St. Regis Paper Company Site

Cass County, Minnesota

Interim Record of Decision

United States
Environmental Protection Agency
Region 5
October 2005

List of Acronyms and Abbreviations

ACA	Ammoniacal copper arsenate
ARAR	Applicable and/or relevant and appropriate requirements
ASTM	American Society for Testing and Materials
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	Contaminants of Concern
EPA	U.S. Environmental Protection Agency
HAZMAT	Hazardous Materials
HEPA	High efficiency particulate air (filter)
IP	International Paper
LLB	Leech Lake Band of Ojibwe
MPCA	Minnesota Pollution Control Agency
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operations and Maintenance
OU	Operable Unit
PAHs	Poly-cyclic aromatic hydrocarbons
PCP	Pentachlorophenol
PPB	Parts per billion
RCRA	Resources Conservation and Recovery Act
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
UAO	Unilateral Administrative Order
WTC	World Trade Center

Interim Action Decision

Part 1: The Declaration

Site Name and Location
Site Name: St. Regis Paper Company Site
Location: Leech Lake Indian Reservation, City of Cass Lake, Cass County, State of Minnesota

Statement of Basis and Purpose
This decision document represents the Selected Interim Remedy for the St. Regis Paper Company Site (the Site) located within the exterior boundary of the Leech Lake Indian Reservation in Cass Lake, Minnesota. The Selected Interim Remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record file for this Site.

The Leech Lake Band of Ojibwe and the State of Minnesota concur with the Selected Interim Remedy.

Assessment of the Site
The response action selected in this Interim Record of Decision is necessary to protect the public health from actual or threatened releases of hazardous substances, as defined by Section 101(14) of CERCLA, 42 U.S.C. §9601 (14), into the environment.

Description of the Selected Interim Remedy
The Selected Interim Remedy was developed to specifically address house dust contamination in approximately 40 residences near the former operating area of the Site. An overall site strategy will be developed based on the conclusions of the human health and ecological risk assessments currently being developed by the responsible party under an August 2004 Unilateral Administrative Order issued by EPA. Performance standards for the Interim Action will be based on the successful completion of the components of the Selected Interim Remedy as follows:

- Remove and replace carpet
- Provide initial and periodic house cleaning for dust removal
- Cover yards with clean dirt fill and grass seed.
- Apply dust suppressant to residential dirt roads

The selected interim response action does not address the site-related contaminated soil. Soil removals, which started in 2004, are ongoing at the Site to remove source material. At the conclusion of the human health and ecological risk assessments, additional actions may be developed to accomplish source reduction.

Statutory Determinations

This interim action is protective of human health and the environment in the short term and is intended to provide adequate protection until a final ROD is signed; complies with those federal, tribal, and state requirements that are applicable or relevant and appropriate for this limited-scope action; and is cost-effective. This action is an interim action only and is not intended to utilize permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable for this Site. Because this action does not constitute the final remedy for the Site, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element will be addressed by the final response action. Subsequent actions may be planned after a review of the risk assessment to address any threats posed by conditions at the Site. For that reason, this remedy may result in hazardous substances remaining on-site above health-based levels. Any final remedy will ensure that actions taken, if needed, will continue to provide adequate protection of human health and the environment through periodic reviews within five years after commencement of any final remedial action. Because this is an interim action ROD, review of this Site and remedy will be ongoing as EPA continues to develop remedial alternatives for the Site.

Interim ROD Data Certification Checklist

- *chemicals of concern:*
  dioxin, arsenic, poly-cyclic aromatic hydrocarbons (PAHs) are the Contaminants of Concern (COCs) for this action.

- *Baseline risk:*
  Please see "Revised House Dust Risk Calculations, St. Regis Paper Company Site, Cass Lake, Minnesota, 9/28/05 in the Administrative Record. **(Attachment A)**

- *Clean up levels and basis for COCs:*
  Clean up levels are not established for this interim action. Removal of dust from the residences is required to achieve the goals of the action.

- *How source materials are addressed:*
  Source materials will not be addressed in this interim action.

- *Current and reasonably anticipated future land use*
  Reasonably anticipated future land uses for the Site as a whole have, as yet, not been established. Approximately 36 acres of the former operations area has been commercial/industrial since at least 1959. Residential properties have existed on portions of the Site for over fifty years.

- *Potential land and ground water use that will be available as a result of actions*
  Continued occupancy of residents.

- *Estimated capital, Operations & Maintenance (O&M), and present worth and number of years over which remedy cost estimates are projected.*

The estimated cost for the remedy is $660,000. The remedy is projected to be necessary until the implementation of the final remedy; a period of approximately one year.

- *Key factors in selecting the remedy*
  The key factors in selecting this remedy are its effectiveness and timeliness in reducing the health risks to residents from contaminated house dust.

Authorizing Signature

Richard Karl

Richard Karl, Director Superfund Division
EPA

Part 2: Decision Summary

Site Name, Location, and Description

St. Regis Paper Company Site, Leech Lake Indian Reservation, Cass Lake, Minnesota.
CERCLIS ID: MND057597940 Site ID: 0503781

Lead Agency:	U.S. Environmental Protection Agency
Support Agencies:	Leech Lake Band of Ojibwe
	Minnesota Pollution Control Agency
Site Type:	Industrial facility, wood treatment

Site Description:
The St. Regis Paper Company Site is located in the City of Cass Lake, Cass County, within the exterior boundaries of the Leech Lake Indian Reservation in Cass County, approximately 20 miles east of Bemidji, Minnesota. The Site comprises four areas: a northwest area, a southwest area, a city dump area, and a residential area **(See Attachment B)**. The northwest area is approximately 67 acres, located just to the south of the BNSF Railway Co. tracks. The southwest area, comprising about 20 acres, is the site of a Resource Conservation and Recovery Act (RCRA) subtitle C containment vault. The city dump area is the site of the former City of Cass Lake city dump comprising about 10 acres. Operable Unit 7, the area of remedial action, is an area of approximately 48 acres and is comprised of the residential properties in proximity to the former operations areas.

Site History and Enforcement Activities

The St. Regis Paper Company Site was operated from 1957 to August 1985 as a wood-treating facility. Chemicals used in the wood-treating processes changed as the facility evolved. Creosote was used in wood treatment from the beginning of operations. Pentachlorophenol (PCP) was added to the process around 1960. Dioxins/furans occur as impurities in commercial formulations of PCP, and therefore, are present in the wood-treating agents. Creosote and PCP were used at the Site until the facility closed. PCP was generally combined with a carrier solvent, usually No. 2 fuel oil. This combination, when present as a free phase product in the groundwater, tends to float. In latter years of facility operations, a water dispersible PCP concentrate, which was a proprietary mixture of PCP and ketone, was used. The PCP concentrate, denser than water, sinks if present as a free phase product in the groundwater. Ammoniacal copper arsenate (ACA) was added in 1969 and used until 1972. The active ingredients in ACA were copper (II) oxide and arsenic pentoxide.

The generation of wastewater began at the facility in 1957 when a 72-inch diameter by 75-foot long pressure cylinder was installed in the wood treating plant in the north central portion of the Site. Creosote was used as the wood treating chemical during the early years of facility operation. Wastewater discharged from the cylinder passed through a baffled separator tank and a charcoal filter before being discharged to a disposal pond located adjacent to the treating plant, Pond A.

In 1960, a 49-foot long extension was added to the original cylinder. The use of PCP as a treating chemical began about this time. Two underground tanks were added to further separate the water

from the oil in the discharge. Beginning in about 1960, wastewater was discharged to a series of three ponds, collectively called Pond B.

In 1969, a second cylinder was added to treat wood with ACA. The small amount of water that was routinely generated when the water soluble preservatives were used was returned as makeup water for preparing the treating solution; however, some cylinder wash water was discharged to the disposal ponds.

In mid-1971, the series of three disposal ponds were covered with sand and replaced with a new pond, Pond C. In 1972, the cylinder that had been used for treating wood with ACA was added as an expansion tank to the original cylinder and a new 72-inch diameter by 150-foot long cylinder was added for treating wood with PCP and ACA. In addition, a 20,000 gallon underground wastewater separation tank was added for each cylinder.

Improvements were made to the wastewater treatment system in 1974. With these improvements, wastewater from each cylinder was carried to a primary separating tank which was approximately 8 feet in diameter and 40 feet long. The oil that accumulated on top of the wastewater was skimmed and returned to the process. Water from the primary tank was pumped to a mixing station where a flocculating agent was added. The mixture was then pumped to a second tank for settling. Water was pumped from this tank through a sand filter and carried through the pipe to a sawdust filter located adjacent to Pond C.

Water from Pond C was used to spray-irrigate grass directly south of Pond C in 1977 and in the Southwest Area in 1980. Pond C was also dredged on one occasion, and the dredged bottom material was placed on the southeast and north sides of the pond. From about 1980 until the end of operations at the Site in 1985, process wastewater was disposed of in a drain, within the Chippewa National Forest, which led to the City of Cass Lake sewage treatment plant located just north of Fox Creek.

Use of Pond C was discontinued in mid-1980. The process was changed such that some wastewater was evaporated. Specifically, wastewater was directed into metal pans adjacent to the treatment plant, and excess steam from the boiler was run through the coils to heat and evaporate the wastewater. The solids were then placed in drums and hauled to waste disposal facilities outside of Minnesota. The evaporation process continued in this fashion until the facility's closure in 1985.

Around 1971, two underground tanks were placed in operation in the wastewater disposal system for oil/sludge/water separation. In 1976, there were incidents of sludge disposal in a pit in the Southwest Area. The quantity of sludge disposed in this area is not known. During active operations at the wood-treatment facility (1957-1985), metal bands, concrete, scrap wood, and miscellaneous other wastes from wood-treating operations were deposited in an on-site landfill area, located north and east of Pond C. Sawdust from the sawdust filters was also periodically deposited in the landfill area northwest of Pond C. Further, there were reports of disposal of

empty containers that once contained water-soluble, wood-preserving chemicals in this on-site landfill area (MPCA 1995).

Two teepee burners were operated at the site to dispose of wood scrap. One of the burners was situated south of Pond C; the other burner was located north and west of Pond C. Also, it was noted in the previous Five-Year Reviews (MPCA 1995; EPA 2000) that a 3,000-gallon spill of creosote in 1976 was recovered by absorption with sawdust. The sawdust was later reportedly burned in a brush-burning project. No additional information has been located regarding this incident.

A wood-constructed conduit ran approximately 75 yards south of the railroad tracks from Pond A to Ponds B and C. A test trench (TT-2) was dug in 1984 near an apparent manhole with no bottom. Observations made during the test trench excavation noted a creosote-type odor, oily water and black and purple stained sand extending to depths below the water table.

Between 1957 and 1975, sludge from the wood-treating operations was transported to the Dump and periodically burned. Between 1957 and 1960, disposal from Pond A occurred almost daily at an estimated rate of 500 gallons per day. After 1976, sludge from operations at the facility was transported to waste disposal facilities outside of Minnesota. The Dump pit was excavated in 1986. The Dump area is currently used by the City to compost yard wastes, dispose of woody vegetation, and store City equipment.

In September 1983, in response to groundwater sampling by the St. Regis Paper Company and sediment sampling by MPCA, EPA proposed the Site for inclusion on the NPL, with a hazard ranking of 53. Finalization of the listing occurred in September 1984 (EPA ID# MND057597940).

The MPCA, the lead agency, and then owner Champion International, negotiated two Response Orders by Consent (one for the former wood-treatment area (OU 1) and vault area (OU 2) and one for the Dump (OU 3)), issued in February 1985 (MPCA 1985a and 1985b). These documents outline the scope of the remedial investigations, feasibility studies, response action planning, response action implementation, routine operations, maintenance, and monitoring.

In 1986, Champion initiated the remedial action with MPCA providing oversight. City water was provided to nearby residents due to groundwater contamination from drip racks, sludge/wastewater pits, and historic spills. Extraction wells and a granulated activated carbon treatment system were installed to treat contamination plumes at the former operating area and City Dump. Wells were also installed for periodic groundwater monitoring. Visually contaminated soil was excavated and placed in an on-site RCRA Sub-title C containment vault. In 1994-95, oversight of Site operations and maintenance was transferred to EPA, with the assistance of the tribal and state governments, under a Unilateral Administrative Order (UAO) to Champion.

Five-year reviews conducted in 1995 by MPCA and in 2000 by EPA recommended additional soil sampling to confirm that soil contaminant levels were at acceptable levels. Initial sampling was conducted by EPA in 2001. That sampling indicated that levels of dioxin exceeded an acceptable residential value of 1 part per billion (ppb), the recommended preliminary remediation level for soils in EPA's Dioxin Policy. Residential removal values were used due to the Site's proximity to the residential area and the lack of any control to access. Additional confirmatory soil sampling was conducted in 2003 by International Paper (IP), successor to Champion, under a UAO from EPA. Due to the confirmation of soil values of dioxin over residential removal levels, soil removal actions were initiated by IP in 2004, under a December 2003 UAO from EPA. In addition, during 2005, the BNSF Railway Co. was added as a potentially responsible party for the Site. In August 2005, EPA issued a separate CERCLA Administrative Settlement Agreement for a removal action at the BNSF Railway Co. property.

During the fall of 2004, under an August 2004 UAO from EPA, IP began collecting samples in support of a human health and ecological risk assessment. Indoor residential dust sampling was conducted as a part of that risk assessment. The results of that indoor dust sampling were used as the basis for this action. (All sampling results are a part of the Administrative Record for the Site. See Attachment F for Administrative Record Index).

Community Participation

The House Dust Risk Calculations report and Proposed Plan for the St. Regis Paper Company Site in Cass Lake, Minnesota were made available to the public in June 2005. They can be found in the Administrative Record file in Region 5, on the St. Regis Site website at www.epa.gov/region5/sites/stregis/index.htm, and in the information repositories maintained by EPA at the Leech Lake Band of Ojibwe Division of Resource Management, Cass Lake Library, Leech Lake Tribal College Library, Bemidji State University Library, and the Cass Lake City Clerk's Office. The notice of the availability of these two documents was published in the Bemidji Pioneer and Cass Lake Times. A public comment period was open from June 2, 2005 until July 8, 2005. In addition, a public meeting was held on June 7, 2005 to present the Proposed Plan, solicit questions, and provide the public an opportunity to provide comments. Representatives from the Leech Lake Band of Ojibwe and the Minnesota Pollution Control Agency were also present while EPA answered questions on the remedial alternatives. EPA used previous meetings on March 22, 2005 and May 17, 2005 to solicit a wider cross section of community input on the reasonably anticipated future land use. Door-to-door meetings with residents in the affected area and public availability sessions were conducted on May 18, 2005. Certified letters were then mailed to residents in the affected areas to solicit comments on EPA's Proposed Plan. EPA's response to the comments received during this period is included in the Responsiveness Summary, which is part of the Interim Record of Decision.

Scope and Role of Operable Unit

An overall planned sequence of actions at the Site has not been established beyond the soil removal actions that continue to take place concurrent with this planned interim remedial action at Operable Unit 7. Subsequent actions will be developed once the human health and ecological risk assessments are complete. However, this interim action will neither be inconsistent with,

nor preclude, any additional actions that may be necessary. The sequence of events, as they are currently being applied at the Site include:

Past and Current response activities:

- Surface contaminated soil removal to 1 ppb for dioxin in unzoned areas
- Surface contaminated soil removal to 5 ppb in commercial areas
- Disposal of contaminated soil in an off-site landfill
- Seeding areas of soil removal
- Fencing and seeding of commercial areas with surface contamination above 1 ppb.

Activities Proposed in this Interim ROD:

- Removal of dust from the residences in proximity to the Site (Operable Unit 7)
- Soil cover on yards and seeding
- Initial and period house cleaning
- Apply dust suppressant to dirt roads

Site Characteristics

This action will include all of the residential properties south of the BNSF Railway Co. tracks, east of Highway 317, north of the Chippewa National Forest, and west of Pike Bay and its channel to Cass Lake (See Attachment B). It is an area of approximately 48 acres lying within the exterior boundaries of the Leech Lake Band of Ojibwe Indian Reservation. The surrounding land contains residential and commercial properties, forests, wetlands, and large water bodies. Lakes and channels adjacent to the Site are used by local and regional tribal members, other residents, and tourists for food, recreation, cultural, and spiritual activities.

The local topography is a hummocky terrain. The glacial deposits in the Site area range from heavy, poorly drained clayey soils developed on ground moraines to light, well drained sands on outwash plains. The residential area is relatively flat and has little relief. Although the surficial soils are sandy, surface water ponds in several areas during the spring and after heavy rains.

Contaminants within the Site soil have been transported into surrounding homes by either wind or by adherence to boots and clothing. The Site area is currently largely unfenced; the International Paper Company having fenced portions of the Site that it controls. The soil is sandy and contains little vegetative cover in many areas. Most roads through the Site are unpaved. Surface soil contamination, in excess of the residential removal action value for dioxin of 1 ppb was found in areas of the Site directly adjacent to the homes to be addressed in this action. Until recently, two daycare providers were located within the residential area of the Site. The likelihood of contaminant migration is high.

Site-related structures and facilities were removed during the remedial actions taken in the late 1980s by the responsible party under the supervision of the Minnesota Pollution Control Agency. Two structures remain from Site operations. One has been converted into a residence. The other is now a small commercial business. The only other site-related structures were built as a part of

the remedial actions. The RCRA subtitle C containment vault is located in the southwest area and the groundwater treatment plant occupies a portion of the former operations area.

Site sampling that is relevant to this proposed action can be divided into soil sampling and house dust sampling. During 2001, 56 soil samples were collected in the Site area by EPA. Most samples were composites, and all were taken from a depth of 0-6 inches. Sampling was conducted in the former operations area (20), the southwest area (6), and the former city dump area (1), on-site former pond and spray aeration areas (6), and the adjacent residential area (20). In addition, two reference soil samples and one seep sample were collected. The composite samples from the former operations area and the southwest area were field screened for PAHs and PCP using immunoassay and for arsenic, chromium, and copper using x-ray fluorescence. Laboratory analysis for the former operations and southwest area sampling was based on field screening results. Samples chosen from the former operations area for laboratory analysis were distributed over the range of field results, from highest to lowest. The six samples from the southwest area with the highest field readings were selected for laboratory analysis.

Additional composite soil sampling was conducted by International Paper in 2003, under a UAO from EPA. Within the north storage area, 53 samples were collected from a depth of 0-4 inches, 24 samples were collected from a depth of 4-12 inches and three samples were collected from 12-24 inches. In the southwest area, four samples from 0-4 inches and one sample from 4-12 inches were collected. Sampling locations were based on the 2001 sampling event values to better define areas above the residential removal level for dioxin in soil. In addition, the seven remaining residential properties north of South 3rd Street were sampled along with representative residential areas north of the BNSF Railway Co., tracks and south of South 3rd Street. The residential areas north and south of the Site were sampled to examine whether a significant off-site airborne contamination threat existed.

During the fall of 2004, under a second UAO from EPA, International Paper again sampled the Site. This time, sampling was in fulfillment of the conceptual site model developed for human health and ecological risk assessments. A portion of this sampling dealt with the risk of contaminated dust in residences near the Site. Ten of the approximately 40 residences were selected to represent a range of values for dioxin in the yard soil from previous sampling (See Attachment C). House sampling was conducted by collecting composite samples using a vacuum according to ASTM Method D 5438. Samples were collected from high-traffic areas of the home including flooring directly inside the front door and the main living area. See Attachment F for a list of all Orders and sampling results documentation.

Current and Potential Future Site and Resource Uses

The area to be considered in this action is residential. At the conclusion of this action, this area will remain a residential area pending the completion of the final ROD. At this time, the community is defining future uses for the entire Site area. EPA provided some assistance to this effort through the services of a contracting firm, E2 Inc. The results of these efforts will be used in the formulation of the final ROD for the Site.

Site Risks

This interim action will only address the specific risks associated with dioxin and arsenic contamination in the house dust of homes in the residential area of the Site. The risks to residents from contaminated house dust are related to ingestion, inhalation, and direct dermal contact. Human impacts from exposure to dioxin include cancer and eye, skin, liver, kidney, and reproductive system damage. Impacts from arsenic include cancer and liver, kidney, skin and lung damage. Other human health risks, if any, and all ecological risks, if any, will be described in the final ROD for the Site.

This interim action is necessary to achieve significant risk reduction quickly while a final remedial solution is being developed. Quantitative risk information relating to contaminated house dust is contained in the risk calculations attached to this decision document. The more specific findings of the baseline risk assessment, and the ultimate clean-up objectives (e.g.., acceptable exposure levels) for the Site will be included in the subsequent final action ROD for the Site.

The primary method by which risks and hazards associated with potential exposure to chemicals in house dust samples were characterized was by comparison to World Trade Center (WTC) screening values (EPA 2003a). WTC methodologies were used because they contain accepted peer reviewed analyses of the same contaminants as this action in indoor settled dust. Specifically, residence-specific concentrations of chemicals (dioxin and arsenic) in house dust and dust loading results were used to calculate residence-specific screening values for dioxin and arsenic using Equations 1 and 2, respectively.

Residence-Specific Screening Value for Dioxin (ng/m^2) = Loading (g/m^2) x Concentration (ng/kg) x 10^{-3} kg/g (1)

Residence-Specific Screening Value for Arsenic (mg/m^2) = Loading (g/m^2) x Concentration (mg/kg) x 10^{-3} kg/g (2)

Where:

g/m^2	=	Grams per square meter
kg/g	=	Kilogram per gram
mg/kg	=	Milligram per kilogram
ng/kg	=	Nanogram per kilogram

Note: All residence-specific loading and concentration results were obtained from Barr Engineering Company (Barr 2005), the contractor for sample collection.

The residence-specific screening values for dioxin and arsenic were then compared to WTC screening levels for dioxin (2 ng/m^2) and arsenic (0.4 mg/m^2) (EPA 2003a). Residence-specific screening values and the results of the comparison are presented in **Attachment A**.

It should be noted that the WTC screening value is based on an exposure duration of 30 years. It is well established that a number of residents among the 10 homes sampled for house dust (as well as among the population of homes potentially affected by Site activities) have lived near the Site for well over 30 years. Therefore, it is appropriate to consider the impact of adjusting the WTC screening values to reflect an exposure duration of 70 years (e.g. lifetime exposure). Such an adjustment is consistent with adjustments made to human health screening levels incorporated into the risk assessment work plan that will be followed to complete the baseline risk assessment for the Site (IP 2004).

The modified WTC screening value for dioxin (5.7 ng/m^2) was calculated using Equation 3.

Modified WTC Screening Value for Dioxin (ng/m^2) =	(WTC Screening Value for Dioxin [2 ng/m^2])	(1E+06 [mg/kg-day]$^{-1}$)/ 1.5E+05 [mg/kg-day]$^{-1}$)	(30 years/70 years)	(3)

A modified WTC screening value was not calculated for arsenic because the basis for the WTC value for arsenic is its noncarcinogenic effects. A change in exposure duration will not change a screening value based on noncarcinogenic effects.

As shown in Attachment A, Table 1, residence-specific screening values for dioxin exceed the WTC screening value (2 ng/m^2) at five of the 10 sampled residences (Res9, Res14, Res15, Res16, and Res20). Similarly, the residence-specific screening values for arsenic exceeded the WTC screening value (0.4 mg/m^2) at four residences (Res5, Res9, Res16, and Res20).

EPA also compared residence-specific screening values for dioxin to the WTC screening value modified to reflect (1) use of a cancer slope factor of 1.5E+05 (mg/kg-day)$^{-1}$ and (2) an exposure duration of 70 years. As shown in Table 1, residence-specific screening values for dioxin exceed the modified WTC screening value (5.7 ng/m2) at the same five residences (Res9, Res14, Res15, Res16, and Res20) identified above.

Remedial Action Objectives

The objective of this action is to reduce the volume of contaminated dust in residential properties and one business property adjacent to the Site in OU 7. Human health risk calculations developed by EPA (Attachment A) are the basis for determining the need to reduce contaminated dust volume in the homes.

Description of Alternatives: *Remedy Components*

Five options were developed in response to contaminated dust found in homes adjacent to the Site. The five options were: (1) no further action, (2) removing and replacing carpeting in all

nearby homes, (3) for homes exceeding EPA's acceptable risk levels: a) removing and replacing carpeting, b) initial and periodic housecleaning for contaminated dust removal, c) soil and grass cover to yards, and c) monitoring for homes below EPA's acceptable risk value, (4) for the entire group of nearby homes: a) removing and replacing carpeting, b) providing initial and periodic housecleaning for dust removal, c) applying a dust suppressant to the dirt roads (this element was not a part of the Proposed Plan), and d) providing soil and grass cover to all yards, and (5) permanent relocation of residents. Option 4 is EPA's preferred interim cleanup option.

Institutional Controls and long-term operation and maintenance were not considered in this action because of its interim nature. Operations and maintenance and institutional controls will be considered when permanent remedies are considered in the Final ROD.

The major components of each option are listed below.

1. No further action:

- Treatment components
  - None
- Containment Components
  - None
- Institutional Controls Components
  - None
- O&M Activities
  - None
- Monitoring
  - None

2. Removing and replacing carpeting in all nearby homes:

- Treatment components
  - None
- Containment Components
  - Old carpet will be landfilled
  - Vacuum cleaner bags and other cleaning waste will be landfilled
- Institutional Controls Components
  - None
- O&M Activities
  - None
- Monitoring
  - None

3. For homes exceeding EPA's acceptable risk levels: a) removal and replacement of carpeting, b) initial cleaning to include dust filters, vacuuming curtains, drapes, and upholstery, c) periodic housecleaning for contaminated dust removal, and d) soil and grass cover to yards. In addition, periodic monitoring for homes below EPA's acceptable risk value.

- Treatment components

- None
- Containment Components
  - Old carpet will be landfilled
  - Vacuum cleaner bags and other cleaning waste will be landfilled
  - Yard contaminants contained by soil cover
- Institutional Controls Components
  - None
- O&M Activities
  - Periodic Housecleaning for Dust Control
- Monitoring
  - Periodic monitoring of homes below risk levels for dioxin contamination

4. Includes: a) Removal and replacement of carpeting for the entire group of nearby homes, b) initial cleaning to include dust filters, vacuuming curtains, drapes, and upholstery, c) periodic housecleaning for dust removal, d) providing soil and grass cover to all yards, and e) applying dust suppressant to dirt roads. (This is EPA's preferred interim cleanup option.)

- Treatment components
  - None
- Containment Components
  - Old carpet will be landfilled
  - Vacuum cleaner bags and other cleaning waste will be landfilled
  - road dust contained with dust suppressant
  - Yard contaminants contained by soil cover
- Institutional Controls Components
  - None
- O&M Activities
  - Periodic Housecleaning for Dust Control
- Monitoring
  - Periodic monitoring of a subset of homes for dust accumulation

5. Permanent relocation of residents

- Treatment components
  - None
- Containment Components
  - None
- Institutional Controls Components
  - Restriction on future occupancy
- O&M Activities
  - None
- Monitoring
  - None

Description of Alternatives: ***Common Elements and Distinguishing Features of Each Alternative***

The five options developed to address house dust contamination at the Site provide a broad range of alternatives. Excluding Option 1 (no action), and Option 5 (permanent relocation), the other three options have many similarities. Options 2, 3, and 4 all involve removing and replacing carpet in order to remove the largest potential source of residential dust. Option 2 only deals with the replacement of carpet and does not deal with other possible dust sources within the homes or the potential for recontamination of homes from the large still contaminated former operations area located adjacent to the homes. Options 3 and 4 also include: 1) an initial house cleaning including the removal and replacement of heating/air conditioning filters and cleaning duct work, upholstery, rugs, and drapes, and 2) periodic house cleaning for dust until a final remedy is implemented. Option 3 only remediates those residences that have been sampled at a value above an EPA screening level. This additional step would significantly lengthen the amount of time it takes to remediate homes by requiring additional sampling at the 30 unsampled homes, analyzing those samples, and then evaluating the results. EPA's preferred option, Option 4, is more protective than Option 2, will be quicker to implement than Option 3, and has the inclusion of a road dust suppressant to reduce the potential for contaminated dust in nearby homes (See documentation of significant changes).

As interim actions, none of the options deals with the ongoing sources of contaminated dust from the surface soil of the former operations area of the Site. However, Options 3 and 4 provide cover for yard-related contaminants in the surface soil in the short term. Any final action regarding contaminated soil, will be left to the final ROD to be developed after the completion of the human health and ecological risk assessments. For that reason, and due to the sparse vegetative cover in areas of the contaminated former operations area, EPA felt it was necessary to provide the periodic house cleaning for dust, outlined in Option 4, to address the remaining potential ongoing source for contaminated house dust.

No Applicable and/or Relevant and Appropriate requirements (ARARs) have been identified that would apply to the proposed removal and disposal of carpets, or for the initial and periodic cleaning of homes for dust removal. Likewise, no ARARs have been identified that would apply to either permanent relocation or to the no action alternative. For Option 3, where monitoring of house dust for dioxin contamination would be required, no ARARs have beeen identified for dioxin or arsenic in house dust. Consequently, EPA has used the mass per unit area of dioxin and arsenic approach developed for the WTC response.

EPA compared the options before recommending a preferred approach. Option 2 was not preferred because it does not include ongoing actions to suppress or eliminate additional deposits of contaminated dust once the carpet is replaced. Option 2 also does not address the potential for contaminated yard dust to enter affected homes. In addition, Option 2 does not include periodic house cleaning for the continued reduction of dust in the homes.

Option 3 was not preferred because it postpones taking the interim action until after additional sampling is completed. Such sampling of the 30 currently unsampled homes might take an additional 3 months for data collection, evaluation, validation, and interpretation of the results. In addition, the tested homes that were not above screening levels would require monitoring dust levels due to the uncertainties in a single "snapshot" house dust sampling event to determine contaminant dust volume. Those uncertainties include weather, seasonal variations, residents cleaning habits, and the continuing potential source of contaminated dust from elevated surface soil values at the adjacent former operations area.

None of the options meets a long-term reliability test. Periodic housecleaning cannot be considered a permanent option. Likewise, taking no action, simply replacing carpet, or relocating the residents does not deal with the potential sources for the dioxin contamination and applying a road dust suppressant to roads is a temporary solution. More permanent options will be considered in the final ROD.

The estimated time for design and implementation for all options except Options 3 and 5, is relatively short. Likewise the time to reach remediation goals is short. Once the interim remedy is implemented, the remediation goals will have been met. The remediation goals will be maintained by the continual housecleaning for dust reduction in Options 3 and 4. The longest time frame for getting a remedy in place is one year in the case of permanent relocation.

The costs for these remedies range from $0 in the case of the no further action alternative to approximately $2,400,000 in the case of permanent relocation of the residents. Options 3 and 4 have similar prices of $620,450 for Option 3 and $660,000 for Option 4. Option 3 has the cost of periodic monitoring of all homes which test below the WTC screening level. Option 2 at $304,085 is the least expensive of the action options because it deals solely with the replacement of carpet **(See Attachment D)**.

The expected outcome of the preferred Option 4 includes lowering long-term human health risks by removing contaminated dust from the interiors of residents homes and reducing the potential recontamination from yards, roads and the former operations areas. Option 3 also reduces these risks, but on a longer timeframe and with uncertainty in those homes testing below screening values. Additional expected outcomes will be addressed in the final ROD. No presumptive or innovative technologies are proposed.

Comparative Analysis of Alternatives: ***Overall Protection of Human Health and the Environment***

Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled through treatment, engineering controls, and/or institutional controls.

Overall protection of the environment was not addressed in this interim action. However, all of the alternatives, except the no-action alternative, provide some protection of human health in the

short term by eliminating, reducing, or controlling risks posed by the Site through the reduction of contaminated dust in homes or removing residents from contaminated dust near the Site. Options 2, 3, and 4 would remove the potentially greatest single source of contaminated dust in homes by removing and replacing carpet. However, Option 2 does not address other common sources of contaminated house dust including drapes, filters, and upholstery. In addition, Options 2 and 3 do not deal with the potential for dust from vehicle traffic. Option 3 also removes and replaces carpet, but only in those homes which exceed the WTC screening levels. Monitoring of the homes below this action level for dioxin is included in Option 3 because of the uncertainty inherent in a single "snapshot" sampling event. The potential for recontamination from wind-borne dust from the remaining former operations source area while a final solution is developed favors Options 3 and 4 that include periodic house cleaning for dust removal.

Comparative Analysis of Alternatives: ***Compliance with Applicable or Relevant and Appropriate Requirements***
Section 121(d) of CERCLA and NCP §300.430(f)(1)(ii)(B) require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate requirements, standards, criteria, and limitations which are collectively referred to as ARARs, unless such ARARs are waived under CERCLA section 121(d)(4).

Applicable requirements are those clean-up standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal, or tribal, or state environmental or facility citing laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Relevant and appropriate requirements are those cleanup standards of control, and other substantive requirements, criteria, or limitations promulgated under federal, tribal, or state environmental or facility citing laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location ,or other circumstance at a CERCLA site, address the problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site.

No federal, State of Minnesota, or Leech Lake Band of Ojibwe program has identified any requirement that would be applicable and/or relevant and appropriate to the options considered in this interim action. During the final ROD, EPA will conduct another evaluation for any additional proposed actions.

Comparative Analysis of Alternatives: ***Long-Term Effectiveness and Permanence***
Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up levels have been met. This criterion includes the consideration of residual risk that will remain on-site following remediation and the adequacy and reliability of controls.

This interim action does not address long-term effectiveness and permanence. This will be addressed in any final ROD actions.

Comparative Analysis of Alternatives: ***Reduction of Toxicity, Mobility, or Volume Through Treatment***

Reduction of Toxicity, Mobility, or Volume Through Treatment refers to the anticipated performance of the treatment technologies that may be included as part of a remedy.

Options 1 and 5 do not include reduction of volume of contaminated dust in the homes of residents. Options 2, 3, and 4 do include reduction of volume through the disposal of contaminated dust by disposing of contaminated materials in landfills, but not by treatment. Options 3 and 4 potentially reduce more volume of contaminated dust in this way by also removing dust from additional home surfaces and filters. A reduction in the mobility of dioxin in the yard soil is accomplished in Options 3 and 4 by covering the dioxin contamination in yard soil with clean fill, but not due to any treatment technologies. Likewise, a reduction in the mobility of potential dioxin contaminated road dust will be accomplished in Option 4.

Comparative Analysis of Alternatives: ***Short-term effectiveness***

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community, and the environment during construction and operation of the remedy until cleanup levels are achieved.

Option 1, no action, would not be an effective alternative because current risks from direct contact with contaminated dust would continue to exist: current homeowners would continue to be exposed to unacceptable levels of dioxin. Option 2 would be effective in the short term with the use of appropriate personnel to remove the contaminated carpet. Homeowners would be relocated during the carpet removal and replacement to eliminate their potential exposure during the action. Options 3 and 4 would likewise be effective in carpet replacement for the same reason as Option 2. Options 3 and 4 would also be effective with adequate training of periodic housecleaners. Proper training will also reduce potential exposures to workers and residents during the housecleaning for dust reduction operations. Option 5 would be an effective alternative by removing residents from the source of contaminated dust.

Comparative Analysis of Alternatives: ***Implementability***

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.

The removal of carpet proposed in Options 2, 3, and 4, while requiring a hazardous materials crew in order to be conservatively protective, is a straightforward operation. Carpet installation can be conducted by a carpet installer. Likewise periodic housecleaning in Options 3 and 4 is a straightforward task with proper equipment and training. The placement of clean dirt fill and seeding to yards is also easy to design, implement, and administer. Dust suppression is likewise, easily implemented. The relocation of residents in Option 5 would require much more administrative time and oversight as well as inconvenience to the residents than would be required to implement Options 3 and 4.

Comparative Analysis of Alternatives: ***Cost***
The estimated present worth costs for the alternatives, excluding the No Action alternative, range from $304,085 for Option 2 to $2,400,000 for Option 5. The cost of each alternative rises with the number of homes affected and the amount of monitoring sampling required. Option 4, the preferred alternative at $660,000 has a cost that is nearly equal to Option 3 at $620,450 which takes significantly longer to complete. Option 2, at a cost of $304,085, does not address many of the potential sources of contaminated house dust. Option 5, while not considered an interim solution, could be considered as a part of a final remedy. Cost summaries can be found in **Attachment D.**

Comparative Analysis of Alternatives: ***Tribal and State Acceptance***
Both the State of Minnesota and the Leech Lake Band of Ojibwe expressed acceptance of Option 4, with comments. These comments are addressed in the Responsiveness Summary.

Comparative Analysis of Alternatives: ***Community Acceptance***
During the public comment period from May 30, 2005 through July 8, 2005, many community members expressed support for Option 5. In addition, a number of community members supported Option 4 with modifications. Many of the proposed modifications were related to providing cover to the dirt roads. The community did not comment on Options 1, 2, or 3.

Principal Threat Waste
The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site whenever practicable [NCP §300.430(a)(1)(iii)(A)]. Principle threats refer to high concentrations of a toxicant, not the primary contaminant of concern. By these standards there are no principal threat wastes at the Site, therefore, treatment is not appropriate.

Source material, in the form of dioxin-contaminated soil, is present in the operations area of the St. Regis Site and in nearby yards of the residents. None of the alternatives address the source materials of the Site by treatment other than removal of contaminated dust present inside the affected residences.

Selected Interim Remedy: ***Summary of the Rationale for the Selected Interim Remedy***
Option 4, removal and replacement of carpeting for the entire group of nearby homes, providing initial and periodic housecleaning for dust removal, providing soil and grass cover to all yards, and applying a dust suppressant to the dirt roads was selected as EPA's preferred remedial action. The principal factors on which the remedy selection decision was based include rapid and implementable protectiveness of human health, short-term effectiveness, cost, and tribal, state, and partial community acceptance. In contrast: 1) Option 2 does not address potential recontamination, 2) Option 3, at the same cost, requires more time to achieve and would involve monitoring sampling, and 3) Option 5 would require much more time and would be disruptive and expensive as an interim solution.

Periodic housecleaning for dust is considered a necessary part of the remedy because, although many sources of contaminated dust will be addressed, the large nearby source at the former

operations area will not be addressed until the Final ROD. The operations area is a large open field with sparse vegetation. The potential exists for windblown soil from the Site to recontaminate homes. An interim response is needed while waiting for a plan to address contaminated Site soils.

Soil cover to all yards is, likewise, an interim response and not meant to be a final solution to yard contamination. The soil cover, of sufficient depth to support grass, is intended to prevent tracking contaminated soil into homes while a final ROD is developed.

The available options for dust suppression will need to be investigated in order to determine the method that provides the best benefit while ensuring no environmental harm.

There are no ARARs that would apply to Option 4. In addition, although Option 4 does not reduce volume through treatment, it does reduce volume by sending the contaminated dust to a landfill. Option 4 also does not exhibit long-term effectiveness but it does exhibit short-term effectiveness. On the whole, Option 4 provides the best consideration of tradeoffs with respect to the balancing and modifying criteria.

Selected Interim Remedy: ***Description of Selected Interim Remedy***
Option 4 requires the following actions: 1) the removal and replacement of carpeting for the entire group of nearby homes, 2) providing initial and periodic housecleaning for dust removal, 3) providing soil and grass cover to all yards, and 4) providing dust suppression to the local dirt streets. This choice is similar to Option 3 but involves providing the remedy to all of the 40 homes near the St. Regis Site rather than just to those homes that are tested and do not exceed a screening level.

In preparation for the removal and replacement of carpet, residents would be temporarily relocated to local hotels and receive the hotel costs plus food expenses. Any resident who would prefer to stay with family or friends would still receive the food allowance. The contents of each residence would be videotaped prior to any work for liability purposes. Carpet removers would be HAZMAT certified as a precaution and, during the removal and initial house cleaning for dust, would operate in an environment to further reduce dust. Carpet to be removed would be misted with water to eliminate resuspension of dust during the removal. Initial housecleaning for dust removal would involve removal and replacement of heating/air conditioning filters, cleaning all duct work, and a thorough cleaning of all potential areas of dust collection such as upholstery, rugs, and draperies utilizing high efficiency particulate air (HEPA) filters. Carpet installers would not require special training. Finally, doormats would be placed outside the homes to further trap dust before entering homes.

Clean topsoil would be provided to cover the yards and grass seed applied to reduce tracking contaminated soil into the home. This clean soil would be tested for contaminants before use. Approximately 4" of clean soil would be placed in the main front and back yard areas followed by seeding with an athletic field mix of grass. Any debris on the yards would be removed.

Maintenance housecleaning for dust removal, including vacuuming of carpet, rugs, drapes, upholstery, and periodic changing of heating/air conditioning filters would occur bimonthly from May through October and then quarterly from November through April and will continue until the final remedial decision is implemented. This periodic house cleaning would utilize high efficiency particulate air (HEPA) filters. Because of the continual housecleaning for dust removal, monitoring would not be needed.

Dust suppression in local dirt streets would be accomplished using a soybean oil by-product or other environmentally safe method.

This cleanup would take about three months to complete. Cost: $665,000

Selected Interim Remedy: ***Summary of Estimated Remedy Costs***

See **Attachment D**.

Selected Interim Remedy: ***Expected Outcomes of Selected Interim Remedy***

As an interim measure, this remedy will result in a significant reduction in the amount of contaminated dust exposure to the residents living near the St. Regis Site from the most likely sources of indoor dust: house carpet, house furnishings, filters, yard soil, and adjacent dirt roads.

Statutory Determinations

This interim action is protective of human health from the contaminated house dust exposure pathway it is addressing in the short term until a final ROD is implemented. There are no ARARs specific to this interim action. An interim action waiver is, therefore, not needed. In EPA's judgment, the Selected Interim Remedy is cost-effective and represents a reasonable value for the money to be spent. With respect to the utilization of permanent solutions and treatment to the maximum extent practicable, the interim action is not designed or expected to be final, but the Selected Interim Remedy represents the best balance of trade-offs among alternatives with respect to pertinent criteria, given the limited scope of the action. In addition, the preference for treatment will be addressed in the final decision document for the Site.

Documentation of Significant Changes

Based on input received during the comment period, the selected remedial option has been modified from the Proposed Plan to incorporate a dust suppressant to dirt roads of the OU 7 and OU 1 areas to reduce the amount of dust generated by vehicles traveling into the area. This modification is necessary to further reduce, on an interim basis, the potential for contaminated dust in the residences. This modification was only applied to Option 4, EPA's preferred alternative. The change has no relevance to either Option 1 or 5 because it would not be added to either the no action alternative or the permanent relocation option. It was also not added to Options 2 and 3 for simplicity of the change and because its sole addition to those options would

not have influenced the selection of preferred Option 4. EPA does not consider this change to be significant.

In addition, costs of the selected remedial option have significantly increased. Original estimates for carpet removal were based on costs which reflect the use of workers trained only in carpet removal. Costs were increased to reflect the use of trained HAZMAT crews to provide a very conservative work environment. Other, minor cost adjustments have been made to reflect more precise engineering estimates developed since the Proposed Plan.

Although the cost changes are significant, EPA considers the changes to be reasonably anticipated by the public. No other significant changes were made to the options presented with the Proposed Plan. The changes made to EPA's preferred option do not significantly alter its overall purpose and could be reasonably anticipated by the public based on the June 2005 Proposed Plan.

Part 3: Responsiveness Summary

Stakeholder Issues and Lead Agency Responses

See **Attachment E**.

Attachment A

REVISED HOUSE DUST RISK CALCULATIONS
ST. REGIS PAPER COMPANY SITE
CASS LAKE, MINNESOTA

1.0 INTRODUCTION

In October 2004, samples of house dust were collected from 10 homes at the St. Regis Paper Company site in Cass Lake, Minnesota. The homes that were sampled were selected to represent homes with a range of 2,3,7,8-tetrachloro-p-dioxin toxicity equivalents (dioxin-TEQ); specifically, 3, 4, and 3 homes were identified as having low, medium, and high dioxin-TEQ concentrations, respectively, in surface soil from their yards. The samples were collected by contractors for International Paper Company (IP) and the U.S. Environmental Protection Agency (EPA) work assignment manager provided oversight during sample collection. The house dust samples were analyzed for dioxin-TEQ, benzo(a)pyrene-TEQ, and arsenic concentrations. Barr Engineering Company (Barr) published analytical results for the house dust samples in February 2005 (Barr 2005). Based on these analytical results, risks and hazards were characterized for each home sampled using two methodologies:

1. Receptor-specific chemical concentrations in house dust and dust loading results were used to calculate residence-specific loading rates which were compared to "settled dust screening values" (screening values) developed by the World Trade Center (WTC) Indoor Air Task Force Working Group (EPA 2003a). The WTC screening values consider dermal contact with and ingestion of dust and are based on an assumed 30-year exposure duration.

2. Receptor-specific chemical concentrations in house dust were compared to EPA Region 9 residential soil preliminary remediation goals (PRG). The PRGs consider potential exposure through incidental ingestion, dermal contact, and inhalation of particulates and are based on an assumed 30 year residential exposure duration (EPA 2004a).

Each of these methods (and variations of each) is summarized below in Section 2.0. Chemical-specific toxicity factors used in the calculations are discussed in Section 3.0. Method-specific risks and hazards are presented and compared in Section 4.0. Finally, uncertainties associated with the methods used and the method-specific risks and hazards are discussed in Section 5.0. References cited in the text are listed immediately following Section 5.0.

2.0 RISK AND HAZARD CALCULATION METHODS

As discussed in Section 1.0, chemical-specific and total risks and hazards were calculated for each of the 10 homes at which house dust samples were collected in October 2004, using two basic methods. These methods are summarized in Sections 2.1 and 2.2.

2.1 Comparison to WTC Screening Values

The primary method by which risks and hazards associated with potential exposure to chemicals in house dust samples were characterized was by comparison to WTC screening values (EPA 2003a). Specifically, residence-specific concentrations of chemicals (dioxin and arsenic) in house dust and dust loading results were used to calculate residence-specific loading rates for dioxin and arsenic using Equations 1 and 2, respectively.

Residence-Specific Screening Value for Dioxin (ng/m^2) = Loading (g/m^2) x Concentration (ng/kg) x 10^{-3} kg/g (1)

Residence-Specific Screening Value for Arsenic (mg/m^2) = Loading (g/m^2) x Concentration (mg/kg) x 10^{-3} kg/g (2)

Where:

g/m^2	=	Grams per square meter
kg/g	=	Kilogram per gram
mg/kg	=	Milligram per kilogram
ng/kg	=	Nanogram per kilogram

Note: All residence-specific loading and concentration results were obtained from Barr Engineering Company (Barr) (Barr 2005).

The residence-specific loading rates for dioxin and arsenic were then compared to WTC screening levels for dioxin (2 ng/m^2) and arsenic (0.4 mg/m^2) (EPA 2003a). Residence-specific loading rates and the results of the comparison are presented in Table A-1.

It should be noted that the WTC screening value is based on an exposure duration of 30 years. It is well established that a number of residents among the 10 homes sampled for house dust (as well as among the population of homes potentially impacted by site activities) have lived near the site for well over 30 years. Based on discussions with representatives of the Leech Lake Band of Ojibwe (the Band), lifetime residence within the community is consistent with the Band's traditional lifestyle (Tetra Tech 2004). Therefore, it is appropriate to consider the impact of adjusting the WTC screening values to reflect an exposure duration of 70 years (e.g. lifetime exposure). Such an adjustment is consistent with adjustments made to human health screening levels incorporated into the risk assessment work plan that will be followed to complete the baseline risk assessment for the site (IP 2004).

The screening value for dioxin used for the WTC response is based on the dioxin cancer slope factor of 1E+06 (milligrams per kilogram-day [mg/kg-day])$^{-1}$ proposed in EPA's "Draft Dioxin Reassessment" (EPA 2003b). This cancer slope factor is currently undergoing review by the Science Advisory Board of the National Academy of Sciences. If the WTC screening value for dioxin is adjusted to reflect the dioxin slope factor of 1.5E+05 (mg/kg-day)$^{-1}$ used to develop the EPA Region 9 PRGs (EPA 2004a), the screening value would be increased.

The modified WTC screening value for dioxin (5.7 ng/m^2) was calculated using Equation 3.

Modified WTC Screening Value for Dioxin (ng/m^2) =	(WTC Screening Value for Dioxin [2 ng/m^2])	(1E+06 [mg/kg-day]$^{-1}$)/ 1.5E+05 [mg/kg-day]$^{-1}$)	(30 years/70 years) (3)

A modified WTC screening value was not calculated for arsenic because the WTC screening value for arsenic is based on noncarcinogenic effects; a change to the exposure duration value will not change the WTC screening value for arsenic.

2.2 Comparison to EPA Region 9 PRGs and Modified PRGs

For the purpose of comparison to the WTC results (see Section 2.1), residence-specific chemical concentrations in house dust were also compared to EPA Region 9 PRGs and modified PRGs. Section 2.2.1 discusses comparisons to EPA Region 9 PRGs (EPA 2004a). Section 2.2.2 discusses comparisons to EPA Region 9 PRGs modified to reflect a 70-year exposure duration. Finally, Section 2.2.3 discusses comparisons to PRGs based on child exposures and noncarcinogenic endpoints.

2.2.1 Comparison to EPA Region 9 PRGs

In the second method, the concentration of each chemical (dioxin-TEQ, benzo[a]pyrene, and arsenic) measured in house dust samples were compared to its chemical-specific EPA residential soil PRG (EPA 2004a). PRGs for the three chemicals listed above are all based on a target carcinogenic risk of 1E-06. Therefore, chemical-specific risks associated with potential exposure to house dust were calculated using Equation 4.

(Chemical concentration/Chemical-specific preliminary remediation goal [PRG])*1E-06 (4)

It should be noted that the EPA Region 9 residential PRGs are based on an assumed exposure via incidental ingestion, dermal exposure, and inhalation of particulates over an exposure duration of 30 years. For the purposes of calculation, pathway-specific exposure rates were calculated based on integrated adult and child exposures. The 30-year exposure duration was assumed to be divided into 6 years as a child and 24 years as an adult (EPA 2004a).

Total risks were calculated as the sum of the dioxin-TEQ-, benzo(a)pyrene-TEQ-, and arsenic-specific risks. All chemical-specific, total, and alternate risks calculated using this method are presented in Table A-2. It should be noted that Table A-2 also presents risks calculated based on comparison to EPA Region 9 residential PRGs adjusted to reflect use of the proposed dioxin slope factor.

2.2.2 Comparison to Modified EPA Region 9 PRGs

Residents living in several of the homes at which house dust samples were collected are known to have lived in their home for over 50 years. Based on conversations with members of the Leech Lake Band of

Ojibwe (the Band), it is assumed that at least some members of the Band may live their entire lives at a single residence. Therefore, EPA Region 9 PRGs were modified to reflect an assumed residential exposure duration of 70 years. Specifically, it was assumed that receptors would be exposed for 6 years as a child and 64 years as an adult. The dioxin slope factor was also adjusted to reflect use of the proposed dioxin slope factor. Chemical-specific risks were calculated using the equation above and the modified PRGs.

Total risks were calculated as the sum of the dioxin-TEQ-, benzo(a)pyrene-TEQ-, and arsenic-specific risks. All chemical-specific, total, and alternate risks calculated using this method are presented in Table A-3.

2.2.3 Comparison to PRGs Based on Child Exposures and Noncarcinogenic Endpoints

In addition to potential carcinogenic effects, potential exposure to all three chemicals for which house dust samples were analyzed (dioxin-TEQ, benzo[a]pyrene, and arsenic), also cause noncarcinogenic health effects. Therefore, a third set of PRGs were developed based on potential exposure by children (0 to 6 years of age) and considering only noncarcinogenic endpoints. Children were selected as receptors because potential exposure by children (adjusted for body weight) is greater than potential exposure by adults (also adjusted for body weight). Noncarcinogenic-based, child PRGs were calculated using Equation 4.2 from EPA Region 9's "User's Guide and Background Technical Document for USEPA Region 9's Preliminary Remediation Goals (PRG) Table" (EPA 2004b). This equation is repeated below.

$$C\ (mg/kg) = \frac{THQ \times BW_c \times AT_n}{EF_r \times ED_c \left[\left(\frac{1}{RfD_o} \times \frac{IRS_c}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD_o} \times \frac{SA_c \times AF \times ABS}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD_i} \times \frac{IRA_c}{PEF}\right) \right]} \quad (5)$$

where:

ABS	=	Dermal Absorption
AF_c	=	Adherence Factor - Child
AT_n	=	Averaging Time For Noncarcinogen
BW_c	=	Body Weight - Child
ED_c	=	Exposure Duration - Child
EF_r	=	Exposure Frequency - Resident
IRA_c	=	Inhalation Rate - Child
IRS	=	Integrated Risk Information System
IRS_c	=	Soil Ingestion Rate - Child
PRG	=	Preliminary Remediation Goal
RfD_i	=	Reference Dose - Inhaled

RfD_o = Reference Dose - Oral
SA_c = Skin Surface Area - Child
THQ = Target Hazard Quotient

Because the child-based PRGs are calculated using a THQ equal to 1, chemical-specific hazards were calculated as follows.

$$\text{Hazard (unitless)} = \text{(Chemical Concentration/PRG)} \quad (6)$$

Dioxin-TEQ-specific hazards were not calculated because no reference doses (RfD) are currently available; these toxicity factors are currently under consideration by EPA. Total hazards were, therefore, calculated as the sum of the benzo(a)pyrene-TEQ- and arsenic-specific hazards. Exposure parameter values and all chemical-specific, total, and alternate hazards are presented in Table A-4.

3.0 CHEMICAL-SPECIFIC TOXICITY FACTORS

For the first two methods discussed above in Sections 2.1 and 2.2, chemical-specific toxicity factors used in the calculations are those selected by EPA Region 9 (EPA 2004a), with one exception. The EPA Region 9 PRGs for dioxin are based on oral and inhalation slope factors equal to 1.5E+05 $(\text{milligrams/kilogram-day})^{-1}$ (EPA 1997a). As part of its "Draft Dioxin Reassessment" EPA proposed an alternate slope factor of 1E+06 $(\text{milligram/kilogram-day})^{-1}$ (EPA 2003b). Therefore, dioxin-TEQ and total risks were calculated based on both dioxin slope factors. Risks calculated using the proposed slope factor are presented for comparison purposes only. The "Draft Dioxin Reassessment" is under review and may be modified as a result of this review by the National Academy of Sciences.

The RfDs used in the calculations based on the child PRGs were identified from a variety of sources. The oral and inhalation RfDs were not identified as part of the EPA Region 9 PRGs (EPA 2004a). Therefore, these values were identified from alternate sources (EPA 2003c). No oral or inhalation RfDs are available for dioxin; EPA is currently considering these toxicity factors. Pyrene was selected as a surrogate for benzo(a)pyrene based on structural similarities; therefore, the pyrene's oral RfD of 3E-02 mg/kg-day (EPA 2004a) was selected as the oral RfD for benzo(a)pyrene. Consistent with the approach taken by EPA Region 9 in developing their PRGs, the oral RfD for benzo(a)pyrene was used as its inhalation RfD.

The oral RfD for arsenic of 3E-04 mg/kg-day was obtained from EPA (2005). The inhalation RfD for arsenic was selected following EPA's updated hierarchy of toxicity information sources (EPA 2003). Specifically, the California Environmental Protection Agency (Cal/EPA) chronic reference exposure level (REL) of 3E-02 microgram per cubic meter ($\mu g/m^3$) was converted as shown in Equation 7 (Cal/EPA 2003).

$$(3E\text{-}02\ \mu g/m^3) \times (1\ mg/1000\ \mu g) \times 20\ m^3/day \times 1/70\ kg = 8.6E\text{-}06\ mg/kg\text{-}day \quad (7)$$

4.0 CHEMICAL-SPECIFIC AND TOTAL RISKS AND HAZARDS

Chemical-specific and total risks and hazards calculated for all 10 homes at which house dust samples were collected using the methods described in Sections 2.1 and 2.2 are presented and discussed in Sections 4.1 and 4.2 and are compared in Section 4.3.

4.1 Risks and Hazards Based on Comparison to WTC Screening Values

As shown in Table A-1, residence-specific loading rates for dioxin exceed the WTC screening value (2 ng/m^2) at five residences (Res9, Res14, Res15, Res16, and Res20). Similarly, the residence-specific loading rates for arsenic exceeded the WTC screening value (0.4 mg/m^2) at four residences (Res5, Res9, Res16, and Res20).

EPA also compared residence-specific loading rates for dioxin to the WTC screening value modified to reflect (1) use of a cancer slope factor of 1.5E+05 $(mg/kg\text{-}day)^{-1}$ and (2) an exposure duration of 70 years. As shown in Table A-1, residence-specific loading rates for dioxin exceed the modified WTC screening value (5.7 ng/m^2) at the same five residences (Res9, Res14, Res15, Res16, and Res20) identified above.

4.2 Risks and Hazards Calculated Based on Comparison to EPA Region 9 PRGs and Modified PRGs

As discussed in Section 2.2, for the purpose of comparison to the WTC results (see Section 4.1), residence-specific risks and hazards were calculated based on comparison to EPA Region 9 PRGs and modified PRGs.

4.2.1 Risks and Hazards Calculated Based on Comparison to EPA Region 9 PRGs

Chemical-specific and total risks calculated based on comparison to EPA Region 9 PRGs are presented in Table 2. Risks for dioxin were calculated using both the slope factor currently listed in EPA's Integrated Risk Information System (IRIS) and used as part of the EPA Region 9 PRGs and EPA's recommended alternate slope factor. Risks based on the current and alternate dioxin slope factors are discussed in Sections 4.2.1.1 and 4.2.1.2. It should be noted that risks calculated using the proposed dioxin slope factor are presented for comparison purposes only. The proposed slope factor is currently under review and may be modified as a result of this review by the National Academy of Sciences.

4.2.1.1 Risks Based on Current Dioxin Slope Factor

The total risk based on the current dioxin slope factor equals or exceeds 1E-04 (the upper end of EPA's risk range) at only two homes: SR-RES5HD-03 (2E-04) and SR-RES9HD-05 (1E-04). Total risk at these homes is driven by arsenic. Specifically, arsenic contributes 97 percent of the total risk at SR-RES5HD-03 and 55 percent of the total risk at SR-RES9HD-05 (dioxin-TEQ contributes 41 percent of the total risk at this second location). Total risk at all other homes is between 2E-05 and 8E-05. Total risk at the remaining 8 homes is driven by dioxin-TEQ (contributions ranging from 14 to 59 percent) and arsenic (contributions ranging from 22 to 71 percent). Benzo(a)pyrene-TEQ contributes less than both dioxin-TEQ and arsenic to total risk at 6 of the 10 homes sampled and benzo(a)pyrene is never the primary risk driver at any of the homes sampled.

4.2.1.2 Risks Based on Proposed Dioxin Slope Factor

The total risk based on the proposed dioxin slope factor equals or exceeds 1E-04 (the upper end of EPA's risk range) at 7 of the 10 homes sampled; the greatest risk was calculated for SR-RES9HD-05 (5E-04). Total risk at these homes is driven by dioxin-TEQ (contributions ranging from 74 to 93 percent). The only home with a total risk equal to or exceeding 1E-04 that is not driven by dioxin-TEQ is SR-RES5HD-03; the total risk at this home is driven by arsenic (97 percent). Total risk for the remaining three homes range from 3E-05 to 8E-05; risks at these locations are also driven by dioxin-TEQ, but to a less extent (contributions ranging from 52 to 64 percent). The contribution of benzo(a)pyrene to total risk is less than described above for risks based on the current dioxin slope factor.

4.2.2 Risks and Hazards Calculated Based on Comparison to Modified EPA Region 9 PRGs

Chemical-specific and total risks calculated based on comparison to modified EPA Region 9 PRGs are presented in Table A-3. Risks for dioxin were calculated using both the slope factor currently listed in EPA's IRIS and used as part of the EPA Region 9 PRGs and EPA's recommended alternate slope factor. Risks based on the current and alternate dioxin slope factors are discussed in Sections 4.2.2.1 and 4.2.2.2.

4.2.2.1 Risks Based on Current Dioxin Slope Factor

The total risk based on the current dioxin slope factor equals or exceeds 1E-04 (the upper end of EPA's risk range) at three homes (as compared to only two homes using unmodified PRGs)s: SR-RES5HD-03 (2E-04), SR-RES9HD-05 (2E-04), and SR-RES16HD-07 (1E-04). Total risk at these homes is driven by arsenic and dioxin-TEQ. Specifically, arsenic contributes 97 percent of the total risk at SR-RES5HD-03 and 56 percent of the total risk at SR-RES9HD-05 (dioxin-TEQ contributes 42 percent of the total risk at this location). In contrast, dioxin-TEQ contributes 61 percent of the total risk at SR-RES16HD-07 (arsenic contributes 37 percent of the total risk at this location). Total risk at all other homes is between 3E-05 and 9E-05. Total risk at the remaining 7 homes is driven by dioxin-TEQ (contributions ranging from 14 to 65 percent) and arsenic (contributions ranging from 22 to 72 percent). Benzo(a)pyrene-TEQ contributes less than both dioxin-TEQ and arsenic to total risk at 6 of the 10 homes sampled and benzo(a)pyrene is never the primary risk driver at any of the homes sampled.

4.2.2.2 Risks Based on Proposed Dioxin Slope Factor

The total risk based on the proposed dioxin slope factor equals or exceeds 1E-04 (the upper end of EPA's risk range) at 8 of the 10 homes sampled; the greatest risk was calculated for SR-RES9HD-05 (7E-04). Only risks at SR-RES13HD-04 and SR-RES18HD-10 were determined to be less than 1E-04. Total risk at the eight homes with total risks equal to or exceeding 1E-04 is driven by dioxin-TEQ (contributions ranging from 63 to 92 percent) with one exception. The only home with a total risk equal to or exceeding 1E-04 that is not driven by dioxin-TEQ is SR-RES5HD-03 (2E-04); the total risk at this home is driven by arsenic (97 percent). Total risk for the two homes with total risks less than 1E-04 (SR-RES13HD-04 [5E-05] and SR-RES18HD-10 [8E-05]) are also driven by dioxin-TEQ, but to a less extent (contributions ranging from 51 to 57 percent). The contribution of benzo(a)pyrene to total risk is less than described above for risks based on the current dioxin slope factor.

4.2.3 Hazards Based on Comparison to Child PRGs

Chemical-specific and total hazards calculated based on comparison to child PRGs are presented in Table A-4. Total hazards equaled or exceeded a target hazard of 1 at two of the 10 residences sampled – Res5 (hazard = 2.7) and Res9 (hazard = 1.4). Total hazards at these properties are all driven by arsenic (contributions of 99.8 and greater).

4.3 Comparison of Method-Specific Risks and Hazards

Risks were calculated by comparing house dust concentrations to WTC screening values (and modified WTC screening values) and to EPA Region 9 PRGs (and modified EPA Region 9 PRGs), considering both the current dioxin-TEQ slope factor and the EPA-recommended alternate slope factor. Risks calculated under these various scenarios are compared below.

- The residences identified with residence-specific loading rates that exceed WTC and modified WTC screening values (Res5 [arsenic only], Res9 [dioxin and arsenic], Res14 [dioxin only], Res15 [dioxin only], Res16 [dioxin and arsenic], and Res20 [dioxin and arsenic]) (see Table 1) closely match the residences identified with total and chemical-specific risks greater than 1E-04 (see Tables A-2 and A-3). (Note: two other residences with total risks greater than 1E-04 (Res12 and Res17) have residence-specific loading rates less than, but similar to, the WTC screening value for arsenic.

- Chemical-specific and total risks calculated based on comparison to modified EPA Region 9 PRGs varied from 1 to 2 times greater than risks calculated based on comparison to unmodified PRGs.

- Chemical-specific and total risks calculated based on the EPA-recommended alternate slope factor were about 6.7 and 1 to 5 times greater, respectively, than the chemical-specific and total risks based on the current dioxin slope factor. The variation in total risks is dependent on the contribution of arsenic to total risks at each residence.

- Total risks calculated based on comparison to modified EPA Region 9 PRGs and assuming 70 years of residential exposure varied from 1 to 7 times greater than risks calculated based on comparison to unmodified PRGs and assuming 30 years of residential exposure. Excluding the single residence at which the risk did not significantly change (SR-RES5HD-03 – this location had the highest arsenic concentration [62.8 mg/kg]), the risks varied from 2.5 to 7 times higher.

5.0 UNCERTAINTIES

Comparison of residence-specific chemical concentrations in house dust and loading results (in the form of residence-specific screening values) to WTC screening values represents a current and technically appropriate methodology. The WTC screening values were specifically designed to evaluate potential

exposure to chemicals in settled dust within a residence. The WTC screening values are calculated using assumptions regarding receptor-specific exposure potential to chemicals in house dust. The exposure assumptions used to calculate the WTC screening value originated in EPA's "Standard Operating Procedures (SOPs) for Residential Exposure Assessment" (EPA 1997b and 2001). However, the assumptions were modified for use in calculating screening values to reflect residential exposure potential (EPA 2003). To the extent that the assumptions used to calculate the WTC screening values do not reflect actual site-specific receptor activity patterns, uncertainty is introduced.

Significant uncertainties are associated with characterizing risks based on comparison to residential soil PRGs. Two primary sources of uncertainty differences are (1) the amount of soil and dust to which receptors may be exposed and (2) differences in the amount and configuration of soil and dust adhering to receptors' skin and the differences in chemical-specific absorption related to these differences.

Residential soil PRGs are based on the assumption that there is an unlimited amount of soil (and dust) to which receptors may be exposed. (Note: receptors are assumed to be exposed to chemicals present in soil outside of the home and to dust [derived from outdoor soil] inside the home). In other words, no matter how often and how much receptors are exposed to soil, there is always more soil (and dust) to be exposed to. This assumption does not consider that the significant majority of soil and dust to which receptors may be exposed consists of soil located outside the home.

Risks characterized based on comparison to modified EPA Region 9 PRGs for dioxin are associated with significant uncertainties and are presented for comparison purposes only. The proposed dioxin slope factor (1E-06 $[mg/kg\text{-}day]^{-1}$) is under review and may be modified as a result of this review by the National Academy of Sciences. Under EPA's 1998 dioxin policy, site remedies will be reconsidered if the dioxin reassessment results indicate there is a chance the remedies will not be considered protective.

In this exercise, it has been assumed that receptors are exposed only to dust within the home. As presented in Barr (2005) the amount of dust collected at the ten homes (pre-sieved) varied considerably from 41.5 grams at SR-RES13HD-04 to 1,693 grams at SR-RES20HD-08 - a range of about 400-fold. Similarly, dust loading varied from 6.9 grams per square meter (g/m^2) at SR-RES13HD-04 to 282.2 g/m^2 at SR-RES20HD-08 - a range of about 40-fold. It may be expected that there may be insufficient amounts of dust at some residences (even acknowledging some amount of continual dust replenishment) to support the degree of exposure inherently assumed in calculating residential PRGs. To the degree that

an insufficient amount of dust is present at a given residence, the risks calculated based on comparison to PRGs (both current and modified) may overestimate actual risks.

Generally, the diameter of dust particles is less the diameter of soil particles to which receptors may be exposed and that adhere to skin surfaces. As a result, differences are likely between the amount of dust adhering to skin (measured as milligrams per square centimeter) and the configuration of the particles on the skin (for example, a monolayer versus a multi-layered configuration). Adherence factors (AF) used in PRG calculations are based on experiments and observations regarding soil exposures. To the extent that a greater amount of the total amount of dust adhering to skin is actually contacting the skin, a greater amount of chemicals adhering to the particles may be absorbed into the body. In other words, the use of EPA-recommend AF values derived from soil exposure may underestimate the absorption of chemicals from dust particles.

The calculation of PRGs assumes some exposure due to inhalation of soil particulates that become airborne and are inhaled. The amount of airborne and breathable particles is estimated using a particulate emission factor (PEF). Use of such a factor with regard to potential indoor dust exposure introduces significant uncertainty. However, the contribution to the PRG based on inhalation exposure is typically minimal as compared to potential exposure through incidental ingestion and dermal contact. Therefore, uncertainty introduced by using PEFs is likely to be less than the two other sources of uncertainty discussed above.

Finally, although research is required to determine the most appropriate methods for estimating exposure to chemicals present in house dust, comparison to WTC screening values represents a technically appropriate methodology that incorporates both chemical concentrations in dust and dust loadings. The WTC screening values have also undergone a significant amount of peer review, both within the government and in the private sector. The use of comparisons to soil PRGs to characterize risks and hazards must be considered preliminary and associated with significant uncertainty. However, it should be noted that the risk and hazard results based on comparison to soil PRGs are similar to and confirm the results based on comparison to WTC screening levels.

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TABLE A-1

COMPARISON OF RESIDENCE-SPECIFIC SCREENING VALUES TO WORLD TRADE CENTER (WTC) SCREENING VALUES

Residence	WTC Settled Dust Screening Value[a] and Modified Value[b] - Dioxin (ng/m^2)	Residence-Specific Loading Rates - Dioxin[c] (ng/m^2)	WTC Settled Dust Screening Value[a] - Arsenic (mg/m^2)	Residence-Specific Loading Rates - Arsenic[d] (mg/m^2)
5	2	5.00E-03	0.4	1.3
	5.7	5.00E-03		
9	2	23.1	0.4	3.1
	5.7	23.1		
14	2	7.3	0.4	0.31
	5.7	7.3		
15	2	6.8	0.4	0.29
	5.7	6.8		
16	2	10.2	0.4	0.6
	5.7	10.2		
20	2	32.7	0.4	1.6
	5.7	32.7		
12	2	1.7	0.4	0.36
	5.7	1.7		
13	2	8.00E-02	0.4	0.03
	5.7	8.00E-02		
17	2	1.1	0.4	0.39
	5.7	1.1		
18	2	0.65	0.4	0.29
	5.7	0.65		

Notes:

Shaded residence-specific screening levels are those that exceed the WTC settled dust screening values and modified values.

[a] World Trade Center Indoor Air Task Force Working Group. 2003. "World Trade Center Indoor Environment Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks." Contaminants of Potential Concern (COPC) Committee. May. On-Line Address: http://www.epa.gov/wtc/copc_benchmark.pdf. Note: these benchmarks

[b] The WTC settled dust screening value for dioxin (2 ng/m^2) was modified to revise two parameters upon which the screening value was based: (1) the proposed dioxin slope factor of 1E+06 $(mg/kg\text{-}day)^{-1}$ was replaced with the currently approved EPA slope factor of 1.5E+05 $(mg/kg\text{-}day)^{-1}$ and (2) the 30-year exposure duration was replaced with a 70-year exposure duration. Specifically, the WTC settled dust screening value for dioxin was modified as follows: 2 ng/m^2 x 1E+06/1.5E+05 x 30/70 = 5.7 ng/m^2.

[c] Calculated as Loading (g/m^2) x Concentration (ng/kg) x 1E-03 kg/g, based on residence-specific loading and housedust concentrations as presented in Barr Engineering Co. 2005. Validated Analytical Data -- House Dust, Laboratory Batch Numbers: K2408652, St. Regis Paper Company Site -- Cass Lake, Minnesota. February 8.

[d] Calculated as Loading (g/m^2) x Concentration (mg/kg) x 1E-03 kg/g, based on residence-specific loading and housedust concentrations as presented in Barr Engineering Co. 2005. Validated Analytical Data -- House Dust, Laboratory Batch Numbers: K2408652, St. Regis Paper Company Site -- Cass Lake, Minnesota. February 8.

TABLE A-2
HOUSE DUST RISK CALCULATIONS
THIRTY-YEAR EXPOSURE
ST. REGIS PAPER COMPANY SITE
CASS LAKE, MINNESOTA

Sample	Chemical-Specific Household Dust Concentrations[a] and PRGs[b]						Chemical-Specific Risks[c]			Total Risk[d]	Risk Drivers
	Dioxin-TEQ (ng/kg)		B(a)P-TEQ (ug/kg)		Arsenic (mg/kg)						
	Concentration	PRG	Concentration	PRG	Concentration	PRG	Dioxin-TEQ	B(a)P-TEQ	Arsenic		
SR-RES15HD-01	71.6	3.9	398	62	3.08	0.39	1.8E-05	6.4E-06	7.9E-06	3E-05	Dioxin-TEQ - 56.19% ; B(a)P-TEQ - 19.65% ; Arsenic - 24.17%
Alt-Dioxin SF[e]	71.6	0.585	398	62	3.08	0.39	1.2E-04	6.4E-06	7.9E-06	1E-04	Dioxin-TEQ - 89.53% ; B(a)P-TEQ - 4.70% ; Arsenic - 5.78%
SR-RES14HD-02	54.3	3.9	392	62	2.28	0.39	1.4E-05	6.3E-06	5.8E-06	3E-05	Dioxin-TEQ - 53.36% ; B(a)P-TEQ - 24.23% ; Arsenic - 22.41%
Alt-Dioxin SF	54.3	0.585	392	62	2.28	0.39	9.3E-05	6.3E-06	5.8E-06	1E-04	Dioxin-TEQ - 88.41% ; B(a)P-TEQ - 6.02% ; Arsenic - 5.57%
SR-RES5HD-03	0.234	3.9	272	62	62.8	0.39	6.0E-08	4.4E-06	1.6E-04	2E-04	Dioxin-TEQ - 0.04% ; B(a)P-TEQ - 2.65% ; Arsenic - 97.31%
Alt-Dioxin SF	0.234	0.585	272	62	62.8	0.39	4.0E-07	4.4E-06	1.6E-04	2E-04	Dioxin-TEQ - 0.24% ; B(a)P-TEQ - 2.65% ; Arsenic - 97.11%
SR-RES13HD-04	11.6	3.9	223	62	4.5	0.39	3.0E-06	3.6E-06	1.2E-05	2E-05	Dioxin-TEQ - 16.42% ; B(a)P-TEQ - 19.86% ; Arsenic - 63.71%
Alt-Dioxin SF	11.6	0.585	223	62	4.5	0.39	2.0E-05	3.6E-06	1.2E-05	3E-05	Dioxin-TEQ - 56.71% ; B(a)P-TEQ - 10.29% ; Arsenic - 33.00%
SR-RES9HD-05	240	3.9	281.5	62	32.45	0.39	6.2E-05	4.5E-06	8.3E-05	1E-04	Dioxin-TEQ - 41.22% ; B(a)P-TEQ - 3.04% ; Arsenic - 55.74%
Alt-Dioxin SF	240	0.585	281.5	62	32.45	0.39	4.1E-04	4.5E-06	8.3E-05	5E-04	Dioxin-TEQ - 82.38% ; B(a)P-TEQ - 0.91% ; Arsenic - 16.71%
SR-RES12HD-06	68.5	3.9	359	62	14.4	0.39	1.8E-05	5.8E-06	3.7E-05	6E-05	Dioxin-TEQ - 29.14% ; B(a)P-TEQ - 9.61% ; Arsenic - 61.26%
Alt-Dioxin SF	68.5	0.585	359	62	14.4	0.39	1.2E-04	5.8E-06	3.7E-05	2E-04	Dioxin-TEQ - 73.27% ; B(a)P-TEQ - 3.62% ; Arsenic - 23.10%
SR-RES16HD-07	193	3.9	105	62	11.5	0.39	4.9E-05	1.7E-06	2.9E-05	8E-05	Dioxin-TEQ - 61.35% ; B(a)P-TEQ - 2.10% ; Arsenic - 36.55%
Alt-Dioxin SF	193	0.585	105	62	11.5	0.39	3.3E-04	1.7E-06	2.9E-05	4E-04	Dioxin-TEQ - 91.36% ; B(a)P-TEQ - 0.47% ; Arsenic - 8.17%
SR-RES20HD-08	116	3.9	110	62	5.64	0.39	3.0E-05	1.8E-06	1.4E-05	5E-05	Dioxin-TEQ - 64.69% ; B(a)P-TEQ - 3.86% ; Arsenic - 31.45%
Alt-Dioxin SF	116	0.585	110	62	5.64	0.39	2.0E-04	1.8E-06	1.4E-05	2E-04	Dioxin-TEQ - 92.43% ; B(a)P-TEQ - 0.83% ; Arsenic - 6.74%
SR-RES17HD-09	30.4	3.9	171	62	10.6	0.39	7.8E-06	2.8E-06	2.7E-05	4E-05	Dioxin-TEQ - 20.66% ; B(a)P-TEQ - 7.31% ; Arsenic - 72.03%
Alt-Dioxin SF	30.4	0.585	171	62	10.6	0.39	5.2E-05	2.8E-06	2.7E-05	8E-05	Dioxin-TEQ - 63.45% ; B(a)P-TEQ - 3.37% ; Arsenic - 33.18%
SR-RES18HD-10	16.2	3.9	485	62	7.12	0.39	4.2E-06	7.8E-06	1.8E-05	3E-05	Dioxin-TEQ - 13.74% ; B(a)P-TEQ - 25.87% ; Arsenic - 60.39%
Alt-Dioxin SF	16.2	0.585	485	62	7.12	0.39	2.8E-05	7.8E-06	1.8E-05	5E-05	Dioxin-TEQ - 51.50% ; B(a)P-TEQ - 14.55% ; Arsenic - 33.95%

Notes:
B(a)P = Benzo(a)pyrene
ug/kg = Microgram per Kilogram
mg/kg = Milligram per Kilogram
ng/kg = Nanogram per Kilogram
PRG = *Preliminary Remediation Goal*
SF = Slope Factor
TEQ = Toxicity Equivalent

[a] House dust analytical results were obtained from "Validated Analytical Data - House Dust" (Barr 2005).
[b] U.S. Environmental Protection Agency Region 9 residential soil PRGs (EPA 2004a).
[c] Chemical-specific risks were calculated as: (Concentration/PRG)*1E-06.
[d] Total risks were calculated as the sum of dioxin-TEQ-, B(a)P-TEQ-, and arsenic-specific risks.
[e] Alternate dioxin SF of 1E+06 $(mg/kg\text{-}day)^{-1}$ (as compared with 1.5E+05 $[mg/kg\text{-}day]^{-1}$) from EPA's "Draft Dioxin Reassessment" (EPA 2003).

TABLE A-3
HOUSE DUST RISK CALCULATIONS
SEVENTY-YEAR EXPOSURE
ST. REGIS PAPER COMPANY SITE
CASS LAKE, MINNESOTA

	Chemical-Specific Household Dust Concentrations[a] and PRGs[b]						Chemical-Specific Risks[c]				
	Dioxin-TEQ (ng/kg)		B(a)P-TEQ (ug/kg)		Arsenic (mg/kg)						
Sample	Concentration	PRG	Concentration	PRG	Concentration	PRG	Dioxin-TEQ	B(a)P-TEQ	Arsenic	Total Risk[d]	Risk Drivers
SR-RES15HD-01	71.6	2.6	398	40	3.08	2.60E-01	2.8E-05	1.0E-05	1.2E-05	5E-05	Dioxin-TEQ - 55.82% ; B(a)P-TEQ - 20.17% ; Arsenic - 24.01%
Alt-Dioxin SF[e]	71.6	0.39	398	40	3.08	2.60E-01	1.8E-04	1.0E-05	1.2E-05	2E-04	Dioxin-TEQ - 89.39% ; B(a)P-TEQ - 4.84% ; Arsenic - 5.77%
SR-RES14HD-02	54.3	2.6	392	40	2.28	2.60E-01	2.1E-05	9.8E-06	8.8E-06	4E-05	Dioxin-TEQ - 52.93% ; B(a)P-TEQ - 24.84% ; Arsenic - 22.23%
Alt-Dioxin SF	54.3	0.39	392	40	2.28	2.60E-01	1.4E-04	9.8E-06	8.8E-06	2E-04	Dioxin-TEQ - 88.23% ; B(a)P-TEQ - 6.21% ; Arsenic - 5.56%
SR-RES5HD-03	0.234	2.6	272	40	62.8	2.60E-01	9.0E-08	6.8E-06	2.4E-04	2E-04	Dioxin-TEQ - 0.04% ; B(a)P-TEQ - 2.74% ; Arsenic - 97.23%
Alt-Dioxin SF	0.234	0.39	272	40	62.8	2.60E-01	6.0E-07	6.8E-06	2.4E-04	2E-04	Dioxin-TEQ - 0.24% ; B(a)P-TEQ - 2.73% ; Arsenic - 97.03%
SR-RES13HD-04	11.6	2.6	223	40	4.5	2.60E-01	4.5E-06	5.6E-06	1.7E-05	3E-05	Dioxin-TEQ - 16.32% ; B(a)P-TEQ - 20.39% ; Arsenic - 63.30%
Alt-Dioxin SF	11.6	0.39	223	40	4.5	2.60E-01	3.0E-05	5.6E-06	1.7E-05	5E-05	Dioxin-TEQ - 56.52% ; B(a)P-TEQ - 10.59% ; Arsenic - 32.89%
SR-RES9HD-05	240	2.6	281.5	40	32.45	2.60E-01	9.2E-05	7.0E-06	1.2E-04	2E-04	Dioxin-TEQ - 41.18% ; B(a)P-TEQ - 3.14% ; Arsenic - 55.68%
Alt-Dioxin SF	240	0.39	281.5	40	32.45	2.60E-01	6.2E-04	7.0E-06	1.2E-04	7E-04	Dioxin-TEQ - 82.36% ; B(a)P-TEQ - 0.94% ; Arsenic - 16.70%
SR-RES12HD-06	68.5	2.6	359	40	14.4	2.60E-01	2.6E-05	9.0E-06	5.5E-05	9E-05	Dioxin-TEQ - 29.05% ; B(a)P-TEQ - 9.89% ; Arsenic - 61.06%
Alt-Dioxin SF	68.5	0.39	359	40	14.4	2.60E-01	1.8E-04	9.0E-06	5.5E-05	2E-04	Dioxin-TEQ - 73.18% ; B(a)P-TEQ - 3.74% ; Arsenic - 23.08%
SR-RES16HD-07	193	2.6	105	40	11.5	2.60E-01	7.4E-05	2.6E-06	4.4E-05	1E-04	Dioxin-TEQ - 61.30% ; B(a)P-TEQ - 2.17% ; Arsenic - 36.53%
Alt-Dioxin SF	193	0.39	105	40	11.5	2.60E-01	4.9E-04	2.6E-06	4.4E-05	5E-04	Dioxin-TEQ - 91.35% ; B(a)P-TEQ - 0.48% ; Arsenic - 8.16%
SR-RES20HD-08	116	2.6	110	40	5.64	2.60E-01	4.5E-05	2.8E-06	2.2E-05	7E-05	Dioxin-TEQ - 64.61% ; B(a)P-TEQ - 3.98% ; Arsenic - 31.41%
Alt-Dioxin SF	116	0.39	110	40	5.64	2.60E-01	3.0E-04	2.8E-06	2.2E-05	3E-04	Dioxin-TEQ - 92.41% ; B(a)P-TEQ - 0.85% ; Arsenic - 6.74%
SR-RES17HD-09	30.4	2.6	171	40	10.6	2.60E-01	1.2E-05	4.3E-06	4.1E-05	6E-05	Dioxin-TEQ - 20.61% ; B(a)P-TEQ - 7.53% ; Arsenic - 71.86%
Alt-Dioxin SF	30.4	0.39	171	40	10.6	2.60E-01	7.8E-05	4.3E-06	4.1E-05	1E-04	Dioxin-TEQ - 63.38% ; B(a)P-TEQ - 3.48% ; Arsenic - 33.15%
SR-RES18HD-10	16.2	2.6	485	40	7.12	2.60E-01	6.2E-06	1.2E-05	2.7E-05	5E-05	Dioxin-TEQ - 13.62% ; B(a)P-TEQ - 26.51% ; Arsenic - 59.87%
Alt-Dioxin SF	16.2	0.39	485	40	7.12	2.60E-01	4.2E-05	1.2E-05	2.7E-05	8E-05	Dioxin-TEQ - 51.25% ; B(a)P-TEQ - 14.96% ; Arsenic - 33.79%

Notes:
B(a)P = Benzo(a)pyrene
ug/kg = Microgram per Kilogram
mg/kg = Milligram per Kilogram
ng/kg = Nanogram per Kilogram
PRG = Preliminary Remediation Goal
SF = Slope Factor
TEQ = Toxicity Equivalent

[a] House dust analytical results were obtained from "Validated Analytical Data - House Dust" (Barr 2005).
[b] U.S. Environmental Protection Agency Region 9 residential soil PRGs (EPA 2004a).
[c] Chemical-specific risks were calculated as: (Concentration/PRG)*1E-06.
[d] Total risks were calculated as the sum of dioxin-TEQ-, B(a)P-TEQ-, and arsenic-specific risks.
[e] Alternate dioxin SF of 1E+06 $(mg/kg\text{-}day)^{-1}$ (as compared with 1.5E+05 $[mg/kg\text{-}day]^{-1}$) from EPA's "Draft Dioxin Reassessment" (EPA 2003).

TABLE A-4
HOUSE DUST HAZARD CALCULATIONS
SIX-YEAR CHILDHOOD EXPOSURE
ST. REGIS PAPER COMPANY SITE
CASS LAKE, MINNESOTA

			Dioxin	B(a)P	Arsenic	
THQ =	1 unitless					
BW_c =	15 kg	RfD_o[f] =	NA	3.00E-02	3.00E-04	mg/kg-day
At_n =	2190 days	RfD_i[g] =	NA	3.00E-02	8.60E-06	mg/kg-day
EF_r =	350 days/year	PEF =	1.32E+09	1.32E+09	1.32E+09	m^3/kg
ED_c =	6 years					
IRS_c =	200 mg/day	PRG =	NA	1.83E+06 ug/kg	2.34E+01 mg/kg	
SA_c =	2800 cm^2/day					
AF_c =	0.2 mg/cm^2					
ABS =	0 1 unitless					
IRA_c =	10 m^3/day					

$$PRG = \frac{THQ \times BW_c \times AT_n}{EF_r \times ED_c \times [((1/RfD_o) \times (IRS_c/10^6\ mg/kg)) + ((1/RfD_o) \times (SA_c \times AF \times ABS/10^6\ mg/kg)) + ((1/RfD_i) \times (IRA_c/PEF))]}$$

	Chemical-Specific Household Dust Concentrations[a] and PRGs[b]						Chemical-Specific Hazards[c]									
	Dioxin-TEQ (ng/kg)		B(a)P-TEQ (ug/kg)		Arsenic (mg/kg)						Hazard Drivers					
Sample	Concentration	PRG	Concentration	PRG	Concentration	PRG	Dioxin-TEQ	B(a)P-TEQ	Arsenic	Total Hazard[d]						
SR-RES15HD-01	71.6	NA	398	1.83E+06	3.08	23.4	--	2 2E-04	1.3E-01	1 3E-01	Dioxin-TEQ -	--	B(a)P-TEQ -	1 65E-03%	Arsenic -	99.84%
SR-RES14HD-02	54 3	NA	392	1.83E+06	2.28	23.4	--	2.1E-04	9 7E-02	9.8E-02	Dioxin-TEQ -	--	B(a)P-TEQ -	2.19E-03%	Arsenic -	99.78%
SR-RES5HD-03	0.234	NA	272	1.83E+06	62.8	23.4	--	1.5E-04	2.7E+00	2.7E+00	Dioxin-TEQ -	--	B(a)P-TEQ -	5.54E-05%	Arsenic -	99.99%
SR-RES13HD-04	11.6	NA	223	1.83E+06	4.5	23.4	--	1.2E-04	1.9E-01	1.9E-01	Dioxin-TEQ -	--	B(a)P-TEQ -	6.33E-04%	Arsenic -	99.94%
SR-RES9HD-05	240	NA	281.5	1.83E+06	32.45	23.4	--	1.5E-04	1.4E+00	1 4E+00	Dioxin-TEQ -	--	B(a)P-TEQ -	1.11E-04%	Arsenic -	99.99%
SR-RES12HD-06	68.5	NA	359	1.83E+06	14.4	23 4	--	2.0E-04	6 1E-01	6 1E-01	Dioxin-TEQ -	--	B(a)P-TEQ -	3.19E-04%	Arsenic -	99 97%
SR-RES16HD-07	193	NA	105	1.83E+06	11.5	23 4	--	5 7E-05	4.9E-01	4.9E-01	Dioxin-TEQ -	--	B(a)P-TEQ -	1.17E-04%	Arsenic -	99.99%
SR-RES20HD-08	116	NA	110	1.83E+06	5 64	23.4	--	6.0E-05	2.4E-01	2.4E-01	Dioxin-TEQ -	--	B(a)P-TEQ -	2.49E-04%	Arsenic -	99.98%
SR-RES17HD-09	30.4	NA	171	1.83E+06	10.6	23 4	--	9.3E-05	4.5E-01	4.5E-01	Dioxin-TEQ -	--	B(a)P-TEQ -	2.06E-04%	Arsenic -	99.98%
SR-RES18HD-10	16 2	NA	485	1.83E+06	7.12	23.4	--	2.6E-04	3.0E-01	3.0E-01	Dioxin-TEQ -	--	B(a)P-TEQ -	8.70E-04%	Arsenic -	99.91%

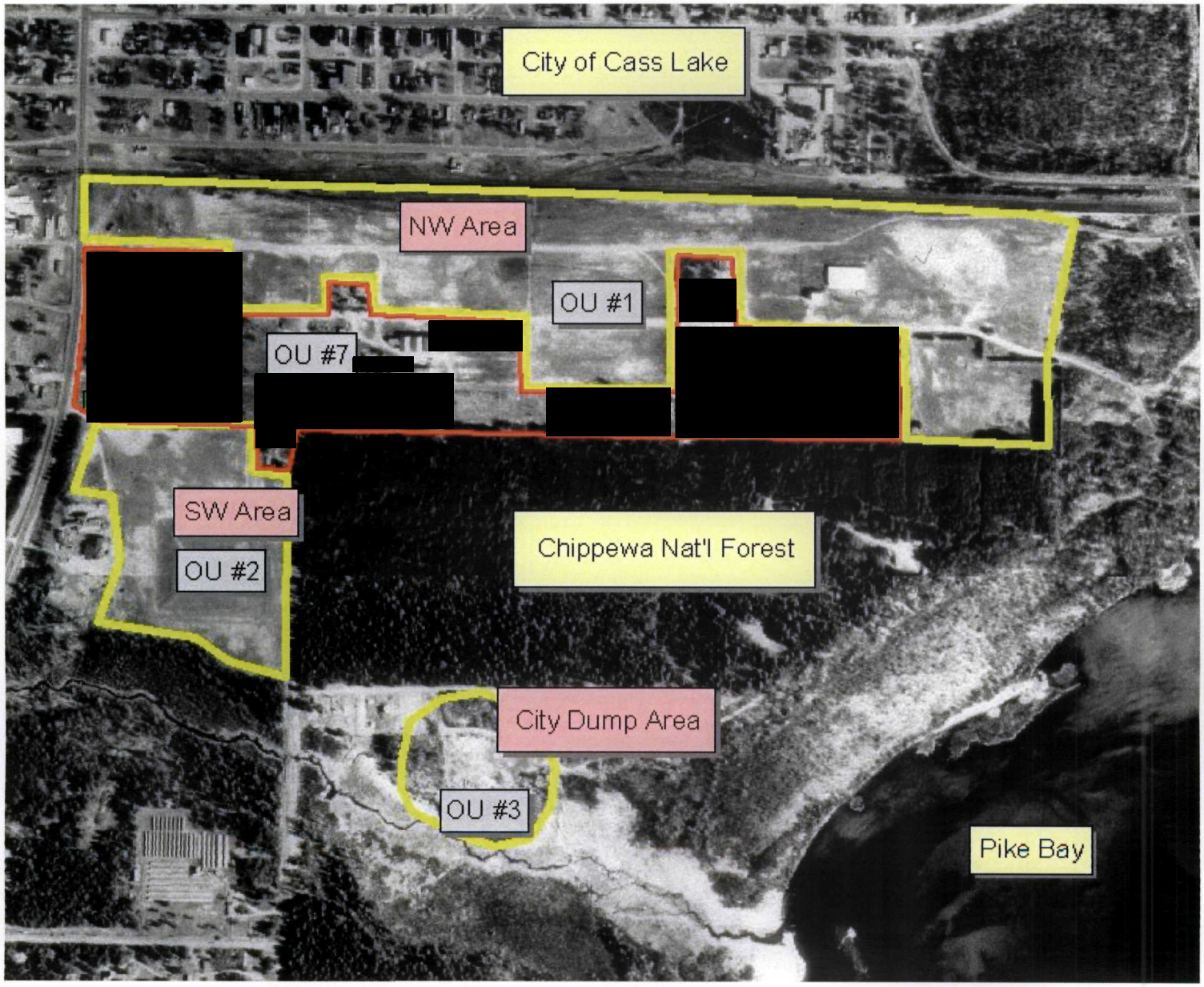
Notes.
-- = Not calculated
B(a)P = Benzo(a)pyrene
ug/kg = Microgram per Kilogram
mg/kg = Milligram per Kilogram
ng/kg = Nanogram per Kilogram
PRG = Preliminary Remediation Goal
ABS = Dermal Absorption
AF_c = Adeherence Factor - Child
AT_n = Averaging Time For Noncarcinogen
BW_c = Body Weight - Child
ED_c = Exposure Duration - Child
EF_r = Exposure Frequency - Resident
IRA_c = Inhilation Rate - Child
IRIS = Integrated Risk Information System
IRS_c = Soil Ingestion Rate - Child
NA = Not applicable
RfD_i = Reference Dose - Inhalation
RfD_o = Reference Dose - Oral
SA_c = Skin Surface Area - Child
THQ = Target Hazard Quotient
TEQ = Toxicity Equivalent

[a] House dust analytical results were obtained from "Validated Analytical Data - House Dust" (Barr 2005).
[b] U S Environmental Protection Agency Region 9 residential soil PRGs (EPA 2004a).
[c] Chemical-specific hazards were calculated as (Concentration/PRG)*1E-06
[d] Total hazards were calculated as the sum of B(a)P-TEQ- and arsenic-specific hazards.
[e] Oral RFDs were obtained from the following sources: benzo(a)pyrene - used RFD from pyrene based on structural similarities and arsenic - IRIS (EPA 2005).
[f] Inhalation RFDs were obtained from the following sources benzo(a)pyrene - consistent with the assumptions used to develop the Region 9 PRGs (EPA 2004a), the oral RfD was adopted as the inhalation RfD; arsenic - used California EPA chronic reference exposure level (REL) (Cal/EPA 2003) of 3E-02 ug/m^3 converted as follows: 3E-02ug/m^3 x 1mg/1000ug x 20m^3/day x 1/70kg = 8 6E-06mg/kg-day

Attachment B

St. Regis Paper Company Superfund Site

Cass Lake, Minnesota



N
W E
S

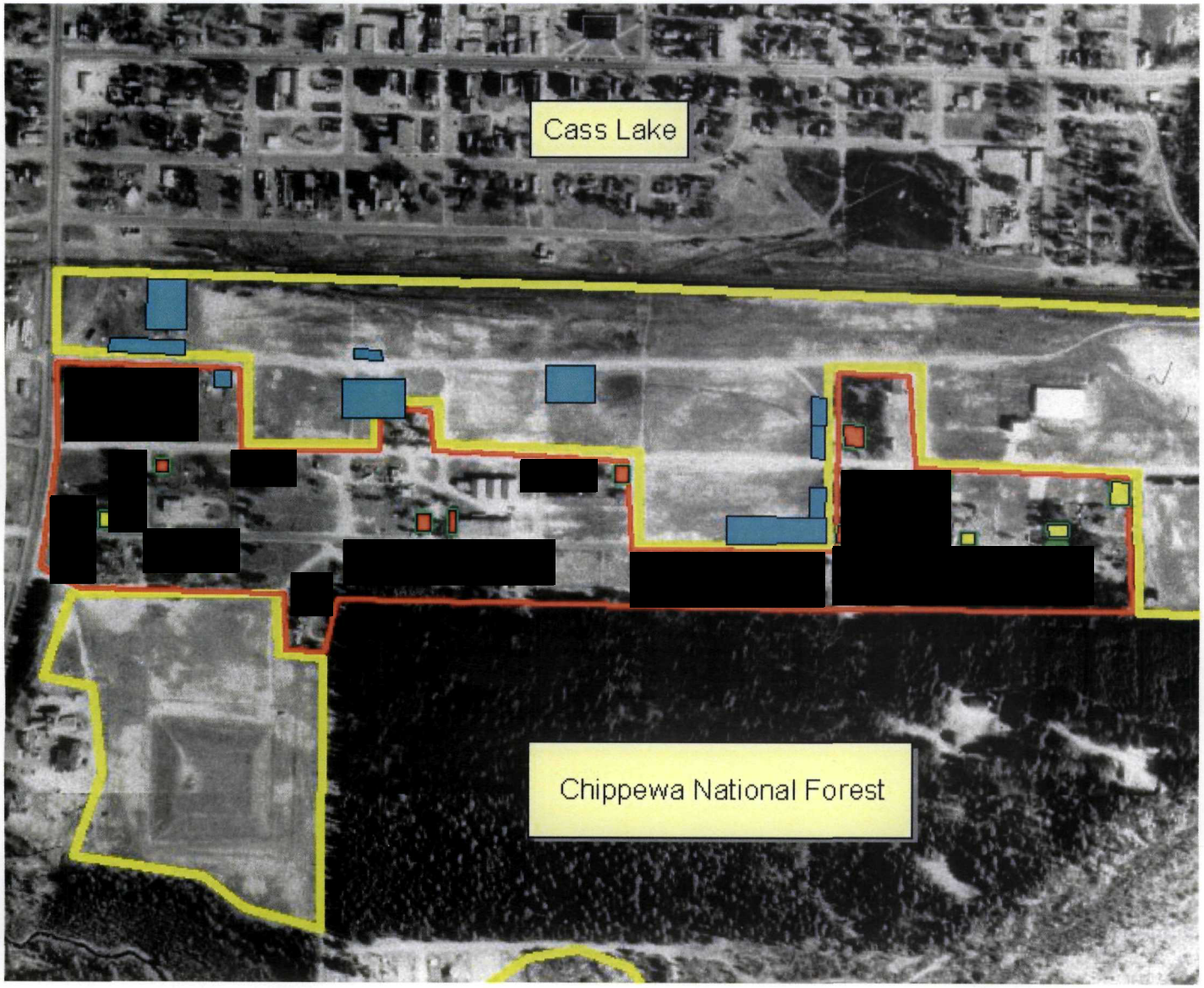
Operable Unit #7
Residences
St. Regis Operations & Dump Areas

0.3 0 0.3 Miles

Attachment C

St. Regis Paper Company Superfund Site

Cass Lake, Minnesota



N
W E
S

- Dust Above Screen
- Dust Below Screen
- All Residents
- Removal Areas
- OU 7
- Site Operations Areas

0.3 0 0.3 Miles

Attachment D

St. Regis Paper Company Superfund Site

Option #4			
item	unit cost	# units	cost
house clean/carpet removal	$3,127.09	40	$125,083.60
new carpet	$4,088.65	40	$163,546.00
yard soil/seed	$6,737.32	40	$269,492.80
maint. House cleaning	$1,606.95	40	$64,278.00
debris removal	$189.50	10	$1,895.00
resident per diem	$386.40	40	$15,456.00
Road Dust Suppression			$18,000.00
Total	**$16,135.91**		**$657,751.40**

Option #2			
item	unit cost	# units	cost
house clean/carpet removal	$3,127.09	40	$125,083.60
new carpet	$4,088.65	40	$163,546.00
resident per diem	$386.40	40	$15,456.00
Total			**$304,085.60**

Option #3			
item	unit cost	# units	cost
house clean/carpet removal	$3,127.09	24	$75,050.16
new carpet	$4,088.65	24	$98,127.60
yard soil/seed	$6,737.32	24	$161,695.68
maint. House cleaning	$1,606.95	24	$38,566.80
debris removal	$189.50	6	$1,137.00
resident per diem	$386.40	24	$9,273.60
Initial Sampling[1]		30	$51,200.00
Monitoring Sampling[2]		16	$185,400.00
Total			**$620,450.84**

[1] Initial Sampling includes:
crew mobilization: (2 workers @ $800/day + $1,000 travel/each * 17 days: $29,200)
data validation: ($1000)
analyses: (30 samples @ $600: $18,000)

[2] Monitoring Sampling, 16 homes (qtrly Dec-May, Monthly Jun-Nov.) includes:
*crew mobilization: (2 workers @ $800/day + $1,000 travel/each * 5 days * 9 mobilizations: $90,000)*
data validation: ($1000 * 9 events: $9,000)
analyses: (16 samples @ $600 * 9 events: $86,400)

Attachment D: Cost Estimate

Note: Disregard costs for crushed gravel road cover. Add road dust suppressant at an estimated cost of $18,000.

St Regis Paper Co Superfund Site
Leach Lake Reservation
City of Cass Lake
Cass County, MN

Designed By: EPA
Estimated By: CENWO-ED-C

Prepared By: Dunn
Checked by Kemp

Preparation Date: 08/18/05
Effective Date of Pricing: 08/18/05
Est Construction Time: 180 Days

Sales Tax: 6.50%

Project assumptions.

1. Initial house cleaning and carpet removal is considerd to be hazardous work. Sebsequent house cleaning will use HEPA vacuum but is considered non-hazardous work.

2. Carpet and pad to be replaced with better but not the highest quality available. Carpet waste considered non-hazardous.

3. Roads overlayed with 4" state spec class 5 gravel.

4. Yards will receive 4" of tested topsoil and seeding. No soil removal is anticipated. Sod is optional.

5. Contract method will be competitive bid for all 40 houses at once. Work to be done fall 2005.

SUMMARY REPORTS SUMMARY PAGE

DETAILED ESTIMATE DETAIL PAGE

BACKUP REPORTS BACKUP PAGE

* * * END TABLE OF CONTENTS * * *

** PROJECT OWNER SUMMARY - LEVEL 1 **

		QUANTITY	UOM	CONTRACT	ESCALATN	CONTINGN	SIOH	TOTAL COST	UNIT COST
1	House Clean & Carpet Removal	40.00	EA	119,127	0	5,956	0	125,083	3127.09
2	Carpet	4500.00	SY	155,758	0	7,788	0	163,546	36.34
3	Yard soil and seeding	6300.00	CY	256,660	0	12,833	0	269,493	42.78
4	Road Gravel	11000.00	LF	103,839	0	5,192	0	109,030	9.91
5	Maintenance House Cleaning	1.00	YR	61,217	0	3,061	0	64,278	64277.88
6	Yard Debris Removal	10.00	EA	1,805	0	90	0	1,895	189.50
7	Resident Per Diem			14,720	0	736	0	15,456	
TOTAL	St Regis Paper Co Superfund Site	1.00	EA	713,125	0	35,656	0	748,781	748781.46
	********** ALTERNATES **********								
10	Sod Option	52.00	MSY	56,427	0	2,821	0	59,248	1139.39

** PROJECT INDIRECT SUMMARY - LEVEL 1 **

		QUANTITY	UOM	DIRECT	OVERHEAD	HOME OFC	PROFIT	BOND	USER DEF	TOTAL COST	UNIT COST
1	House Clean & Carpet Remo	40.00	EA	94,503	9,450	5,198	7,641	2,336	0	119,127	2978.18
2	Carpet	4500.00	SY	123,562	12,356	6,796	9,990	3,054	0	155,758	34.61
3	Yard soil and seeding	6300.00	CY	203,606	20,361	11,198	16,462	5,033	0	256,660	40.74
4	Road Gravel	11000.00	LF	82,374	8,237	4,531	6,660	2,036	0	103,839	9.44
5	Maintenance House Cleanin	1.00	YR	48,563	4,856	2,671	3,926	1,200	0	61,217	61217.03
6	Yard Debris Removal	10.00	EA	1,432	143	79	116	35	0	1,805	180.48
7	Resident Per Diem			14,720	0	0	0	0	0	14,720	
	St Regis Paper Co Superfu	1.00	EA	568,761	55,404	30,472	44,794	13,694	0	713,125	713125.20
	CONTINGENCY									35,656	
	TOTAL INCL OWNER COSTS									748,781	
	****** ALTERNATES *******										
10	Sod Option	52.00	MSY	44,763	4,476	2,462	3,619	1,106	0	56,427	1085.14
	CONTINGENCY									2,821	54.26
	TOTAL INCL OWNER COSTS									59,248	1139.39

** PROFIT WEIGHTED GUIDELINES **

PROJECT: St Regis Paper Co Superfund Site ESTIMATED BY CENWO-ED-C
Leach Lake Reservation
City of Cass Lake CHECKED BY: Dunn
Cass County, MN Checked by Kemp
DATE: 01/15/05

PROFIT OBJECTIVE FOR: AA Prime - Enviromental-

FACTOR	RATE (%)		WEIGHT (0.03 - 0.12)		VALUE
1. Degree of Risk	20	x	0.080	=	1.600%
2. Difficulty of Work	15	x	0.060	=	0.900%
3. Size of Job	15	x	0.090	=	1.350%
4. Period of Performance	15	x	0.040	=	0.600%
5. Contractor's Investment	5	x	0.050	=	0.250%
6. Assistance by Government	5	x	0.110	=	0.550%
7. Subcontracting	25	x	0.070	=	1.750%
	100		PROFIT FACTOR:		7.000%

COMMENTS (Reasons for Weights Assigned):

1. House Clean & Carpet Removal

	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	MISC	TOTAL COST	UNIT COST
House Clean & Carpet Removal									
abat work area, eqpt			0.00	0.00	0.00	532.50	0.00	532.50	
mob fees & truck decontamination	1.00	LS	0	0	0	533	0	533	532.50
Hazmat abat work area, HEPA			0.01	0.21	0.00	0.05	0.00	0.27	
vacuum cleaning.	160000	SF	848	33,616	448	8,520	0	42,584	0.27
Walls, ceiling, floors, furniture, drapes, ductwork, assume 4000 sf ea x 40 = 160,000 sf									
abat work area,			2.00	79.19	11.01	154.43	0.00	244.62	
portable, decontn chamber	40.00	EA	80	3,167	440	6,177	0	9,785	244.62
abat work area, set up			1.86	72.97	0.00	0.00	0.00	72.97	
neg. air machine, 1-2k CFM	40.00	EA	74	2,919	0	0	0	2,919	72.97
Hazmat abat carpet removal			0.01	0.33	0.00	0.00	0.00	0.34	
40 x 1,000 sf = 40,000	40000	SF	340	13,368	176	0	0	13,544	0.34
Move Furniture			3.99	157.26	2.07	0.00	0.00	159.32	
	40.00	EA	160	6,290	83	0	0	6,373	159.32
Vidio tape & appliance check			3.99	157.26	2.07	10.65	0.00	169.97	
40 tapes x $2 = 80	40.00	EA	160	6,290	83	426	0	6,799	169.97
1 camera $320									
Rubbish handling, 50' haul, 2 mi			0.67	18.53	7.10	3.20	0.00	28.83	
loading & trucking, hand loading	370.00	CY	247	6,857	2,628	1,182	0	10,667	28.83
truck carpet disposal. Non-hazardous material. 40,000 sf x .25 /27 =370 cy									
Hazmat abat furnace filter repl			0.28	11.03	0.14	10.65	0.00	21.82	
	40.00	EA	11	441	6	426	0	873	21.82
Toilet, portable chemical, rent			0.00	0.00	0.00	85.38	0.00	85.38	
per month	5.00	EA	0	0	0	427	0	427	85.38
TOTAL House Clean & Carpet Removal	40.00	EA	1,920	72,949	3,863	17,691	0	94,503	2362.57

2. Carpet

	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	MISC	TOTAL COST	UNIT COST
Carpet									
1000 sf ea x 40 homes /9 = 4444 sy round up to allow for waste, use 4500 sy.									
Carpet, nylon			0.09	4.57	0.00	16.29	0.00	20.86	
Quote 8/11/05	4500.00	SY	424	20,565	0	73,325	0	93,890	20.86
Floor to Ceiling in Bemidji MN									
Linda 218-751-1063									
Shaw- Can Cun -Frieze style									
rated active to heavy use									
$25.48/sy with pad installed.									
Average furniture move									
recommend using $150/home.									
Carpet, tackless, sponge rubber			0.04	1.70	0.00	2.92	0.00	4.62	
pad, min, stretched instl,add to	4500.00	SY	158	7,650	0	13,131	0	20,781	4.62
above									
Move furnishings			4.59	222.26	0.00	0.00	0.00	222.26	
pad, min, stretched instl,add to	40.00	EA	183	8,890	0	0	0	8,890	222.26
above									
TOTAL Carpet	4500.00	SY	766	37,105	0	86,457	0	123,562	27.46

3. Yard soil and seeding

	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	MISC	TOTAL COST	UNIT COST
Yard soil and seeding									
Assumed 1300sy x 9 x .333 /27 x 1.2 swell x 40 houses =6926 cy									
Use 7000 cy split 90/10 between machine and hand work.									
Seeding 1300 sy x 40 = 52,000 sy									
Loam or topsoil, furnish &			0.09	3.93	1.57	15.98	0.00	21.48	
place, imported, 4" deep	6300.00	CY	581	24,787	9,921	100,643	0	135,350	21.48
Quote 8/17/05 Bud Storlie									
Storlie Const 218-335-6249									
Loam or topsoil, furnish &			1.36	41.41	0.00	15.98	0.00	57.39	
place, spread by hand	700.00	CY	949	28,990	0	11,183	0	40,173	57.39
Seeding, athletic field mix,			6.00	183.22	0.00	292.24	0.00	475.46	
8#/MSFpush spreader	52.00	MSY	312	9,528	0	15,196	0	24,724	475.46
Testing, misc sample collection			0.00	75.00	0.00	0.00	0.00	75.00	
(shallow), hourly rate,	6.00	EA	0	450	0	0	0	450	75.00
subcontracted									
Testing, LAS, S&SA, dioxins,			0.00	0.00	0.00	0.00	485.00	485.00	
SW8280 Assume 1/1000 cy.	6.00	EA	0	0	0	0	2,910	2,910	485.00
TOTAL Yard soil and seeding	6300.00	CY	1,843	63,755	9,921	127,021	2,910	203,606	32.32

4. Road Gravel

	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	MISC	TOTAL COST	UNIT COST
Road Gravel									
Assumed 11,000 lf 20' wide at 4" depth. = 2,715 cy									
Base course, gravel, bank run,			0.05	1.88	1.75	20.71	0.00	24.34	
compacted, 4" D, large areas.	2715.00	CY	130	5,101	4,754	56,239	0	66,094	24.34
Quote 8/12/05									
Anderson Bros, Roger Irish									
218-820-9954									
Belly dumped delivered									
$20.70/cy @ 1.4 ton/cy									
Grade & roll sub-base,			0.01	0.38	0.28	0.00	0.00	0.67	
large areas over 2500 SY	24445	SY	210	9,331	6,950	0	0	16,280	0.67
TOTAL Road Gravel	11000	LF	340	14,431	11,704	56,239	0	82,374	7.49

5. Maintenance House Cleaning

	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	MISC	TOTAL COST	UNIT COST
Maintenance House Cleaning									
Assumed twice a month April thru October 7 mo x 2 =14									
And quarterly during November thru March 2 qr x 1 = 2									

Total			16 per year.						
abat work area, eqpt			0.00	0.00	0.00	532.50	0.00	532.50	
mob fees & truck decontamination	1.00	LS	0	0	0	533	0	533	532.50
Hazmat abat work area, HEPA			0.01	0.21	0.00	0.00	0.00	0.21	
vacuum cleaning.	160000	SF	848	33,616	448	0	0	34,064	0.21
Walls, ceiling, floors,									
furniture, drapes, ductwork,									
assume 4000 sf ea x 40 =									
160,000 sf									
Hazmat abat furnace filter repl			0.28	11.03	0.14	10.65	0.00	21.82	
40 houses x 16 cleanings =640	640.00	EA	179	7,058	93	6,816	0	13,967	21.82
			---	---	---	---	---	---	
TOTAL Maintenance House Cleaning	1.00	YR	1,027	40,674	541	7,348	0	48,563	48563.09

6. Yard Debris Removal

	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	MISC	TOTAL COST	UNIT COST
Yard Debris Removal									
Rubbish handling, 50' haul, 2 mi			0.67	18.53	7.10	0.00	3.00	28.63	
loading & trucking, hand loading	50.00	CY	33	927	355	0	150	1,432	28.63
truck miscl yard disposal.									
Non-hazardous material.									
10 yards x assumed 5 cy = 50 cy									
TOTAL Yard Debris Removal	10.00	EA	33	927	355	0	150	1,432	143.17

7. Resident Per Diem

	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	MISC	TOTAL COST	UNIT COST
Resident Per Diem									
Assumed 40 x 4 persons x 2 days =320 days. GSA Minesota rate used.									
Lodging assume each residence for two days, 40 x 2 = 80.									
Lodging			0.00	0.00	0.00	0.00	60.00	60.00	
average productivity	80.00	EA	0	0	0	0	4,800	4,800	60.00
ME&I			0.00	0.00	0.00	0.00	31.00	31.00	
average productivity	320.00	EA	0	0	0	0	9,920	9,920	31.00
TOTAL Resident Per Diem			0	0	0	0	14,720	14,720	
TOTAL St Regis Paper Co Superfund Site	1.00	EA	5,929	229,840	26,384	294,756	17,780	568,761	568760.52

10. Sod Option

	QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	MISC	TOTAL COST	UNIT COST
Sod Option									
Sodding, 1" deep, over 8 MSF,			12.00	396.10	18.00	922.18	0.00	1336.29	
bluegrass sod, on level ground	52.00	MSY	624	20,597	936	47,954	0	69,487	1336.29
Quote Kosel Services 8/16/05 Landscaping Rich Kosel 218-755-9570 $69,400 for 52,000 sy delivered and installed.									
Seeding, athletic field mix,			6.00	183.22	0.00	292.24	0.00	475.46	
8#/MSFpush spreader	-52.00	MSY	-312	-9,528	0	-15,196	0	-24,724	475.46
TOTAL Sod Option	52.00	MSY	312	11,070	936	32,757	0	44,763	860.83

** LABOR BACKUP - LEVEL 1 **

SRC	LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	**** TOTAL **** DEFAULT	HOURS
House Clean & Carpet Removal												
MIL	B-ASBTSWKR	Asbestos Worker/-Haz Mtl Handler	18.21	0.0%	35.0%	3.30	11.38	39.26	HR	08/16/05	40.95	1678
MIL	B-LABORER	Laborers, (Semi-Skilled)	16.63	0.0%	36.4%	7.86	0.00	30.54	HR	08/16/05	27.04	185
MIL	B-TRKDVRHV	Truck Drivers, Heavy	14.05	0.0%	32.1%	0.00	0.00	18.56	HR	08/16/05	27.99	62
Carpet												
MIL	B-TILELYR	Tile Layers, (Floor)	28.86	0.0%	27.0%	11.80	0.00	48.45	HR	08/16/05	32.53	766
Yard soil and seeding												
MIL	B-EQOPRMED	Equip. Operators, Medium	28.90	0.0%	27.9%	11.70	0.00	48.66	HR	08/16/05	35.24	388
MIL	B-LABORER	Laborers, (Semi-Skilled)	16.63	0.0%	36.4%	7.86	0.00	30.54	HR	08/16/05	27.04	1455
Road Gravel												
MIL	B-EQOPRMED	Equip. Operators, Medium	28.90	0.0%	27.9%	11.70	0.00	48.66	HR	08/16/05	35.24	237
MIL	B-LABORER	Laborers, (Semi-Skilled)	16.63	0.0%	36.4%	7.86	0.00	30.54	HR	08/16/05	27.04	79
MIL	B-TRKDVRHV	Truck Drivers, Heavy	14.05	0.0%	32.1%	0.00	0.00	18.56	HR	08/16/05	27.99	26
Maintenance House Cleaning												
MIL	B-ASBTSWKR	Asbestos Worker/-Haz Mtl Handler	18.21	0.0%	35.0%	3.30	11.38	39.26	HR	08/16/05	40.95	1033
Yard Debris Removal		y /8hr =$11.38										
MIL	B-LABORER	Laborers, (Semi-Skilled)	16.63	0.0%	36.4%	7.86	0.00	30.54	HR	08/16/05	27.04	25
MIL	B-TRKDVRHV	Truck Drivers, Heavy	14.05	0.0%	32.1%	0.00	0.00	18.56	HR	08/16/05	27.99	8
Resident Per Diem												
Sod Option												
MIL	B-EQOPRLT	Equip. Operators, Light	24.35	0.0%	27.9%	11.70	0.00	42.84	HR	08/16/05	33.66	125
MIL	B-LABORER	Laborers, (Semi-Skilled)	16.63	0.0%	36.4%	7.86	0.00	30.54	HR	08/16/05	27.04	187

Attachment E

RESPONSIVENESS SUMMARY

ST. REGIS SUPERFUND SITE
OPERABLE UNIT #7
LEECH LAKE INDIAN RESERVATIION
CITY OF CASS LAKE
CASS COUNTY, MINNESOTA

SEPTEMBER 2005

RESPONSIVENESS SUMMARY

ST. REGIS SUPERFUND SITE
OPERABLE UNIT #7
CASS COUNTY, MINNESOTA

1.0 OVERVIEW

At the start of the May 30, 2005, public comment period for the St. Regis Superfund site, the U.S. Environmental Protection Agency (EPA), with the concurrence of the Leech Lake Band of Ojibwe (LLB) and the State of Minnesota(MDNR), proposed an interim alternative to address dust contamination in the residences near the former operations area of the St. Regis Paper Company Site (the Site) on the Leech Lake Indian Reservation, in the City of Cass Lake, Cass County, Minnesota. This area has been named Operable Unit 7 (OU #7) by EPA. EPA's preferred alternative, as specified in the Proposed Plan, is to 1) replace carpet from the approximately 40 residences, 2) provide an initial house cleaning for dust removal, 3) provide periodic house cleaning until implementation of a final decision regarding further remedial action, 4) provide clean dirt fill cover and grass seed to the yards of those homes, and 5) apply a dust suppressant to the dirt roads adjacent to those homes.

After careful review of the comments received from the public during the public comment period and public meeting, EPA has modified the preferred remedy. Part 2 of the ROD explains in detail the content of the modified remedy.

Comments received at a June 7, 2005, public meeting in Cass Lake, Minnesota, and written comments reflected a nearly even split between support for EPA's proposed alternative with some modification (9 comments) and the option for permanent relocation of residents (11 comments).

This Responsiveness Summary responds to the comments and concerns expressed by the public and the potentially responsible parties (PRPs) in written and oral comments received by EPA during the public comment period, which ran from May 30 to July 8, 2005. A court reporter recorded spoken comments at a public meeting that was held on June 7, 2005.

Two sections follow:

* Background on community involvement and history of community relations activities at the Site
* Summary of comments received during the public comment period, including EPA responses

2.0 BACKGROUND ON COMMUNITY INVOLVEMENT/HISTORY OF COMMUNITY RELATIONS ACTIVITIES

See Part 2 of the ROD.

3.0 SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD

The public comment period designated for the St. Regis Paper Company Superfund site residential area (Operable Unit #7) was held from May 30 to July 8, 2005, and included a public meeting on June 7, 2005. Comments on the Proposed Plan received during the public comment period are listed below. Some of the comments have been paraphrased so they could be summarized effectively in this document. For original comments in their entirety, refer to the public meeting transcript and written comments which are available for review at public information repositories listed in Appendix A and in the U.S. EPA offices in Chicago, Illinois. In addition they can be viewed at the Site website: www.epa.gov/region5/sites/stregis/index.htm

An EPA response follows each comment. Comments and responses have been divided into four sections and are categorized by topic within each section, where appropriate. The four sections are:

3.1 Summary of comments from the local community

3.2 Summary of comments from elected government officials

3.3 Summary of comments from agency partners

3.4 Summary of comments from International Paper Company.

3.1 Summary of Comments from the Local Community

3.1.1 Reject EPA Preferred Option/Support Option 5, Permanent Relocation

3.1.1(a)
COMMENT: Eleven residents commented that EPA's proposed interim solution is a "band aid" to the problem rather than an effective method for reducing risk. These commenters preferred Option 5 which would involve the permanent relocation of the residents in Operable Unit #7.

RESPONSE: The interim action to be taken is in response to only a portion of a much larger human health and ecological risk assessment of the Site. At this time, the results of the full risk assessment are not complete. For that reason, only an interim response is planned to address the known human health risks posed by the presence of contaminated dust in houses. Because a more complete remedial response may result after the risk assessments are completed, they are intentionally narrow in focus. After the results of the risk assessment are available and when a final remedy is developed, a new list of options

could again include the option of permanent relocation.

3.1.2 **Support EPA Preferred Option 4 with Modifications**

Many residents accepted EPA's preferred option with modifications. The proposed changes are itemized below with EPA responses.

3.1.2(a)
COMMENT: A number of commenters agreed with EPA preferred Option 4 with the addition of some type of cover to the dirt roads which make up most of the streets in the neighborhood. Most comments stated that the dust that is generated by passing vehicles could very quickly reduce the effectiveness of any periodic cleaning of homes for dust.

RESPONSE: EPA agrees with the comment and has revised the recommended alternative to include a dust suppression application to dirt roads in the vicinity of the homes to further reduce the amount of potential dust. The addition of this action may further reduce the residents' risk of exposure to contaminated dust.

3.1.2(b)
COMMENT: Some commenters agreed with EPA's preferred option with the stipulation that the final action taken at the Site meets soil clean up standards consistent with the draft EPA Dioxin Reassessment or, according to some comments, with a level of 50 ppt.

RESPONSE: No decisions can be made at this time on a final remedy for the site. The results of the human health and ecological risk assessments must be evaluated before the development of potential options. Once the risk assessment has been evaluated, EPA will again develop a list of options to address any remaining risks to either the community or the local environment. That list will again be presented at a public meeting and community members will have an opportunity to express opinions on EPA's preferred option or other options.

3.1.2(c)
COMMENT: Some commenters felt that additional sampling of OU #7 residents garden produce was needed to better define the current health risks.

RESPONSE: The August 2004 UAO Risk Assessment Workplan included the collection of garden produce from nearby residents and local produce stands. EPA later decided not to sample the produce from residential gardens in the area (OU #7) because of the use of fireplace ash in the gardens which was confirmed by those residents. Fireplace ash may introduce non-site related dioxin to the garden soil, which would invalidate the sampling results for produce from those gardens.

3.1.2(d)
COMMENT: Some commenters requested that businesses located on the west side of Hwy 371 across from the Site be included in the OU #7 area residential properties. Another commenter asked whether businesses located within the residential area would be included in the remedy.

RESPONSE: One business is located within the Site area of OU #7 area. That business will be included in the work planned for the residences. There is, however, no reason to believe that businesses located on the west side of Hwy 371 have been impacted by the Site. Site-related sampling conducted on the east side of Hwy 371 south of 1st Street and near the highway show a maximum soil value of only 22 ppt for dioxin. For that reason, those businesses will not be included in the interim proposed action. Some actions may be considered for this area when a final remedy is planned.

3.1.2(e)
COMMENT: One commenter requested that high efficiency particulate air (HEPA) filter vacuum cleaners be used during the house cleaning for dust removal events.

RESPONSE: EPA will require that contractors performing house cleaning for dust removal use HEPA vacuum cleaners for this work.

3.1.2(f)
COMMENT: One commenter requested that geotextile fabric be used below the clean soil to be placed on residential yards as a part of the remedial action.

RESPONSE: The clean soil applied to yards is meant to provide only a shallow temporary barrier to residents from contaminated soil as an interim response. If soil removal is necessary as a part of a final action, any geotextile fabric would then also require disposal. EPA feels that actions taken should, as much as practicable, be compatible with final actions. Because of the interim nature of the soil cover, EPA feels that the use of geotextile fabrics below the soil is not necessary.

3.1.2(g)
COMMENT: One commenter recommended that the St. Regis Site be fenced while waiting for a final remedy due to the potential for residents to be exposed to contaminated soil on Site.

RESPONSE: This planned remedial work is a focused action that applies only to residential house dust exposures. Fencing may be included in future remedial work when addressing potential Site soil exposures.

3.1.2(h)
COMMENT: Two commenters recommended that additional outreach be conducted to the community in order for the residents to fully appreciate the potential exposure risks from dioxin.

RESPONSE: EPA will continue to cooperate with the Agency for Toxic Substances and Disease Registry (ATSDR) EPA's health agency, the Minnesota Department of Health staff, and local health providers within Cass Lake to communicate the cautions needed in dealing with dioxin contaminated soil, the potential health impacts from exposure to dioxin, and the ongoing work by EPA to reduce residents exposure.

3.1.3 Support Proposed Plan

3.1.3
COMMENT: One resident in a telephone conversation on June 23, 2005, supported EPA's plan as proposed.

RESPONSE: EPA agrees with the commenter and, with the modifications presented in Section 3.1.2, will implement the actions.

3.2 Summary of Comments from Elected Government Officials

3.2.1
Elaine Fleming
Mayor of the City of Cass Lake

COMMENT: The official position of the City of Cass Lake, in a letter dated July 7, 2005, supported EPA's preferred option with some comments. These were comments generated by the Minnesota Department of Health with which the City agreed. The City: 1) supports the use of HEPA vacuum cleaners in effected homes, 2) would like to see the Site expanded to include businesses near the Site, 3) recommended that the EPA communicate to residents why workers will be required to wear protective clothing, 4) requests that driveways and dirt roads be covered with clean soil/gravel to reduce dust generation, 5) would like EPA to fence the large areas of the Site that remain accessible to the public, 6) would like EPA to explain to the City and residents, in basic terms, the methodology used for the interim cleanup, 7) would like a geotextile fabric used below the temporary soil cover, and 8) would like any final remedy to take into account Minnesota and Leech Lake Band of Ojibwe laws and policies regarding land use and depth to contaminated soil, deed restrictions, and easements.

RESPONSE: Regarding HEPA vacuums, see the response to comment 3.1.2(e). Regarding including businesses, see the response to comment 3.1.2(d). Regarding communication with residents on the use of personal protective equipment, the EPA Remedial Project Manager and Community Involvement Coordinator will be available locally during the initiation of the remedial action to answer any questions from the public. In addition, the contractor selected for the action will establish a local telephone number for residents to call with any questions or concerns regarding the actions. Regarding dirt roads, see the response to comment 3.1.2(a). Regarding driveways, EPA will not include covering

driveways in the action because driving speeds are or should be significantly reduced in driveways, limiting the potential for dust generation. Regarding fencing of the Site, see the response to comment 3.1.2(g).

Regarding the request to explain, in basic terms the methodology used for the interim cleanup, an explanation follows. In addition, a public meeting will be held in Cass Lake prior to the initiation of work to further explain EPA's methodology and what will happen during the action.

EPA calculated health risks for residents of each home tested to date. The risk level for those residents is based on both the amount of dust found in the house and the level of dioxin found in the dust in that same house. The amount of dust varies depending on cleaning frequency, age of carpet, and other things. The goal of the interim action is to reduce the dust volume in homes, including contaminated dust, and reduce the potential ways for contaminated dust to get back in the house.

Regarding the use of geotextile fabric, see the response to comment 3.1.2(f). Regarding utilizing State of Minnnesota or Leech Lake Band of Ojibwe laws and policies regarding land use and depth to contaminated soil, deed restrictions, and easements, EPA will promulgate a final decision after examining and considering ARARs. The final ROD will be consistent with CERCLA, the NCP, and all relevant federal laws and policies. See also the response to comment 3.1.2(b).

3.3 Summary of Comments from Agency Partners

3.3.1 Comments from Leech Lake Band of Ojibwe

3.3.1(a)
COMMENT: The Leech Lake Band of Ojibwe (LLB), in a letter from Shirley Nordrum to Tim Drexler of EPA dated July 8, 2005, concurred with U.S.EPA's preferred option for remedial actions at the Site, with the understanding that a final action is pending.

RESPONSE: A decision on the need for a final action (if any) will come at the conclusion of the Risk Assessments. See also response to comment 3.1.2(b).

3.3.1(b)
COMMENT: LLB commented that it reserves its right under 42 USC 9626(b) to seek permanent relocation of tribal members from the contaminated site to protect their health and welfare.

RESPONSE: At this time, EPA does not find that permanent relocation is necessary to protect the health and welfare of tribal members, based upon the available information. Therefore the proposed plan for this Site does not involve relocation to respond to risks from contaminated house dust; as such, CERCLA Section 126(b) is inapplicable.

Section 126(b) of CERCLA states:

> Should the President determine that proper remedial action is the permanent relocation of tribal members away from a contaminated site because it is cost effective and necessary to protect their health and welfare, such finding must be concurred in by the affected tribal government before relocation shall occur. The President, in cooperation with the Secretary of the Interior, shall also assure that all benefits of the relocation program are provided to the affected tribe and that alternative land of equivalent value is available and satisfactory to the tribe. Any lands acquired for relocation of tribal members shall be held in trust by the United States for the benefit of the tribe.

If EPA had proposed permanent relocation as a remedial action or component at this Site, EPA would have sought the concurrence of the tribal government, as provided for in CERCLA Section 126(b).

3.3.1(c)
COMMENT: LLB comments that the remedial action should be completed by July 31, 2005.

RESPONSE: The EPA will work as quickly as possible in order to complete the remedial actions expeditiously. However, due to the inherent time constraints in the generation of Records of Decision, the action documented in the Interim ROD could not be implemented by July 31, 2005.

3.3.1(d)
COMMENT: LLB comments that the affected homes should be provided with air conditioning units to reduce recontamination from road dust blowing through open windows.

RESPONSE: See response to comment 3.1.2(a)

3.3.2 Comments from State of Minnesota

3.3.2(a)
COMMENT: The State of Minnesota Pollution Control Agency (MPCA), in a letter to EPA on July 8, 2005, concurred with EPA's preferred option, with comments. The MPCA states that they would like to see the remedial action completed by July 31, 2005.

RESPONSE: See response to comment 3.3.1(c)

3.3.2(b)
COMMENT: MPCA further comments that the homes with young children or daycare businesses receive the highest priority in the remediation schedule.

RESPONSE: EPA agrees with the comment and plans to conduct the remedial action with an emphasis on performing the remedial actions first to homes in the neighborhood with small children or

daycare providers.

3.4 Summary of Comments from International Paper Company

International Paper Company (IP) submitted several comments with supporting documentation on July 8, 2005. Most of the following comments are paraphrased from these documents.

3.4.1 Does not consider all relevant information

3.4.1
COMMENT: IP states that EPA did not consider all of the soil sampling conducted for dioxin on the residential properties before making the decision to apply the remedy to all of the homes. IP comments that it is likely that house dust concentrations in unsampled houses is similar to soil concentrations and that therefore house dust concentrations can be assessed using outdoor soil values.

RESPONSE: EPA acknowledges that the concentration of dioxin in outdoor soil may be predictive of the concentration of dioxin in indoor dust. However, no predictive relationship has been developed (nor is one likely to be developed based on the limited amount of available data) for identifying which of the unsampled residences have elevated dust loadings. Therefore, with no basis for identifying which of the remaining residences may have elevated dust loadings, EPA took the health protective approach of extending the response action to all of the remaining unsampled homes. In addition, there is enough uncertainty in the sampling conducted for house dust that EPA would not have considered risking additional contaminant exposure to the residents by concluding that no unsampled homes were affected after half of the 10 homes tested exceeded screening levels. House dust sampling did not take into consideration the season, temperature, precipitation, cleaning frequency, or many other variables that may have influenced the amount and, potentially, the concentration of contaminants in the samples taken. Also, as noted by IP, the highest risks were identified in residences with the highest dust loading densities. Based on existing data, there is no accurate way to predict which of the remaining unsampled residences have elevated dust loading densities that may contribute to significant risks. EPA would have considered it irresponsible to identify which of the unsampled residences required no action based on the small number of indoor dust samples collected to date.

3.4.2 No evidence of an actual or threatened release of arsenic so response action to address arsenic is not within EPA authority under CERCLA

3.4.2(a) IP states that EPA inappropriately identifies arsenic as a site-related contaminant and that there is no evidence that the arsenic concentrations found in indoor dust samples are related to the arsenic concentrations found in the residential soils.

RESPONSE: EPA is aware that the concentrations of arsenic found within the house dust of local residents does not appear to be related to the concentrations within residential soils. However, other variables including the methods used in soil vs. house dust sample collection may have resulted in the apparent discrepancy. In addition, studies have shown that the concentration of arsenic may be significantly higher in house dust as compared to yard soil (Paustenbach and others 1997). Finally, arsenic is known to have been a component of a chemical mixture used at the Site and has been identified as a chemical of potential concern (COPC) for the Site. As a result, EPA has conservatively retained arsenic as a COPC for indoor dust.

3.4.3 <u>There is no compelling rationale for the proposal to implement immediate action, much less to all 40 homes</u>

3.4.3(a)
COMMENT: IP comments that there is no compelling scientific rationale for EPA's proposal to implement immediate response actions at any of the residences based on the soil and house dust exposure methodologies specified in EPA's human health risk assessment work plan for the Site.

RESPONSE: Although it is true that long term human health risks, based on the methodologies cited in the August 2004 Risk Assessment UAO, are at unacceptable levels in fewer homes than those determined by the WTC methodologies, there are risks sufficient for action using the methodologies cited in the UAO. More importantly, however, EPA is required to use the best available science in determining risk. For that reason, EPA could not ignore the peer reviewed science presented in the WTC Indoor Environment Assessment once we were made aware of that document.

3.4.3(b)
COMMENT: IP further comments that extending the response action to the 40 homes in the neighborhood has no legitimate technical justification and is contradicted by the extensive dataset available.

RESPONSE: The response action was extended to the approximately 40 residents for two main reasons. The technical reason for extending the remedial action to the unsampled homes is due to the inherent uncertainty in the house dust sampling (See response to Comment 3.4.1). In addition, in adhering to the requirements outlined at 40 CFR 300.430(e)(9)(iii) for evaluating remedial alternatives, EPA's preferred alternative, Option 4, was a cost effective alternative to sampling the 30 unsampled homes, providing remedial measures to those homes exceeding risk-based limits, and then continuing a monitoring program in the homes that did not have exceedences due to sampling uncertainties. Monitoring, continuing until the final remedy, would have added significant costs and time in both sampling personnel mobilization and laboratory analyses in addition to feelings of intrusion and anxiety that homeowners would experience in the periodic sampling of their homes.

3.4.4 Proposed Plan relies on flawed analyses and inappropriate characterizations of the risk posed by house dust

3.4.4(a)
COMMENT: IP comments that the use of risk-based benchmarks for settled dust developed for the World Trade Center (WTC) Indoor Environment Assessment (EPA 2003) does not take into account technical limitations of the method that result in gross overestimates of exposure to chemicals in house dust. IP states that the use of a linear relationship between house dust load and dust ingestion rate results in implausible daily dust ingestion rates at higher dust loads. IP states that because the house dust loading levels in the sampled homes had dust levels far above the average levels presented in the WTC study, they result in unrealistically high ingestion rates. IP states that for this reason the WTC approach should not be used as a basis for determining the need for response actions.

RESPONSE: The WTC methodology was not developed or applied based on using a default soil ingestion rate to calculate a limit for dust loading density. The key parameter is the mass of chemical per surface area available for exposure. The fact that the dust loadings were higher in the homes impacted by St. Regis contamination does not invalidate the applicability of the methods used in the WTC assessment. It is acknowledged that using these dust loading densities predicts higher soil ingestion rates than typical default values. However, these values are viewed as site-specific exposure estimates that are appropriate for this site. After consultation with the primary author of the WTC Indoor Environment Assessment, EPA confirms that the application of these methods to the St. Regis assessment can be supported.

EPA agrees with IP that the Cass Lake area near the former wood treatment site is an unusually dusty area due to many factors which include dirt roads, poor soil resulting in sparse vegetation, and modest homes, some of which are not air conditioned and so rely on open windows. It is because of these site-specific factors that dust ingestion rates, especially for children, may indeed be significantly above the average amount.

3.4.4(b)
COMMENT: IP comments that the very high settled dust loads in the homes that were sampled, together with the direct relationship between dioxin concentrations in soil and house dust, indicate that exposure is not limited by dust quantity and would not increase during the summer when more outdoor soil may be tracked into homes.

RESPONSE: This comment speculates on house dust seasonal variability without a basis in site-specific house dust sampling data. There is no data to make conclusions on seasonal variations in the levels of house dust. EPA must make conservative judgments, based on the information available, to

protect the health of residents exposed to contaminants found within their homes during the 2004 sampling event.

3.4.5 NCP requirement that interim measures be consistent with final remedies dictate that risk assessment be complete before any action

3.4.5(a)
COMMENT: IP comments that EPA's proposal to implement an interim response action without first performing an adequate technical analysis is inconsistent with EPA policy and guidance. IP continues that EPA's decision should await a comprehensive evaluation of all relevant data which will be presented in the risk assessment report.

RESPONSE: The St. Regis Site did not develop a risk assessment report prior to the initiation of remedial actions. Due to the recent determination through soil sampling conducted in 2001 and 2003 that aspects of the remedy were not protective, elements of a remedial investigation/ feasibility study (RI/FS), including human health and ecological risk assessments, are being conducted at the Site (UAO V-W-04-C-796). EPA guidance on the development of Records of Decision for remedial actions (EPA 540-R-98-031) states that preparation of an RI/FS report is not required for an interim action, only that there must be documentation that supports the rationale for the action within the Record of Decision. Therefore, actions can be taken prior to the development of the full risk assessment.

3.4.6 EPA's cost estimate is unrealistically low

3.4.6
COMMENT: IP comments that the information provided by U.S.EPA in a June 15, 2005 telephone conversation was insufficient to evaluate the cost-effectiveness of the alternatives developed under the proposed plan.

RESPONSE: As IP states, EPA provided IP with the general cost information used to generate the Proposed Plan. Although an estimate of costs is presented within the Proposed Plan, the Proposed Plan is not considered by EPA to be the definitive estimate of remedial action costs. According to EPA guidance (EPA 540-R-98-031), the Record of Decision serves as the primary data source for analyzing the costs of Superfund cleanups.

Adjustments to the estimated costs of the interim remedial alternatives have been made in the proposed Interim Record of Decision based on more detailed evaluations. An adequate rationale for our costs has been provided with the proposed remedy selection. The adjustments reflect new engineering information and additional work scope described in the Record of Decision under "Part 2 Decision Summary" within the section

titled "Documentation of Significant Changes." (See also Response to 3.1.2(a)).

3.4.7 Information in Proposed Plan is insufficient to allow a thorough technical review

3.4.7(a)
COMMENT: IP comments that the narrative contained for each alternative in the Proposed Plan is insufficient to evaluate the technical basis, implementability, and associated cost of each alternative. IP further comments that engineering/construction details are not presented in EPA's Proposed Plan.

RESPONSE: EPA representatives were available at the June 7, 2005 public meeting to answer questions and provide information on all aspects of the Proposed Plan. General information was also given to Tom Ross of International Paper in a telephone conversation with Tim Drexler on June 15, 2005. In addition, according to EPA guidance (EPA 540-R-98-031), the Proposed Plan is meant to briefly summarize alternatives highlighting the key factors that led to identifying the Preferred Alternative. As stated previously, an interim action does not require the full detail of a feasibility study, only that information required for the focused action.

The Proposed Plan for St. Regis contaminated house dust removal contained the necessary elements to judge the relative technical basis and implementability of each alternative. The limited actions to be taken on the site include removing and replacing carpet, providing clean dirt fill to yards and seeding, periodic house cleaning for dust removal, and applying a dust suppressant to nearby roads. None of these focused options contain elements with engineering requirements so difficult that the technical feasibility has any serious issues. Additional and more detailed engineering estimates are contained in the proposed Interim Record of Decision.

Regarding costs, please see response to comment 3.4.6.

3.4.7(b)
COMMENT: IP comments that Applicable and/or Relevant and Appropriate Regulations (ARARs) cannot be evaluated because they are not documented in the Proposed Plan.

RESPONSE: EPA evaluated the limited and focused actions proposed for the remedial actions and found that any potential ARARs for the work would be related to either the disposal of old carpet contained in the houses or to house cleaning for dust removal. Based on requests to other federal environmental programs and tribal and state partners, no ARARs regarding the disposal of the carpet or house cleaning for dust removal were identified. Therefore, no ARARs were presented in the Proposed Plan.

APPENDIX A

LOCATION OF INFORMATION REPOSITORIES

An administrative repository contains laws, work plans, community relations plans, technical reports, and other documents relevant to the investigation and cleanup of Superfund sites. Repositories for the Site have been set up at the following locations:

Cass Lake Library
223 Cedar Ave.
Cass Lake, MN

Leech Lake Band of Ojibwe
Division of Resource Management Office
6530 Highway 2 N.W.
Cass Lake, MN

Cass Lake City Clerk
332 Second Street N.W.
Cass Lake, MN

Leech Lake Tribal College
113 Balsam Ave.
Cass Lake, MN

Bemidji State University Library
1501 Birchmont Drive N.E.
Bemidji, MN

In addition, an administrative record repository has been established at EPA's Region 5 office in Chicago, 77 West Jackson Blvd., Chicago, IL. Information is also contained at the Site website: www.epa.gov/region5/sites/stregis/index.htm.

REFERENCES

Barr Engineering Company (Barr). 2005. "Validated Analytical Data-House Dust" February 8.

International Paper (IP). 2004. "Human Health and Ecological Risk Assessment Work Plan, St. Regis Paper Company Site, Cass Lake, Minnesota." July 29.

McKinney J, Rogers, Metal Bioavailability, EPA Workshop Identified Research Needs, Environ. Sci. Technol. 26(7):1298-1299, 1992.

National Research Council (NRC), Recommended Dietary Allowances, 10th edition, Washington, DC: National Academy Press, 1989.

Paustenbach, D.J., B.L. Finley, and T.F. Long. 1997. "The Critical Role of House Dust in Understanding the Hazards Posed by Contaminated Soils." *International Journal of Toxicology.* Volume 16. Pages 339 through 362.

U.S. Environmental Protection Agency (EPA), Office of Solid Waste and Emergency Response. Risk assessment guidance for Superfund. Volume I. Human health evaluation manual. Supplemental guidance: Standard default exposure factors. Interim final. Washington, DC: U.S. Environmental Protection Agency. OSWER directive 9285.6-03, 1991.

U.S. Environmental Protection Agency (EPA), Office of Emergency and Remedial Response. Risk assessment guidance for Superfund. Volume I. Human health evaluation manual (Part A). Interim final. Washington, DC: U.S. Environmental Protection Agency. EPA/540/1-89/002, 1989.

U.S. Environmental Protection Agency (EPA), "World Trade Center Indoor Environmental Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks." World Trade Center Indoor Air Task Force Working Group, Contaminants of Potential Concern (COPC) Committee. May. On-Line Address: http://www.epa.gov/wtc/copc_benchmark.pdf

AR

Attachment F

141756

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

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

ORIGINAL
(RECONSTRUCTED)
MARCH 27, 2000

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	02/26/85	Minnesota Pollution Control Agency (MPCA) and Champion International Corporation	File	Response Order by Consent between Champion International Corporation and MPCA for the St. Regis Paper Company Treatment Facility Area	76
2	02/26/85	MPCA and Champion International Corporation	File	Response Order by Consent between Champion International Corporation and MPCA for the St. Regis Paper Company Dumping Area	61
3	03/05/86	MPCA	File	Minnesota Enforcement Decision Document for the St. Regis Paper Company Site	39
4	06/00/86	Barr Engineering Company	Champion International Corporation	Response Action Plan for Contaminated Groundwater at the Cass Lake Treating Facility Site	107
5	06/00/86	Barr Engineering Company	Champion International Corporation	Response Action Plan for Sludge and Contaminated Soil at the Cass Lake Treating Facility Site	219
6	07/29/86	MPCA	File	Minnesota Enforcement Decision Document for the Former Cass Lake City Dump Site	9
7	03/00/87	Barr Engineering Company	Champion International Corporation	Response Action Plan for Contaminated Groundwater at the City Dump Pit Site in Cass Lake	88
8	12/03/93	Neidergang, N., U.S. EPA	Scherkenbach, T., MPCA	Letter re: RCRA Post-Closure Permit for the St. Regis Paper Company Site	2

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
9	01/28/94	Muno, W., U.S. EPA	Ross, T., Champion International Corporation	Letter re: U.S. EPA Strategy for the St. Regis Paper Company Site	2
10	04/00/94	Barr Engineering Company	Champion International Corporation	Annual Monitoring Report for Groundwater and Surface Water Monitoring at the Cass Lake Sites (January-December 1993)	664
11	07/00/94	Barr Engineering Company	Champion International Corporation	Semi-Annual Progress Report for the Cass Lake Sites (January-June 1994)	181
12	09/00/94	Barr Engineering Company	Champion International Corporation	Semi-Annual Report: Contaminated Soil Containment Vault for the Cass Lake Sites (January-June 1994)	81
13	09/15/94	Traub, J., U.S. EPA	Warner, J., MPCA	Letter re: Change in the Lead Agency Designation for the St. Regis Paper Co. Superfund Site	2
14	09/19/94	Muno, W., U.S. EPA	Scherkenbach, T., MPCA	Letter re: Federal Superfund Jurisdiction over the St. Regis Paper Company Site	2
15	09/30/94	Bremer, K. U.S. EPA	Ross, T., Champion International Corporation	Letter: Recission of U.S. EPA's May 16, 1994 Request for Submittal of a Revised Part B Permit Application for the St. Regis Paper Company Site	2

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR
ST. REGIS PAPER COMPANY
CASS LAKE, MN

UPDATE #1
JULY 23, 2003

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	11/19/94	Ross, T., Champion International Corporation	Martin, L., U.S. EPA	Letter re: Champion's Comments on the Draft CERCLA 106 Order for for the St. Regis/Cass Lake Site	
2	01/24/95	Muno, W., U.S. EPA	Ross, T., Champion International Company	Unilateral Administrative Order re: the St. Regis Paper Company Site w/ Cover Letter	
3	03/01/95	Barr Engineering Company	U.S. EPA	1994 Annual Monitoring Report for Groundwater & Surface Water Monitoring at the St. Regis Paper Company Site	
4	03/27/95	MPCA	Public	Five-Year Review Report for the St. Regis Paper Company Site	
5	04/06/95	Muno, W., U.S. EPA	Warner, J., MPCA	Letter re: U.S. EPA's Approval of the March 1995 Five-Year Review Report for the St. Regis Paper Company Site	
6	06/01/95	Champion International Corporation	U.S. EPA & Leech Lake Band of Chippewa	Report: Discussion of Site Investigation Information Relevant to Five-Year Review Issues for the St. Regis Paper Company Site	
7	03/01/96	Barr Engineering Company	U.S. EPA	1995 Annual Monitoring Report for Groundwater & Surface Water Monitoring at the St. Regis Paper Company Site	
8	0 /01/97	Barr Engineering Company	U.S. EPA	1996 Annual Monitoring Report for Groundwater & Surface Water Monitoring at the St. Regis Paper Company Site	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
9	03/01/98	Barr Engineering Company	U.S. EPA	1997 Annual Monitoring Report for Groundwater & Surface Water Monitoring at the St. Regis Paper Company Site	
10	04/13/98	Fields, T., U.S. EPA/ OSWER	Addressees	Memorandum re: Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites (OSWER Directive #9200.4-26)	
11	03/01/99	Barr Engineering Company	U.S. EPA	1998 Annual Monitoring Report for Groundwater & Surface Water Monitoring at the St. Regis Paper Company Site	
12	05/26/99	U.S. DOI/ Bureau of Indian Affairs	Kern, L., U.S. EPA	Letter re: Request for Additional Remedial Investigative Work at the St. Regis Paper Company Site	
13	08/05/99	Ross, T., Champion International Corporation	Jennings, M., Leech Lake Band of Ojibwe	Letter re: Champion's Responses to Trustee Questions for the St. Regis Paper Company Site w/ Attachments	
14	03/01/00	Barr Engineering Company	U.S. EPA	1999 Annual Monitoring Report for Groundwater & Surface Water Monitoring at the St. Regis Paper Company Site	
15	08/24/00	Heinert, R., International Paper	Kern, L., U.S. EPA	Letter re: Project Management Change for St. Regis Paper Company Site	
16	09/29/00	U.S. EPA	Public	Second Five-Year Review Report for the St. Regis Paper Company Site	
17	03/01/01	Barr Engineering Company	U.S. EPA	2000 Annual Monitoring Report for Groundwater & Surface Water Monitoring at the St. Regis Paper Company Site	
18	07/11/01	Whitman, C., U.S. EPA	U.S. EPA	Memorandum re: U.S. EPA Policy for the Administration of Environmental Programs on Indian Reservations	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
19	08/23/01	Du Bey, R., Short Cressman & Burgess, PLLC	U.S. EPA	Letter re: Leech Lake Band of Ojibwe Petition for Assessment of Release for the St. Regis Paper Company Site w/ Attachments	
20	09/00/01	Exponent	International Paper	Work Plan for the U.S. EPA Non-Time Critical Removal Support Split Sampling and Supplemental Sampling Program for the St. Regis Paper Company Site w/ Attachments A1-A4	
21	2001-2002	Enviro-Test Laboratories	File	Sampling Data for Fish Tissue for the St. Regis Paper Company Site for the Period 2001-2002	
22	07/12/02	Federal Register	Public	Notice: Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs (FR: Vol. 67, No. 134, 46328-46333)	
23	08/23/02	Tetra Tech EM, Inc.	U.S. EPA	Data Evaluation Report w/ Appendices A-E and Attachments 1-23 for the St. Regis Paper Company Site	
24	10/11/02	Podowski, A., U.S. EPA	Kern, L., U.S. EPA	Memorandum re: Review of Data Evaluation Report for the St. Regis Paper Company Site	
25	01/24/03	Enviro-Test Laboratories	File	Analytical Report for Samples Received January 24, 2003 for the St. Regis Paper Company Site	
26	01/31/03	Fleming, E., City of Cass Lake	Kern, L., U.S. EPA	Letter re: January 27, 2003 City Council Meeting Concerning Health Risks Connected with the St. Regis Paper Company Site	
27	02/05/03	Muno, W., U.S. EPA	Nordrum, S., Leech Lake Band of Ojibwe	Letter re: U.S. EPA's Proposed Removal Site Evaluation at the St. Regis Paper Co. Site	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
28	02/11/03	Alta Analytical Laboratory	Barr Engineering, Inc.	Analytical Results for One Tissue Sample for the St. Regis Paper Company Site	
29	02/13/03	Nordrum, S., Leech Lake Band of Ojibwe	Muno, W., U.S. EPA	Letter re: U.S. EPA's Proposed Removal Site Evaluation at the St. Regis Paper Company Site	
30	02/21/03	Nordrum, S., Leech Lake Band of Ojibwe	Kern, L. & S. Vega, U.S. EPA	Letter re: U.S. EPA's Proposed Removal Site Evaluation at the St. Regis Paper Company Site	
31	02/21/03	Richards, C., University of Minnesota	Kern, L., U.S. EPA	Final Report: Assessing and Communicating Risk: A Partnership to Evaluate a Superfund Site on Leech Lake Tribal Lands	
32	03/10/03	Kern, L., U.S. EPA	Nordrum, S., Leech Lake Band of Ojibwe	Letter re: Proposed Removal Site Evaluation at the St. Regis Paper Company Site	
33	03/14/03	Drexler, T., U.S. EPA	Nordrum, S., Leech Lake Band of Ojibwe	Letter re: Appropriate Dioxin Cleanup Levels in Soils for the St. Regis Paper Site and Bases of U.S. EPA's Consultation Authority	
34	04/10/03	Yingling, V., Minnesota Department of Health	Drexler, T., U.S. EPA	E-Mail Transmission re: MDH's March 20-21, 2003 Site Visit and Private Well Survey for the St. Regis Paper Company Site	
35	04/16/03	Johnson, M., ATSDR	Drexler, T., U.S. EPA	E-Mail Transmissions re: Testing for Quinoline and Carbazoles at the St. Regis Paper Company Site	
36	04/21/03	Ross, T., International Paper	Drexler, T., U.S. EPA	Letter re: Reanalysis of Cass Lake Whitefish Sample CL-WH-14 w/ Attachment	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
37	04/21/03	Yingling, V., Minnesota Department of Health	Drexler, T., U.S. EPA	E-Mail Transmission re: Private Well Sampling at the St. Regis Paper Company Site	
38	04/23/03	Nordrum, S., Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA & V. Yingling, MDH	E-Mail Transmission re: Leech Lake Band of Ojibwe's Position Concerning Private Well Sampling at the St. Regis Paper Company Site	
39	04/24/03	Johnson, S., MPCA	Drexler, T., U.S. EPA	E-Mail Transmission re: MPCA's Concurrence with MDH's Recommendation to Shorten the Analyte List for Residences North of the Tracks at the St. Regis Paper Company Site	
40	04/29/03	Ross, T., International Paper	Drexler, T., U.S. EPA	Letter re: IP's Initial Comments on U.S. EPA's Work Plan for Supplemental Assessment at the St. Regis Paper Company Site	
41	04/29/03	Ross, T., International Paper	Vega, S., U.S. EPA	Letter re: IP's Initial Comments on U.S. EPA's Work Plan for Removal Site Evaluation at the St. Regis Paper Company Site	
42	05/01/03	Nordrum, S., Leech Lake Band of Ojibwe	Vega, S., U.S. EPA	E-Mail Transmissions re: Comments on the Field Sampling Plan for Removal Site Evaluation for the St. Regis Paper Company Site w/ Attachment	
43	05/05/03	Levin, I., U.S. EPA	Drexler, T., U.S. EPA	QAPP Addendum for Acute Toxicity Assessment of the NPDES Discharge from the St. Regis Superfund Site w/ Approval Memorandum	
44	05/06/03	Fleming, E., City of Cass Lake	Drexler, T., U.S. EPA	Letter re: Cass Lake Citizens' Comments on the Proposed Sampling Plans for Human Health Risk and Removal Site Evaluation for the St. Regis Paper Company Site	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
45	05/07/03	Ross, T., International Paper	Vega, S., U.S. EPA	Letter: IP's Additional Comments on U.S. EPA's Work Plan for Removal Site Evaluation at the St. Regis Paper Company Site	
46	05/08/03	Persell, J., Minnesota Chippewa Tribe	Drexler, T., U.S. EPA	E-Mail Transmission re: Comments on Supplemental Soil Sampling Plan for the St. Regis Paper Company Site	
47	06/02/03	Cullerton, M., Tetra Tech EM, Inc.	Drexler, T., U.S. EPA	Letter re: Surface Soil Samples Collected During the October 2001 Sampling Event at the St. Regis Paper Company Site	
48	06/13/03	Peters, K., Peters & Peters, PLC	Drexler, T., U.S. EPA	Letter re: City of Cass Lake's Comments on IP's June 10, 2003 Work Plan for the St. Regis Superfund Site	
49	06/16/03	Pena, D., Minnesota Department of Health	Drexler, T., U.S. EPA	E-Mail Transmission re: Comments on IP's Work Plan for the St. Regis Paper Company Site	
50	06/17/03	Steiner, C., U.S. EPA	Drexler, T., U.S. EPA	E-Mail Transmission re: Results of Acute Toxicity Testing for St. Regis WWTP	
51	06/19/03	MPCA	File	MPCA's Comments on IP's Work Plan for Removal Site Evaluation and Supplemental Assessment for the St. Regis Paper Company Site	
52	06/19/03	Persell, J., Minnesota Chippewa Tribe	Drexler, T., U.S. EPA	E-Mail Transmission re: IP's Comments on the Revised Work Plan for the St. Regis Paper Company Site	
53	06/30/03	Vega, S. & T. Drexler, U.S. EPA	Messing, R., Minnesota Department of Health	Letter: US EPA's Response to Comments on IP's Draft Workplan for the St. Regis Paper Company Site	
54	06/30/03	Vega, S. & T. Drexler, U.S. EPA	Johnson, S., MPCA	Letter: US EPA's Response to Comments on IP's Draft Workplan for the St. Regis Paper Company Site	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
55	06/30/03	Vega, S. & T. Drexler, U.S. EPA	Fleming, E., City of Cass Lake	Letter: US EPA's Response to Comments on IP's Draft Workplan for the St. Regis Paper Company Site	
56	06/30/03	Vega, S. & T. Drexler, U.S. EPA	Nordrum, S., Leech Lake Band of Ojibwe	Letter: US EPA's Response to Comments on IP's Draft Workplan for the St. Regis Paper Company Site	
57	07/07/03	Vega, S. & T. Drexler, U.S. EPA	Ross, T., International Paper	Letter: re U.S. EPA's Comments on the June 23, 2003 Version of the Field Sampling Plan for the Removal Site Evaluation at the St. Regis Paper Company Site	
58	07/11/03	Ross, T., International Paper	Drexler, T., U.S. EPA	Letter re: IP's Comments on U.S. EPA's Split, Co-Located and Independent Soil and Groundwater Sampling at the St. Regis Paper Company Site	
59	07/18/03	Drexler, T., U.S. EPA	File	Memorandum: Justification for Supplemental Sampling at the St. Regis Paper Company Site	
60	07/18/03	Yingling, V., Minnesota Department of Health	Drexler, T., U.S. EPA	E-Mail Transmission re: Preliminary Review of St. Regis Groundwater Information	
61	07/21/03	Barr Engineering Company	International Paper	Final Report: Residential Well Evaluation - Supplemental Assessment for the St. Regis Paper Company Site	
62	07/21/03	Persell, J., Minnesota Chippewa Tribe	Drexler, T., U.S. EPA	E-Mail Transmission re: Comments on Data Quality Objectives for IP's Quality Assurance Plan for Sampling and Analysis at the St. Regis Paper Company Site	
63	07/24/03	Muno, W., U.S. EPA	International Paper Company	Unilateral Administrative Order re: St. Regis Paper Company Site	

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

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

UPDATE #2
AUGUST 11, 2004

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	00/00/00	Minnesota Department of Health	U.S. EPA	MDH Comments on DQOs and CSM	8
2	02/07/84	Helwig, D., MPCA	Hora, M., MPCA	Memorandum re: PCBs in Sediment from Cass Lake	4
3	01/11/01	Tetra Tech EM, Inc.	U.S. EPA	Trip Report for Sediment, Surface Water, Groundwater, Soil and Fish Sampling Activities	15
4	2002	Leech Lake Band of Ojibwe	File	St. Regis Paper Company Superfund Site Interview -Project (PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED)	55
5	01/31/02	U.S. EPA/ Region 5 CLP	U.S. EPA	Standard Operating Procedure Acute Static Effluent Toxicity Testing Using Daphnids	58
6	03/20/02	U.S. EPA/ Region 5 CLP	U.S. EPA	Standard Operating Procedure for Chronic Static Renewal Toxicity Testing Using *Ceriodaphnia dubia* (Revision 009.3)	58
7	03/26/03	Kick, D., U.S. DOA/ Chippewa National Forest	Drexler, T., U.S. EPA	Letter re: Additional Soil Sampling for a Removal Action on Lands Managed by Forest Service	2
8	04/15/03	Johnson, S., MPCA	Drexler, T., U.S. EPA	Letter re: Notification of Change of Project Leader	1

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
9	05/05/03	Levin, I., U.S. EPA	Drexler, T., U.S. EPA	Memorandum re: Approval of the Draft of the Addendum to the Quality Assurance Project Plan for Acute Toxicity Assessment of the NPDES Discharge from St. Regis Superfund Site	21
10	05/23/03	Enviro-Test Laboratories	Persell, J., Minnesota Chippewa Tribe	Letter re: Results for Sample CL-WH-14	5
11	08/01/03	Drexler, T., U.S. EPA	Levin, I., U.S. EPA	Memorandum re: Addendum to Field Sampling QAPP for Chronic Toxicity Testing	1
12	08/28/03	Cullerton, M., Tetra Tech EM, Inc.	Drexler, T., U.S. EPA	Letter re: Data Validation Report for Fish Tissue Analysis	28
13	09/12/03	Nordrum, S., Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	E-Mail Transmission re: Leech Lake Band of Ojibwe Comments on the Data Gaps Sampling Recommendations Tables	2
14	10/22/03	Cullerton, M., Tetra Tech EM, Inc.	Drexler, T., U.S. EPA	E-Mail Transmission re: Tetra Tech Comments on the Leech Lake Band of Ojibwe Pilot Superfund Project Final Draft Report	5
15	11/17/03	Donnelly, P., U.S. EPA	Drexler, T., U.S. EPA	Chronic Toxicity Test Results	4
16	12/00/03	Persell, J., Minnesota Chippewa Tribe for Leech Lake Band of Ojibwe	U.S. EPA	Leech Lake Band of Ojibwe Pilot Superfund Project Final Report	147
17	12/09/03	U.S. EPA	Public	U.S. EPA Original Removal Administrative Record Incorporated by Reference	
18	12/31/03	Wagoner, L., U.S. DOA/ Chippewa National Forest	Drexler, T., U.S. EPA	Letter re: Inclusion of Land Managed by Forest Service in the Removal Action Scoping Sampling	25

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
19	01/09/04	Tetra Tech EM, Inc.	U.S. EPA	Summary of Human Health Exposure Scenarios	24
20	01/16/04	Tetra Tech EM, Inc.	U.S. EPA	Screening Ecological Risk Assessment Draft Technical Memorandum	125
21	01/23/04	Harper, B., AESE, Inc.	Nordrum, S., Leech Lake Band of Ojibwe	Memorandum re: Comments on CSMs	6
22	02/01/04	Cullerton, M., Tetra Tech EM, Inc.	Drexler, T., U.S. EPA	Letter re: Data Validation Report for Reanalysis of Fish Tissue Sample CL-WH-14	8
23	02/02/04	International Paper	U.S. EPA	CD-ROM re: Site Sampling Data for the St. Regis Paper Company Site	
24	02/05/04	Ross, T., International Paper	Drexler, T., U.S. EPA	Letter re: Data Validation Review from the 2001 Fish Tissue Analysis	7
25	02/19/04	Cullerton, M., Tetra Tech EM, Inc.	Drexler, T., U.S. EPA	Letter re: Responses to IP's Comments on the Data Validation 2001 Fish Tissue Analysis	6
26	03/04/04	Brauner, D., U.S. EPA	Drexler, T., U.S. EPA	Memorandum re: Review of the Draft Human Health and Ecological Risk Assessment Work Plan	3
27	03/08/04	Johnson, S., MPCA	Drexler, T., U.S. EPA	E-Mail Transmission re: MPCA Comments on the Human Health and Ecological Risk Assessment Work Plan	5
28	03/08/04	Yingling, V., MDH	Addressees	E-Mail Transmission re: MDH Comments on the Draft Human Health and Ecological Risk Assessment Work Plan	14
29	03/10/04	Nordrum, S., Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	E-Mail Transmission re: Comments on the Human Health and Ecological Risk Assessment Work Plan	33

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
30	03/10/04	Persell, J., Minnesota Chippewa Tribe for Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	E-Mail Transmission re: Minnesota Chippewa Tribe Comments on the Draft Human Health and Ecological Risk Assessment Work Plan	5
31	03/11/04	Wagoner, N., U.S. DOA/ Chippewa National Forest	Drexler, T., U.S. EPA	Letter re: U.S. DOA's Comments on the Risk Assessment Work Plan, Conceptual Site Models and Preliminary Data Gaps Tables	1
32	03/12/04	Drexler, T., U.S. EPA	Ross, T., International Paper	Letter re: U.S. EPA Comments on the Draft Human Health and Ecological Risk Assessment Work Plan	49
33	03/12/04	Drexler, T., U.S. EPA	Ross, T., International Paper, et al.	E-Mail Transmission re: Enviro-Test Laboratories Position on CL-WH-14 Fish Tissue Sample	2
34	03/12/04	Nordrum, S., Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	E-Mail Transmission re: Comments on the Risk Assessment Work Plan, Conceptual Site Models and Preliminary Data Gaps Table	3
35	03/16/04	Eckerly, R., City of Cass Lake	Drexler, T., U.S. EPA	FAX Transmission re: City of Cass Lake Comments on the February 20, 2004 Draft Human Health and Ecological Risk Assessment Work Plan	4
36	03/18/04	Nordrum, S., Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	E-Mail Transmission re: Technical Review Comments on the Human Health and Ecological Risk Assessment Work Plan, Conceptual Site Models and Preliminary Data Gaps Table	8
37	03/31/04	Cullerton, M., Tetra Tech EM, Inc.	Drexler, T., U.S. EPA	Letter re: Data Validation Report for September-October 2002 Fish Sample Analyses	15

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
38	04/05/04	Ross, T., International Paper	Drexler, T., U.S. EPA	Letter re: IP's Initial Responses to U.S. EPA Comments on the Risk Assessment Work Plan	4
39	04/23/04	Drexler, T., U.S. EPA	Ross, T., International Paper	Letter re: U.S. EPA's Spring 2004 Fish Tissue Sample Collection	2
40	04/28/04	Kirschner, F., AESE, Inc.	Nordrum, S., Leech Lake Band of Ojibwe	Memorandum re: Leech Lake Band of Ojibwe Comments on the Sampling and Analysis Plan for Human Health and Ecological Risk Assessment	8
41	04/28/04	Yingling, V., MDH	Drexler, T., U.S. EPA	E-Mail Transmission re: MDH Comments on the Sampling and Analysis Plan	9
42	05/03/04	Tetra Tech EM, Inc.	U.S. EPA	Sampling and Analysis Plan for Fish Tissue Sampling Activities	152
43	05/10/04	Yingling, V., MDH	Drexler, T., U.S. EPA	E-Mail Transmission re: MDH Comments of Appendix A for the Field Sampling Plan	5
44	05/20/04	Brauner, D., U.S. EPA	Drexler, T., U.S. EPA	Memorandum: Recommendations for Effects Levels Benchmarks for St. Regis Site and Summaries of Ecotoxicological Effects of Various Constituents of Concern	6
45	06/14/04	Drexler, T., U.S. EPA	File	Memorandum re: Meeting with International Paper Concerning Disposal of Facility Waste Water	1
46	06/18/04	Ross, T., International Paper	Drexler, T., U.S. EPA	Letter re: IP's Response to U.S. EPA's Proposed Revisions to Risk Assessment Sampling and Analysis Plan and Field Sampling Plan	6
47	06/21/04	Drexler, T., U.S. EPA	File	Memorandum re: Brief History of Sewage Treatment for City of Cass Lake	1

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
48	06/29/04	Pena, D.,	Drexler, T., U.S. EPA	E-Mail Transmission re: Methods for Estimating Health Risks from Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs)	8
49	07/01/04	Reiplinger, P., R. Molash & E. Fleming, City of Cass Lake	Drexler, T., U.S. EPA	Letter re: City of Cass Lake Comments on the June 18, 2004 Revised Draft Human Health and Ecological Risk Assessment Work Plan	5
50	07/02/04	Persell, J., Minnesota Chippewa Tribe for Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	E-Mail Transmission re: Leech Lake Band of Ojibwe Comments on the Field Sampling Plan and Sampling and Analysis Plan	6
51	07/06/04	Johnson, S., MPCA	Drexler, T., U.S. EPA	E-Mail Transmission re: MPCA Comments on the June 8, 2004 Draft Sampling and Analysis Plan and Appendix A of the Field Sampling Plan for Human Health and Ecological Risk Assessment	2
52	07/06/04	Messing, R.,	Drexler, T., U.S. EPA	E-Mail Transmission re: Comments on the June 8, 2004 Draft Sampling and Analysis Plan for Human Health and Ecological Risk Assessment	8
53	07/12/04	Persell, J., Minnesota Chippewa Tribe for Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	E-Mail Transmission re: Leech Lake Band of Ojibwe Comments on the Draft Appendix B for the Quality Assurance Project Plan for Human Health and Ecological Risk Assessment	3
54	07/16/04	Ross, T., International Paper	Drexler, T., U.S. EPA	E-Mail Transmission re: Split Sampling for Upcoming Risk Assessment	2

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
55	07/29/04	Ross, T., International Paper	Drexler, T., U.S. EPA	Letter re: IP's Initial Responses to U.S. EPA's Revisions to Risk Assessment Documents for the St. Regis Paper Company Site and City Dump Pit Site	3
56	07/30/04	Drexler, T., U.S. EPA	Ross, T., International Paper	E-Mail Transmission re: U.S. EPA's Response to IP's July 30, 2004 Letter Commenting on U.S. EPA's Revisions to Risk Assessment Documents for City of Cass Lake Sites	2
57	08/04/04	Drexler, T., U.S. EPA	Ross, T., International Paper	U.S. EPA's Comments on the Human Health and Ecological Risk Assessment QAPP for the St. Regis Paper Company Site w/Cover Letter	17
58	08/05/04	Drexler, T., U.S. EPA	File	Memorandum re: Technical Conference Call Between U.S. EPA and IP on the Draft Human Health and Ecological Risk Assessment for the St. Regis Paper Company Site	2
59	08/10/04	Drexler, T., U.S. EPA	Addressees	E-Mail Transmission re: Notes from August 5, 2004 Technical Conference Call Between U.S. EPA and IP	1
60	08/11/04	Karl, R., U.S. EPA	Respondent	Unilateral Administrative Order for Human Health and Ecological Risk Assessment for the St. Regis Paper Company Site	415

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

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

UPDATE #3
APRIL 5, 2005

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	03/00/05	International Paper Project Team	U.S. EPA	2004 Annual Report for St. Regis Paper Company and City Dump Pit Site	

Attachment F

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

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

UPDATE #4
SEPTEMBER 29, 2005

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	05/00/03	Contaminants of Potential Concern Committee of the World Trade Center Indoor Air Task Force Working Group	File	Report: "World Trade Center Indoor Environment Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks"	
2	04/05/04	Albrecht, J., U.S. Army Corps of Engineers/ St. Paul District	U.S. EPA	Real Estate Cost Estimate for the St. Regis Paper Company Site	
3	02/08/05	Mattison, T., Barr Engineering Company	Drexler, T., U.S. EPA	Validated Analytical Data for House Dust for the St. Regis Paper Company Site	
4	03/02/05	Mandernach, D., Minnesota Department of Health	Karl, R., U.S. EPA	Letter re: Ongoing Residential Exposures to Dioxins in Contaminated Soil and Dust in the Vicinity of the St. Regis Paper Company Facility	
5	03/03/05	Drexler, T., U.S. EPA	Addressees	E-Mail Transmission Forwarding Text and Spreadsheet for U.S. EPA Risk Calculations for the St. Regis Paper Company Site	
6	03/03/05	Johnson, M., U.S. EPA	Drexler, T., U.S. EPA	E-Mail Transmission re: St. Regis House Dust Risk Calculations	
7	03/07/05	Drexler, T., U.S. EPA	Addressees	E-Mail Transmission re: Risk Calculations Performed by U.S. EPA at the St. Regis Paper Company Site w/ Reply History	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
8	03/17/05	Ross, T., International Paper	Drexler, T., U.S. EPA	Letter re: Technical Comments on U.S. EPA Risk Estimates for Indoor Dust Samples for the St. Regis Paper Company Site	
9	05/06/05	Johnson, S., Minnesota Pollution Control Agency	Drexler, T., U.S. EPA	Letter re: MPCA Con-currrence with U.S. EPA Draft St. Regis House Dust Proposed Plan	
10	05/13/05	Drexler, T., U.S. EPA	Ross, T., International Paper	Letter re: U.S. EPA Response to IP's Comments on EPA House Dust Risk Calculations for the St. Regis Paper Company Site	
11	05/13/05	Robinson, R., Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	Letter re: Leech Lake Band of Ojibwe Position Concerning the Draft Proposed Interim House Dust Contamination Remedial Action Plan	
12	05/24/05	Drexler, T., U.S. EPA	Ross, T., International Paper	Letter re: Revised St. Regis Paper Company Site House Dust Risk Calculations	
13	06/07/05	Jacobson, L., Registered Professional Reporter	U.S. EPA	Transcript of June 7, 2005 EPA Public Hearing for the St. Regis Paper Company Site	
14	06/23/05	Pena, D. & R. Messing, Minnesota Department of Health	Drexler, T., U.S. EPA	Letter re: MDH Comments on the Interim Plan for House Dust Contamination at the St. Regis Paper Company Site	
15	07/06/05	Lester, S., Center for Health, Environment & Justice	Shimek, R., Indigenous Environmental Network	Letter re: U.S. EPA's Proposed Plan to Cleanup Contaminated House Dust Near the St. Regis Paper Company Site	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
16	07/07/05	Fleming, E., City of Cass Lake	Drexler, T., U.S. EPA	Letter re: City of Cass Lake Comments on U.S. EPA Proposed Short-Term Cleanup Plan for Contaminated House Dust in Residences Near the St. Regis Paper Company Site	
17	07/08/05	Concerned Citizens	U.S. EPA	Public Comments Received June 23 - July 8, 2005 on the Interim ROD for the St. Regis Paper Company Site (PORTIONS OF THESE DOCUMENTS HAVE BEEN REDACTED)	
18	07/08/05	Johnson, S., MPCA	Drexler, T., U.S. EPA	Letter re: MPCA Comments on U.S. EPA's House Dust Proposed Plan for the St. Regis Paper Company Site	
19	07/08/05	Nordrum, S., Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	Letter re: LLBO Comments on the U.S. EPA House Dust Proposed Plan for the St. Regis Paper Company Site	
20	07/08/05	Ross, T., International Paper	Drexler, T., U.S. EPA	Letter re: IP Technical Comments on U.S. EPA's Proposed Plan for House Dust Contamination at the St. Regis Paper Company Site	
21	07/08/05	Shimek, R., Indigenous Environmental Network	Drexler, T., U.S. EPA	Letter re: IEN Comment on the House Dust Contamination Proposal at the St. Regis Paper Company Site w/ Attachment	
22	08/18/05	Tri-Service Automated Cost Engineering System (TRACES)	File	Engineer Estimate for St. Regis Paper Company Site - Leech Lake Reservation	
23	09/23/05	Johnson, S., MPCA	Drexler, T., U.S. EPA	E-Mail Transmission re: MPCA Comment on the Proposed ROD for the St. Regis Paper Company Site	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
24	09/23/05	Nordrum, S., Leech Lake Band of Ojibwe	Drexler, T., U.S. EPA	Letter re: LLBO Comments on the U.S. EPA Draft Document "Interim Action Decision" Concerning House Dust Contamination at the St. Regis Paper Company Site	
25	09/28/05	U.S. EPA	Public	Third Five-Year Review Report for the St. Regis Paper Company Site	
26	00/00/00	U.S. EPA	File	Information Sheets from Environmental Dust Control and Minnesota Soybean re: Road Dust Control Options for the St. Regis Paper Company Site	
27	00/00/00	U.S. EPA	Public	Interim Record of Decision for the St. Regis Paper Company Site **(PENDING)**	