cm diameter monitoring wells, each consisting of a flush threaded 3.0 metre length of PVC slotted screen and PVC riser extending to an elevation approximately 1 metre above the ground surface. End caps were fitted on both ends of each monitoring well. Sand pack was installed to a depth of 0.3 metres (1 foot) above the screened section, and a bentonite seal was installed from the top of the sand pack to the ground surface. Above grade locking well covers were installed to protect the wells from damage.

Additional individual details regarding the installation of each intermediate aquifer monitoring well are given below and shown in the borehole logs in Appendix B.

3.3.1 Deeper Intermediate Aquifer Well - MW03-06-D

Monitoring well MW03-06-D was drilled to a total depth of 20.1 metres (66 feet), with a 3 metre (10 foot) screened section installed from 20.1 metres (66 feet) to 17 metres (56 feet). The overburden extended to a depth of 4.5 metres (14 feet, 8 inches). Rock quality designations range from 54% to 100%, with the screened section having an RQD ranging from of 100% to 69%. The rock in this well has a measured RQD of 97% and 100% from 16.4 metres (54 feet) to 19.5 metres (64 feet), which indicates an area of excellent rock quality at that depth, with a 0.6 metre (2 feet) section having an RQD of 69% at the bottom of the well. The screened section of this well is installed in the deeper portion of the intermediate aquifer. The high RQDs in the zone above the screened section of this monitoring well indicate there is a degree of hydraulic separation between the upper and lower parts of this hydrogeologic unit at this location.

3.3.2 Intermediate Aquifer Well – MW04-06-I

Monitoring well MW04-06-I was drilled to a total depth of 16.4 metres (54 feet), with a 3 metre (10 foot) screened section installed from 16.4 metres (54 feet) to 13.4 metres (44 feet). The overburden extended to a depth of 4.4 metres (14 feet, 4 inches). Rock quality designations range from 51% to 95%, with the screened section having RQDs of 65% and 79%. The rock in this well has a measured RQD of 95% from 11.8 metres (39 feet) to 13.4 (44 feet), which indicates that there is likely a degree of hydraulic separation between the upper portion of the intermediate aquifer and the overburden/bedrock interface aquifer at this location.

3.3.3 Deeper Intermediate Aquifer Well – MW05-06-D

Monitoring well MW05-06-D was drilled to a total depth of 21.0 metres (69 feet), with a 4.5 metre (15 foot) screened section installed from 21.0 metres (69 feet) to 16.4 metres (54 feet). The overburden extended to a depth of 9.3 metres (30 feet 6 inchs). Rock quality designations range from 56% to 100%, with the screened section having RQDs of 81%, 85%, and 99%, respectively. The rock in this well has a measured RQD of 89% and 100% from 13.7 metres (45 feet) to 16.4 (54 feet), which indicates that there is a degree of hydraulic separation between the upper and lower parts of this hydrogeologic unit at this location

3.3.4 Intermediate Aquifer Well – MW05-06-I

Monitoring well MW05-06-I was drilled to a total depth of 13.4 metres (44 feet), with a 3 metre (10 foot) screened section installed from 13.4 metres (44 feet) to 10.3 metres (34 feet). The overburden extended to a depth of 9.3 metres (30 feet 6 inchs). Rock quality designations range from 31% to 67%, with the screened section having a RQD of 67% and 31%, respectively. Because this monitoring well extends less than 10 metres into bedrock it could potentially be classified as being representative of the overburden/bedrock interface unit (see Section 1). However, with a 9.1 m thickness of stiff silty clay overburden separating the bedrock layer at this location from the ground surface, it is expected that this monitoring well is more representative of the intermediate bedrock unit.

3.4 Groundwater Sampling

Groundwater samples were collected using two different sampling techniques. The first sampling technique was used to sample the shallow groundwater monitoring wells, and the second technique was used to sample the intermediate groundwater monitoring wells.

3.4.1 Shallow Groundwater Samples

After allowing the wells to equilibrate, groundwater levels were measured with a water level meter on April 18, 2006, prior to sampling. Dedicated inertial pumps consisting of Waterra tubing and foot valves were installed in the two monitoring wells. Both MW01-06-S and MW02-06-S were developed using the Waterra inertial pumps. All purge water was collected and stored in drums located onsite for future disposal by Scott's Environmental. Prior to sample collection a total of three well volumes was removed from each well, and this purge water was collected and stored in drums on-site. All groundwater samples were collected using XCG's standard field procedures, which include new dedicated sampling equipment and laboratory prepared bottles. XCG field staff use nitrile gloves during well installation, development, and sampling to limit to possibility of sample contamination. Collected samples are immediately sealed in laboratory bottles, labelled, and placed in a cooler with ice for preservation and delivered to Caduceon Laboratories for analysis at the end of the sampling day. One sample from each well was analyzed by Caduceon Laboratories for metals (Sb, Al, As, Ba, Be, B(HWS), Ca, Cd, Cr(total, VI), Co, Cu, Fe, Pb, Hg, K, Mg, Mo, Na, Ni, Se, Ag, Tl, V and Zn), hardness, BOD5, alkalinity, ammonia, anions (Cl, NO2, NO3, SO4), COD, DOC, TOC, pH, conductivity, phenolics water (4-AAP), TKN, benzene, toluene, ethylbenzene, and xylenes (BTEX), and volatile organic compounds (VOC). One sample from each well was analyzed by the University of Waterloo Environmental Isotope Lab for tritium.

Two existing shallow groundwater wells (MW3 and MW4) located on Mr. Paul Martin's property east of the landfill property were sampled. Dedicated inertial pumps consisting of Waterra tubing and foot valves were installed in MW3 and MW4. Both wells were developed using the same method described above for MW01-06-S and MW02-06-S, and the samples were collected in the same manner and analyzed for the same set of parameters.

3.4.2 Intermediate Groundwater Samples

Coring water was introduced into the formations surrounding these monitoring wells during the rock drilling activities. Coring water had to be removed from the formation around each well to provide for representative sampling of formation groundwater. Dedicated 12V centrifugal high lift pumps with Waterra tubing were installed in each of the four intermediate aquifer wells (MW03-06-D, MW04-06-I, MW05-06-D, and MW05-06-I). Three of the four wells (MW03-06-D, MW04-06-I, and MW05-06-I) were pumped dry each weekday beginning March 31, 2006, to April 18, 2006, which was the sampling date. All purge water was stored in drums on-site for later disposal by Scott's Environmental. Over this time period approximately 400 litres of purge water was removed from each of the three wells, which amounts to approximately 7, 11, and 11 well volumes from MW03-06-D, MW04-06-I, and MW05-06-I, respectively. MW05-06-D was pumped dry on March 31, 2006. The well recovered slowly not providing enough water to further purge the well until April 18, 2006, at which time a sample was collected for analysis. All groundwater samples were collected using XCG's standard field procedures, as perviously described with respect to the shallow monitoring wells. The samples were analyzed for the same set of parameters listed above in Section 3.4.1.

3.5 Quality Assurance and Quality Control

As part of XCG's field program, one (1) QA/QC blind groundwater duplicate was collected and analyzed. A blind duplicate is a duplicate sample that is sent to the laboratory for analysis but is not labelled as a duplicate.

One (1) blind duplicate, labelled MW03-06-D2, of groundwater sample MW03-06-D1 was collected and submitted to Caduceon and the University of Waterloo Environmental Isotope Lab for laboratory analysis of the same set of parameters listed in Section 3.4.1.

Standard sample handling protocols were followed, including the use of dedicated sampling equipment, gloves, and sample preservation.

4. GROUNDWATER QUALITY OBSERVATIONS

During well development and sample collection for monitoring wells MW01-06-S, MW02-06-S, MW3 and MW4, each well exhibited a high level of fines in the purge water. No visual or olfactory indications of contamination were evident during the development and sampling of these four wells.

Monitoring wells MW03-06-D, MW04-06-I, MW05-06-D, and MW05-06-I all exhibited clear running purge water. No visual or olfactory indications of contamination were evident during the development and sampling of these four wells.

5. ANALYTICAL RESULTS

Groundwater quality in each of the wells was assessed based on analytical results from one set of samples collected on April 18, 2006, and May 10, 2006. In order to compare the data collected by XCG against background groundwater quality in the area, to identify possible leachate impacts, XCG calculated mean background concentrations of 22 different water quality parameters that are used by WM at this site, and commonly used at other landfill sites, as leachate indicators. These are listed in Table 5-1, and include 19 parameters from the Leachate Indicator List shown on page 6 of WM's 2004 Annual Monitoring Report, and three additional parameters: boron, dissolved organic carbon (DOC), and tritium. Four of the 22 parameters are among the eight parameters identified by WM for evaluation of compliance with Reasonable Use criteria at the property boundary: alkalinity, iron, boron, and DOC.[1] One parameter—tritium—was included because it was identified in isotopic studies conducted by WM between 1998 and 2000 as a potentially useful leachate indicator parameter.[2]

To calculate the mean values of the 22 selected parameters, XCG entered all analytical results from WM's annual groundwater quality reports into a spreadsheet. Overburden/bedrock interface average background concentrations were calculated using all historic WM data from the following wells inferred to be upgradient of the waste mound based on past readings of potentiometric surface elevations: M10-3, M12, M14, M28, M49-2, and M58-3. Intermediate unit average background concentrations were calculated using all historic WM data from the following wells inferred to be upgradient of the waste mound based on past readings of potentiometric surface elevations: M3A-1, M5-2, M48-2, M48-3, OW56-d, OW56-i, OW55-d, and OW55-i. The method of choosing these monitoring wells as background wells was based on the quantity of data available and the locations and depths of the wells. Details regarding this are provided in XCG's report entitled "Statistical Analysis of Historic Monitoring Data at the Richmond Landfill, Napanee, Ontario," May 24, 2006.

The mean values calculated, using the above method, for the 22 water quality parameters are shown in Table 5-1.

Table 5-1 illustrates the comparison between the results of XCG's sampling of overburden/bedrock interface and intermediate bedrock groundwater, and average background groundwater quality.

Copies of analytical certificates of analysis are included in Appendix C.

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[1] "Detailed Background Report to Discussion Paper #5, Final, Part A, Hydrogeology Baseline Conditions," Waste Management of Canada Corporation, September 2005, page 40.

[2] Ibid., p. 23.

Table 5-1 – Summary of Groundwater Quality Results for Selected Parameters

Overburden/Bedrock Interface Groundwater Wells

Waste Management - Average of background concentration	**Alkalinity**	**Aluminum**	**Ammonia**	**BOD**	**Calcium**	**COD**	**Chloride**	**Conductivity**	**DOC**	**Hardness**	**Iron**	**Magnesium**	**Nitrate**	**pH**	**Potassium**	**Silver**	**Sodium**	**Sulphate**	**TKN**	**TOC**	**Boron**	**Tritium**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	umho/cm	ppm	ppm	ppm	ppm	ppm	pH units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	TU
	304	0.11	0.25	2.58	69.3	6.72	50.3	802	1.50	278	0.24	30.3	1.45	7.88	5.20	0.001	67.6	55.0	0.54	2.33	0.18	9.5
Well ID's																						
MW01-06-S	226	0.04	0.18	**22**	**83.1**	**3080**	5	416	-	260	0.018	12.8	0.1	7.09	0.8	<0.005	8	30	**80**	**549**	0.015	**17**
MW02-06-S	266	<0.01	0.15	**7**	**158**	**462**	**160**	**1110**	**3.7**	**469**	<0.005	18.2	<0.5	7.15	0.7	<0.005	**87**	**98**	**20**	**1900**	0.008	**16**
MW3 (Paul Martin)	**424**	<0.01	<0.05	**4**	**153**	**16**	5	**909**	**7**	**534**	0.01	**36.8**	0.4	6.99	1.8	<0.005	7.7	**105**	0.5	**12.7**	0.006	**11.59**
MW4 (Paul Martin)	**400**	<0.01	0.1	**8**	**142**	**42**	4	771	**4**	**470**	<0.005	27.8	<0.1	6.87	1.6	<0.005	5.5	36	**1.1**	**33.5**	0.01	1.13

Intermediate Bedrock Groundwater Wells

Waste Management - Average of background concentration	**Alkalinity**	**Aluminum**	**Ammonia**	**BOD**	**Calcium**	**COD**	**Chloride**	**Conductivity**	**DOC**	**Hardness**	**Iron**	**Magnesium**	**Nitrate**	**pH**	**Potassium**	**Silver**	**Sodium**	**Sulphate**	**TKN**	**TOC**	**Boron**	**Tritium**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	umho/cm	ppm	ppm	ppm	ppm	ppm	pH units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	TU
	340	0.028	2.62	7.77	135	35.2	1300	4375	1.31	777	0.71	104	0.093	7.79	26.2	0.004	646	90.4	3.59	4.62	0.99	17
Well ID's																						
MW03-06-D1 (Duplicates)	**444**	<0.01	0.98	2	73.2	10	130	1170	**3.9**	330	0.167	35.8	<0.5	7.13	6.2	<0.005	82.9	30	1.6	**9.2**	0.135	**48**
MW03-06-D2 (Dupilcates)	**460**	0.01	1.07	2	97.7	10	130	1190	**4.2**	445	0.374	48.8	<0.5	7.17	10.4	<0.005	85.5	20	1.6	**5**	0.517	**54**
MW05-06-D	250	**0.55**	0.4	4	86.7	**54**	68	799	**119.7**	252	**2.36**	8.51	<0.1	7.87	**31.1**	<0.005	102	76	**300**	**127**	0.527	14
MW04-06-I	**428**	0.02	1.32	<2	85.4	18	130	1180	**1.6**	391	**0.787**	43.2	<0.5	7.15	13	<0.005	123	40	**6**	**9**	0.908	9
MW05-06-I	90	0.01	0.13	<2	13.9	9	4	236	0.9	69	0.015	8.29	<0.1	7.99	2.4	<0.005	54.1	27	0.3	1.6	0.214	<6
Coring Water Analysis	92	**1.07**	<0.05	<2	28.9	<5	21	298	**1.6**	100	0.039	6.89	**0.3**	7.7	1.3	<0.005	10.3	26	0.2	1.7	0.017	**39**

Notes:

Background tritium data were obtained from "Detailed Background Report to Discussion Paper #5, Final Part A, Hydrogeology Baseline Conditions, Richmond Landfill Expansion Environmental Assessment" prepared for Waste Management.

Bold values exceed the average background concentrations (except pH values higher than the average were not bolded due to the nature of the pH parameter).

5.1 Water Chemistry Overburden/Bedrock Interface Wells

As shown in Table 5-1, XCG's findings in the overburden/bedrock interface groundwater samples showed a number of parameters that were greater than the calculated background averages of these parameters in groundwater. Parameters identified in one or more of the off-site monitoring wells at concentrations greater than two or more times background averages included BOD, calcium, COD, chloride, DOC, TKN, and TOC. It is noted, however, that because similarly elevated concentrations of other leachate indicators were not found in the groundwater samples, and because all of these parameters may arise from other contaminant sources (such as naturally occurring organic material, septic systems, animal waste, agricultural fertilizers, road salt, and naturally occurring poor groundwater quality), there is no clear evidence that a leachate impact has occurred in any of the overburden/bedrock interface wells sampled by XCG in this study.

The analysis of BTEX and VOCs in samples from overburden/bedrock interface monitoring wells found all parameters to be non-detectable, with the exception of 1,3,5-trimethylbenzene, which was reported at 1.0 ppb in MW01-06-S. This is a trace level and is not indicative of a significant VOC impact at this location.

5.2 Water Chemistry Intermediate Bedrock Wells

As shown in Table 5-1, XCG's findings in the intermediate bedrock groundwater samples again showed a number of parameters that were greater than the calculated background averages of these parameters in groundwater. Parameters identified in one or more of the off-site monitoring wells at concentrations greater than two or more times background averages included aluminum, DOC, iron, nitrate, TKN, TOC, and tritium. With the exception of the duplicate samples from monitoring well MW03-06-D, because similarly elevated concentrations of other leachate indicators were not found in the groundwater samples, and because all of these parameters may arise from other contaminant sources (see list in Section 5.1) there is no clear evidence that a leachate impact has occurred in the intermediate bedrock aquifer at the locations of MW05-06-D, MW04-06-I, and MW05-06-I. With respect to the findings of elevated tritium levels in MW03-06-D, however, there are no known sources of tritium in the area other than leachate, so further examination of the results from this monitoring well are warranted, and a discussion of this is presented below in Section 5.2.1.

The analysis of BTEX and VOCs in samples from intermediate bedrock monitoring wells found all parameters to be non-detectable, with the exception of toluene, which was reported at 4.1 and 3.6 ppb in MW03-06-D. Toluene is used by WM as one of the key leachate indicators, so its presence could potentially be associated with leachate. However, it is noted that these toluene levels are relatively low, and there are other potential sources of toluene in the area.

5.2.1 Interpretation of Tritium Results

As shown in Table 5-1, the tritium levels measured in the two samples from monitoring well MW03-06-D were 48 and 54 TU, which are levels approximately three times the average level of tritium in the background intermediate bedrock groundwater, which was found to be 17 TU.

In a report by XCG dated January 30, 2004, entitled “Findings of Groundwater Quality Investigation in the Vicinity of the Richmond Landfill Site, Near Napanee, Ontario”, a study was documented in which tritium analyses were conducted on groundwater samples collected from wells on 12 private properties near the Richmond Landfill. The tritium analyses were conducted by the Isotope Laboratory of the University of Waterloo. In a sample from one bedrock well, located at 1141 Beechwood Road (about 700 m southeast of the waste mound), a tritium activity of 83 TU was measured. This private drilled well is located in the same general vinicity, southeast of the waste mound, as MW03-06-D.

In light of the above findings of elevated tritium in two different off-site wells, XCG conducted a statistical analysis of historic WM tritium data in order to determine what tritium level would be considered representative of a probable leachate impact, in order to effectively evaluate off-site tritium findings. This analysis was presented in XCG’s report entitled “Statistical Analysis of Historic Monitoring Data at the Richmond Landfill, Napanee, Ontario,” May 24, 2006.

The above study documented statistical analyses of tritium data that were carried out in a number of different ways. Using a conservative approach (i.e., an approach that would tend to provide an over-estimate) a value for 40 TU was derived as being representative of the threshold tritium level at which a probable leachate impact exists, based on typical background tritium concentrations in the area. Any value greater than this level would be considered to be an “outlier” with respect to typical background tritium levels. A value of 64 TU was derived as being the threshold at which the existence of a leachate impact is highly probable. Any value greater than this level would be considered to be a “far outlier”.

Based on the above, the tritium levels of 48 TU and 54 TU observed in MW03-06-D are representative of a probable leachate impact. The level of 83 TU found in the well at 1141 Beechwood Road is representative of a highly probable leachate impact.

It is noted that the coring water used for drilling monitoring wells MW05-06-D and MW05-06-I had a measured tritium value of 39 TU, which is well above the background average in the groundwater in the area. Thus, the coring water had the potential to bias the tritium results. However, as indicated in Seciton 3.3, all coring water used during drilling activities was removed and hauled offsite for disposal. The water recovery method used confined all coring water to the drilled well, and as a result there was no potential for coring water to flow onto the ground around the well and infiltrate into the ground. Furthermore, the monitoring wells were sufficiently purged to ensure that any coring water remaining in the formation was removed prior to any groundwater samples being collected. The tritium results for MW04-06-I and MW05-06-I were 9 and <6 TU, respectively, which indicates that any coring water in the formation around these monitoring wells had been sufficiently removed prior to sampling. Since MW03-06-D was purged using the same method, it is very unlikely that the tritium concentration in the coring water significantly affected the analytical findings at this location.

As shown in Table 5.1, many other leachate indicators were present in the groundwater samples collected from MW03-06-D, but the concentrations of these indicators were variable and generally not distinguishable from background. This can be explained by dilution effects. Given that tritium activities in the leachate have been found by WM to range from 3985 TU to 8000 TU, an increase in tritium concentration over background in the order of about 35 TU would represent an impact by leachate that has been diluted in the order of 1:100 to 1:200 by background groundwater. At this dilution level, leachate indicators other than tritium tend to become lost in the background. Although it may be argued that off-site leachate impacts that have been diluted to the above degree are only slight impacts, the fact that evidence of off-site leachate impacts has been identified based on a small number of off-site sampling points is a concern in itself, and warrants a much more extensive off-site investigation to determine whether more severe off-site impacts exist.

6. DISCUSSION OF QA/QC PROGRAM

As part of XCG's field program, one (1) QA/QC blind groundwater duplicate was collected and analyzed. A blind duplicate is a duplicate sample that is sent to the laboratory for analysis but is not labelled as a duplicate.

One (1) blind duplicate MW03-06-D2 of groundwater sample MW03-06-D1 was collected and submitted for analyses of the parameters listed in Section 3.4.1.

In general, the results of the analysis of the blind duplicate groundwater samples submitted showed some minor variances in the reported parameter concentrations with many of the parameters equal. Overall the groundwater sample results are considered to be representative and reproducible.

7. LIMITATIONS AND CONCLUSIONS

7.1 Limitations

The conclusions presented in this report are professional opinions based upon findings and observations of sampling locations selected for subsurface investigation based on a review of historical findings related to the Richmond Landfill site. Conditions between and beyond these locations, which could not be detected or anticipated at the time of this report, may become apparent during future investigations or on-site work. As such XCG cannot be held responsible for environmental conditions at the site that were not apparent from the available information.

The scope of this report is limited to the matters expressly covered. This report was prepared for the sole benefit of The Mohawks of the Bay of Quinte, and may not be relied upon by any other person or entity without the written authorization of The Mohawks of the Bay of Quinte. Any use or reuse of this document (or the findings, conclusions, or recommendations represented herein), by parties other than The Mohawks of the Bay of Quinte is at the sole risk of those parties.

7.2 Conclusions

The following are the key findings of the groundwater investigation in the vicinity of the Richmond Landfill:

1. Tritium concentrations measured in the two samples from intermediate bedrock monitoring well MW03-06-D, located southeast of the waste mound, were 48 and 54 TU. These levels are approximately three times the average level of tritium in the background intermediate bedrock groundwater, which was found to be 17 TU based on historical findings at the Richmond Landfill site.
2. In a report by XCG dated January 30, 2004, entitled "Findings of Groundwater Quality Investigation in the Vicinity of the Richmond Landfill Site, Near Napanee, Ontario", a study was documented in which tritium analyses were conducted on groundwater samples collected from wells on 12 private properties near the Richmond Landfill. In a sample from one bedrock well, located at 1141 Beechwood Road (about 700 m southeast of the waste mound), a tritium activity of 83 TU was measured. This private drilled well is located in the same general vinicity, southeast of the waste mound, as MW03-06-D.
3. In light of the above findings of elevated tritium in two different off-site wells, XCG conducted a statistical analysis of historic WM tritium data in order to determine what tritium level would be considered representative of a probable leachate impact, in order to effectively evaluate off-site tritium findings. This analysis was presented in XCG's report entitled "Statistical Analysis of Historic Monitoring Data at the Richmond Landfill, Napanee, Ontario," May 24, 2006.
4. The above study documented statistical analyses of tritium data that were carried out in a number of different ways. Using a conservative approach (i.e., an approach that would tend to provide an over-estimate) a value for 40 TU was derived as being representative of the threshold tritium level at which a probable leachate impact exists, based on typical background tritium concentrations in the area. Any value greater than this level would be considered to be an "outlier" with respect to typical background tritium levels. A value of 64

TU was derived as being the threshold at which the existence of a leachate impact is highly probable. Any value greater than this level would be considered to be a “far outlier”.

5. Based on the above, the tritium levels of 48 TU and 54 TU observed in MW03-06-D are representative of a probable leachate impact. The level of 83 TU found in the well at 1141 Beechwood Road is representative of a highly probable leachate impact.
6. Many other leachate indicators were present in the groundwater samples collected from MW03-06-D, but the concentrations of these indicators were variable and generally not distinguishable from background. This can be explained by dilution effects. Given that tritium activities in the leachate have been found by WM to range from 3985 TU to 8000 TU, an increase in tritium concentration over background in the order of about 35 TU would represent an impact by leachate that has been diluted in the order of 1:100 to 1:200 by background groundwater. At this dilution level, leachate indicators other than tritium tend to become lost in the background. Although it may be argued that off-site leachate impacts that have been diluted to the above degree are only slight impacts, the fact that evidence of off-site leachate impacts has been identified based on a small number of off-site sampling points is a concern in itself, and warrants a much more extensive off-site investigation to determine whether more severe off-site impacts exist.

8. REFERENCES

“*2004 Annual Monitoring Report, Waste Management of Canada Corporation Richmond Landfill, Town of Greater Napanee, Ontario*”, Water and Earth Science Associates Ltd., C-B2964-4-V.2, March 2005.

“*2003 Annual Monitoring Report, Waste Management of Canada Corporation Richmond Landfill, Town of Greater Napanee, Ontario*”, Water and Earth Science Associates Ltd., C-B2524-4, March 2004.

“Detailed Background Report to Discussion paper #5, Final, Part B – Appendices, Hydrogeology Baseline Conditions, Richmond Landfill Expansion Environmental Assessment”, Waste Management of Canada Corporation, September 2005.

“Detailed Background Report to Discussion Paper #5, Final, Part A, Hydrogeology Baseline Conditions, Richmond Landfill Expansion Environmental Assessment” Waste Management of Canada Corporation, September 2005.

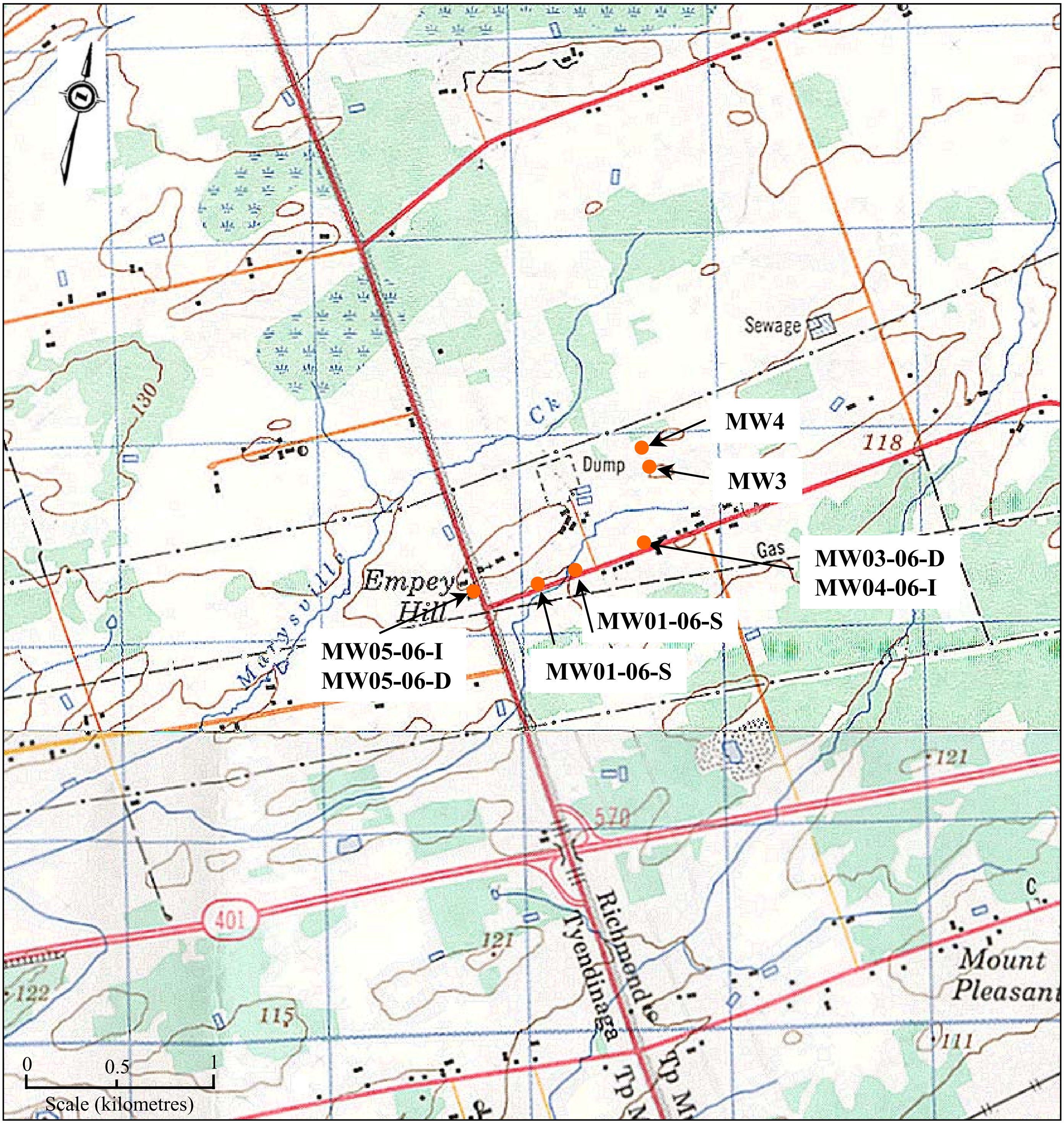
“Statistical Analysis of Historic Monitoring Data at the Richmond Landfill, Napanee, Ontario,” XCG Consultants Ltd., May 24, 2006.

“Findings of Groundwater Quality Investigation in the Vicinity of the Richmond Landfill Site, Near Napanee, Ontario”, XCG Consultants Ltd., January 30, 2004.

APPENDIX A

SITE PLAN

FIGURE 1 – SITE PLAN



Property locations are approximate.

APPENDIX B

BOREHOLE LOGS

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW01-06-S

Driller: G.E.T. Drilling Ltd.

Drill Method: Piunjar

Sample Method: Split Spoon

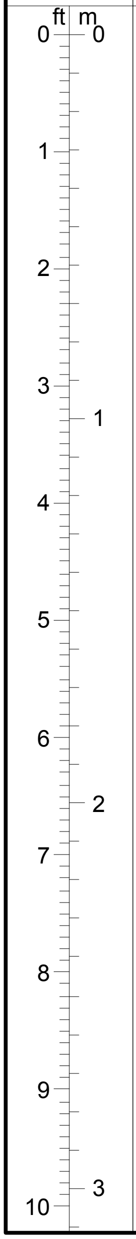
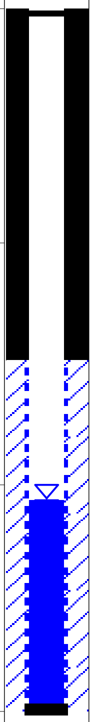
Borehole Diameter: 7.5

Start Date: March 27, 2006

Completed: March 27, 2006

Checked By: KBS

Logged By: DAW

Depth	Sample No.	N-Value	Sample Type	Sample Name	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
						Ground Surface	0		
						Overburden Light brown stiff silty clay	-0.61		
						Native Material Light brown stiff silty clay	-1.24		
						Native Material Light brown stiff silty clay Moist at 1.0 metres Refusal @ 1.8m	-1.83		

Groundwater Elevation: 90.48 metres

T.O.P Elevation: 92.81 metres

Ground Surface Elevation: 91.76 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

Sheet: 1 of 2

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW02-06-S

Driller: G.E.T. Drilling Ltd.

Drill Method: Piunjar

Sample Method: Split Spoon

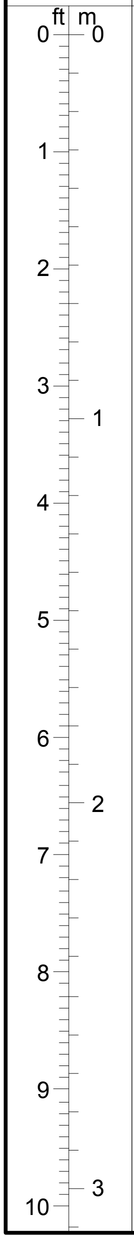
Borehole Diameter: 7.5

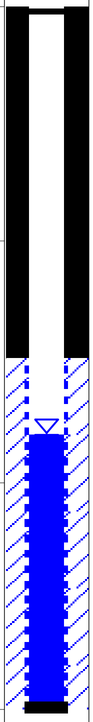
Start Date: March 27, 2006

Completed: March 27, 2006

Checked By: KBS

Logged By: DAW



Depth	Sample No.	N-Value	Sample Type	Sample Name	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
						Ground Surface	0		
						Overburden Light brown stiff silty clay	-0.61		
						Native Material Light brown stiff silty clay	-1.24		
						Native Material Light brown stiff silty clay Moist at 1.0 metres Refusal @ 1.8m	-1.83		

Groundwater Elevation: 91.94 metres

T.O.P Elevation: 93.81 metres

Ground Surface Elevation: 93.06 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

Sheet: 1 of 2

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW03-06-D

Driller: George Downing Estate Drilling

Drill Method: Track Mount CME 75

Sample Method: Rock Coring

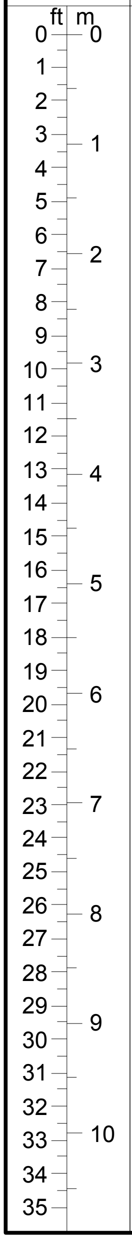
Borehole Diameter: 20 cm

Start Date: March 27, 2006

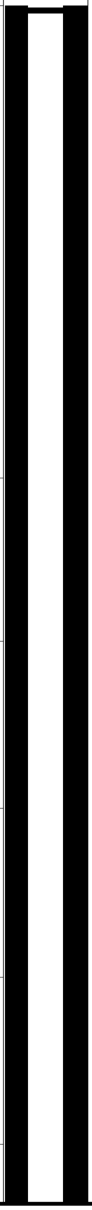
Completed: March 28, 2006

Checked By: KBS

Logged By: DAW



Depth	Sample No.	N-Value	Recovery (%)	Gastech Reading	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
						Ground Surface	0		
						Overburden Light brown stiff silty clay	-4.3		
						Bedrock Limestone RQD of 54%	-5.8		
						Bedrock Limestone RQD of 71%	-7.3		
						Bedrock Limestone RQD of 76%	-8.8		
						Bedrock Limestone RQD of 86%	-10		



Groundwater Elevation: 86.15 metres

T.O.P Elevation: 100 metres

Ground Surface Elevation: 99.24 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW03-06-D

Driller: George Downing Estate Drilling

Drill Method: Track Mounted CME 75

Sample Method: Rock Coring

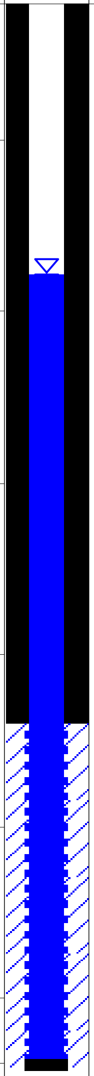
Borehole Diameter: 20 cm

Start Date: March 27, 2006

Completed: March 28, 2006

Checked By: KBS

Logged By: DAW

Depth	Sample No.	N-Value	Recovery (%)	Gastech Reading	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
36 11 37 38						***Bedrock*** Limestone RQD of 85%	-12		
39 12 40 41 42 13 43						***Bedrock*** Limestone RQD of 100%	-13		
44 45 14 46 47 48						***Bedrock*** Limestone RQD of 58%	-15		
49 15 50 51 52 16 53						***Bedrock*** Limestone RQD of 85%	-16		
54 55 17 56 57 58						***Bedrock*** Limestone RQD of 97%	-18		
59 18 60 61 62 19 63						***Bedrock*** Limestone RQD of 100%	-20		
64 65 20						***Bedrock*** Limestone RQD of 69%	-20		
66 67 68 21 69 70						End of Borehole			

Groundwater Elevation: 86.15 metres

T.O.P Elevation: 100 metres

Ground Surface Elevation: 99.24 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

XCG

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW04-06-I

Driller: George Downing Estate Drilling

Drill Method: Track Mount CME 75

Sample Method: Rock Coring

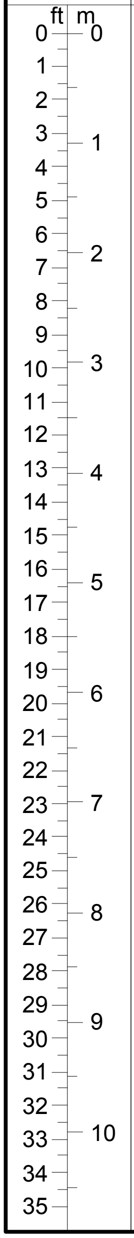
Borehole Diameter: 20 cm

Start Date: March 28, 2006

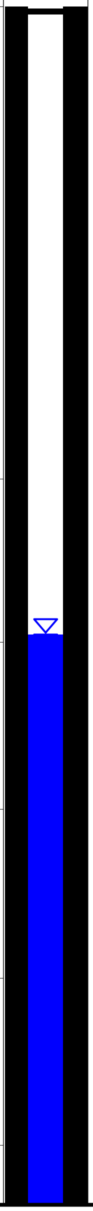
Completed: March 29, 2006

Checked By: KBS

Logged By: DAW



Depth	Sample No.	N-Value	Recovery (%)	Gastech Reading	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
						Ground Surface	0		
						Overburden Light brown stiff silty clay	-4.3		
						Bedrock Limestone RQD of 51%	-5.8		
						Bedrock Limestone RQD of 63%	-7.3		
						Bedrock Limestone RQD of 55%	-8.8		
						Bedrock Limestone RQD of 86%	-10		



Groundwater Elevation: 93.40 metres

T.O.P Elevation: 99.62 metres

Ground Surface Elevation: 99.12 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW04-06-I

Driller: George Downing Estate Drilling

Drill Method: Track Mounted CME 75

Sample Method: Rock Coring

Borehole Diameter: 20 cm

Start Date: March 28, 2006

Completed: March 29, 2006

Checked By: KBS

Logged By: DAW

Depth	Sample No.	N-Value	Recovery (%)	Gastech Reading	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
						Bedrock Limestone RQD of 86%	-12		
						Bedrock Limestone RQD of 95%	-13		
						Bedrock Limestone RQD of 65%	-15		
						Bedrock Limestone RQD of 79%	-16		
						End of Borehole			

36 — 11
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39 — 12
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43 — 13
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46 — 14
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49 — 15
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52 — 16
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56 — 17
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59 — 18
60
61
62 — 19
63
64
65 — 20
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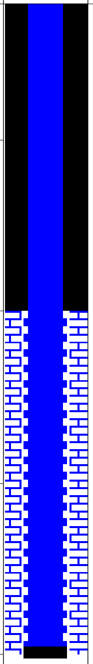
67
68
69 — 21
70



Groundwater Elevation: 93.40 metres

T.O.P Elevation: 99.62 metres

Ground Surface Elevation: 99.12 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

Sheet: 2 of 2

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW05-06-I

Driller: George Downing Estate Drilling

Drill Method: Track Mount CME 75

Sample Method: Rock Coring

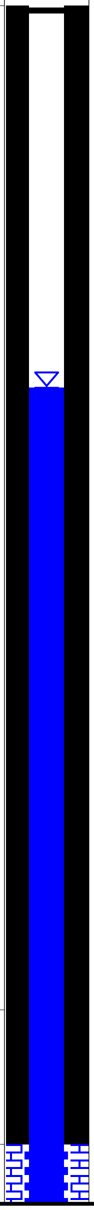
Borehole Diameter: 20 cm

Start Date: March 30, 2006

Completed: March 30, 2006

Checked By: KBS

Logged By: DAW

Depth	Sample No.	N-Value	Recovery (%)	Gastech Reading	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
ft m 0 0						Ground Surface	0		
1 2 3 1 4 5 6 2 7 8 9 10 3 11 12 13 4 14 15 16 5 17 18 19 20 6 21 22 23 7 24 25 26 8 27 28 29 30 9						***Overburden*** Light brown stiff silty clay	-9.3		
31 32 33 10 34						***Bedrock*** Limestone RQD of 47%	-10		
35									

Groundwater Elevation: 94.37 metres

T.O.P Elevation: 98.62 metres

Ground Surface Elevation: 97.85 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

Sheet: 1 of 2

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW05-06-I

Driller: George Downing Estate Drilling

Drill Method: Track Mounted CME75

Sample Method: Rock Coring

Borehole Diameter: 20 cm

Start Date: March 30, 2006

Completed: March 30, 2006

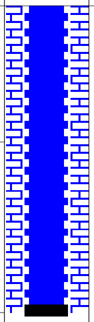
Checked By: KBS

Logged By: DAW

Depth	Sample No.	N-Value	Recovery (%)	Gastech Reading	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
						Bedrock Limestone RQD of 67%	-12		
						Bedrock Limestone RQD of 31%	-13		
						End of Borehole			

36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70

11 12 13 14 15 16 17 18 19 20 21



Groundwater Elevation: 94.37 metres

T.O.P Elevation: 98.62 metres

Ground Surface Elevation: 97.85 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

Sheet: 2 of 2

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW05-06-D

Driller: George Downing Estate Drilling

Drill Method: Track Mount CME 75

Sample Method: Rock Coring

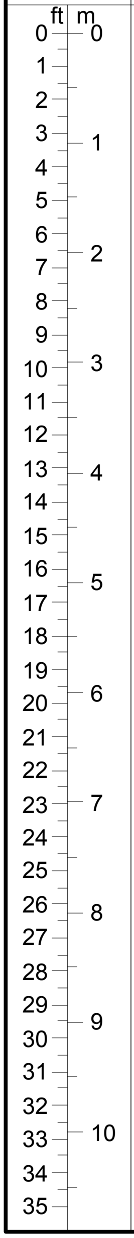
Borehole Diameter: 20 cm

Start Date: March 27, 2006

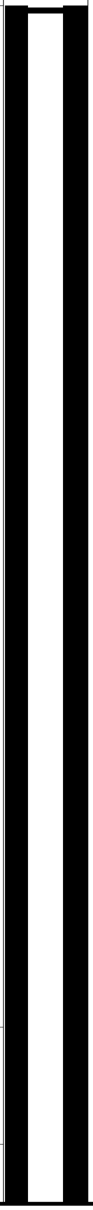
Completed: March 28, 2006

Checked By: KBS

Logged By: DAW



Sample No.	N-Value	Recovery (%)	Gastech Reading	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
					Ground Surface	0		
					Overburden Light brown stiff silty clay	-9.3		
					Bedrock Limestone RQD of 56%	-10		



Groundwater Elevation: 79.38 metres

T.O.P Elevation: 98.63 metres

Ground Surface Elevation: 97.85 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

Sheet: 1 of 2

Project No: 1-664-38-04

Project: Ground Water Sampling

Client: Mohawks of the Bay of Quinte

Location: Beechwood Rd & County Rd 10

Log of Well MW05-06-D

Driller: George Downing Estate Drilling

Drill Method: Track Mount CME 75

Sample Method: Rock Coring

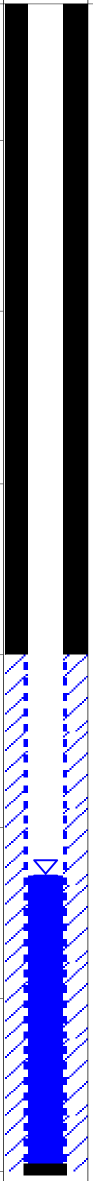
Borehole Diameter: 20 cm

Start Date: March 27, 2006

Completed: March 28, 2006

Checked By: KBS

Logged By: DAW

Depth	Sample No.	N-Value	Recovery (%)	Gastech Reading	Graphic Log	Geology Description	Depth/Elev (m)	Well Completion	Well Details
36 — 11 37 38						***Bedrock*** Limestone RQD of 76%	-12		
39 — 12 40 41 42 43 — 13						***Bedrock*** Limestone RQD of 65%	-13		
44 45 46 — 14 47 48						***Bedrock*** Limestone RQD of 89%	-15		
49 — 15 50 51 52 53 — 16						***Bedrock*** Limestone RQD of 100%	-16		
54 55 56 — 17 57 58						***Bedrock*** Limestone RQD of 81%	-18		
59 — 18 60 61 62 — 19 63						***Bedrock*** Limestone RQD of 85%	-20		
64 65 66 — 20 67 68						***Bedrock*** Limestone RQD of 99%	-21		
69 — 21 70						End of Borehole			

Groundwater Elevation: 79.38 metres

T.O.P Elevation: 98.63 metres

Ground Surface Elevation: 97.85 metres

Monitoring Well Log

Arbitrary 100m Benchmark Set MW03-06-D

APPENDIX C

LAB CERTIFICATES

CADUCEON™
ENVIRONMENTAL LABORATORIES

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 19817 **REPORT No. B06-10754 (i)**

Report To:
XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Cameron Pritchett

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW01-06-S	MW02-06-S	MW03-06-D1	MW04-06-I
			Sample I.D.:		B06-10754-1	B06-10754-2	B06-10754-3	B06-10754-4
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	18-Apr-06
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Alkalinity (as CaCO3)	mg/L	3	SM 2320	20-Apr-06	226	266	444	428
Carbonate (as CaCO3)	mg/L	3	SM 2320	20-Apr-06	< 3	< 3	< 3	< 3
Bicarbonate(as CaCO3)	mg/L	3	SM 2320	20-Apr-06	226	266	444	428
Conductivity	µmho/cm	1	SM2513	20-Apr-06	416	1110	1170	1180
pH	pH Units		SM4300H+	20-Apr-06	7.09	7.15	7.13	7.15
Chloride	mg/L	1	SM4110	20-Apr-06	5	160	130	130
Nitrite (N)	mg/L	0.1	SM4110	20-Apr-06	< 0.1	< 0.5	< 0.5	< 0.5
Nitrate (N)	mg/L	0.1	SM4110	20-Apr-06	0.1	< 0.5	< 0.5	< 0.5
Sulphate	mg/L	1	SM4110	20-Apr-06	30	98	30	40
BOD(5 day)	mg/L	2	SM 5210B	19-Apr-06	22	7	2	< 2
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	21-Apr-06	80	20	1.6	6
Ammonia (N)-Total	mg/L	0.05	EPA 350.2	19-Apr-06	0.18	0.15	0.98	1.32
Dissolved Organic Carbon	mg/L	0.5	EPA 415.1	21-Apr-06	--	3.7	3.9	1.6
Total Organic Carbon	mg/L	0.5	EPA 415.1	21-Apr-06	549	1900	9.2	9.0
Phenol	mg/L	0.001	EPA 420.2	20-Apr-06	< 0.001	< 0.001	< 0.001	< 0.001
COD	mg/L	5	HACH 8000	20-Apr-06	3080	462	10	18
Hardness (as CaCO3)	mg/L	1	SM 3120	20-Apr-06	260	469	330	391
Aluminum	mg/L	0.01	SM 3120	20-Apr-06	0.04	< 0.01	< 0.01	0.02
Antimony	mg/L	0.001	SM 3114	20-Apr-06	< 0.001	< 0.001	< 0.001	< 0.001
Arsenic	mg/L	0.001	SM 3114	20-Apr-06	< 0.001	< 0.001	< 0.001	< 0.001
Barium	mg/L	0.001	SM 3120	20-Apr-06	0.050	0.062	0.048	0.090
Beryllium	mg/L	0.002	SM 3120	20-Apr-06	< 0.002	< 0.002	< 0.002	< 0.002
Boron	mg/L	0.005	SM 3120	20-Apr-06	0.015	0.008	0.135	0.908
Cadmium	mg/L	0.0001	EPA 200.8	20-Apr-06	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Elevated MDLs are due to dilution

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 19817 **REPORT No. B06-10754 (i)**

Report To:

XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Cameron Pritchett

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW01-06-S	MW02-06-S	MW03-06-D1	MW04-06-I
			Sample I.D.:		B06-10754-1	B06-10754-2	B06-10754-3	B06-10754-4
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	18-Apr-06
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Calcium	mg/L	0.02	SM 3120	20-Apr-06	83.1	158	73.2	85.4
Chromium	mg/L	0.002	SM 3120	20-Apr-06	< 0.002	< 0.002	< 0.002	< 0.002
Chromium (VI)	mg/L	0.01	EPA7196	20-Apr-06	< 0.01 [3]	< 0.01 [3]	< 0.01 [3]	< 0.01 [3]
Cobalt	mg/L	0.005	SM 3120	20-Apr-06	< 0.005	< 0.005	< 0.005	< 0.005
Copper	mg/L	0.002	SM 3120	20-Apr-06	< 0.002	< 0.002	< 0.002	< 0.002
Iron	mg/L	0.005	SM 3120	20-Apr-06	0.018	< 0.005	0.167	0.787
Lead	mg/L	0.0005	EPA 200.8	20-Apr-06	0.0008	< 0.0005	< 0.0005	< 0.0005
Magnesium	mg/L	0.01	SM 3120	20-Apr-06	12.8	18.2	35.8	43.2
Mercury	mg/L	0.00006	SM 3112	20-Apr-06	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Molybdenum	mg/L	0.01	SM 3120	20-Apr-06	0.02	< 0.01	0.01	< 0.01
Nickel	mg/L	0.01	SM 3120	20-Apr-06	< 0.01	< 0.01	< 0.01	< 0.01
Potassium	mg/L	0.1	SM 3120	20-Apr-06	0.8	0.7	6.2	13.0
Selenium	mg/L	0.001	SM 3114	20-Apr-06	0.002	0.001	0.002	0.001
Silver	mg/L	0.005	SM 3120	20-Apr-06	< 0.005	< 0.005	< 0.005	< 0.005
Sodium	mg/L	0.2	SM 3120	20-Apr-06	8.0	87.0	82.9	123
Thallium	mg/L	0.0002	EPA 200.8	20-Apr-06	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vanadium	mg/L	0.005	SM 3120	20-Apr-06	< 0.005	< 0.005	< 0.005	< 0.005
Zinc	mg/L	0.005	SM 3120	20-Apr-06	0.019	0.035	< 0.005	0.006

1 Chromium (VI) result is based on total chromium

Elevated MDLs are due to dilution

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CERTIFICATE OF ANALYSIS

Final Report

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Report To:

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33 Earl St.
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285 Dalton Ave
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Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW05-06-D	MW05-06-I	MW03-06-D2	
			Sample I.D.:		B06-10754-5	B06-10754-6	B06-10754-7	
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Alkalinity (as CaCO3)	mg/L	3	SM 2320	20-Apr-06	250	90	460	
Carbonate (as CaCO3)	mg/L	3	SM 2320	20-Apr-06	< 3	< 3	< 3	
Bicarbonate(as CaCO3)	mg/L	3	SM 2320	20-Apr-06	250	90	460	
Conductivity	µmho/cm	1	SM2513	20-Apr-06	799	236	1190	
pH	pH Units		SM4300H+	20-Apr-06	7.87	7.99	7.17	
Chloride	mg/L	1	SM4110	20-Apr-06	68	4	130	
Nitrite (N)	mg/L	0.1	SM4110	20-Apr-06	< 0.1	< 0.1	< 0.5	
Nitrate (N)	mg/L	0.1	SM4110	20-Apr-06	< 0.1	< 0.1	< 0.5	
Sulphate	mg/L	1	SM4110	20-Apr-06	76	27	20	
BOD(5 day)	mg/L	2	SM 5210B	19-Apr-06	4	< 2	2	
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	21-Apr-06	300	0.3	1.6	
Ammonia (N)-Total	mg/L	0.05	EPA 350.2	19-Apr-06	0.40	0.13	1.07	
Dissolved Organic Carbon	mg/L	0.5	EPA 415.1	21-Apr-06	119.7	0.9	4.2	
Total Organic Carbon	mg/L	0.5	EPA 415.1	21-Apr-06	127	1.6	5.0	
Phenol	mg/L	0.001	EPA 420.2	20-Apr-06	0.005	0.004	< 0.001	
COD	mg/L	5	HACH 8000	20-Apr-06	54	9	10	
Hardness (as CaCO3)	mg/L	1	SM 3120	20-Apr-06	252	69	445	
Aluminum	mg/L	0.01	SM 3120	20-Apr-06	0.55	0.01	0.01	
Antimony	mg/L	0.001	SM 3114	20-Apr-06	< 0.001	< 0.001	< 0.001	
Arsenic	mg/L	0.001	SM 3114	20-Apr-06	< 0.001	< 0.001	< 0.001	
Barium	mg/L	0.001	SM 3120	20-Apr-06	0.023	0.045	0.299	
Beryllium	mg/L	0.002	SM 3120	20-Apr-06	< 0.002	< 0.002	< 0.002	
Boron	mg/L	0.005	SM 3120	20-Apr-06	0.527	0.214	0.517	
Cadmium	mg/L	0.0001	EPA 200.8	20-Apr-06	0.0002	< 0.0001	< 0.0001	

Elevated MDLs are due to dilution

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CERTIFICATE OF ANALYSIS

Final Report

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Kingston ON K7L 2G4
Attention: Cameron Pritchett

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW05-06-D	MW05-06-I	MW03-06-D2	
			Sample I.D.:		B06-10754-5	B06-10754-6	B06-10754-7	
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Calcium	mg/L	0.02	SM 3120	20-Apr-06	86.7	13.9	97.7	
Chromium	mg/L	0.002	SM 3120	20-Apr-06	< 0.002	< 0.002	< 0.002	
Chromium (VI)	mg/L	0.01	EPA7196	20-Apr-06	< 0.01[3]	< 0.01[3]	< 0.01[3]	
Cobalt	mg/L	0.005	SM 3120	20-Apr-06	< 0.005	< 0.005	< 0.005	
Copper	mg/L	0.002	SM 3120	20-Apr-06	0.008	< 0.002	< 0.002	
Iron	mg/L	0.005	SM 3120	20-Apr-06	2.36	0.015	0.374	
Lead	mg/L	0.0005	EPA 200.8	20-Apr-06	0.0025	< 0.0005	< 0.0005	
Magnesium	mg/L	0.01	SM 3120	20-Apr-06	8.51	8.29	48.8	
Mercury	mg/L	0.00006	SM 3112	20-Apr-06	< 0.00006	< 0.00006	< 0.00006	
Molybdenum	mg/L	0.01	SM 3120	20-Apr-06	0.03	< 0.01	< 0.01	
Nickel	mg/L	0.01	SM 3120	20-Apr-06	< 0.01	< 0.01	< 0.01	
Potassium	mg/L	0.1	SM 3120	20-Apr-06	31.1	2.4	10.4	
Selenium	mg/L	0.001	SM 3114	20-Apr-06	0.001	0.002	< 0.001	
Silver	mg/L	0.005	SM 3120	20-Apr-06	< 0.005	< 0.005	< 0.005	
Sodium	mg/L	0.2	SM 3120	20-Apr-06	102	54.1	85.5	
Thallium	mg/L	0.0002	EPA 200.8	20-Apr-06	< 0.0002	< 0.0002	< 0.0002	
Vanadium	mg/L	0.005	SM 3120	20-Apr-06	< 0.005	< 0.005	< 0.005	
Zinc	mg/L	0.005	SM 3120	20-Apr-06	0.073	0.007	0.008	

1 Chromium (VI) result is based on total chromium

Elevated MDLs are due to dilution

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CADUCEON™
ENVIRONMENTAL LABORATORIES

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 19817 **REPORT No. B06-10754 (ii)**

Report To:
XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Cameron Pritchett

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW01-06-S	MW02-06-S	MW03-06-D1	MW04-06-I
			Sample I.D.:		B06-10754-1	B06-10754-2	B06-10754-3	B06-10754-4
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	18-Apr-06
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Benzene	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	< 0.5	< 0.5
Bromobenzene	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Bromochloromethane	µg/L	2	EPA 8260	25-Apr-06	< 2	< 2	< 2	< 2
Bromodichloromethane	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Bromoethane	µg/L	0.8	EPA 8260	25-Apr-06	< 0.8	< 0.8	< 0.8	< 0.8
Bromoform	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Carbon Tetrachloride	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform	µg/L	0.3	EPA 8260	25-Apr-06	< 0.3	< 0.3	< 0.3	< 0.3
Chloromethane	µg/L	0.3	EPA 8260	25-Apr-06	< 0.3	< 0.3	< 0.3	< 0.3
Chlorotoluene,2-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Chlorotoluene,4-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Dibromo-3-Chloropropane, 1,2-	µg/L	1	EPA 8260	25-Apr-06	< 1	< 1	< 1	< 1
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dibromochloromethane	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dibromoethane,1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dibromomethane	µg/L	1	EPA 8260	25-Apr-06	< 1	< 1	< 1	< 1
Dichlorobenzene,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene,1,3-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dichlorobenzene,1,4-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2

M. Dubien

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CADUCEON™

ENVIRONMENTAL LABORATORIES

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 19817 **REPORT No. B06-10754 (ii)**

Report To:

XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Cameron Pritchett

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW01-06-S	MW02-06-S	MW03-06-D1	MW04-06-I
			Sample I.D.:		B06-10754-1	B06-10754-2	B06-10754-3	B06-10754-4
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	18-Apr-06
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Dichlorodifluoromethane	µg/L	1	EPA 8260	25-Apr-06	< 1	< 1	< 1	< 1
Dichloroethane,1,1-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethane,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropane,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Dichloropropane,1,3-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Dichloropropane,2,2-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Dichloropropene,1,1-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Ethylbenzene	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	< 0.5	< 0.5
Hexachlorobutadiene	µg/L	1	EPA 8260	25-Apr-06	< 1	< 1	< 1	< 1
Isopropylbenzene	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Isopropyltoluene,4-	µg/L	0.4	EPA 8260	25-Apr-06	< 0.4	< 0.4	< 0.4	< 0.4
Xylene, m,p-	µg/L	1.0	EPA 8260	25-Apr-06	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	25-Apr-06	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	µg/L	0.7	EPA 8260	25-Apr-06	< 0.7	< 0.7	< 0.7	< 0.7
n-Butylbenzene	µg/L	0.7	EPA 8260	25-Apr-06	< 0.7	< 0.7	< 0.7	< 0.7
n-Propylbenzene	µg/L	0.4	EPA 8260	25-Apr-06	< 0.4	< 0.4	< 0.4	< 0.4
Xylene, o-	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	< 0.5	< 0.5
sec-Butylebenzene	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	µg/L	0.6	EPA 8260	25-Apr-06	< 0.6	< 0.6	< 0.6	< 0.6
tert-Butylbenzene	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	25-Apr-06	< 0.4	< 0.4	< 0.4	< 0.4

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CADUCEON™
ENVIRONMENTAL LABORATORIES

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 19817 **REPORT No. B06-10754 (ii)**

Report To:
XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Cameron Pritchett

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW01-06-S	MW02-06-S	MW03-06-D1	MW04-06-I
			Sample I.D.:		B06-10754-1	B06-10754-2	B06-10754-3	B06-10754-4
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	18-Apr-06
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Tetrachloroethylene	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	4.1	< 0.5
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorobenzene,1,2,3-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Trichlorobenzene,1,2,4-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethylene	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	< 0.1
Trichloropropane,1,2,3-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2
Trimethylbenzene,1,2,4-	µg/L	2	EPA 8260	25-Apr-06	< 2	< 2	< 2	< 2
Trimethylbenzene,1,3,5-	µg/L	0.6	EPA 8260	25-Apr-06	1.0	< 0.6	< 0.6	< 0.6
Vinyl Chloride	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	< 0.2

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CADUCEON™
ENVIRONMENTAL LABORATORIES

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 19817

REPORT No. B06-10754 (ii)

Report To:

XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Cameron Pritchett

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW05-06-D	MW05-06-I	MW03-06-D2	
			Sample I.D.:		B06-10754-5	B06-10754-6	B06-10754-7	
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Benzene	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	< 0.5	
Bromobenzene	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Bromochloromethane	µg/L	2	EPA 8260	25-Apr-06	< 2	< 2	< 2	
Bromodichloromethane	µg/L	0.1	EPA 8260	25-Apr-06	1.0	< 0.1	< 0.1	
Bromoethane	µg/L	0.8	EPA 8260	25-Apr-06	< 0.8	< 0.8	< 0.8	
Bromoform	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Carbon Tetrachloride	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Chloroethane	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Chloroform	µg/L	0.3	EPA 8260	25-Apr-06	3.9	< 0.3	< 0.3	
Chloromethane	µg/L	0.3	EPA 8260	25-Apr-06	< 0.3	< 0.3	< 0.3	
Chlorotoluene,2-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Chlorotoluene,4-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Dibromo-3-Chloropropane, 1,2-	µg/L	1	EPA 8260	25-Apr-06	< 1	< 1	< 1	
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dibromochloromethane	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dibromoethane,1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dibromomethane	µg/L	1	EPA 8260	25-Apr-06	< 1	< 1	< 1	
Dichlorobenzene,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dichlorobenzene,1,3-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dichlorobenzene,1,4-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 19817 **REPORT No. B06-10754 (ii)**

Report To:

XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Cameron Pritchett

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW05-06-D	MW05-06-I	MW03-06-D2	
			Sample I.D.:		B06-10754-5	B06-10754-6	B06-10754-7	
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Dichlorodifluoromethane	µg/L	1	EPA 8260	25-Apr-06	< 1	< 1	< 1	
Dichloroethane,1,1-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dichloroethane,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dichloropropane,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Dichloropropane,1,3-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Dichloropropane,2,2-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Dichloropropene,1,1-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Ethylbenzene	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	< 0.5	
Hexachlorobutadiene	µg/L	1	EPA 8260	25-Apr-06	< 1	< 1	< 1	
Isopropylbenzene	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Isopropyltoluene,4-	µg/L	0.4	EPA 8260	25-Apr-06	< 0.4	< 0.4	< 0.4	
Xylene, m,p-	µg/L	1.0	EPA 8260	25-Apr-06	< 1.0	< 1.0	< 1.0	
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	25-Apr-06	< 0.3	< 0.3	< 0.3	
Naphthalene	µg/L	0.7	EPA 8260	25-Apr-06	< 0.7	< 0.7	< 0.7	
n-Butylbenzene	µg/L	0.7	EPA 8260	25-Apr-06	< 0.7	< 0.7	< 0.7	
n-Propylbenzene	µg/L	0.4	EPA 8260	25-Apr-06	< 0.4	< 0.4	< 0.4	
Xylene, o-	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	< 0.5	
sec-Butylebenzene	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	< 0.5	
Styrene	µg/L	0.6	EPA 8260	25-Apr-06	< 0.6	< 0.6	< 0.6	
tert-Butylbenzene	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	25-Apr-06	< 0.4	< 0.4	< 0.4	

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 19817 **REPORT No. B06-10754 (ii)**

Report To:
XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Cameron Pritchett

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 19-Apr-06
DATE REPORTED: 28-Apr-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW05-06-D	MW05-06-I	MW03-06-D2	
			Sample I.D.:		B06-10754-5	B06-10754-6	B06-10754-7	
			Date Collected:		18-Apr-06	18-Apr-06	18-Apr-06	
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Tetrachloroethylene	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Toluene	µg/L	0.5	EPA 8260	25-Apr-06	< 0.5	< 0.5	3.6	
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Trichlorobenzene,1,2,3-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Trichlorobenzene,1,2,4-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Trichloroethylene	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Trichlorofluoromethane	µg/L	0.1	EPA 8260	25-Apr-06	< 0.1	< 0.1	< 0.1	
Trichloropropane,1,2,3-	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	
Trimethylbenzene,1,2,4-	µg/L	2	EPA 8260	25-Apr-06	< 2	< 2	< 2	
Trimethylbenzene,1,3,5-	µg/L	0.6	EPA 8260	25-Apr-06	< 0.6	< 0.6	< 0.6	
Vinyl Chloride	µg/L	0.2	EPA 8260	25-Apr-06	< 0.2	< 0.2	< 0.2	

M.Dubi

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CADUCEON™

ENVIRONMENTAL LABORATORIES

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 094358 **REPORT No. B06-13393 (ii)**

Report To:

XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Dale White

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 10-May-06
DATE REPORTED: 18-May-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: MBQ
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW3	MW4		
			Sample I.D.:		B06-13393-1	B06-13393-2		
			Date Collected:		10-May-06	10-May-06		
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Benzene	µg/L	0.5	EPA 8260	14-May-06	< 0.5	< 0.5		
Bromobenzene	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Bromochloromethane	µg/L	2	EPA 8260	14-May-06	< 2	< 2		
Bromodichloromethane	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Bromoethane	µg/L	0.8	EPA 8260	14-May-06	< 0.8	< 0.8		
Bromoform	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Carbon Tetrachloride	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Monochlorobenzene (Chlorobenzene)	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Chloroethane	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Chloroform	µg/L	0.3	EPA 8260	14-May-06	< 0.3	< 0.3		
Chloromethane	µg/L	0.3	EPA 8260	14-May-06	< 0.3	< 0.3		
Chlorotoluene,2-	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Chlorotoluene,4-	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Dibromo-3-Chloropropane, 1,2-	µg/L	1	EPA 8260	14-May-06	< 1	< 1		
Dichloroethene, cis-1,2-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dichloropropene, cis-1,3-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dibromochloromethane	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dibromoethane,1,2- (Ethylene Dibromide)	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dibromomethane	µg/L	1	EPA 8260	14-May-06	< 1	< 1		
Dichlorobenzene,1,2-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dichlorobenzene,1,3-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dichlorobenzene,1,4-	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CADUCEON™
ENVIRONMENTAL LABORATORIES

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 094358 **REPORT No. B06-13393 (ii)**

Report To:
XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Dale White

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 10-May-06
DATE REPORTED: 18-May-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: MBQ
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW3	MW4		
			Sample I.D.:		B06-13393-1	B06-13393-2		
			Date Collected:		10-May-06	10-May-06		
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Dichlorodifluoromethane	µg/L	1	EPA 8260	14-May-06	< 1	< 1		
Dichloroethane,1,1-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dichloroethane,1,2-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dichloroethene, 1,1-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dichloroethene, trans-1,2-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dichloropropane,1,2-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Dichloropropane,1,3-	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Dichloropropane,2,2-	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Dichloropropene,1,1-	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Ethylbenzene	µg/L	0.5	EPA 8260	14-May-06	< 0.5	< 0.5		
Hexachlorobutadiene	µg/L	1	EPA 8260	14-May-06	< 1	< 1		
Isopropylbenzene	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Isopropyltoluene,4-	µg/L	0.4	EPA 8260	14-May-06	< 0.4	< 0.4		
Xylene, m,p-	µg/L	1.0	EPA 8260	14-May-06	< 1.0	< 1.0		
Dichloromethane (Methylene Chloride)	µg/L	0.3	EPA 8260	14-May-06	< 0.3	< 0.3		
Naphthalene	µg/L	0.7	EPA 8260	14-May-06	< 0.7	< 0.7		
n-Butylbenzene	µg/L	0.7	EPA 8260	14-May-06	< 0.7	< 0.7		
n-Propylbenzene	µg/L	0.4	EPA 8260	14-May-06	< 0.4	< 0.4		
Xylene, o-	µg/L	0.5	EPA 8260	14-May-06	< 0.5	< 0.5		
sec-Butylebenzene	µg/L	0.5	EPA 8260	14-May-06	< 0.5	< 0.5		
Styrene	µg/L	0.6	EPA 8260	14-May-06	< 0.6	< 0.6		
tert-Butylbenzene	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Tetrachloroethane,1,1,1,2-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Tetrachloroethane,1,1,2,2-	µg/L	0.4	EPA 8260	14-May-06	< 0.4	< 0.4		

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CERTIFICATE OF ANALYSIS

Final Report

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33 Earl St.
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Attention: Dale White

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 10-May-06

DATE REPORTED: 18-May-06

SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: MBQ

P.O. NUMBER: 1-664-38-04

WATERWORKS NO.

			Client I.D.:		MW3	MW4		
			Sample I.D.:		B06-13393-1	B06-13393-2		
			Date Collected:		10-May-06	10-May-06		
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Tetrachloroethylene	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Toluene	µg/L	0.5	EPA 8260	14-May-06	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Trichlorobenzene,1,2,3-	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Trichlorobenzene,1,2,4-	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Trichloroethane,1,1,1-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Trichloroethane,1,1,2-	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Trichloroethylene	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Trichlorofluoromethane	µg/L	0.1	EPA 8260	14-May-06	< 0.1	< 0.1		
Trichloropropane,1,2,3-	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		
Trimethylbenzene,1,2,4-	µg/L	2	EPA 8260	14-May-06	< 2	< 2		
Trimethylbenzene,1,3,5-	µg/L	0.6	EPA 8260	14-May-06	< 0.6	< 0.6		
Vinyl Chloride	µg/L	0.2	EPA 8260	14-May-06	< 0.2	< 0.2		

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

CADUCEON™
ENVIRONMENTAL LABORATORIES

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: 094358 **REPORT No. B06-13393 (i)**

Report To:
XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Dale White

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 10-May-06
DATE REPORTED: 18-May-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: MBQ
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW3	MW4	COR	
			Sample I.D.:		B06-13393-1	B06-13393-2	B06-13393-3	
			Date Collected:		10-May-06	10-May-06		
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Alkalinity (as CaCO3)	mg/L	3	SM 2320	11-May-06	424	400	92	
Carbonate (as CaCO3)	mg/L	3	SM 2320	11-May-06	< 3	< 3	< 3	
Bicarbonate(as CaCO3)	mg/L	3	SM 2320	11-May-06	424	400	92	
Conductivity	µmho/cm	1	SM2513	12-May-06	909	771	298	
pH	pH Units		SM4300H+	11-May-06	6.99	6.87	7.70	
Chloride	mg/L	1	SM4110	16-May-06	5	4	21	
Nitrite (N)	mg/L	0.1	SM4110	16-May-06	< 0.1	< 0.1	< 0.1	
Nitrate (N)	mg/L	0.1	SM4110	16-May-06	0.4	< 0.1	0.3	
Sulphate	mg/L	1	SM4110	16-May-06	105	36	26	
BOD(5 day)	mg/L	2	SM 5210B	10-May-06	4	8	< 2	
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	12-May-06	0.5	1.1	0.2	
Ammonia (N)-Total	mg/L	0.05	EPA 350.2	12-May-06	< 0.05	0.10	< 0.05	
Dissolved Organic Carbon	mg/L	0.5	EPA 415.1	15-May-06	7.0	4.0	1.6	
Total Organic Carbon	mg/L	0.5	EPA 415.1	15-May-06	12.7	33.5	1.7	
Phenol	mg/L	0.001	EPA 420.2	15-May-06	< 0.001	< 0.001	< 0.001	
COD	mg/L	5	HACH 8000	12-May-06	16	42	< 5	
Hardness (as CaCO3)	mg/L	1	SM 3120	12-May-06	534	470	100	
Aluminum	mg/L	0.01	SM 3120	12-May-06	< 0.01	< 0.01	1.07	
Antimony	mg/L	0.001	SM 3114	16-May-06	< 0.001	< 0.001	< 0.001	
Arsenic	mg/L	0.001	SM 3114	12-May-06	< 0.001	< 0.001	< 0.001	
Barium	mg/L	0.001	SM 3120	12-May-06	0.095	0.110	0.018	
Beryllium	mg/L	0.002	SM 3120	12-May-06	< 0.002	< 0.002	< 0.002	
Boron	mg/L	0.005	SM 3120	12-May-06	0.006	0.010	0.017	
Cadmium	mg/L	0.0001	EPA 200.8	12-May-06	< 0.0001	< 0.0001	< 0.0001	

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

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CERTIFICATE OF ANALYSIS

Final Report

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Report To:
XCG Consultants
33 Earl St.
Kingston ON K7L 2G4
Attention: Dale White

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285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax 544-2770

DATE RECEIVED: 10-May-06
DATE REPORTED: 18-May-06
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: MBQ
P.O. NUMBER: 1-664-38-04
WATERWORKS NO.

			Client I.D.:		MW3	MW4	COR	
			Sample I.D.:		B06-13393-1	B06-13393-2	B06-13393-3	
			Date Collected:		10-May-06	10-May-06		
Parameter	**Units**	**M.D.L.**	**Reference Method**	**Date Analyzed**				
Calcium	mg/L	0.02	SM 3120	12-May-06	153	142	28.9	
Chromium	mg/L	0.002	SM 3120	12-May-06	< 0.002	< 0.002	< 0.002	
Chromium (VI)	mg/L	0.01	EPA7196	12-May-06	< 0.01 [1]	< 0.01 [1]	< 0.01 [1]	
Cobalt	mg/L	0.005	SM 3120	12-May-06	< 0.005	< 0.005	< 0.005	
Copper	mg/L	0.002	SM 3120	12-May-06	< 0.002	< 0.002	0.003	
Iron	mg/L	0.005	SM 3120	12-May-06	0.010	< 0.005	0.039	
Lead	mg/L	0.0005	EPA 200.8	12-May-06	< 0.0005	< 0.0005	< 0.0005	
Magnesium	mg/L	0.01	SM 3120	12-May-06	36.8	27.8	6.89	
Mercury	mg/L	0.00006	SM 3112	12-May-06	< 0.00006	< 0.00006	< 0.00006	
Molybdenum	mg/L	0.01	SM 3120	12-May-06	< 0.01	< 0.01	< 0.01	
Nickel	mg/L	0.01	SM 3120	12-May-06	< 0.01	< 0.01	< 0.01	
Potassium	mg/L	0.1	SM 3120	12-May-06	1.8	1.6	1.3	
Selenium	mg/L	0.001	SM 3114	12-May-06	< 0.001	0.001	< 0.001	
Silver	mg/L	0.005	SM 3120	12-May-06	< 0.005	< 0.005	< 0.005	
Sodium	mg/L	0.2	SM 3120	12-May-06	7.7	5.5	10.3	
Strontium	mg/L	0.001	SM 3120	12-May-06	0.539	0.543	0.147	
Thallium	mg/L	0.0002	EPA 200.8	12-May-06	< 0.0002	< 0.0002	< 0.0002	
Vanadium	mg/L	0.005	SM 3120	12-May-06	< 0.005	< 0.005	< 0.005	
Zinc	mg/L	0.005	SM 3120	12-May-06	< 0.005	< 0.005	0.052	

[1] Chromium (VI) result is based on total chromium

Michelle Dubien
Lab Supervisor

M.D.L. = Method Detection Limit

Client: Pritchett
XCG Consultants Ltd.

ISO# 2006322
Location: ~~Rick has~~ 6-F
3 for 3H only
all in 40ml bottles

Environmental Isotope Lab
2006-05-12
1 of 1

Cond.	Done	Sample	Lab#	3H	Result	Repeat
		COR	128952	X	39.12 ± 3 93	35.86 ± 3.85
		MW 3(b) 10/05/06	128953	X	11.59 ± 3.71	
		MW 4(b) 10/05/06	128954	X	1.13 ± 3.65	

Rick

2006-05-18

To Contact EIL:
mepatton@uwaterloo.ca
or phone:
519 888 4732

Robert J. Drimmie
Laboratory Manager
rdrimmie@uwaterloo.ca
519 888 4567 ext 2580

Client: Pritchett
XCG Consulting Ltd.

ISO# 2006264
Location: T-4
7 for 3H
all in 40ml bottles

Environmental Isotope Lab
2006-05-11
1 of 1

Sample	Lab#	3H	Result	Repeat
MW01-06-S April-18-2006	126932	X	17 +/- 4	
MW02-06-S April-18-2006	126933	X	16 +/- 4	
MW03-06-D1 April-18-2006	126934	X	48 +/- 4	
MW03-06-D2 April-18-2006	126935	X	54 +/- 4	
MW03-06-I April-18-2006	126936	X	9 +/- 4	
WM05-06-D April-18-2006	126937	X	14 +/- 4	
MW05-06-I April-18-2006	126938	X	<6 +/- 4	<6 +/- 4

Tritium is reported in Tritium Units.
1TU = 3.221 Picocuries/L per IAEA, 2000 Report
1TU = 0.11919 Becquerels/L per IAEA, 2000 Report

To Contact EIL:
mepatton@uwaterloo.ca
or phone:
519 888 4732

Robert J. Drimmie
Laboratory Manager
rdrimmie@uwaterloo.ca
519 888 4567 ext 2580