



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

EPA Region 5 Records Ctr.



204760

011 2003

000002

REPLY TO THE ATTENTION OF
St. Regis Paper Company Site

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

International Paper Company,
c/o Richard R. Rothman, Esq.
Bingham McCutchen, LLP,
Suite 4400
355 South Grand Avenue,
Los Angeles, California
90071-3106

Re: Unilateral Administrative Order for the St. Regis Paper
Company Site (Cass Lake, MN) - Removal Action for City Areas

Dear Mr. Rothman:

Enclosed please find a Unilateral Administrative Order issued by
the U.S. Environmental Protection Agency ("U.S. EPA") under
Section 106 of the Comprehensive Environmental Response,
Compensation, and Liability Act of 1980, as amended by the
Superfund Amendments and Reauthorization Act of 1986 ("CERCLA"),
42 U.S.C. §9601, et seq.

Please note that the Order allows an opportunity for a
conference if requested within 2 business days after issuance of
the Order, or if no conference is requested, an opportunity to
submit comments within 2 business days of issuance of the Order.

If you have any questions regarding the Order, feel free to
contact Tom Turner, Assistant Regional Counsel, at
(312)886-6613 or Sonia Vega, On-Scene Coordinator, at
(651) 296-7361.

Sincerely yours,

William E. Muno, Director
Superfund Division

Enclosure; Unilateral Administrative Order

cc: State Agency Superfund Program Manager
Tribal Environmental Officer-Leech Lake Band of Ojibwe

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 5

IN THE MATTER OF:) Docket No. V-W- 94-C-771
St. Regis Paper Company)
Superfund Site, Cass Lake,) ADMINISTRATIVE ORDER
Cass County, Minnesota) PURSUANT TO SECTION 106(a)
Respondent:) OF THE COMPREHENSIVE
International Paper Company) ENVIRONMENTAL RESPONSE,
) COMPENSATION, AND
) LIABILITY ACT OF 1980,
) AS AMENDED, 42 U.S.C.
) §9606(a)

I. JURISDICTION AND GENERAL PROVISIONS

This Order is issued pursuant to the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9606(a), and delegated to the Administrator of the United States Environmental Protection Agency ("U.S. EPA") by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the Regional Administrators by U.S. EPA Delegation Nos. 14-14-A and 14-14-B, and to the Director, Superfund Division, Region 5, by Regional Delegation Nos. 14-14-A and 14-14-B.

This Order pertains to property located within the exterior boundaries of the Leech Lake Band of Ojibwe Reservation in Section 15, T145N, R31W in Cass Lake, Cass Lake County, Minnesota known as the "St. Regis Paper Company Site" or the "Site" and adjacent effected properties. The Site is generally depicted on a map attached as Appendix A. This Order requires the Respondent to perform Removal Action activities described herein to address the actual or threatened release of hazardous substances at or from the Site.

U.S. EPA has notified the State of Minnesota and the Leech Lake Band of Ojibwe of this action.

II. PARTIES BOUND

This Order applies to and is binding upon Respondent and

5. Sludges from the Wood Treatment Facility Area were disposed of at a landfill located on the eastern edge of the Site.

6. In 1977, the St. Regis Paper Company installed groundwater monitoring wells at the Site. Based on the results of groundwater monitoring, the Minnesota Pollution Control Agency (MPCA) determined that hazardous substances had been released from the Site. Monitoring wells revealed the presence of pentachlorophenol (PCP); polynuclear aromatic hydrocarbons (PAHs); phenols; hexa-, Hepta-, and Octochlorodibenzo-p-dioxin (collectively called PCDD); Polychlorinated dibenzo-p-furans (PCDF); and metals.

7. On September 21, 1984 (49 Fed. Reg. 37070), pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B.

8. In February 1985, MPCA and Champion reached an agreement on remedial measures to be implemented in order to address the threat to public health and the environment posed by the Site. MPCA and Champion signed two Response Orders by Consent under the Minnesota Environmental Response and Liability Act (MERLA), one for the Wood Treatment Facility Area and one for the City Dump Pit Area. These Orders provided for the following: (1) A Remedial Investigation at the Site; (2) A Feasibility Study; (3) Development and Implementation of the Response Action Plan to abate or minimize the release of hazardous substances from the Site; (4) Routine monitoring to determine the effectiveness of the implemented response actions.

9. On March 5, 1986, MPCA issued a Minnesota Enforcement Decision Document (MEDD) for the Wood Treatment Facility Area. The MEDD called for: (1) the installation of ten (10) ground water wells with granular activated carbon treatment which would pump and treat contaminated ground water until acceptable levels in ground water are reached; (2) the construction of a Resource Conservation and Recovery Act (RCRA) on site containment vault for the deposition of hazardous waste sludges and contaminated soil to be excavated during source removal activities; (3) the extension of the Cass Lake Community Water System to residents not currently serviced and potentially affected by ground water contamination from the Site; (4) long term monitoring of the ground water and surface water to determine the effectiveness of the ground water pump out system; (5) long term monitoring of the site containment vault; (6) long term monitoring of the treated ground water discharge and selected fish species to determine the effectiveness of the ground water treatment system; (7) long term

complied with the UAO. The sampling indicated validated data results confirming earlier findings (and producing new findings) of dioxin over the 1 part per billion (ppb) level in various locations throughout the Site. Some of these locations are proximate to residential areas.

IV. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, and the Administrative Record supporting these removal actions, U.S. EPA determines that:

1. The St. Regis Paper Company Superfund Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. §9601(9).
2. The contamination found at the Site, as identified in the Findings of Fact above, includes "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. §9601(14).
3. The Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. §9601(21).
4. Respondent International Paper Company is either (a) person who at the time of disposal of any hazardous substances owned or operated the St. Regis Paper Company Superfund Site, or who arranged for disposal or transport for disposal of hazardous substances at the St. Regis Paper Company Superfund Site. Respondent is therefore a liable person under Section 107(a) of CERCLA, 42 U.S.C. §9607(a).
5. The conditions described in the Findings of Fact above constitute an actual or threatened "release" into the "environment" as defined by Sections 101(8) and (22) of CERCLA, 42 U.S.C. §§9601(8) and (22).
6. The actual or threatened release of hazardous substances from the Site may present an imminent and substantial endangerment to the public health, welfare, or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. §9606(a), and require the Removal Action described within.
7. The Removal Actions required by this Order, if carried out in compliance with the terms of this Order, are consistent with the NCP and CERCLA.

communication from U.S. EPA relating to this Order shall constitute receipt by Respondent.

The U.S. EPA has designated Sonia Vega of the Emergency Response Branch, Region 5, as its On-Scene Coordinator ("OSC") as its Project Manager. Respondent shall direct all submissions required by this Order to the OSC at U.S. EPA Region 5, Emergency Response Branch 520 Lafayette Road North, St. Paul, Minnesota 55155-4194., by certified or express mail. Respondent shall also send a copy of all submissions to Sonia Vega, OSC, and Tom Turner and Mony Chabria, Associate Regional Counsels, 77 West Jackson Boulevard, mail codes: SE-5J and C-14J, respectively, Chicago, Illinois, 60604-3590. Respondent is encouraged to make their submissions to U.S. EPA on recycled paper (which includes significant post consumer waste paper content where possible) and using two-sided copies.

3. Work to Be Performed

Respondent shall perform all actions necessary to implement the Work Plan for Removal (attached as Appendix B). This plan shall be known collectively as 'the Work.'

3.1 Work Plan and Implementation

Within 5 business days after the effective date of this Order, the Respondent shall begin performing the Work set forth above in Paragraph 3.

If U.S. EPA requires revisions to any work plan, Respondent shall submit a revised draft Work Plan within 2 business days of notification. Respondent shall implement such work plan (as finally approved in writing by U.S. EPA) in accordance with the schedule approved by U.S. EPA. The work plans, the schedule, and any subsequent modifications shall be fully enforceable under this Order. Respondent shall notify U.S. EPA at least 48 hours prior to performing any on-site work pursuant to the U.S. EPA approved work plans.

Respondent shall not commence or undertake any removal actions at the Site without prior U.S. EPA approval.

3.2 Health and Safety Plan

Within 2 business days after the effective date of this Order, the Respondent shall submit a plan for U.S. EPA review and comment that ensures the protection of the public health and safety during performance of Work under this Order. This plan

sample collection activity. U.S. EPA shall have the right to take any additional samples that it deems necessary.

3.4 Reporting

Respondent shall submit a monthly written progress report to U.S. EPA concerning activities undertaken pursuant to this Order, beginning 30 calendar days after the effective date of this Order, until termination of this Order, unless otherwise directed by the OSC. These reports shall describe all significant developments during the preceding period, including the work performed and any problems encountered, analytical data received during the reporting period, and developments anticipated during the next reporting period, including a schedule of work to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

Any Respondent that owns any portion of the Site, and any successor in title shall, at least 30 days prior to the conveyance of any interest in real property at the Site, give written notice of this Order to the transferee and written notice of the proposed conveyance to U.S. EPA and the State. The notice to U.S. EPA and the State shall include the name and address of the transferee. The party conveying such an interest shall require that the transferee will provide access as described in Section V.4 (Access to Property and Information).

3.5 Final Report

Within 30 calendar days after completion of all removal actions required under this Order, the Respondent shall submit for U.S. EPA review a final report summarizing the removal actions taken to comply with this Order. The final report shall conform to the requirements set forth in Section 300.165 of the NCP. The final report shall also include a good faith estimate of total costs incurred in complying with the Order, a listing of quantities and types of materials sampled or removed, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destinations of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal and supplemental sampling actions (e.g., manifests, invoices, bills, contracts, and permits).

The final report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

retained under this Section at any time before expiration of the ten year period at the written request of U.S. EPA. Any information that Respondent is required to provide or maintain pursuant to this Order is not subject to the Paperwork Reduction Act of 1995, 44 U.S.C. §3501 et seq.

6. Off-Site Shipments

All hazardous substances, pollutants or contaminants removed off-site pursuant to this Order for analysis, treatment, storage or disposal shall be analyzed, treated, stored, or disposed of at a facility in compliance, as determined by U.S. EPA, with the U.S. EPA Off-Site Rule, 40 CFR §300.440, 58 Fed. Reg. 49215 (Sept. 22, 1993).

7. Compliance With Other Laws

All actions required pursuant to this Order shall be performed in accordance with all applicable laws and regulations except as provided in Section 121(e) of CERCLA and 40 CFR §§ 300.400(e) and 300.415(j).

8. Emergency Response and Notification of Releases

If any incident, or change in Site conditions, during the activities conducted pursuant to this Order causes or threatens to cause an additional release of hazardous substances from the Site or an endangerment to the public health, welfare, or the environment, the Respondent shall immediately take all appropriate action to prevent, abate or minimize such release, or endangerment caused or threatened by the release. Respondent shall also immediately notify the OSC, or, in the event of his or her unavailability, shall notify the Regional Duty Officer, Emergency Response Branch, Region 5 at (312) 353-2318, of the incident or Site conditions.

Respondent shall submit a written report to U.S. EPA within 5 business days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. Respondent shall also comply with any other notification requirements, including those in Section 103 of CERCLA, 42 U.S.C. §9603, and Section 304 of the Emergency Planning and Community Right-To-Know Act, 42 U.S.C. §11004.

U.S. Environmental Protection Agency
Program Accounting & Analysis Section
P.O. Box 70753
Chicago, Illinois 60673

Respondent shall simultaneously transmit a copy of the check to the Director, Superfund Division, U.S. EPA Region 5, 77 West Jackson Blvd., Chicago, Illinois, 60604-3590. Payments shall be designated as "Response Costs - St. Regis Paper Company Site" and shall reference the payer's name and address, the U.S. EPA site identification number (05J2), and the docket number of this Order.

Interest at a rate established by the Department of the Treasury pursuant to 31 U.S.C. §3717 and 4 CFR §102.13 shall begin to accrue on the unpaid balance from the day after the expiration of the 30 day period notwithstanding any dispute or an objection to any portion of the costs.

IX. RESERVATION OF RIGHTS

Nothing herein shall limit the power and authority of U.S. EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent U.S. EPA from seeking legal or equitable relief to enforce the terms of this Order. U.S. EPA also reserves the right to take any other legal or equitable action as it deems appropriate and necessary, or to require the Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

X. OTHER CLAIMS

By issuance of this Order, the United States and U.S. EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or U.S. EPA shall not be a party or be held out as a party to any contract entered into by the Respondent or its directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out activities pursuant to this Order. Each party shall bear its own costs and attorneys fees in connection with the action resolved by this Order.

modify any work plans or sampling plans to correct such deficiencies. The Respondent shall implement the modified and approved work plan(s) or sampling plan(s) and shall submit a modified Final Report in accordance with the U.S. EPA notice. Failure to implement the approved modified work plan(s) or sampling plan(s) shall be a violation of this Order.

XIII. ACCESS TO ADMINISTRATIVE RECORD

The Administrative Record supporting these removal actions is available for review during normal business hours in the U.S. EPA Record Center, Region 5, 77 W. Jackson Blvd., Seventh Floor, Chicago, Illinois. Respondent may contact Tom Turner or Mony Chabria, Associate Regional Counsels, at (312)886-6613 or (312) 886-6842, respectively, to arrange to review the Administrative Record. An index of the Administrative Record is attached to this Order.

XIV. OPPORTUNITY TO CONFER

Within 2 business days after issuance of this Order, Respondent may request a conference with U.S. EPA. Any such conference shall be held within 2 business days from the date of the request, unless extended by agreement of the parties. At any conference held pursuant to the request, Respondent may appear in person or be represented by an attorney or other representative.

If a conference is held, Respondent may present any information, arguments or comments regarding this Order. Regardless of whether a conference is held, Respondent may submit any information, arguments or comments (including justifications for any assertions that the Order should be withdrawn against a Respondent), in writing to U.S. EPA within 1 business day following the conference, or within 2 business days of issuance of the Order if no conference is requested. This conference is not an evidentiary hearing, does not constitute a proceeding to challenge this Order, and does not give Respondent a right to seek review of this Order. Requests for a conference shall be directed to Tom Turner or Mony Chabria, Associate Regional Counsels, at (312) 886-6613 or (312) 886-6842, respectively. Written submissions shall be directed as specified in Section V.2 of this Order.

ATTACHMENT 1

LIABILITY FILE INDEX

1. Minnesota Pollution Control Agency, Response Order by Consent for the Wood Treatment Facility, effective February 26, 1985.
2. Minnesota Pollution Control Agency, Response Order by Consent for the Cass Lake City Dump, effective February 26, 1985.
3. Letter from Thomas B. Ross, Manager - Environmental Projects, Champion International Corporation, to Linda Martin, Remedial Project Manager, U.S. EPA, dated December 15, 1994.
4. Letter from Ralph Heinert, Manager, Environmental Projects, International Paper Company, to Linda Kern, Remedial Project Manager, U.S. EPA, dated August 24, 2000.
5. Letters and Proposed Work Plans of International Paper Company of August and November 2003 for RSE/Supplemental Sampling Event and Removal Action, respectively.
6. August 2003 International Paper Co. Letter of Compliance with U.S. EPA CERCLA UAO of July 24, 2003

ATTACHMENT 2

U.S. ENVIRONMENTAL PROTECTION AGENCY REMOVAL ACTION

ADMINISTRATIVE RECORD FOR ST. REGIS PAPER COMPANY SITE CASS LAKE, CASS COUNTY, MINNESOTA

ORIGINAL
NOVEMBER 25, 2003

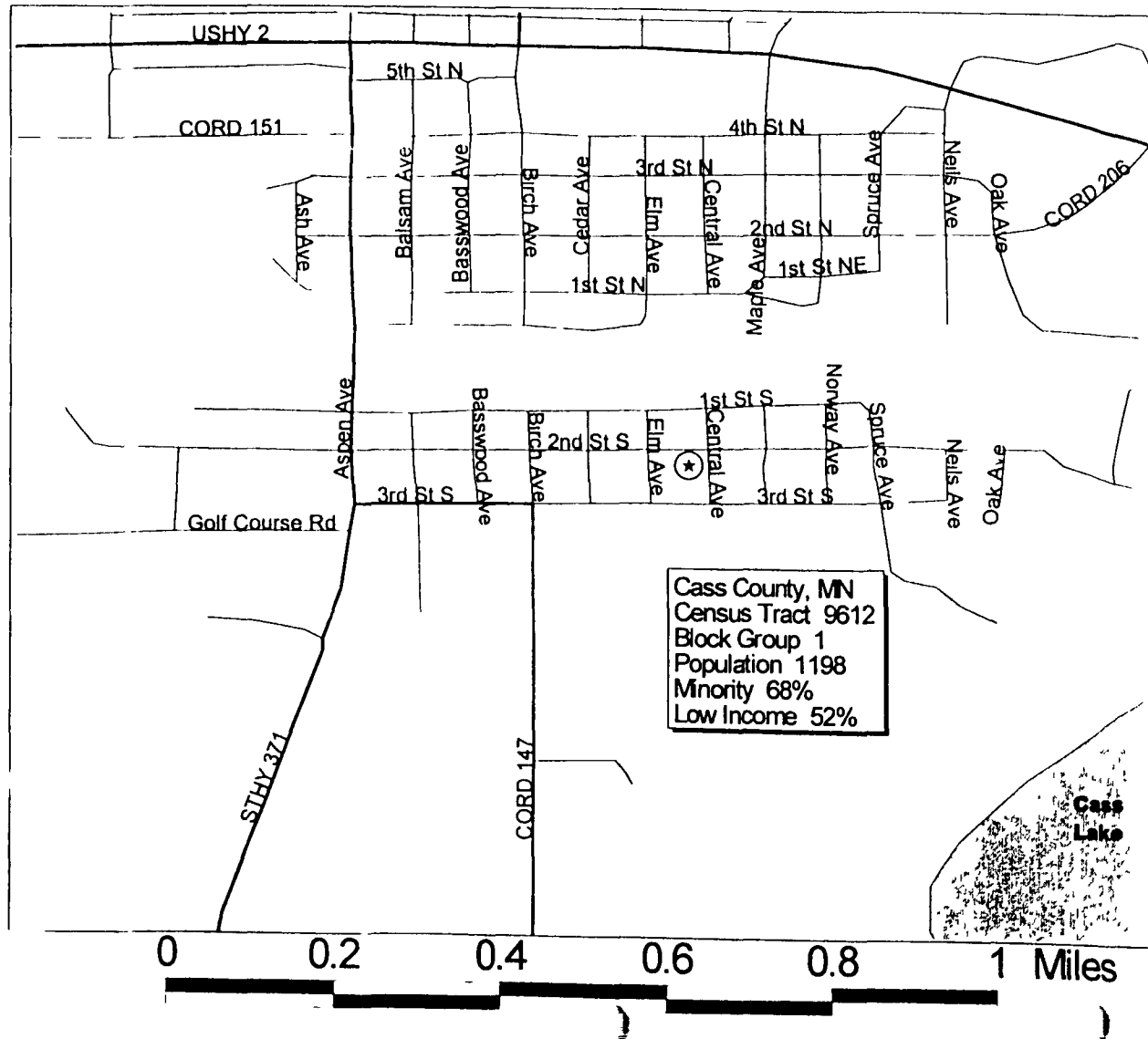
| <u>NO.</u> | <u>DATE</u> | <u>AUTHOR</u> | <u>RECIPIENT</u> | <u>TITLE/DESCRIPTION</u> | <u>PAGES</u> |
|------------|-------------|-----------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 1 | 09/30/99 | U.S. EPA | Parties to the Memorandum | Memorandum of Understanding Among the Leech Lake Band of Ojibwe, MPCA, MDNR, U.S. DOA Forest Service, U.S. DOI and U.S. EPA re: Natural Resource Damage Assessment in the St. Regis Paper Company Superfund Site Environment | 21 |
| 2 | 08/28/03 | Minnesota Department of Health | U.S. EPA | Public Comment Release of Health Consultation for the St. Regis Paper Company Site w/Attached ASTDR Health Consultations Questionnaire | 69 |
| 3 | 09/02/03 | Barr Engineering Company | U.S. EPA | Analytical Data for the St. Regis Paper Company Site (September 2-October 23, 2003) | 214 |
| 4 | 10/10/03 | Turner, T., U.S. EPA | Nordrum, S., Leach Lake Band of Ojibwe | Letter re: U.S. EPA Meeting with International Paper Company to Discuss Validated Sampling Results at the St. Regis Paper Company Site | 3 |
| 5 | 10/20/03 | U.S. EPA | File | Attendance Sheet for St. Regis Paper Company Site Negotiation | 2 |
| 6 | 10/23/03 | White, P., Leach Lake Band of Ojibwe | Skinner, T., U.S. EPA | Letter re: Concerns Over Proposed Soil Removal Actions at the St. Regis Paper Company Site | 4 |
| 7 | 10/27/03 | Vega, S., U.S. EPA | Messing, R., Minnesota Department of Health | E-Mail Transmission re: MDH's October 28, 2003 Letter | 3 |

| <u>NO.</u> | <u>DATE</u> | <u>AUTHOR</u> | <u>RECIPIENT</u> | <u>TITLE/DESCRIPTION</u> | <u>PAGES</u> |
|------------|-------------|------------------------------------------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 8 | 10/27/03 | Barr Engineering Company | International Paper Company | Preliminary Draft 2003 Removal Action Work Plan, St. Regis Paper Company Site, for EPA Review/Com- ment w/Attached Cover Letter | 34 |
| 9 | 10/28/03 | Turner, T., U.S. EPA | Nordrum, S., Leach Lake Band of Ojibwe | Letter re: U.S. EPA's Briefing of October 20, 2003 Meeting with Inter- national Paper | 3 |
| 10 | 10/29/03 | Messing, R., Minnesota Department of Health | Vega, S., U.S. EPA, et al | E-Mail Transmissions re: Meetings in Cass Lake to Discuss the Public Comment Release of the health Consultation | 3 |
| 11 | 10/29/03 | Vega, S., U.S. EPA | Johnson, M., U.S. EPA/ ATSDR | E-Mail Transmission re: Proposed Removal Action at the St. Regis Paper Company Site | 1 |
| 12 | 10/30/03 | Messing, R., Minnesota Department of Health | Johnson, M., U.S. EPA, et al | E-Mail Transmission re: Work Plan for Removal Action at the St. Regis Paper Company Site | 2 |
| 13 | 11/04/03 | U.S. EPA | File | Meeting Agenda for Novem- ber 4, 2003 Public Meeting to Discuss the Removal Plan for the St. Regis Paper Company Site | 1 |
| 14 | 11/11/03 | Mattison, T., Barr Engineering Company | Vega, S. U.S. EPA | Validated Analytical Data for the St. Regis Paper Company Site w/Cover Letter | 28 |
| 15 | 11/12/03 | Messing, R., Minnesota Department of Health | Addressees | E-Mail Transmission re: November 10, 2003 Cass Lake City Council Meeting | 2 |
| 16 | 11,12/03 | Johnson, S., MPCA | Drexler, T., U.S. EPA | E-Mail Transmission re: State of Minnesota Dioxin Guidelines | 1 |
| 17 | 11/12/03 | Johnson, S., MPCA | Drexler, T., U.S. EPA | E-Mail Transmission re: City Owned Property and the St. Regis Removal Action Work Plan | 1 |

| <u>NO.</u> | <u>DATE</u> | <u>AUTHOR</u> | <u>RECIPIENT</u> | <u>TITLE/DESCRIPTION</u> | <u>PAGES</u> |
|------------|-------------|--------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 18 | 11/12/03 | Vega, S., U.S. EPA | Fleming, E., City of Cass Lake | FAX Transmission re: U.S. EPA's Proposed Removal Action Plan and the City of Cass Lake w/Attachments | 11 |
| 29 | 11/13/03 | Fleming, E., City of Cass Lake | Drexler, T., U.S. EPA | Letter re: City of Cass Lake Resolution Regarding Removal Action Resolution No. 21-2003 w/Attachment | 3 |
| 20 | 11/17/03 | U.S. EPA | File | Chronic Toxicity Study FY 2003 for the St. Regis Paper Company Site | 4 |
| 21 | 11/20/03 | Mathur, B., U.S. EPA | White, P., Leech Lake Band of Ojibwe | Letter re: Superfund Unilateral Administrative Order for the St. Regis Paper Company Site | 2 |
| 22 | 00/00/00 | Vega, S., U.S. EPA | Muno. W., U.S. EPA | Action Memorandum: Request for a Time Cri- Critical Removal Action at the St. Regis Paper Company Site (PENDING) | |
| 23 | 00/00/00 | U.S. EPA | International Paper Company | Administrative Order (PENDING) | |

Region 5 Superfund EJ Analysis

St. Regis Paper Co. Site Cass Lake, MN



State of Minnesota averages:
 Minority: 12%
 Low Income: 27%

U.S. EPA Region 5
 Environmental Justice Case Criteria
 for State of Minnesota

Minority: 24% or greater
 Low Income: 54% or greater

⊙ Site Location

Appendix A

**2003 REMOVAL ACTION WORK PLAN
CITY-OWNED PROPERTY**

**St. Regis Paper Company Superfund Site
Cass Lake, Minnesota**

Prepared for

International Paper

6400 Poplar Avenue
Memphis, Tennessee 38197

Prepared by

Barr Engineering Company

4700 West 77th Street
Minneapolis, Minnesota 55435

November 3, 2003

APPENDIX 

Contents

| | |
|---------------------------------------------------------------|-----------|
| 1. Introduction | 1 |
| 2. Removal Site Evaluation | 3 |
| 3. Removal Action Plan | 5 |
| 3.1 Planning for the Removal Action | 5 |
| 3.1.1 Schedule and Weather Considerations | 5 |
| 3.1.2 Surveying and Access | 7 |
| 3.1.3 Removal Action PHASP and QAPP Addendums | 7 |
| 3.1.4 Regulatory Status of Excavated Soil from Removal Action | 8 |
| 3.2 Conducting the Removal Action | 8 |
| 3.2.1 Excavation Area Preparation | 9 |
| 3.2.2 Soil Excavation | 9 |
| 3.2.3 Soil Loading and Transportation | 10 |
| 3.2.4 Soil Disposal | 10 |
| 3.2.5 Confirmatory Sample Collection | 10 |
| 3.2.6 Air Monitoring During Excavation | 11 |
| 3.3 Removal Action Implementation Report | 12 |
| 4. References | 13 |

List of Tables

| | |
|---------|------------------------------------------------------------------------------------------------------------|
| Table 1 | Validated Dioxin/Furan Concentrations in Surface Soil, 2003 Removal Action Work Plan – City-Owned Property |
| Table 2 | Grid and 2003 Sample Coordinates |
| Table 3 | Sample Locations, Depths and Analytes |

List of Figures

| | |
|----------|--------------------------------------------------------|
| Figure 1 | Site Location Map |
| Figure 2 | Removal Action Organization Chart |
| Figure 3 | Removal Action Areas – City-Owned Property |
| Figure 4 | Schedule for 2003 Removal Action – City-Owned Property |

List of Appendices

| | |
|------------|------------------------------------------------------------------|
| Appendix A | Quality Assurance Project Plan Addendum |
| Appendix B | Waste Profile Form for the Removal Action Land Disposal Facility |
| Appendix C | Fugitive Dust – Risk Calculation |

1. Introduction

On behalf of International Paper Company, Barr Engineering Company has prepared this Removal Action Work Plan (RAWP) for the St. Regis Paper Company Superfund Site (Site) in Cass Lake, Minnesota. The Site location is shown on Figure 1. The RAWP was developed to respond to the U.S. EPA's consideration of a time-critical removal of surface and near surface soil from portions of the Site based on Removal Site Evaluation (RSE) soil sampling conducted in 2003. The RAWP has been prepared concurrently with the ongoing analysis and evaluation of the RSE soil samples in an effort to plan and implement a removal action before the end of the 2003 construction season, if conditions allow. It is anticipated that the Removal Action will be implemented under a Unilateral Administrative Order issued by the U.S. Environmental Protection Agency (EPA) to International Paper which is being developed concurrently with the RAWP. An organization chart for the Removal Action is shown on Figure 2.

The Site is a closed wood treating facility that is listed on the National Priorities List of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The Site is currently in the operation, maintenance, and monitoring stages of a remedial action that took place under the regulatory authority of EPA Region 5 pursuant to a Unilateral Administrative Order issued in January 1995.

EPA performed a Five-Year Review of the Site in September 2000 and concluded that additional investigation was necessary to determine whether existing remedial measures remain protective of human health and the environment. An extensive sampling effort was conducted in the fall of 2001 which included collection of soil samples at the Site (Tetra Tech 2002). Among other findings, the 2001 investigation provided information on the distribution and concentrations of dioxins/furans, polycyclic aromatic hydrocarbons (PAHs), pentachlorophenol (PCP) and metals in surface soils within the limits of former operations at the Site and on nearby residential and industrial properties.

Based on the information collected in 2001, the primary focus of the RSE in 2003 was to delineate the extent of soil with dioxin/furan concentrations exceeding 1 ppb TEQ_{DF-WHO98} in the former north storage area (NSA) and Southwest Area of the Site. The objectives of the RSE

are more fully explained in Section 2 of this document. The RSE sample analysis is ongoing and the results from the RSE are being used to assess the potential need for a Removal Action to address dioxins/furans in these areas. EPA's 1998 Office of Solid Waste and Emergency Response (OSWER) directive 9200.4-26 identifies preliminary remediation goals (PRGs) for setting cleanup levels for dioxins/furans in soil at CERCLA and Resource Conservation and Recovery Act (RCRA) sites. Specifically, the OSWER directive provides a dioxin/furan TEQ of 1 ppb as a cleanup level for residential soils, and a TEQ range of 5 to 20 ppb as a cleanup level for industrial and commercial soils.

The schedule for completing the RSE as well as planning and implementing the possible Removal Action before the end of the 2003 construction season is extremely ambitious and highly dependent upon a number of conditions beyond the reasonable control or influence of EPA or International Paper including weather and access to property owned by others. In addition, the compressed time frame will require an expedited review and approval from EPA. A meeting was held with EPA and other stakeholders on October 20, 2003 to discuss the available results from the RSE and the feasibility of conducting a time-critical Removal Action (RA) before the end of the 2003 construction season.

Based on the RSE analytical results and the limited time remaining in 2003, EPA agreed that the focus of this RAWP would be City-owned property with surface soil concentrations above 1 ppb TEQ_{DF-WHO98}. International Paper will attempt to obtain access from the City of Cass Lake to conduct the RA outlined in this RAWP. The planned RA is limited to City-owned property because the other areas of the Site are in commercial or industrial use and none of the RSE analytical results from those areas exceed the OSWER directive for soils on industrial and commercial properties. Also, none of the RSE analytical results on private residential properties near the Site exceed 1 ppb TEQ_{DF-WHO98}.

The RAWP consists of 3 sections, including this introduction (Section 1.0). Section 2.0 describes the results of the Removal Site Evaluation; and Section 3.0 describes the planned removal action activities.

2. Removal Site Evaluation

Removal Site Evaluation (RSE) and other field work was conducted in August 2003 following issuance of Unilateral Administrative Order No. V-W-'03-C-748. The purpose of the RSE was to assess the need for a possible removal action to address dioxins/furans in soils of the former NSA and Southwest Disposal Area. To support this decision, the scope of work for the RSE was designed to meet the following specific technical objectives:

- Delineate the extent of dioxins/furans at concentrations greater than 1 ppb TEQ in surface soil (0 to 4", 4" to 12", and 12" to 24" depths) within the former NSA and Southwest Disposal Area.
- Evaluate the vertical extent of dioxins/furans in soils at sampling locations in the NSA and Southwest Disposal Pit Area where dioxin/furan concentrations exceeded 1 ppb TEQ in surface soil samples collected by the EPA in 2001.
- Measure dioxin/furan concentrations in surface soil at all locations in the NSA where 2001 PCP field screening results were greater than 1 ppb, and at a subset of locations where PCP field screening results were less than 1 ppb. Elevated dioxin/furan concentrations measured in 2001 generally corresponded to locations with elevated PCP field screening results.
- Collect a number of shallow soil samples that were archived for possible future analysis. This helped ensure that the study objectives were met efficiently, and it reduced the likelihood that a time-consuming field remobilization would be needed to address any data gaps remaining after the first round of laboratory analyses was completed.

The RSE field activities are complete and the analytical results for archived samples are expected to be complete in mid November 2003. The RSE will be summarized in a final report that will be submitted to the EPA within 4 weeks of completion of data validation of the archived samples. The RSE data for the City-owned properties are included in Table 1. The RSE data were collected from a grid system that was established across the Site as shown on Figure 3. The following table summarizes the City-owned grids where sample results for

TEQ_{DF}-WHO₉₈ concentrations exceeded 1 ppb, plus other City-owned grids where RSE data are still pending.

**City-owned Grids with Dioxin/Furan (TEQ_{DF}-WHO₉₈) Results
 Greater than 1 ppb or Results are Still Pending**

| Grid Cell on City-Owned Property | TEQ _{DF} -WHO ₉₈ (ppb) | | |
|----------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|----------------------------|
| | 0 to 4-inch sample depth | 4 to 12-inch sample depth | 12 to 24-inch sample depth |
| C3-4 (south portion) | 1.2 | 0.36 | Not sampled |
| C4-5 (south portion) | 1.5 | Archive sample selected for analysis; data expected mid November | Not sampled |
| C11-12 (south portion) | 1.2 | Archive sample selected for analysis; data expected mid November | Not sampled |
| D10-11 (western portion) | Archive sample selected for analysis; data expected mid November | Archive sample; may be analyzed pending results of 0"-4" sample | Not sampled |
| E29-30 | 1.3 | Not sampled | Not sampled |
| J26-27 | 4.8 | 2.8 | 0.15 |
| J27-29 | 2.0 | 0.071 | 0.030 |
| J29-30 | 3.3 | 2.8 | Not sampled |

The areas represented by these cells are identified on Figure 3. Within these cells, soils within the sample intervals that exceed 1 ppb TEQ_{DF}-WHO₉₈ will be removed in the planned RA during November 2003.

3. Removal Action Plan

This section describes the proposed RA that will be implemented during the remainder of the 2003 construction season, if possible. In general, the planned RA will involve excavation of surface and near surface soil on City-owned property where samples have shown dioxin/furan TEQ_{DF}-WHO₉₈ concentrations exceeding 1 ppb. The excavated soil will be transported to a Subtitle C landfill for disposal. The following sections outline the detailed planning and implementation of the RA.

3.1 Planning for the Removal Action

3.1.1 Schedule and Weather Considerations

Figure 4 presents the schedule that is envisioned for the RA and it assumes that all earthwork must be completed by Thanksgiving (November 27th). One of the primary considerations that will affect the feasibility of implementing the RA in 2003 is the impact of winter weather conditions in northern Minnesota. Due to the nature of the planned RA, the work must be conducted without the presence of significant snow cover or frozen soil conditions. Because of this concern, the planning and implementation of the RA is proceeding as quickly as possible.

Even under the aggressive planning schedule shown on Figure 4, it is possible that winter weather may set in before Thanksgiving and that it will not be possible to start or complete the planned RA excavation work before the end of the 2003 construction season. The following criteria have been established to postpone or suspend the 2003 RA excavation work until such time as weather conditions allow for the resumption of safe, efficient, and effective field work.

If more than 2 inches of accumulating snowfall occurs prior to mobilization or during the RA, it will negatively impact the work, and therefore, the RA will not proceed because:

- The presence of the snow cover will unreasonably complicate the soil excavation and handling, so that snow would need to be removed. However, snow removal would confound the existing RSE characterization of the surface soil (0" to 4" depth) due to

potential disturbances from snow removal (i.e., some surface soil would inevitably be scraped away with snow).

- Some of the snow would inevitably become incorporated into the soil and greatly complicate the handling and disposal of the soil.
- The presence of snow would complicate the planned measures for controlling the excavation depth (see Section 3.2.1).

If frozen soil conditions are present to a depth of 3 or more inches prior to mobilization or during the RA, it is likely to negatively impact the work and therefore the RA will not proceed because:

- The frozen soil will complicate excavation of the planned 0" to 4" excavation depth and result in removal of more soil than is required.
- The frozen soil will be difficult to excavate, load and transport.
- Frozen and/or snowy conditions increase the likelihood of accidents and injuries to Site workers.

In addition to the criteria established for snow and frost depths, other weather conditions may occur that would be unsuitable for conducting the planned RA (e.g., excessively wet surface soils, the presence of puddles and standing water, heavy precipitation, etc.). In those conditions, the planned RA field work would not be feasible due to concerns related to rutting of the unpaved city streets, complications with handling wet contaminated soil (liquids dripping during handling/transportation, liquids affecting landfill acceptance of the soil, etc.), and the inevitable tracking of soil (from non-RA areas or unpaved city streets) that may create a public concern with the overall isolation/containment of the RA areas. Also, operating during excessive soil moisture conditions may unnecessarily damage the vegetative cover of areas adjacent to the excavated cells, leading to an increased concern regarding wind blown soils next spring and summer.

Any decision to postpone or suspend the excavation activities will be coordinated with EPA's On-Scene Coordinator (OSC). Beginning November 5, 2003, the OSC, International Paper and its contractors will assess the field conditions every day before and during the RA and jointly determine whether the current and anticipated field conditions are suitable for the safe and efficient start or continuation of the RA excavation work. If it is determined that field conditions are not suitable for conducting RA work, then the RA work will be suspended for the season (i.e., a delay to wait for the conditions to improve this year is not realistic this late in the season and the project can not tolerate the loss of any work days prior to Thanksgiving and the anticipated end of the construction season).

If the RA work is postponed prior to initiation of field work or if RA work is suspended once underway, RA areas will be covered with a geotextile fabric and enclosed by a perimeter safety fence which will be maintained until the RA excavation work is resumed. RA work will resume in spring 2004 when transportation restrictions and weather conditions allow. The schedule to resume the excavation activities will be coordinated with the OSC.

3.1.2 Surveying and Access

As previously described, the planned RA excavations will occur on the City-owned portions of the Site (see Figure 3). In order to conduct the work, International Paper will attempt to obtain access from the City of Cass Lake for the planned RA. Access must be provided no later than November 5, 2003 in order for the planned RA to proceed this year.

In preparation for the Removal Action, the limits of the City owned property will be located and marked near the planned excavation areas (i.e., near grids C3 to C5, C11 to C12, and D10 to D11) by a land surveyor. Excavation and Site work will not extend beyond the City-owned property limits.

3.1.3 Removal Action PHASP and QAPP Addendums

The excavation contractor will prepare a Project Health and Safety Plan (PHASP). In general, the Project Quality Assurance Project Plan (QAPP) that was used for conducting the RSE is suitable for conducting the planned RA. Appendix A of this Work Plan contains an addendum that updates the existing QAPP for use with the RA.

3.1.4 Regulatory Status of Excavated Soil from Removal Action

International Paper proposes Peoria Disposal Company (PDC) as the primary disposal facility for the RA soils. PDC is a RCRA Subtitle C landfill and a copy of the waste profile information for the RA soils is in Appendix B. Based on representative samples of the RA soil, the soil is not a characteristic hazardous waste under 40 CFR § 261.2. In addition, the soil is not a listed hazardous waste under 40 CFR § 261.3. The soil excavated during the RA will be managed as a RCRA Subtitle D (non-hazardous) waste and it will not be subject to RCRA Subtitle C regulations. Additionally, the RA soils are considered non-special wastes as defined by the State of Illinois 415 ILCS 5/22.48. However, excavated soils will be transported to and disposed of in a RCRA Subtitle C permitted hazardous waste landfill.

3.2 Conducting the Removal Action

The proposed RA generally consists of the following tasks (in sequential order):

- secure the excavation areas with safety fence
- excavate surface soils
- load transport vehicles and transport to the disposal facility
- dispose of the soil at a RCRA Subtitle C landfill
- collect confirmatory samples (as described in Section 3.2.5)
- grade the edges of the shallow excavation areas to eliminate abrupt change in grade
- cover the excavated areas with geotextile fabric secured with sandbags or other acceptable method to be maintained in place until post-excavation confirmatory soil samples have shown dioxin/furan TEQ_{DF}-WHO₅₃ concentrations are less than 1 ppb
- prepare a RA Implementation report to document the soil excavation/disposal activities

3.2.1 Excavation Area Preparation

The corners of each excavation area will be delineated with survey stakes. The stakes will be offset 2 feet from each corner so they can be maintained during excavation. The limits of the excavation will be marked with a string-line. Where excavation areas border city roadways, the limits of excavation will extend to the edges of the active roadway. Each excavation area will be surrounded by safety fencing to help restrict access to the area.

The corner coordinates of each grid cell included in this RA are summarized on Table 2 and shown on Figure 3. The grid coordinates were established during the RSE using a global positioning system (GPS) and they will be re-established by GPS equipment prior to the soil excavation. The boundaries of the City-owned property will also be marked in the field as discussed in Section 3.1.2 to guide the limits of the grid cell excavations near that boundary.

3.2.2 Soil Excavation

The surface soil will be removed to the specified depth to remove the soils that exceed 1 ppb TEQ_{DF}-WHO₉₈. These areas and depths were identified by the RSE grid sampling.

Excavation will be conducted with special excavation equipment using methods to precisely control the depth of cut (such as GPS or laser-guided equipment). The excavation equipment will conduct the soil excavation within each grid area and transfer the excavated soil to trucks that will be located outside and adjacent to the excavation area (i.e., the trucks will not enter the excavation area). Plastic sheeting will be used to drape the loading area to mitigate any spillage during loading. After completing an excavation area, the edges of the excavation will be graded to address the slight (i.e., 4-inch or 12-inch) excavation face. The tires/tracks of the excavation equipment will be pressure washed prior to being moved to the next grid area that is not adjacent to the excavated area.

The depth of excavation will be closely controlled during excavation. Measurements from a string-line placed on 30-foot spacing in a north-south direction will be used to confirm that the proper excavation and depth has been achieved.

The excavated areas will be covered with a geotextile fabric and enclosed by a perimeter safety fence which will be maintained in place until post-excavation confirmatory soil samples have shown dioxin/furan TEQ_{DF}-WHO₉₈ concentrations are less than 1 ppb.

3.2.3 Soil Loading and Transportation

The excavated soils will be transported from the Site to the disposal facility by over-the-road transport trucks. The trucks will be equipped with sealed end gates and/or lined with plastic sheeting, and the soil load will be tarped prior to leaving the Site to address concerns related to spillage during transport. Each truck will be loaded to its maximum allowable weight (likely 20 tons of soil). The weight will be verified at a nearby truck scale or a portable truck scale brought to the Site. Roads adjacent to the grid may need to be blocked temporarily during loading, but given the light traffic in the area and availability of alternative routes, this is not expected to create safety concerns or cause delays to traffic. Traffic control cones and barricades will be used to redirect local traffic.

3.2.4 Soil Disposal

The excavated soils will be disposed of in the RCRA Subtitle C landfill operated by Peoria Disposal Company Peoria, Illinois. A copy of the non-special waste certification is in Appendix B.

3.2.5 Confirmatory Sample Collection

The confirmatory sample program uses the same exposure area rationale and sample compositing methodology that was approved by the EPA for the 2003 RSE sampling program. Following excavation, one composite confirmatory soil sample will be collected from the base of the excavated grid cell. The grid cells were defined in the August 24, 2003 Unilateral Administrative Order Docket No. V-W-'03-C-748. Each composite soil sample will be created from five grab sub-samples collected from the base of the excavation (0 to 4-inch interval below excavation) following methodology described in the RSE work plan.

Additional delineation samples will be collected from grid cells adjacent to the excavated grid cells if these adjacent grids were not sampled in the RSE and are owned by the City of Cass

Lake. Based on validated RSE data, it has been determined that additional delineation samples will be needed for grid cells D29-30, F29-30, I29-30, I25-26, C2-3, and C10-11.

Each base-of-excavation sample and each additional delineation sample will be analyzed for dioxins/furans. Due to the limited time remaining in the 2003 construction season, the analytical results will not be available from the confirmatory sample program until after the excavation contractor has demobilized.

The depth of excavation will be closely controlled during excavation. Measurements from a string-line placed on 30-foot spacing in a north-south direction will be used to confirm that the proper excavation and depth has been achieved. The confirmatory and additional delineation sample program is summarized on Table 3.

3.2.6 Air Monitoring During Excavation

Although air emissions are not expected to be a concern during this work due to the relatively low soil contaminant concentrations and the expected weather conditions in November, perimeter monitoring will be conducted during soil excavation to verify that on-site work is not causing unacceptable air quality at the perimeter of the work area. Air monitoring will consist of dust monitoring using a MiniRam or equivalent instrument. Monitoring will be performed daily during excavation work in removal areas using real time sampling equipment. Based on the relatively low contaminant concentrations measured in the soil and the low air temperature, chemical-concentration-specific air monitoring is not warranted (see Appendix C). This risk calculation demonstrates an incremental cancer risk level significantly less than 10^{-6} for a resident exposed to fugitive dust over a 30 day construction period based on the conservative assumption that the dust contains the highest concentration in the soils to be excavated (i.e., 4.8 ppb TEQ_{DF-WHO98}).

Fugitive dust emissions will be measured periodically at the upwind and downwind perimeter of the excavation areas, when windy conditions are present, or when visible dust emissions are observed near earthwork activities. Measurements will be logged and the monitor will be calibrated and maintained according to manufacturer's guidance. Measures to control fugitive dust (i.e., watering) will be implemented as necessary to prevent dust concentrations at the

downwind perimeter above $150 \mu\text{g}/\text{m}^3$, which is the National Primary and Secondary Ambient Air Quality Standard (NAAQS) for PM_{10} .

3.3 Removal Action Implementation Report

Upon completion of RA activities, a report summarizing RA activities will be submitted to the EPA for review and approval. The report will be submitted within 30 calendar days of completion on the RA work, which includes validation of all confirmatory and additional delineation sample results. The RA Implementation Report will include the following: (1) data, results, and figures (e.g., maps of soil excavation) from RA implementation; (2) documentation of disposal of soil; (3) follow-up actions, if any; (4) discussion of any RA Plan changes with a discussion of why the changes were necessary; (5) discussion of any difficulties encountered during the implementation, which may alter or impair the effectiveness of the RA; and (6) RA costs.

4. References

- Agency for Toxic Substances and Disease Registry (ATSDR). 1997. "Dioxin and Dioxin-Like Compounds in Soil, Part 1: ATSDR Interim Policy Guideline." U.S. Department of Health and Human Services. August 21
- Baker, Donald G., 1983. "Wind Climatology and Wind Power." Technical Bulletin. Agricultural Experiment Station, University of Minnesota.
- Champion International Corporation (Champion). 1988. "Response Action Final Report, Former City Dump Pit Site." Prepared by Barr Engineering Company. November.
- Minnesota Pollution Control Agency (MPCA). 1995. "Five-Year Review Report, St. Regis Paper Company Site, Cass Lake, Minnesota." March 27.
- Minnesota Climatology Work Group website, <http://climate.umn.edu>
- National Oceanic and Atmospheric Administration's National Weather Service website, <http://www.new.noaa.gov>
- Tetra Tech EM Inc. (Tetra Tech). 2002. "Data Evaluation Report, St. Regis Company Site, Cass Lake, Minnesota." August 23.
- U.S. Environmental Protection Agency (U.S. EPA). 1985. "National Enforcement Investigation Center Policies and Procedures." U.S. EPA-330/9-78/001-R. Revised June.
- U.S. EPA. 1992. "Specifications and Guidance for Obtaining Contaminant-Free Sample Containers." April.
- U.S. EPA. 1998. "Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites." OSWER Directive 9200.4-26. April 13.
- U.S. EPA. 1999. "Statement of Work for Non-Time-Critical Removal Support, St. Regis Paper Company Site, MN, Revision 1." June 17.
- U.S. EPA. 2002. "Statement of Work for Analysis of Chlorinated Dibenzo-P-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs)." Analytical Operations/Data Quality Center. Document No. DLM01.4. January.
- U.S. EPA. 2003. Unilateral Administration Order. St. Regis Paper Company Site. Docket No. V-W-'03-C-748. Effective Date July 24, 2003.
- U.S. Geological Survey (USGS). 1972. 7.5-Minute Series Topographic Maps of Cass Lake and Pike Bay, Minnesota, Quadrangles.

Tables

Table 1

**Validated Dioxin/Furan Concentration in Surface Soil
2003 Removal Action Work Plan – City-Owned Property
St. Regis Paper Company Site**

[concentration in µg/Kg (ppb)]

| Location | AC8-9-0-4 | AC9-10-0-4 | C3-4 0-4 | C3-4 4-12 | C4-5-0-4 | C5-6-0-4 |
|---------------------------------------------------------|------------|------------|-----------|-----------|------------|------------|
| Date | 8/26/2003 | 8/26/2003 | 8/26/2003 | 8/26/2003 | 8/26/2003 | 8/26/2003 |
| Lab | CAS | CAS | CAS | CAS | CAS | CAS |
| Dup | | | | | | |
| 2,3,7,8-TCDD | 0 003 | 0 003 | 0 005 | 0 001 j | 0 006 | 0 003 |
| 1,2,3,7,8-PeCDD | 0 057 | 0 061 | 0 092 | 0 033 | 0 093 | 0 053 |
| 1,2,3,4,7,8-HxCDD | 0 172 | 0 199 | 0 235 | 0 116 | 0 246 | 0 156 |
| 1,2,3,6,7,8-HxCDD | 0 609 | 0 612 | 1 869 | 0 464 | 1 755 | 1 019 j |
| 1,2,3,7,8,9-HxCDD | 0 301 | 0 330 | 0 555 | 0 228 | 0 535 | 0 379 |
| 1,2,3,4,6,7,8-HpCDD | 21 457 | 25 202 | 53 631 | 16 405 | 69 309 | 38 464 |
| OCDD | 190 148 | 199 105 | 461 755 | 125 080 | 681 493 e | 333 568 |
| 2,3,7,8-TCDF | 0 003 | 0 004 | 0 011 | 0 004 | 0 021 | 0 008 |
| 1,2,3,7,8-PeCDF | 0 021 | 0 021 | 0 049 | 0 022 | 0 135 | 0 041 |
| 2,3,4,7,8-PeCDF | 0 022 | 0 023 | 0 043 | 0 018 | 0 104 | 0 038 |
| 1,2,3,4,7,8-HxCDF | 0 254 | 0 236 | 0 448 | 0 137 | 0 829 | 0 323 |
| 1,2,3,6,7,8-HxCDF | 0 074 | 0 073 | 0 151 | 0 055 | 0 259 | 0 100 |
| 1,2,3,7,8,9-HxCDF | <0 075 | <0 065 | 0 080 | <0 059 | 0 234 | 0 079 |
| 2,3,4,6,7,8-HxCDF | 0 139 EMPC | 0 167 | 0 273 | 0 109 | 0 453 EMPC | 0 199 EMPC |
| 1,2,3,4,6,7,8-HpCDF | 3 781 | 4 352 | 9 074 | 2 657 | 13 570 | 6 217 |
| 1,2,3,4,7,8,9-HpCDF | 0 334 | 0 351 | 0 569 | 0 215 | 0 941 | 0 351 |
| OCDF | 21 819 | 26 545 | 44 226 | 13 720 | 75 893 | 36 028 |
| TCDD, Total | 0 013 | 0 023 | 0 050 | 0 004 | 0 030 | 0 013 |
| PeCDD, Total | 0 198 | 0 215 | 0 361 | 0 147 | 0 367 | 0 186 |
| HxCDD, Total | 2 822 | 2 769 | 5 675 | 1 994 | 5 467 | 3 602 |
| HpCDD, Total | 41 192 | 39 236 | 64 496 | 24 311 | 66 563 | 56 113 |
| TCDF, Total | 0 046 | 0 062 | 0 090 | 0 043 | 0 131 | 0 043 |
| PeCDF, Total | 0 674 | 0 743 | 1 115 | 0 548 | 1 876 | 0 639 |
| HxCDF, Total | 2 174 | 2 417 | 4 319 | 3 370 | 7 392 | 2 782 |
| HpCDF, Total | 19 549 | 18 306 | 27 110 | 12 562 | 12 860 | 25 395 |
| TEQ _{DF} - WHO ₉₈ (ND = 1/2 DL) (1) | 0 508 | 0 563 | 1.17 | 0 365 | 1.51 | 0 790 |

Data qualifiers and footnotes

e - estimated value Analyte exceeds upper end of the linear calibration range

j - estimated value Analyte concentration is below method reporting limit and above non-detect

EMPC - estimated maximum possible concentration

(1) TEQ_{DF}-WHO₉₈ values shown above are calculated by multiplying the validated congener concentrations by their respective toxicity equivalency factors (TEF) and summing across all congeners. The results may differ from the TEQ concentrations reported in the laboratory data package, which are based on unvalidated data from each independent sample analysis (initial or dilution), and may include congener concentrations that exceeded the specified calibration range

Table 1

Validated Dioxin/Furan Concentration in Surface Soil
2003 Removal Action Work Plan – City-Owned Property
St. Regis Paper Company Site

[concentration in µg/Kg (ppb)]

| Location Date Lab Dup | C11-12-0-4 8/27/2003 CAS | C12-14-0-4 8/27/2003 CAS | C23-24-0-4 8/27/2003 CAS | DE8-9 0-4 8/8/2003 CAS | DE8-9 4-12 8/8/2003 CAS | D25-26 0-4 8/8/2003 CAS |
|---------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------|-------------------------------|-------------------------------|
| 2,3,7,8-TCDD | 0 004 | 0 002 EMPC | 0 0009 j EMPC | <0 0006 | <0 0005 | <0 0003 |
| 1,2,3,7,8-PeCDD | 0 071 | 0 064 | 0 024 | 0 017 | 0 011 | 0 021 |
| 1,2,3,4,7,8-HxCDD | 0 279 | 0 247 | 0 078 | 0 067 | 0 046 | 0 049 |
| 1,2,3,6,7,8-HxCDD | 1 621 | 0 843 j | 0 273 | 0 206 | 0 132 | 0 404 |
| 1,2,3,7,8,9-HxCDD | 0 519 | 0 443 | 0 164 | 0 130 | 0 090 | 0 135 |
| 1,2,3,4,6,7,8-HpCDD | 60 551 | 29 690 | 6 065 | 8 516 | 6,274 | 12 855 |
| OCDD | 536 045 e | 246 315 | 52 209 | 55 358 e | 45 773 e | 133 391 |
| 2,3,7,8-TCDF | 0 008 | 0 005 | 0 001 | 0 001 | 0 0009 EMPC | 0 004 |
| 1,2,3,7,8-PeCDF | 0 048 | 0 028 | <0 011 | 0 006 | 0 004 | 0 038 |
| 2,3,4,7,8-PeCDF | 0 054 | 0 030 | <0 011 | 0 007 | 0 005 | 0 033 |
| 1,2,3,4,7,8-HxCDF | 0 515 | 0 308 | 0 096 | 0 068 | 0 053 | 0 372 |
| 1,2,3,6,7,8-HxCDF | 0 128 | 0 094 | 0 038 | 0 023 | 0 017 | 0 112 |
| 1,2,3,7,8,9-HxCDF | <0 005 | <0 006 | <0 002 | 0 002 | 0 002 j EMPC | <0 0269 |
| 2,3,4,6,7,8-HxCDF | 0 267 | 0 205 | 0 069 | 0 045 | 0 036 | 0 176 |
| 1,2,3,4,6,7,8-HpCDF | 9 889 | 4 973 | 1 250 | 1 131 | 0 949 | 3 413 |
| 1,2,3,4,7,8,9-HpCDF | 0 832 | 0 471 | 0 165 | 0 106 | 0 075 | 0 360 |
| OCDF | 64 587 | 25 663 | 4 946 | 5 449 | 4 530 | 12 861 |
| TCDD, Total | 0 022 | 0 010 | 0 005 | <0 0006 | <0 0005 | 0 002 |
| PeCDD, Total | 0 253 | 0 227 | 0 095 | 0 074 | 0 046 | 0 082 |
| HxCDD, Total | 5 220 | 3 828 | 1 374 | 2 062 | 1 151 | 1 766 |
| HpCDD, Total | 59 701 | 51 472 | 17 098 | 22 841 | 13 136 | 28 397 |
| TCDF, Total | 0 078 | 0 057 | 0 028 | 0 009 | 0 006 | 0 030 |
| PeCDF, Total | 1 083 | 0 749 | 0 411 | 0 190 | 0 156 | 0 753 |
| HxCDF, Total | 3 811 | 2 690 | 2 769 | 1 336 | 1 020 | 3 317 |
| HpCDF, Total | 8 954 | 21 778 | 8 274 | 5 412 | 3 816 | 17 592 |
| TEQ _{DF} - WHO ₉₈ (ND = 1/2 DL) (1) | 1.21 | 0 676 | 0 181 | 0 179 | 0 130 | 0 346 |

Data qualifiers and footnotes

e - estimated value Analyte exceeds upper end of the linear calibration range

j - estimated value Analyte concentration is below method reporting limit and above non-detect

EMPC - estimated maximum possible concentration

(1) TEQ_{DF}-WHO₉₈ values shown above are calculated by multiplying the validated congener concentrations by their respective toxicity equivalency factors (TEF) and summing across all congeners. The results may differ from the TEQ concentrations reported in the laboratory data package, which are based on unvalidated data from each independent sample analysis (initial or dilution), and may include congener concentrations that exceeded the specified calibration range

Table 1

Validated Dioxin/Furan Concentration in Surface Soil
2003 Removal Action Work Plan – City-Owned Property
St. Regis Paper Company Site

[concentration in µg/Kg (ppb)]

| Location | D27-29 0-4 | E24-25 0-4 | E24-25 4-12 | E29-30 0-4 | F27-29 0-4 | F27-29 4-12 |
|---------------------------------------------------------|------------|---------------------|---------------------|------------|----------------------|----------------------|
| Date | 8/13/2003 | 8/13/2003 | 8/13/2003 | 8/8/2003 | 8/6/2003 | 8/6/2003 |
| Lab | CAS | CAS | CAS | CAS | CAS | CAS |
| Dup | | | | | | |
| 2,3,7,8-TCDD | 0 001 | 0 0007 _j | 0 0004 _j | 0 006 | 0 003 | 0 002 |
| 1,2,3,7,8-PeCDD | 0 026 | 0 015 | 0 010 | 0 143 | 0 068 | 0 032 |
| 1,2,3,4,7,8-HxCDD | 0 083 | 0 050 | 0 039 | 0 438 | 0 260 | 0 123 |
| 1,2,3,6,7,8-HxCDD | 0 406 | 0 489 | 0 625 | 1 602 | 0 963 | 0 274 _j |
| 1,2,3,7,8,9-HxCDD | 0 186 | 0 097 | 0 094 | 0 748 | 0 295 _j | 0 242 |
| 1,2,3,4,6,7,8-HpCDD | 13 044 | 15 946 | 18 757 | 49 437 | 30 852 | 11 364 |
| OCDD | 115 856 | 173 869 | 196 286 | 428 350 | 249 540 _e | 133 473 _e |
| 2,3,7,8-TCDF | 0 007 | 0 006 | 0 005 | 0 014 | 0 026 | 0 006 |
| 1,2,3,7,8-PeCDF | 0 040 | 0 057 | 0 092 | 0 086 | 0 111 | 0 064 |
| 2,3,4,7,8-PeCDF | 0 050 | 0 046 | 0 051 | 0 094 | 0 113 | 0 065 |
| 1,2,3,4,7,8-HxCDF | 0 343 | 0 488 | 0 629 | 0 617 EMPC | 0 723 | 0 460 |
| 1,2,3,6,7,8-HxCDF | 0 096 | 0 115 | 0 164 | 0 309 | 0 233 | 0 128 |
| 1,2,3,7,8,9-HxCDF | <0 007 | 0 015 | 0 038 | 0 030 | 0 041 | <0 035 |
| 2,3,4,6,7,8-HxCDF | 0 160 | 0 182 | 0 246 | 0 566 | 0 366 | 0 229 |
| 1,2,3,4,6,7,8-HpCDF | 3 285 | 4 221 | 5 503 | 12 178 | 7 167 | 2 489 |
| 1,2,3,4,7,8,9-HpCDF | 0 250 | 0 338 | 0 555 | 0 806 | 0 639 | 0 447 |
| OCDF | 11 740 | 13 069 | 14 100 | 58 002 | 29 433 | 14 042 |
| TCDD, Total | 0 013 | 0 015 | 0 003 | 0 031 | 0 016 | 0 004 |
| PeCDD, Total | 0 094 | 0 069 | 0 025 | 0 547 | 0 279 | 0 111 |
| HxCDD, Total | 1 739 | 1 615 | 1 720 | 8 027 | 7 753 | 2 747 |
| HpCDD, Total | 21 470 | 27 647 | 25 001 | 92 152 | 75 414 | 46 496 |
| TCDF, Total | 0 034 | 0 037 | 0 026 | 0 251 | 0 143 | 0 052 |
| PeCDF, Total | 0 950 | 0 800 | 0 890 | 3 336 | 2 648 | 1 686 |
| HxCDF, Total | 5 123 | 8 491 | 4 449 | 9 664 | 7 251 | 4 152 |
| HpCDF, Total | 12 616 | 16 143 | 17 161 | 45 124 | 34 820 | 30 590 |
| TEQ _{DF} - WHO ₉₈ (ND = 1/2 DL) (1) | 0 361 | 0 409 | 0 494 | 1 305 | 0 840 | 0 370 |

Data qualifiers and footnotes

e - estimated value Analyte exceeds upper end of the linear calibration range

j - estimated value Analyte concentration is below method reporting limit and above non-detect

EMPC - estimated maximum possible concentration

(1) TEQ_{DF}-WHO₉₈ values shown above are calculated by multiplying the validated congener concentrations by their respective toxicity equivalency factors (TEF) and summing across all congeners. The results may differ from the TEQ concentrations reported in the laboratory data package, which are based on unvalidated data from each independent sample analysis (initial or dilution), and may include congener concentrations that exceeded the specified calibration range.

Table 1

Validated Dioxin/Furan Concentration in Surface Soil
 2003 Removal Action Work Plan – City-Owned Property
 St. Regis Paper Company Site

[concentration in µg/Kg (ppb)]

| Location | H25-26 0-4 | I20-21 0-4 | I26-27 0-4 | I27-29 0-4 | J26-27 0-4 | J26-27 4-12 |
|---------------------------------------------------------|------------|------------|------------|------------|------------|-------------|
| Date | 8/5/2003 | 8/15/2003 | 8/6/2003 | 8/6/2003 | 8/8/2003 | 8/8/2003 |
| Lab | CAS | CAS | CAS | CAS | CAS | CAS |
| Dup | | | | | | |
| 2,3,7,8-TCDD | 0 0006 j | 0 001 | <0 0003 | 0 0008 j | 0 002 | 0 0006 j |
| 1,2,3,7,8-PeCDD | 0 008 | 0 024 | 0 004 | 0 021 | 0 083 | 0 026 |
| 1,2,3,4,7,8-HxCDD | 0 024 | 0 070 | 0 010 | 0 054 | 0 313 | 0 089 |
| 1,2,3,6,7,8-HxCDD | 0 108 | 0 292 | 0 064 | 0 320 | 5 251 | 3 090 |
| 1,2,3,7,8,9-HxCDD | 0 049 | 0 183 | 0 022 | 0 112 | 0 830 | 0 255 |
| 1,2,3,4,6,7,8-HpCDD | 2 344 | 11 694 | 2 496 | 11 694 | 158 645 | 112 241 |
| OCDD | 22 122 e | 79 825 e | 24 152 | 124 075 | 1504 395 e | 1406 612 e |
| 2,3,7,8-TCDF | 0 001 | 0 002 | <0 001 | 0 004 | 0 065 | 0 037 |
| 1,2,3,7,8-PeCDF | 0 008 | 0 010 | 0 007 | 0 030 | 0 412 | 0 209 |
| 2,3,4,7,8-PeCDF | 0 010 | 0 010 | 0 009 | 0 035 | 0 755 | 0 308 |
| 1,2,3,4,7,8-HxCDF | 0 144 | 0 096 | 0 061 | 0 308 | 9 161 | 4 746 |
| 1,2,3,6,7,8-HxCDF | 0 032 | 0 043 | 0 016 | 0 076 | 1 489 | 0 757 |
| 1,2,3,7,8,9-HxCDF | 0 032 | 0 018 | 0 021 | 0 084 EMPC | 0 079 | 0 049 |
| 2,3,4,6,7,8-HxCDF | 0 056 | 0 077 | 0 026 | 0 129 | 2 451 | 1 382 |
| 1,2,3,4,6,7,8-HpCDF | 0 530 | 2 182 | 0 450 | 2 713 | 50 506 | 30 098 |
| 1,2,3,4,7,8,9-HpCDF | 0 080 | 0 136 | 0 045 | 0 207 | 4 332 | 2 502 |
| OCDF | 1 686 | 7 118 | 1 682 | 12 664 | 209 140 e | 171 091 e |
| TCDD, Total | 0 002 | 0 005 | <0 0003 | 0 003 | 0 027 | 0 009 |
| PeCDD, Total | 0 039 | 0 088 | 0 014 | 0 082 | 0 253 | 0 070 |
| HxCDD, Total | 0 548 | 1 469 | 0 257 | 1 388 | 12 278 | 5 265 |
| HpCDD, Total | 6 977 | 15 922 | 4 105 | 23 525 | 70 667 | 71 507 |
| TCDF, Total | 0 010 | 0 022 | 0 004 | 0 047 | 0 338 | 0 144 |
| PeCDF, Total | 0 229 | 0 322 | 0 154 | 0 759 | 9 483 | 3 986 |
| HxCDF, Total | 1 909 | 1 932 | 0 926 | 5 721 | 24 238 | 13 173 |
| HpCDF, Total | 3 558 | 5 378 | 2 094 | 13 912 | 47 376 | 42 756 |
| TEQ _{DF} - WHO ₉₈ (ND = 1/2 DL) (1) | 0 090 | 0 257 | 0 060 | 0 310 | 4 753 | 2.837 |

Data qualifiers and footnotes

e - estimated value Analyte exceeds upper end of the linear calibration range

j - estimated value Analyte concentration is below method reporting limit and above non-detect

EMPC - estimated maximum possible concentration

(1) TEQ_{DF}-WHO₉₈ values shown above are calculated by multiplying the validated congener concentrations by the respective toxicity equivalency factors (TEF) and summing across all congeners. The results may differ from the TEQ concentrations reported in the laboratory data package, which are based on unvalidated data from each independent sample analysis (initial or dilution), and may include congener concentrations that exceeded the specified calibration range

Table 1

**Validated Dioxin/Furan Concentration in Surface Soil
2003 Removal Action Work Plan – City-Owned Property
St. Regis Paper Company Site**

[concentration in µg/Kg (ppb)]

| Location | J26-27 12-24 | J27-29 0-4 | J27-29 4-12 | J27-29 12-24 | J29-30 0-4 | J29-30 4-12 |
|---------------------------------------------------------|-----------------|------------------|-----------------|-----------------|-------------------|---------------------|
| Date | 8/8/2003 | 8/8/2003 | 8/8/2003 | 8/8/2003 | 8/6/2003 | 8/6/2003 |
| Lab | CAS | CAS | CAS | CAS | CAS | CAS |
| Dup | | | | | | |
| 2,3,7,8-TCDD | <0 0002 | 0 002 | <0 0002 | <0 0001 | 0 0017 EMPC | <i>0 003</i> |
| 1,2,3,7,8-PeCDD | 0 0019 <i>j</i> | 0 033 | <0 0002 | 0 0006 <i>j</i> | 0 046 | <i>0 087</i> |
| 1,2,3,4,7,8-HxCDD | 0 009 EMPC | 0 071 | 0 0008 <i>j</i> | 0 001 <i>j</i> | 0 166 | <i>0 312</i> |
| 1,2,3,6,7,8-HxCDD | 0 189 | 2 426 | 0 009 | 0 043 | <i>j</i> 0 372 | <i>3 753</i> |
| 1,2,3,7,8,9-HxCDD | 0 023 | 0 243 | 0 001 <i>j</i> | 0 003 | 0 389 | <i>0 721</i> |
| 1,2,3,4,6,7,8-HpCDD | 5 335 | 79 840 <i>e</i> | 0 282 | 1 096 | 186 701 | <i>100 375</i> |
| OCDD | 52 529 <i>e</i> | 747 571 <i>e</i> | 2 208 <i>e</i> | 8 740 | 2182 551 <i>e</i> | <i>868 955607 e</i> |
| 2,3,7,8-TCDF | 0 004 | 0 010 | <0 0002 | <0 001 | 0 014 | <i>0 044</i> |
| 1,2,3,7,8-PeCDF | 0 023 | 0 127 | <0 0002 | 0 0016 <i>j</i> | 0 123 | <i>0 250 JK</i> |
| 2,3,4,7,8-PeCDF | 0 029 | 0 181 | 0 0005 <i>j</i> | 0 003 | 0 140 | <i>0 283 JK</i> |
| 1,2,3,4,7,8-HxCDF | 0 252 | 2 798 | 0 008 | 0 036 | 2 625 | <i>4 274</i> |
| 1,2,3,6,7,8-HxCDF | 0 048 | 0 386 | 0 0013 <i>j</i> | 0 006 | 0 262 | <i>0 749</i> |
| 1,2,3,7,8,9-HxCDF | <0 0103 | 0 033 EMPC | <0 0006 | <0 0006 | 0 063 | <i>0 148 K</i> |
| 2,3,4,6,7,8-HpCDF | 0 070 | 0 844 | 0 003 | 0 012 | 0 887 | <i>1 478</i> |
| 1,2,3,4,6,7,8-HpCDF | 1 515 | 28 143 | 0 116 | 0 490 | 28 274 | <i>32 204</i> |
| 1,2,3,4,7,8,9-HpCDF | 0 089 | 2.203 | 0 012 | 0 062 | 2 125 | <i>3 181</i> |
| OCDF | 9 036 | 154 944 <i>e</i> | 0 624 | 2 748 | 132 899 | <i>86 658</i> |
| TCDD, Total | 0 001 | 0 018 | <0 0002 | <0 0001 | 0 010 | |
| PeCDD, Total | 0 003 | 0 138 | <0 0002 | 0 001 | 0 183 | |
| HxCDD, Total | 0 487 | 5 660 | 0 021 | 0 095 | 5 045 | |
| HpCDD, Total | 9 989 | 66 753 | 0 461 | 2 229 | 82 565 | |
| TCDF, Total | 0 015 | 0 113 | <0 0002 | 0 004 | 0 116 | |
| PeCDF, Total | 0 420 | 2 748 | 0 006 | 0 033 | 2 490 | |
| HxCDF, Total | 2 976 | 11 552 | 0 124 | 0 608 | 8 468 | |
| HpCDF, Total | 8 349 | 39 244 | 0 572 | 3 440 | 53 718 | |
| TEQ _{DF} - WHO ₉₈ (ND = 1/2 DL) (1) | 0 153 | 2.005 | 0 007 | 0 029 | 3.30 | <i>2.80</i> |

Data qualifiers and footnotes

e - estimated value Analyte exceeds upper end of the linear calibration range

j - estimated value Analyte concentration is below method reporting limit and above non-detect

EMPC - estimated maximum possible concentration

(1) TEQ_{DF}-WHO₉₈ values shown above are calculated by multiplying the validated congener concentrations by their respective toxicity equivalency factors (TEF) and summing across all congeners. The results may differ from the TEQ concentrations reported in the laboratory data package, which are based on unvalidated data from each independent sample analysis (initial or dilution), and may include congener concentrations that exceeded the specified calibration range

Underlined and italicized text indicates "unvalidated" data

Table 1

Validated Dioxin/Furan Concentration in Surface Soil
 2003 Removal Action Work Plan – City-Owned Property
 St. Regis Paper Company Site

[concentration in µg/Kg (ppb)]

| | |
|---------------------------------------------------------|---------------------|
| Location | <u>J25-26 0-4</u> |
| Date | <u>8/6/2003</u> |
| Lab | <u>CAS</u> |
| Dup | - |
| 2,3,7,8-TCDD | <0.000334 |
| 1,2,3,7,8-PeCDD | 0.004 |
| 1,2,3,4,7,8-HxCDD | 0.013 |
| 1,2,3,6,7,8-HxCDD | 0.056 |
| 1,2,3,7,8,9-HxCDD | 0.025 |
| 1,2,3,4,6,7,8-HpCDD | 1.604107 <i>e</i> |
| OCDD | 12.867262 <i>be</i> |
| 2,3,7,8-TCDF | 0.001 |
| 1,2,3,7,8-PeCDF | 0.004 |
| 2,3,4,7,8-PeCDF | 0.007 |
| 1,2,3,4,7,8-HxCDF | 0.081 |
| 1,2,3,6,7,8-HxCDF | 0.017 |
| 1,2,3,7,8,9-HxCDF | <0.001057 |
| 2,3,4,6,7,8-HxCDF | 0.030 |
| 1,2,3,4,6,7,8-HpCDF | 0.473 |
| 1,2,3,4,7,8,9-HpCDF | 0.049 |
| OCDF | 1.066 |
| TCDD, Total | - |
| PeCDD, Total | - |
| HxCDD, Total | - |
| HpCDD, Total | - |
| TCDF, Total | - |
| PeCDF, Total | - |
| HxCDF, Total | - |
| HpCDF, Total | - |
| TEQ _{DF} - WHO ₉₈ (ND = 1/2 DL) (1) | 0.05 |

Data qualifiers and footnotes

e - estimated value Analyte exceeds upper end of the linear calibration range

j - estimated value Analyte concentration is below method reporting limit and above non-detect

EMPC - estimated maximum possible concentration

(1) TEQ_{DF}-WHO₉₈ values shown above are calculated by multiplying the validated congener concentrations by their respective toxicity equivalency factors (TEF) and summing across all congeners. The results may differ from the TEQ concentrations reported in the laboratory data package, which are based on unvalidated data from each independent sample analysis (initial or dilution), and may include congener concentrations that exceeded the specified calibration range.

Underlined and italicized text indicates “unvalidated” data

Table 2

**Grid and 2003 Sample Coordinates
2003 Removal Action Work Plan - City-Owned Property
St. Regis Paper Company Site
Docket No: V-W-'03-C-748**

(coordinates in UTM NAD 83 [in meters])

| Sample ID | Grid Node | Grid Node Coordinates | | 2003 Sample Coordinates | |
|---------------------------|-----------|-----------------------|---------------|-------------------------|---------------|
| | | X-Coor. | Y-Coor. | X-Coor. | Y-Coor. |
| North Storage Area | | | | | |
| J26-27 | J26 | 379083 51400 | 5248037 83500 | 379085 42300 | 5248035 89500 |
| | J27 | 379112 13100 | 5248037 57200 | 379110 34200 | 5248035 91300 |
| | L26 | 379083 07800 | 5248007 07900 | 379088 20300 | 5248014 89200 |
| | L27 | 379112 87500 | 5248005 90100 | 379120 30700 | 5248014 76900 |
| | Center | 379097 89950 | 5248022 09675 | 379095 55000 | 5248028 28700 |
| J27-29 | J27 | 379112 13100 | 5248037 57200 | 379116 07800 | 5248034 35600 |
| | J29 | 379178 47600 | 5248037 55300 | 379171 18000 | 5248032 31500 |
| | L27 | 379112 87500 | 5248005 90100 | 379109 36700 | 5248016 00600 |
| | L29 | 379178 65400 | 5248004 78000 | 379172 13800 | 5248012 99900 |
| | Center | 379145 53400 | 5248021 45150 | 379149 71500 | 5248026 47700 |
| J29-30 | J29 | 379178 47600 | 5248037 55300 | 379179 70800 | 5248035 31500 |
| | J30 | 379196 76422 | 5248037 55300 | 379194 28900 | 5248035 23400 |
| | L29 | 379178 65400 | 5248004 78000 | 379180 37400 | 5248007 44500 |
| | L30 | 379196 94222 | 5248004 78000 | 379192 63500 | 5248010 05200 |
| | Center | 379187 70911 | 5248021 16650 | 379186 47600 | 5248021 57400 |
| E29-30 | E29 | 379179 15700 | 5248175 70600 | 379179 33400 | 5248172 85700 |
| | E30 | 379209 63737 | 5248175 70600 | 379193 24400 | 5248172 69500 |
| | F29 | 379178 55100 | 5248143 64500 | 379180 81800 | 5248145 65300 |
| | F30 | 379209 03137 | 5248143 64500 | 379191 31600 | 5248147 44000 |
| | Center | 379194 09419 | 5248159 67550 | 379184 91600 | 5248156 41900 |
| D10-11 | D10 | 378624 82641 | 5248221 52950 | 378625 40100 | 5248205 24100 |
| | D11 | 378655 30678 | 5248220 74975 | 378654 52200 | 5248203 23800 |
| | E10 | 378624 82641 | 5248188 44450 | 378625 35400 | 5248188 57300 |
| | E11 | 378655 30678 | 5248187 65725 | 378654 61100 | 5248187 17500 |
| | Center | 378640 06659 | 5248204 59525 | 378638 85600 | 5248197 60900 |
| C3-4 | C3 | 378376 24600 | 5248254 04400 | | |
| | C4 | 378421 68952 | 5248252 94550 | 378419 67900 | 5248250 32100 |
| | D3 | 378375 97300 | 5248229 61300 | 378377 96100 | 5248232 20900 |
| | D4 | 378418 81100 | 5248228 87950 | 378416 04200 | 5248232 43000 |
| | Center | 378398 17988 | 5248241 37050 | 378397 65900 | 5248241 30000 |
| C4-5 | C4 | 378421 68952 | 5248252 94550 | 378422 61600 | 5248251 03800 |
| | C5 | 378462 54700 | 5248251 84700 | 378460 70800 | 5248250 54300 |
| | D4 | 378418 81100 | 5248228 87950 | 378419 69400 | 5248229 21500 |
| | D5 | 378461 64900 | 5248228 14600 | 378459 62200 | 5248228 06600 |
| | Center | 378441 17413 | 5248240 45450 | 378441 05000 | 5248239 70700 |
| C11-12 | C11 | 378655 30678 | 5248249 87325 | 378656 45700 | 5248247 93900 |
| | C12 | 378687 71800 | 5248249 35200 | 378686 67800 | 5248247 36100 |
| | D11 | 378655 30678 | 5248220 74975 | 378656 02300 | 5248220 85100 |
| | D12 | 378685 97600 | 5248219 97000 | 378684 23200 | 5248220 51700 |
| | Center | 378671 07689 | 5248234 98625 | 378672 23700 | 5248234 40500 |

Table 3

**Sample Locations, Depths and Analytes
2003 Removal Action Work Plan - City-Owned Property
St. Regis Paper Company Superfund Site
Docket No.**

| Analytical Samples | | | | | |
|--------------------|---------------|----------------|--------|----------|----------------------------------|
| Station ID | Area | Study Element | 0-4 in | Analytes | Sampling Rationale |
| J26-27 | North Storage | Removal Action | x | PCDD/F | Confirmatory - Base of Exc. |
| J27-29 | North Storage | Removal Action | x | PCDD/F | Confirmatory - Base of Exc. |
| J29-30 | North Storage | Removal Action | x | PCDD/F | Confirmatory - Base of Exc. |
| E29-30 | North Storage | Removal Action | x | PCDD/F | Confirmatory - Base of Exc. |
| C3-4 (south 1/2) | North Storage | Removal Action | x | PCDD/F | Confirmatory - Base of Exc. |
| C4-5 (south 1/2) | North Storage | Removal Action | x | PCDD/F | Confirmatory - Base of Exc. |
| C11-12 (south 1/2) | North Storage | Removal Action | x | PCDD/F | Confirmatory - Base of Exc. |
| | | | | | |
| I29-30 | North Storage | Removal Action | x | PCDD/F | Additional delineation - Lateral |
| D29-30 | North Storage | Removal Action | x | PCDD/F | Additional delineation - Lateral |
| F29-30 | North Storage | Removal Action | x | PCDD/F | Additional delineation - Lateral |
| C2-3 | North Storage | Removal Action | x | PCDD/F | Additional delineation - Lateral |
| C10-11 | North Storage | Removal Action | x | PCDD/F | Additional delineation - Lateral |

Figures

Appendices

Appendix A
Quality Assurance Project Plan Addendum

Addendum 1
Quality Assurance Project Plan
Removal Site Evaluation and Supplemental Assessment
St. Regis Paper Company Superfund Site
Cass Lake, Minnesota
November 3, 2003

The purpose of this Addendum is to update the information contained in the Quality Assurance Project Plan (QAPP) (EPA 2003) prepared for the 2003 Removal Site Evaluation (RSE) and Supplemental Assessment (SA) at the St. Regis Paper Company Site to represent the planned removal action (RA) activities in response to the findings of the RSE and SA. No significant changes to the overall sampling and analytical aspects of the project will occur. Verification or check samples will be collected at the locations described in the Removal Action Work Plan and will follow a similar 5-point compositing scheme as presented in the RSE and SA Field Sampling and Analysis Plan (FSP). More detail on the specific areas identified for removal action and the rationale is outlined in the "Removal Action Work Plan (RAWP), St. Regis Paper Company Superfund Site, Cass Lake, Minnesota", Prepared for International Paper (Barr, October 2003).

Identified below are the specific sections of the QAPP to be modified and the included modifications. All other requirements of the original QAPP are unchanged and will be followed, as applicable, in the RA.

1.2.3 Project Description

The removal action will address soils on the areas of the Site owned by the City of Cass Lake with dioxin/furan concentrations exceeding 1 part per billion (ppb) TEQ_{DF-WHO98}, based on the analytical results from the 2003 RSE and SA.

The table on page 5 of the RAWP and Figure 3 present the areas identified for removal activities. These soils will be excavated and transported to a RCRA Subtitle C landfill for disposal. Detailed plans for removal are presented in the RAWP.

1.3.1 Project Objectives and Tasks

The purpose of the RA is to remove soils with dioxin/furan concentrations exceeding 1 ppb TEQ_{DF-WHO98}, from areas of the Site located on City property. The RA includes the

- Excavation, transportation, and disposal in a RCRA Subtitle C landfill of surface soils at all City-owned locations identified in the Work Plan where dioxin/furan concentrations exceed 1 ppb TEQ.
- Collection and analysis of verification (check) samples at the locations identified in the RAWP.

1.3.3 Project Schedule

Field work is scheduled to commence beginning in November 2003 (weather permitting). A detailed schedule for RA activities is presented in the RAWP.

2.1 Sampling Process Design

The sample design and rationale are described in the RAWP for the RA project activities. Analytical parameters and frequencies of sample collection are summarized in Table 3 of the RAWP.

2.5.1 Field Quality Control Requirements

Field QC samples will be collected and analyzed to assess the quality of the data generated from sampling activities. In general, duplicate and blank samples will be collected at a rate of 1 every 10 field samples.

Appendix B
Non-Special Waste Certification



Thomas B. Ross
Manager
Environmental Remediation

6400 Poplar Avenue
Memphis, TN 38197

T 901 419 3899
F 901 419 3962
tom.ross@ipaper.com

October 31, 2003

Dee Anna Preston
Peoria Disposal Company
PO Box 9071
Peoria, IL 61612-9071

Via Fax Number: (309) 688-0881 and First Class Mail

**RE: Soil Disposal Profile Information
St. Regis Paper Company Site, Cass Lake, MN**

Dear Ms. Preston:

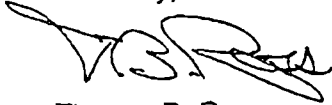
International Paper Company is planning a Removal Action (RA) at the above referenced Site in November 2003 that is expected to involve the excavation, transportation, and disposal of approximately 2,500 to 3,300 tons of soil. As you have indicated during your discussions with our consultant Barr Engineering, the RA soil waste stream from this Site has been tentatively approved by PDC pending a completed Non-Special Waste Certification by International Paper and written approval by the U.S. Environmental Protection Agency (EPA) that the RA soil is a non-hazardous RCRA waste. I am enclosing the completed and signed Non-Special Waste Certification form for the soil.

A Unilateral Administrative Order (UAO) and Removal Action Work Plan (RAWP) for this work are currently being completed by EPA, and those documents will include language establishing the non-hazardous RCRA waste characterization for the soil excavated during the RA. It is my understanding that your facility will accept EPA's approval of the RAWP and the issued UAO as written approval from EPA of the non-hazardous RCRA waste characterization of the RA soil. The UAO and the RAWP are expected to be finalized and approved by the EPA by November 5, 2003 and we will forward a copy of them to you when they have been issued.

As Barr has discussed with you, International Paper is considering other quotes for the transportation to PDC and we are looking to develop comparable prices for that work. I have reviewed a copy of the preliminary transportation and disposal price quote that you provided to Barr Engineering on October 27, 2003, and request that the transportation quote be updated to allow for two hours of in-plant (on-Site) time before demurrage fees are charged. Also, please note that we expect to be shipping the RA soil between November 11 and November 26, so your transportation quote will need to accommodate loading of 15 to 20 trucks per day during that time. We will be in touch with you to conclude pricing negotiations early next week.

Thank you for your continued efforts in providing final approval of this waste stream and for actively managing the transportation logistics that are associated with this project. Please let Barr Engineering or me know if there are any outstanding issues that remain that were not addressed in this letter or the enclosed Certification.

Sincerely,



Thomas B. Ross
Manager, Environmental Remediation

Enclosure

C: Tom Mattison, Barr Engineering

Non-Special Waste Certification

Generator International Paper Company

Address Former site located near 2nd Street South and Central Avenue

City,St,Zip Cass Lake, MN 56633

Waste Name Soil from a former wood treating site

Invoicing Contact Tom Ross Company International Paper Company

Address 6400 Poplar Avenue **City,St,Zip** Memphis, TN 38197 **Phone#** 901-419-3899

This is to certify that the industrial process waste or pollution control waste described herein is outside the scope of categories listed in subdivision (1) of subsection (c) of Section 3.79 of the Illinois Environmental Protection Act, 415 ILCS 5/1 et seq. Section 22.48 further provides that each of the following items is required for determination that the waste is not a special waste and must be responded to:

22.48 b. 1. The means by which the generator has determined that the waste is not a hazardous waste. (Check where appropriate)

- A review of Illinois Title 35, Section 721, Identification and Listing of Hazardous Waste.
- Analysis of the waste. (Attached) Data summary tables previously provided by Barr Engineering.
- Knowledge of the waste.
- MSDS (Attached)
- Other: EPA Region 5 concurrence with non-hazardous waste classification via anticipated UAO.

22.48 b. 2. The means by which the generator has determined that the waste is not a liquid. (Check where appropriate).

- Is not a liquid, as determined using the paint filter test set forth in subdivision (3) (A) of subsection (m) of Section 811.107 of Title 35 of the Illinois Administrative Code. Test results pending, will be provided.
- Is a liquid, as determined using the paint filter test set forth in subdivision (3) (A) of subsection (m) of Section 811.107 of Title 35 of the Illinois Administrative Code.

22.48 b. 3. If the waste undergoes testing, the analytical results obtained from testing, signed and dated by the person responsible for completing the analysis.

- The waste has undergone testing and the analysis is attached. Data tables previously provided.
- The waste has not undergone testing.

22.48 b. 4. If the waste does not undergo full characterization testing, an explanation as to why no testing, or only partial characterization testing, is needed.

- Knowledge of the waste.
- Material Safety Data Sheets.
- Other (provide explanation): _____

22.48 b. 5. A description of the process generating the waste. (Please respond in detail) _____

Soil excavated from a former wood treating site.

22.48 b. 6. Relevant Material Safety Data Sheets (Must attach, if available):

Other: _____

The signatures transmitted by facsimile machine shall be treated in all manner and respects as an ORIGINAL document and shall be considered to have the same binding legal effect as an ORIGINAL document. I hereby agree that I shall not raise as a defense to the formation of this Non-special Waste Certification Form the fact that the signature was transmitted through the use of a facsimile machine.

I certify under penalty of law that I personally have examined this certification and am familiar with the waste through analysis and testing or through knowledge of the process to support this certification. I believe that the information submitted is true, accurate, and complete. I understand that a person who knowingly and falsely certifies that a waste is not special waste is subject to the penalties in subdivision (6) of subsection (b) of Section 44 of the Illinois Environmental Protection Act.

Signature 

Name Thomas B. Ross

Title Manager, Environmental Remediation

Date October 31, 2003

Attachments

Appendix C
Fugitive Dust – Risk Calculation

**Appendix C - Fugitive Dust - Risk Calculation
2003 Removal Action Work Plan
St. Regis Paper Company Site**

Methodology based on:

Exposure and Human Health Evaluation of Airborne Pollution from the World Trade Center Disaster. NCEA -W -1395. EPA/600/P-2/002A. October 2002. External Review Draft. <http://www.epa.gov/ncea>

| | Units | | Site | | |
|--------------------------------------|-------------------------------|----------------|---------------|---------------|---------------------------------------------------------|
| | | | Worker | Resident | |
| Inhalation Rate | m ³ /hr | IN | 1.3 | 0.55 | US EPA (1997a) |
| Hours/Day Inhalation | hr/day | HRD | 10 | 24 | |
| Fraction adsorbed | unitless | ABS | 0.8 | 0.8 | US EPA (2000) |
| Body Weight | Kg | BW | 70 | 70 | |
| Soil Concentration | ng TEQ/Kg | C _s | 4,800 | | |
| Fugitive Emission Rate | µg/m ³ | | 150 | | PM ₁₀ - Ambient Air Quality Standard (NAAQS) |
| Air Concentration | pg TEQ/m ³ | C _a | 0.72 | | |
| Daily Dose | pg TEQ/Kg-day | DD | 1.07E-01 | 1.09E-01 | |
| Exposure Duration | days | ED | 30 | 30 | |
| Lifetime | days | LT | 25550 | 25550 | |
| Slope Factor | (pg TEQ/Kg-day) ⁻¹ | SF | 0.001 | 0.001 | |
| Lifetime Daily Dose | pg TEQ/Kg-day | LADD | 1.3E-04 | 1.3E-04 | |
| Incremental Cancer Risk Level | | CR | 1.E-07 | 1.E-07 | |

References:

- US EPA (1997a) - Exposure Factors Handbook United States Environmental Protection Agency National Center for Environmental Assessment, Office of Research and Development, US Environmental Protection Agency 1997 EPA/600/P-95/002F(a-c)
- US EPA (2000) - Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds United States Environmental Protection Agency, Office of Research and Development, National Center for Environmental Assessment Review Draft September, 2000 EPA/600/P-00/001B(a-f) Available at, <http://www.epa.gov/ncea>