SITE MANAGEMENT PLAN

Penta Wood Products
Township of Daniels, Wisconsin

Remedial Action

WA No. 040-RDRD-05WE / Contract No. 68-W6-0025

October 1999

Contents

Acronyms

ACZA	ammonia, copper II oxide, arsenate, and zinc
ASM	Assistant Site Manager
CAMU	Corrective Action Management Unit
CP	Contingency Plan
FSP	Field Sampling Plan
LNAPL	light non-aqueous phase liquid
mg/L	milligrams per liter
PCP	pentachlorophenol
POE	Point-of-entry
PPE	personnel protective equipment
ppm	parts per million
psi	pounds per square inch
PWP	Penta Wood Products
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RTL	review team leader
SACM	Superfund Accelerated Cleanup Model
SM	Site Manager
SSC	Site Safety Coordinator
TSCA	Toxic Substance Control Act
USEPA	United States Environmental Protection Agency
WDNR	Wisconsin Department of Natural Resources
WDOJ	Wisconsin Department of Justice
WPDES	Wisconsin Pollutant Discharge Elimination System

SECTION 1

Site Management Plan

This technical report summarizes the support plans for the remedial action at the Penta Wood Products (Penta Wood) site in accordance with Work Assignment No. 040-RDRD-05WE.

Objective of the Site Management Plan

This plan includes the supporting plans required during remedial action (RA) activities. These supporting plans include the following:

- A Pollution Control and Mitigation Plan
- A Waste Management, Transportation, and Disposal Plan
- A Contingency Plan (CP) that discusses procedures to be used in the event of an accident or emergency at the site during RA activities.

Site Description

The Penta Wood Products (PWP) site is an inactive wood treating facility located on Daniels 70 (former State Route 70) in Burnett County, Wisconsin (Figure 1). It is approximately 78 miles northeast of Minneapolis, Minnesota, and 60 miles south of Duluth, Minnesota. The Village of Siren, Wisconsin, is approximately 2 miles east of the site and there are three residences within 200 feet of the site using private wells.

The PWP property currently consists of approximately 82 acres that were actively used; 40 undeveloped acres consisting of forest were sold after the facility closed. The property is located in a rural agricultural and residential setting and is bordered to the east, west, and north by forested areas. Some of these areas are classified by the State of Wisconsin as wetlands. With the exception of an 8-acre parcel, Daniels 70 forms the southern property boundary.

The PWP site is situated on a plateau with a 110-foot drop in elevation from the southern boundary to the northern boundary. The site stratigraphy consists of three layers: an upper sand, a glacial till that is not continuous throughout the site, and a lower sand. The depth to groundwater is over 100 feet on the plateau. Groundwater occurs both in a thin unconfined aquifer and within a multi-layered semiconfined aquifer system. The regional groundwater flow direction is to the north. Since the closing of the onsite production well, groundwater flow at the site has been radial, with a strong downward vertical gradient.

A number of surface water bodies are present north and east of the site. Doctor Lake and an unnamed lake are located 2,000 feet east and northeast of the site, respectively. Approximately 2,140 acres of lakes, 94 acres of bogs, and 7,500 acres of wetland are located

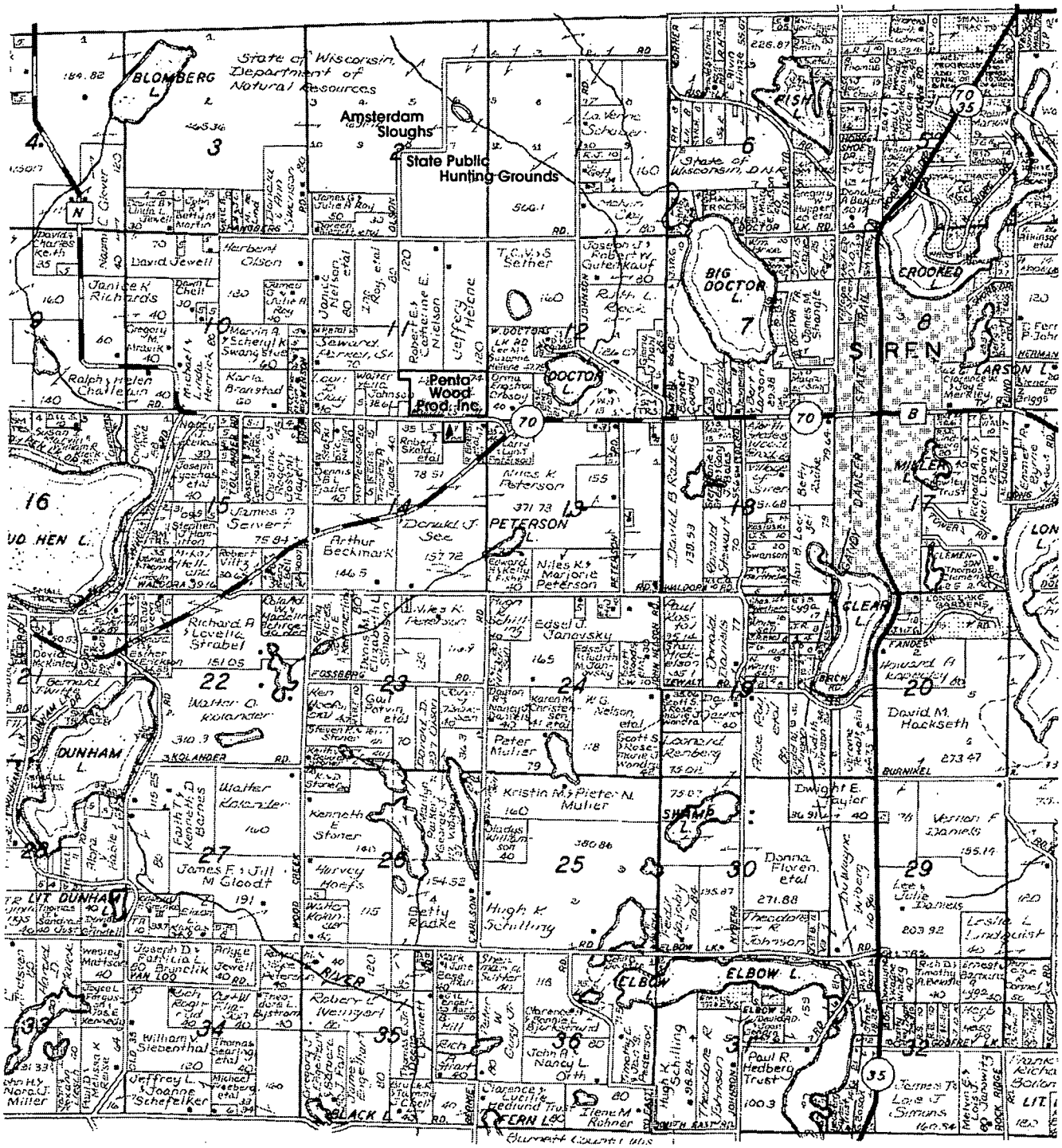

FIGURE 1
Site Location Map
Penta Wood Products Site
Site Management Plan

CH2MHILL

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within a 4-mile radius of the site. A wetland is located within 130 feet of the northern property boundary. The Amsterdam Slough Public Hunting area covers 7,233 acres and is located 1 mile north of the site.

Site History

PWP operated from 1953 to 1992. Raw timber was cut into posts and telephone poles and treated with either a 5 to 7 percent pentachlorophenol (PCP) solution in a No. 2 fuel oil carrier, or with a water borne salt treatment called Chemonite consisting of ammonia, copper II oxide, arsenate, and zinc (ACZA). During its 39 years of operation, PWP discharged wastewater from an oil/water separator down a gully into a lagoon on the northeast corner of the property (Figure 1). Process wastes were also discharged onto a wood chip pile in the northwestern portion of the property. Ash from a boiler was used to berm a cooling pond. Beginning in the 1970s, Wisconsin Department of Natural Resources (WDNR) investigators noted several large spills, stained soils, fires, and poor operating practices.

PWP began an environmental investigation in 1987. In 1988 the onsite production well was closed for potable use when it was found to contain 2,700 µg/L of PCP. The State of Wisconsin Department of Justice (WDOJ) filed a preliminary injunction against PWP in 1991, citing Wisconsin Pollutant Discharge Elimination System (WPDES) violations and violations of other State statutes regarding storage of raw materials, and waste handling practices. The facility voluntarily closed in May 1992 with the promulgation of the Resource Conservation and Recovery Act (RCRA) drip track regulations.

The site was put into the Superfund Accelerated Cleanup Model (SACM) pilot program, and a removal action was conducted by the United States Environmental Protection Agency (USEPA) from 1994 to 1996. The ACZA treatment building and half of the oil/water separator building were demolished and remaining chemicals and sludges were disposed offsite. Grossly PCP- and metals-contaminated soils were also excavated and disposed offsite, and metals-contaminated soils were excavated and mixed onsite with cement to form a 3-acre concrete biopad. Emergency erosion control measures were taken in 1998 in an effort to reduce washout of contaminated wood debris from the lagoon wall into the wetlands.

A Remedial Investigation/Feasibility Study (RI/FS) was conducted by CH2M HILL in 1997-1998, culminating with the issuance of a ROD in September 1998. The ROD specifies that the selected remedial action for the site consists of soil and sediment consolidation and bioventing, light non-aqueous phase liquid (LNAPL) collection and disposal, groundwater collection and treatment in the LNAPL area, and monitored natural attenuation for the remainder of the groundwater plume. CH2M HILL performed remedial design activities between March and November 1999. The design drawings and specifications, design report, and cost estimate were prepared for the bidding and construction of the remedy selected in the ROD.

Nature and Extent of Contamination

As a result of spills and past waste handling practices at the site, subsurface soils to a depth of over 100 feet are contaminated with a PCP/oil mixture beneath the gully where wastewater was discharged from an oil/water separator to a lagoon. Over the years, PWP filled erosion gullies with wood debris. This wood debris layer is semi-saturated with the PCP/oil mixture. The PCP/oil mixture, which has traveled to the groundwater and spread horizontally as a light non-aqueous phase liquid (LNAPL) layer, is in equilibrium with pore pressures and is not expected to continue spreading. An LNAPL of PCP/oil is floating on the water table over an estimated 4-acre area.

A dissolved phase PCP plume exists in the groundwater and appears to be stable. PCP concentrations in groundwater have been monitored at the site since 1988, and some of the wells have 11 rounds of sampling data. PCP groundwater concentrations have shown consistent declines at the majority of monitoring wells over time, although many of the wells have been monitored for only 3 years. There is a general decrease in the size of the PCP plume, and the total contaminant mass of PCP in the saturated zone has declined since 1994. For example, PCP contamination detected at 2,000 µg/L at MW17 in 1994 has declined to non-detect levels in 1997. There is no evidence of contaminated groundwater discharging to the wetland or migrating below the wetland to surface water bodies.

Additional evidence that PCP is biodegrading in groundwater is supported by the natural attenuation parameter data. The groundwater is under anaerobic conditions in both the unconfined and semiconfined aquifer in the LNAPL plume area. The anaerobic plume is not expanding, which is important because aerobic biodegradation has a faster decay rate than anaerobic biodegradation; therefore, biodegradation should be capable of preventing the further expansion of the plume.

The northern lagoon wall is collapsing and overland transport of oil saturated soil and wood debris has resulted in sediment and surface water contamination in an offsite wetland.

Wastewater was discharged into a ravine filled with wood chips. Despite elevated levels of PCP and TPH detected in the wood chips, the soil and groundwater below the wood chip pile appear to be minimally impacted. The wood chips may be retaining the contamination.

Surficial soils are contaminated with arsenic. The metals-contaminated soil is mainly around the treatment building and on the eastern portion of the site where ACZA-treated wood was stored. Surficial soil PCP contamination exists along the gully corridor and in hot spots near the rail tracks, treatment cylinder, and areas used to store the treated wood.

Description of Work

The ROD specifies that the selected remedial action for the site consists of soil and sediment consolidation and bioventing, LNAPL collection and disposal, groundwater collection and treatment in the LNAPL area, and monitored natural attenuation for the remainder of the

groundwater plume. The selected remedy focuses on removing free phase LNAPL and the grossly contaminated groundwater while slowly drawing down the water table and enhancing natural biodegradation of the soils above the LNAPL by bioventing (adding air to the soils above the water table). PCP/fuel oil contaminated soils, wood chips, and sediments will be consolidated in a designated Corrective Action Management Unit (CAMU), mixed with the shallow layer of wood debris/soil, and covered. Bioventing wells will be installed in this area of the CAMU and air will be blown into the subsurface soils. Near-surface arsenic/metals contaminated soil will be segregated where possible; highly contaminated soils will be solidified in cement and placed onsite in a separate area of the CAMU.

The overland transport of contaminated site materials through a collapsing lagoon wall to an adjacent wetland will be eliminated with reconstruction of the slope, regrading of the site for surface water runoff control, and reestablishing vegetation. The natural degradation of contaminants that is occurring in the groundwater plume will be monitored. If monitoring detects that offsite receptors are threatened, or if the remedy fails to effectively reduce the contaminants mass within a reasonable amount of time, contingency plans will be implemented.

The major components of the remedy consist of:

- Building demolition
- Segregation, select solidification, and placement of arsenic contaminated soils in an onsite CAM
- Consolidation of PCP/fuel oil soils and wood chips in the CAMU under a soil cover
- Bioventing PCP/fuel oil contaminated material
- Biopad removal and disposal onsite in the CAMU
- Erosion control measures
- Revegetation
- LNAPL removal
- Containment, collection, treatment, and discharge of grossly contaminated groundwater (exceeding 1,000 µg/L PCP)
- Monitored natural attenuation of groundwater contamination
- Institutional controls
- Environmental monitoring/maintenance
- Point-of-entry (POE) carbon treatment for residences, if necessary
- 5-year site reviews

Project Organization and Responsibility

The organizational structure of the construction team is shown in Figure 2. Key parties of the organization include the USEPA, WDNR, the contractor, and the construction subcontractors.

USEPA

The USEPA is ultimately responsible for all activities at the facility related to the demolition of existing buildings, site preparation/earthwork activities, drilling/well installation, and bioventing/groundwater treatment facility installation. The USEPA will retain independent design, QA, and construction organizations to accomplish the work and will have the authority to hire and fire these organizations. The USEPA also has the authority to accept or reject QA plans, reports, and recommendations of the contractor, and the materials and workmanship of the construction subcontractors.

CH2M HILL Site Manager

The CH2M HILL Site Manager (SM) is responsible for implementing the project and is authorized to commit resources to meet project objectives and requirements. The SM's primary function is to achieve technical, financial, and scheduling objectives. The SM will report directly to the USEPA Region 5 RPM during the RA and will be the major point of contact for matters concerning the project. The SM is in direct communication with the Construction Manager. The SM will perform the majority of his or her duties from the CH2M HILL office in Milwaukee but will visit the site on an as-needed basis. More specifically, the SM will:

- Define project objectives and develop a detailed work plan and schedule
- Establish project policy and procedures to address the specific needs of the project as a whole, as well as the objectives of each task
- Acquire and apply technical and corporate resources to meet budget and schedule constraints
- Orient field leaders and support staff with regard to the project's special considerations
- Monitor and direct other team members
- Develop and meet ongoing project or task staffing requirements, including mechanisms to review and evaluate each task product
- Review the work performed on each task to ensure quality, responsiveness, and timeliness
- Review and analyze overall task performance with regard to planned schedule and budget
- Review external reports (deliverables) before submission to USEPA Region 5
- Represent the project team at meetings and public hearings

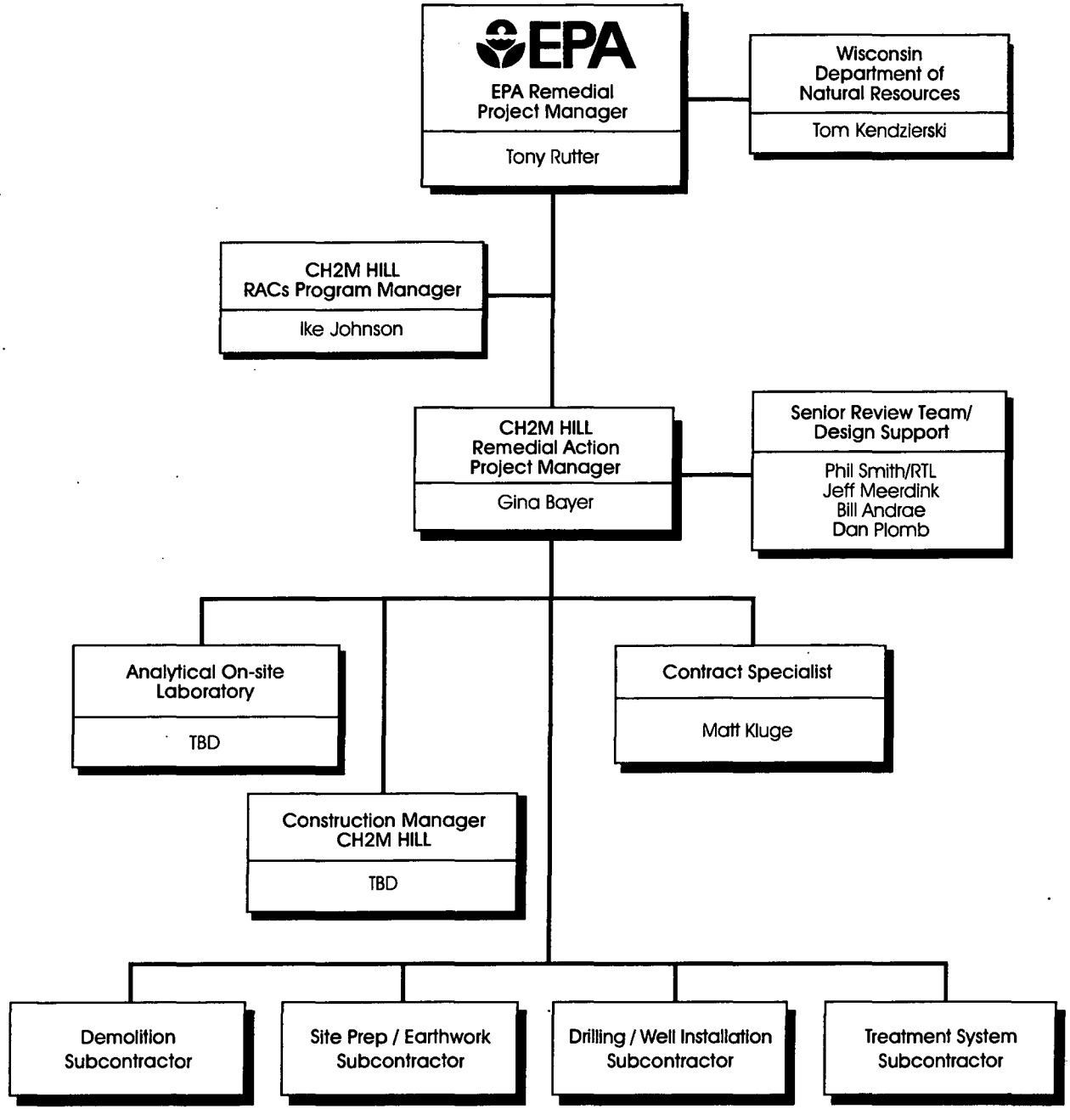


FIGURE 2
Team Organization
Penta Wood Products Site
Site Management Plan

- Review non-compliance notices submitted by the Construction Manager and will determine appropriate action.
- Supervise CH2M HILL design staff and assist them in resolving project-related issues that cannot be adequately resolved at a lower level.

CH2M HILL Review Team Leader

The role of the review team leader (RTL) is to support the SM in site management activities and to coordinate CH2M HILL internal reviews. The RTL will also be involved in ongoing planning activities. Phil Smith is the RTL for the RA.

Contractor Design Staff

The design staff's primary responsibility is to design the remedial action so that it will fulfill the cleanup standards of the USEPA. Design activities may not end until construction is completed. The design staff will:

- Clarify or interpret requirements of the plans and specifications
- Review submittals for conformance to the construction documents
- Review requests for design changes during construction
- Prepare design changes to account for unexpected site conditions or changes in construction or operation methodology

CH2M HILL Contract Specialist

CH2M HILL's RAC Program APM-ADMIN is responsible for the contract documents created in support of RA activities. Specific responsibilities include the following:

- Contracting the analytical laboratories
- Contracting the subcontractors
- Resolving any contract disputes
- CH2M HILL's contract specialist is Matt Kluge.

Construction Manager and Resident Inspector

CH2M HILL will provide a full-time, onsite Construction Manager during construction, and an additional full-time, onsite Resident Inspector during certain activities. The Construction Manager is directly responsible to the SM for the field administration of the construction contract requirements during construction. In addition, the Construction Manager performs field observation duties and directs field technical staff. The Construction Manager acts as a liaison, and is in direct communication with the construction subcontractor(s), the CH2M HILL design team, and the SM. The Construction Manager will perform the following activities with help from the Resident Inspector as needed:

- Inspect work for compliance with subcontract documents
- Monitor, update, and report on construction progress

- Perform field testing in accordance with the Construction Quality Assurance Plan
- Witness QC performance tests conducted by the subcontractor
- Recommend acceptance of completed work
- Maintain field logs
- Verify quantities of constructed items
- Provide support for change order request review or preparation
- Implement the requirements of the CH2M HILL Site Safety Plan

Work will be inspected for conformance with the subcontract documents and approved technical submittals. Inspections will be performed to check compliance with environmental requirements identified in the subcontract. These inspections will include a review of waste disposal records. CH2M HILL will perform QA field and laboratory testing of materials incorporated into the construction, and evaluate test results for compliance with the subcontract documents. Under this task, CH2M HILL will also witness and document the subcontractor's implementation of the QC requirements.

Other Contractor Field Staff

Other contractor field staff observe the subcontractors' materials and workmanship for compliance with the plans and specifications and can issue non-compliance notices for subcontractor workmanship and materials that do not meet the requirements of the contract documents.

The field staff perform the following duties:

- Observing the fabrication, manufacture, and testing of materials in the subcontractors' or vendors' offsite or onsite work areas, as required
- Observing and sampling purchased materials upon delivery to verify that correct type, quantity, and size of material has been furnished
- Observing performance of subcontractors' work and identifying areas of non-compliance with contract standards
- Performing field QA verification testing and environmental control testing according to the program outlined by this CQAP and the Field Sampling Plan (FSP)
- Preparing daily diaries of construction activities, observations, and verification tests performed
- Advising the Construction Manager of site conditions or construction conditions that may affect the accomplishment or quality of work
- Maintaining a visual account of construction progress by taking photographs on a regular basis

Independent Testing Companies

Independent testing companies may be retained by the contractor to perform laboratory or field testing of materials and inspection during construction. Responsibilities of the testing companies include:

- Controlling and supervising independent testing company personnel assigned to the project
- Ensuring that all personnel assigned to the project are properly qualified and trained for the assigned tasks
- Maintaining the proper equipment and supplies for performing the assigned tasks in accordance with specified procedures
- Obtaining test specimens and performing QA tests as requested
- Documenting and submitting test results as established by the CQAP
- Advising the Construction Manager regarding the interpretation of observations and test results
- Reporting non-compliance to the Construction Manager immediately
- Maintaining project files for review, upon request, by the CH2M HILL field staff

Construction Subcontractors

The construction subcontractors are responsible for providing the materials, equipment, and personnel for performing and controlling the construction work in accordance with the subcontract documents. Up to four different construction subcontractors will be involved with the RA at the Penta Wood site: (1) demolition subcontractor; (2) site preparation/earthwork subcontractor; (3) drilling/well installation subcontractor; and (4) bioventing/groundwater treatment system subcontractor.

Vendors and Subcontractors to the Subcontractor

These organizations are agents of the construction subcontractor by way of subcontracts, sub-subcontracts, or similar arrangements. As such, they are responsible, through the subcontractors, for maintaining QC procedures in accordance with their contractual arrangements and the subcontractor's QC plans. These agents should also provide the subcontractor with QC data and reports necessary for the agent's submittals to the CH2M HILL Site Manager.

Surveyors, Security Guard

CH2M HILL will retain a surveyor as needed to verify soil quantities as measured by the earthwork subcontractor. CH2M HILL will also retain a security guard if the USEPA WAM and WDNR project manager decides that a security guard is needed.

SECTION 2

Pollution Control and Mitigation Plan

This support plan outlines the process, procedures, and safeguards that will be used to prevent contaminants or pollutants from being released offsite during the implementation of the RA. The details of this plan are preliminary, and will be refined upon receipt of the approved work plan from the selected earthwork subcontractor. However, several activities at the site will be conducted which have the potential to cause offsite release of contaminants, and therefore will require certain basic safeguards. The basic site activities that will require specific pollution control safeguards include:

- Clearing and grubbing of clean and contaminated ground
- Excavation, stockpiling, and grading of clean and contaminated soil
- Overland transportation and placement of clean and contaminated soil
- Demolition of clean and contaminated concrete
- Treatment system well installation

Attached Drawing C-2 illustrates the areas of soil excavation and placement. This drawing will be updated with specific pollution control safeguards upon acceptance of the work plan from the selected earthwork subcontractor.

Air Pollution Control

Air pollution from construction operations will be minimized at all times. Site soils are predominantly sands and silty sands, with moderate potential for wind transport when dry. Construction activities that may result in the generation of dust (both "clean" and with elevated concentrations of arsenic and/or PCP) include clearing and grubbing, soil excavation, overland transport, and placement of soil. Dust may also be produced from open excavations, stockpiles, and placed fill prior to cover and restoration. Several safeguards will be implemented to minimize air pollution from these sources.

Site activities will be scheduled such that the time after clearing and grubbing prior to commencing work on the cleared and grubbed ground will be minimized, and will be no longer than 14 days. In areas of excavation and/or regrading, the ground will be backfilled, as required, and covered with clean mulch or wood chips within 14 days of completion of the excavation or regrading. These activities will reduce the amount of time that bare soil is exposed to the atmosphere and subject to offsite wind migration.

Any stockpiles of wind-transportable soil requiring disposal in the CAMU that will be left in place for over 24 hours will be covered with geofabric to prevent wind transport. Construction will proceed in a manner that reduces the time between excavation of such soils and their subsequent disposal in the CAMU.

Concrete demolition activities will be conducted with equipment and in a manner to reduce dust generation. Where possible, concrete will be saw-cut prior to demolition to produce clean fractures and thereby reduce crushing of the concrete. When grinding of stained concrete is required, dust control equipment will be used in conjunction with the grinder to eliminate off-site dust migration.

During excavation, grading, transportation, or placement of any soils requiring disposal in the CAMU, the soil may be misted with water to control the release of dust. Likewise, unpaved temporary access and haul roads will be misted with water for the same purpose, as necessary.

Burning of waste materials, rubbish, or other debris will not be permitted. The subcontractor will strictly adhere to applicable local, state, and federal environmental regulations for dust prevention. Weather conditions will be continually monitored for windy or stormy conditions that could potentially affect the operations. Soil will not be handled during windy weather if it appears that the wind will cause adverse affects to the operation or surrounding area.

These air pollution control measures may be modified, depending on field conditions, or the experience/methods of the selected subcontractor. If significant changes are made, an updated Site Management Plan will be submitted.

Erosion and Surface Water Pollution Control

Several safeguards will be implemented to minimize soil erosion, cross contamination, offsite migration, and surface water pollution throughout implementation of the remedial action. These safeguards will continue to minimize such pollution after construction, until site restoration activities have been completed and associated vegetation has matured. Attached Drawing C-8 identifies surface water controls for the construction site.

Soil Erosion Protection

Silt fences or hay bales will be placed on both the uphill and downhill sides of each excavation prior to clearing and grubbing, to prevent soil migration into or out of the excavation. Soil excavation will commence within 14 days of completion of clearing and grubbing of any area.

Silt fence or bales will remain in place until surface restoration activities are completed. The following surface restoration activities will be conducted:

- Within the CAMU footprint, 6" of topsoil will be placed above 6" of clean soil cover. The topsoil will be seeded with mixed grass.
- Within gently sloping (less than 10 percent) excavation/grading areas outside the CAMU footprint, bare soil will be covered with wood chips or mulch. Soil will then be mixed with fertilizer and seeded with mixed grass. Finally, jack or red pine seedlings will be placed at a density of 600 trees per acre.

- Within steeply sloped (greater than 10 percent) excavation/grading areas outside the CAMU footprint, bare soil will be covered with 4" of topsoil and an erosion blanket. The ground will then be seeded with mixed grass. Finally, white pine balled saplings will be placed at a density of 500 trees per acre.

Surface restoration activities will commence within 14 days of completion of final excavation, fill, or soil cover activities in any area. Mulch, topsoil, and erosion control blankets (where required) will be placed immediately. Fertilizing and revegetation (grasses and trees, as required) will be conducted prior to demobilization. These surface restoration activities will provide erosion protection to allow establishment of permanent vegetation over all disturbed areas.

Throughout all construction activities, cross-contamination will be minimized with rock mats, access roads, and a decontamination pad. One rock mat will be placed prior to construction activities at the main access gate. Temporary access roads will be constructed as necessary to access all working areas of the site, and will be scraped clean upon completion of activities in each area. A decontamination pad will be constructed with an HDPE lining, bermed sides, and sump with a submersible pump. This pad will be constructed to adequately clean equipment and collect the decontamination water for pumping and storage within the on-site water storage tank.

Surface Water Protection

The safeguards described above shall be sufficient to significantly reduce soil erosion and transport. However, any eroded soil that does migrate will be intercepted by a system of stormwater interceptor ditches, downchutes, and settling basins which shall protect offsite surface water receptors from pollution.

Stormwater interceptor ditches will be constructed along the perimeter and within the boundaries of the historically active site. Ditches within the site will be located close enough to each other to intercept overland sheet flow prior to channelization of this flow and formation of rills & gullies. These ditches will be lined with erosion matting or riprap to reduce erosion of the ditch lining, and will contain rock check-dams at regular intervals to trap mobilized settlement. These ditches will intercept sheet flow from the site and transport this flow to engineered stormwater downchutes and settling basins prior to offsite discharge.

Two stormwater downchutes will be constructed to transport water collected from the interceptor ditches down the steep slope on the northern edge of the active site. These downchutes will be constructed of large rip-rap in gabion baskets, cased with concrete to eliminate erosion of the downchute lining. Each will be constructed with a riprap/gabion energy dissipation basin at the downstream end to minimize scour from the concentrated water flow.

Three settling basins will be constructed along the surface water collection system, one at the upstream end of each downchute, and one directly upstream of the offsite discharge

point. These basins will be large enough to slow down the flow of water such that suspended solids will settle from the discharge.

During excavation of soils with elevated arsenic or PCP concentrations, any water encountered will be pumped from the excavation to a storage tank. This tank will be of sufficient volume to store all such dewatering discharge and decontamination water until it can be pumped through the onsite treatment system. Water pumped from clean excavations will be discharged to a protected ditch or settling basin to minimize erosion at the discharge point.

Groundwater and Subsurface Soil Pollution Control

The only mechanism for introducing additional groundwater or subsurface soil pollution at the site is the installation of treatment system wells. Nine well nests (shallow and deep wells ranging from 25 to 125 feet bgs) will be installed within or near the CAMU.

Cross-contamination between wells will be minimized by thoroughly decontaminating all drill bits, auger flights, and other equipment after installing each well. Decontamination will be conducted at the constructed decontamination pad, and all decontamination water will be pumped to the on-site storage tank for future disposal.

Maintenance of Pollution Prevention Safeguards

After construction of the pollution prevention safeguards discussed above, inspections and repairs will be conducted at regular intervals to ensure continued effectiveness.

Weekly inspections will be conducted to ensure the acceptable performance of the following:

- Silt fencing and hay bales
- Erosion control matting
- Stockpile covers
- Mulch and wood chip soil cover
- Ditches, including ditch linings and rock check dams

Any items found to be in disrepair will be fixed on a weekly basis. Rock check dams will be cleaned of sediment. Erosion matting and wood chip soil cover will be reapplied, if necessary.

The following items will be inspected immediately upon completion of construction, three months after construction, and semi-annually thereafter:

- Downchutes, settling basins, and ditch riprap
- Grass cover
- Planted trees

Any items found to be in disrepair will be fixed as soon as possible. Grass or trees may require reseeding or replanting, depending on the size and number of areas where grass or trees have not been established.

SECTION 3

Waste Management, Transport, and Disposal Plan

This support plan describes how wastes generated during the RA at the Penta Wood Products site will be managed and ultimately treated or disposed.

Several types of wastes are expected to be generated during the RA:

1. Miscellaneous building demolition debris, including:
   - Wood
   - Sheet metal
   - Glass
   - Plastic
   - Piping
2. Contaminated and non-contaminated concrete
3. Contaminated soil
4. Wastewater, from several sources:
   - Equipment decontamination
   - Well development and pump testing
   - Dewatering of excavations following rain events
5. Other miscellaneous wastes, including:
   - Used Personal Protective Equipment
   - Papers
   - Plastic sheeting
   - Used absorbent materials
   - Broken or unused sample containers
   - Tubing

In addition to the wastes listed above, several containers of laboratory chemicals remain on-site from previous investigation activities.

Miscellaneous Building Demolition Debris

Over one hundred tons of building demolition debris will be generated by the demolition subcontractor during the RA. Materials will include wood, sheet metal, glass, plastic, and piping. Prior to demolition activities, the demolition subcontractor will conduct a thorough survey for asbestos, lead-based paint, or any other hazardous materials. Any such

hazardous materials discovered will be properly handled during demolition activities, and will be transported offsite to an approved disposal facility.

If the demolition subcontractor deems it economically feasible, salvageable sheet metal will be recycled. Prior to being transported offsite for recycling, the material will be decontaminated at the on-site decontamination pad (set up by the site preparation/earthwork subcontractor). All other non-recyclable materials resulting from building demolition (not including concrete slabs) will be disposed of at a facility that is approved and licensed by the appropriate state agency.

Waste will be transported in proper containers and vehicles. Transporters will be licensed and will have the appropriate USEPA, DOT, and state permits and identification numbers. Pre-transport requirements such as truck bed liners, placards, tarps, documentation, and signatures will be in place before the trucks leave the area. Vehicles traveling on offsite public roads will remain in non-contaminated areas while onsite or will be decontaminated prior to leaving the site.

Concrete

Approximately 8,500 tons of concrete is present onsite. The majority of this concrete (90%) is a one-foot thick slab of stabilized arsenic contaminated soil (the "biopad"). The remaining 10% consists of 18 different floor slabs of existing and former buildings onsite, ranging in thickness from 6 to 12 inches. All existing concrete will be broken up by the site preparation/earthwork subcontractor and be disposed on-site in the CAMU.

Prior to removal of any concrete, it will be examined for signs of staining. Any visibly stained concrete will be sampled and tested for arsenic concentration. If results of these tests indicate arsenic levels greater than 200 milligrams per liter (mg/L), the concrete will be scarified, pulverized, and stabilized. After this process, the concrete will be sampled and tested to verify that it passes SPLP.

Concrete will be broken into manageable pieces for transport to the CAMU. The site preparation/earthwork subcontractor will use a contractor-approved method to break the slabs into pieces as large as practicable, and no smaller than one foot in any horizontal direction (for floor slabs) or four feet in any horizontal direction (for the biopad). The idea is to minimize the amount of surface area of concrete upon final disposal in the CAMU.

Concrete will be the first material placed in the arsenic portion of the CAMU. The floor slab concrete will be placed first, at the approximate location where the arsenic portion of the CAMU will meet the PCP portion of the CAMU. Biopad concrete will be placed on top of the floor slab concrete. It should be noted that no concrete will be placed less than six feet within the final CAMU cover elevation, to prevent any damage to the CAMU cover from frost action.

Soil

Areas of PCP- and arsenic-contaminated soil and wood chips have been identified across the site and will be excavated and placed in the CAMU during the RA. An estimated 60,000 cubic yards (70,000 tons) of soil and wood chips will be consolidated in the CAMU. PCP- and PCP/arsenic-contaminated soil and wood chips will be placed in the PCP (southwestern) portion, and arsenic-contaminated soil will be placed in the arsenic (northeastern) portion of the CAMU.

Arsenic Soil

The arsenic-contaminated soil will be sampled and tested for arsenic concentration during excavation activities. Soil exhibiting an arsenic concentration in excess of 200 parts per million (ppm) will be stabilized by the site preparation/earthwork subcontractor using a contractor-approved method so that the SPLP arsenic concentration is less than 5 mg/L and the 28-day compressive strength is greater than 50 pounds per square inch (psi). The stabilized arsenic soil will be placed on top of the biopad concrete in the arsenic portion of the CAMU, with arsenic soil not requiring stabilization (between 1.5 ppm and 200 ppm) being placed on top of the stabilized soil.

PCP Soil

PCP- and PCP/arsenic-contaminated soil will be mixed with PCP-contaminated and clean wood chips to facilitate better aerobic degradation prior to placement in the PCP portion of the CAMU.

Final CAMU Cover

After all materials have been placed in the CAMU, a final cover will be placed. This will consist of a 6-inch layer of soil obtained on-site, with an additional 6 inches of topsoil. The on-site soil layer will be a high permeability sandy soil over the PCP portion and a lower-permeability soil over the arsenic portion of the CAMU. The topsoil will be seeded and monitored to verify that grass is established.

Wastewater

Wastewater will be generated in three ways during the RA: (1) wastewater from decontamination of equipment; (2) groundwater obtained through well development or well purging; and (3) water in excavations following rain events.

Equipment Decontamination Water

A decontamination station will be constructed at the site to decontaminate vehicles and equipment. The equipment will be washed with a mobile steam cleaner to remove any contaminants adhering to the machinery. The decontamination station will be constructed to collect decontamination and rinse solutions by a bermed area lined with a 60-mil plastic liner and covered with gravel. The berms will serve as a catchment for wastewater and a sump will

be constructed in one corner to serve as a low point. Overspray from the decontamination process will be confined by the decontamination station. Wastewater from decontamination activities will be containerized on-site in 1,000-gallon poly storage tanks. The water will be treated in the on-site groundwater treatment system after it has been constructed.

Well Purging and Development Water

Groundwater requiring disposal will be generated through the purging and development of seven newly-installed groundwater extraction wells and one new groundwater monitoring well. This water will be containerized on-site in 1,000-gallon poly storage tanks, and will be treated in the on-site groundwater treatment system when it becomes operational.

Rainwater in Excavations

Collection of rainwater in excavations is not anticipated to occur at the Penta Wood Products site for two main reasons. The surficial soils are primarily sand, and thus are not conducive to ponding of water for extended periods of time. Also, the contaminated areas to be excavated are anticipated to be mostly shallow excavations with few low spots other than one edge. However, should ponding of water occur, the site preparation/earthwork subcontractor will pump the water out of the excavation and store it on-site in 1,000 gallon poly tanks. The water will be treated following construction of the on-site groundwater treatment system.

Miscellaneous Wastes

Solid waste will be generated during the RA consisting of used personnel protective equipment (PPE) (gloves, booties), papers, plastic sheeting, used absorbent materials, Teflon® tubing, broken or unused sample containers, and other solids. These wastes will be grossly decontaminated (if possible and necessary), containerized, tested as appropriate, and disposed offsite as necessary.

Field Investigation Chemicals

Several containers of chemicals that remain from previous field activities are present in a storage room in the office building at the Penta Wood Products site. The majority of these chemicals are in their original container, and some containers are still factory sealed. Some of the chemicals present include acetone, methane, cement, hydrated lime, methylene chloride, nitric acid, propane, sodium sulfate, and sulfuric acid. One container with approximately 40 gallons of an unknown liquid is labeled as LAB WASTE, and 1 gallon of another liquid is labeled as COD WASTE.

The demolition subcontractor will be responsible for disposing of all these chemicals in accordance with all applicable local, state, and federal regulations. If hazardous wastes or Toxic Substance Control Act (TSCA) wastes are encountered, the subcontractor will dispose of these substances at a treatment/disposal facility approved by the USEPA.

SECTION 4

Contingency Plan

Emergency Response Plan

Pre-Emergency Planning

The Site Safety Coordinator (SSC) will perform the applicable pre-emergency planning tasks before starting field activities:

- Locate nearest telephone to the site and inspect onsite communications
- Locate chemical, safety, radiological, and biological hazards
- Confirm and post emergency telephone numbers and map of route to hospital
- Post site map marked with locations of emergency equipment and supplies
- Review emergency response plan for applicability to any changes in site conditions, alterations to onsite operations, or personnel availability
- Designate one vehicle as the emergency vehicle. Place hospital directions and map inside. Keep keys accessible during field activities
- Inventory and check site emergency equipment and supplies
- Review emergency procedures for personnel injury, exposures, fires, explosions, and chemical and vapor releases with field personnel
- Locate onsite emergency equipment and supplies of clean water
- Verify local emergency contacts, hospital routes, evacuation routes, and assembly points
- Drive route to hospital
- Review names of onsite personnel trained in first aid and CPR
- Review notification procedures for contacting CH2M HILL's medical consultant and team member's occupational physicians
- Brief new workers on the emergency response plan

Emergency Equipment and Supplies

The SSC will mark the locations of the following emergency equipment on the site map and post the site map in the support zone:

- 20-lb ABC fire extinguisher

- Industrial first aid kit
- Facility emergency equipment
- Additional emergency equipment
- Nearest phone

Emergency Medical Treatment

The SSC will assume charge during a medical emergency until the ambulance arrives or the injured person is admitted to the emergency room. The following procedure will be implemented:

- Prevent further injury
- Initiate first aid and CPR
- Call the ambulance and hospital
- Determine if decontamination will make injury worse
- Make certain that injured person is accompanied to emergency room
- Notify the SM of the injury
- Notify the CH2M HILL District or Regional Health and Safety Manager
- Notify the injured person's human resources department
- Prepare an incident report to be submitted to the CH2M HILL Corporate Director of Health and Safety and the CH2M HILL Corporate Human Resources Department within 48 hours

Evacuation

- Evacuation routes will be designated by the SSC before beginning work
- Onsite and offsite assembly points will be designated before beginning work
- An air horn will be used for the emergency signal
- Personnel will exit the work area and assemble at the onsite assembly point upon hearing the emergency signal for evacuation
- The SSC and a "buddy" will remain onsite after the site has been evacuated (if possible) to assist local responders and advise them of the nature and location of the incident
- The SSC will account for all personnel in the onsite assembly zone
- A person designated by the SSC (before work) will account for personnel at the offsite assembly area
- The SSC is to write up the incident as soon as possible after it occurs, and submit a report to the CH2M HILL Corporate Director of Health and Safety

Emergency contacts and emergency notification procedures are presented on the attached forms. These forms will be posted in the field trailer for quick and easy access in the event of an emergency.

Local Notification and Involvement

An Emergency Response Meeting will be held at the site before the initiation of RA activities. The meeting attendees should include:

- Construction Manager
- CH2M HILL Site Safety Officer
- CH2M HILL Site Safety Coordinator
- Subcontractor Site Superintendent
- Subcontractor Safety Officer
- Fire Department Representative
- Police Department Representative
- Hospital Representative
- Emergency Response Representative

The meeting agenda will include the following:

- Description of work
- Description of site contamination
- Restriction to site access
- Forced evacuation assembly points
- Contact persons

First Aid Medical Information

One person who is trained in first aid and CPR will be onsite during work hours. The SSCs are trained in first aid and CPR and will be responsible for first aid during emergencies. The SSCs will review the names of trained personnel and note them at the health and safety briefings and will designate a trained individual for those occasions when he or she is not onsite.

In the event of an emergency, the information noted on the Emergency Response Numbers form will be provided to the emergency response provider.

Route to Hospital

Written/verbal directions to the nearest hospital, Burnett Medical Center, are as follows.

1. Leave the site and turn right (head west) on Highway Daniels 70.
2. After 3.5 miles, Daniels 70 joins State Highway 70.

3. After 9.7 miles (in Grantsburg), turn right on Highway 48/87 and go 1 block to St. George Avenue.

4. Turn left on St. George Avenue (long block).

5. Hospital will be on the left.

Total distance: 13.5 miles

Travel time: 15 minutes

Emergency Numbers

Emergency Service	Address	Telephone
Ambulance	Frederic Ambulance Service Frederic, WI 54837	911 715-327-4430
Hospital	Burnett Medical Center 257 W St. George Ave Grantsburg, WI 54840-7827	715-463-5353
County Sheriff	7410 County Road K # 122 Siren, WI 54872-9067	911 715-349-2121
Fire Department	Siren Fire Hall 7732 State Road 70 Siren, WI 54872-8223	911 517-681-3111
Poison Control Center		800-343-2722
Gas Company	Wisconsin Gas Company	800-242-4035
Electric Company	Northwestern Wisconsin Electric 104 S Pine St Grantsburg, WI 54840-7926	715-463-5371
Water Department	Siren Water Utility 7660 Cape St Siren, WI 54872-8318	715-349-2493 After hours: 715-349-2416
Chemtree		800-424-9300
National Spill Response Center		800-424-8802
USEPA Emergency Response Team		908-321-6660

When calling 911 be prepared to answer the following questions:

Who: Penta Wood Products Site
Where: 8682 Daniels 70 (Former State Road 70)
Siren, WI 54782

How many are injured?

Describe the type of injuries/illnesses and first aid being administered.

- Time, location, and a description of the area involved
- Receiving stream or waters
- Cause of the incident, equipment, and personnel involved
- Injuries or property damage
- Containment procedures initiated
- Summary of contact with government agencies, contracting officer, engineer, or owner
- Description of the cleanup procedures employed or to be employed including the disposal location of contaminated material

Attachments

N

0 100 200 300
SCALE IN FEET

APPROXIMATE PROPERTY BOUNDARY

SOIL UNDER BIOPAD T.O. BE EXCAVATED AT LEAST 4" DEEP

LEGEND

- APPROXIMATE CAMU BOUNDARY
- APPROXIMATE AREA OF PCP CONTAMINATED WOOD CHIPS TO BE EXCAVATED PRIOR TO CAMU ACTIVITIES
- 2 — EXCAVATION AREA NUMBER AS TABULATED IN THE SPECIFICATIONS (SECTION 02205-EXCAVATION)
- ① — DEPTH OF EXCAVATION IN FEET
- ARSENIC-CONTAMINATED MATERIAL TO BE CONSOLIDATED BELOW COVER
- ARSENIC-CONTAMINATED MATERIAL TO BE SOLIDIFIED
- PCP-CONTAMINATED MATERIAL TO BE CONSOLIDATED BELOW COVER

DSGN M.D.GAVIN DR J.M.ZAFFKE CHK D.G.ANDERSON APVD P.R.SMITH	NO.	DATE	REVISION	BY	APVD	VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. 0 — 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CH2MHILL

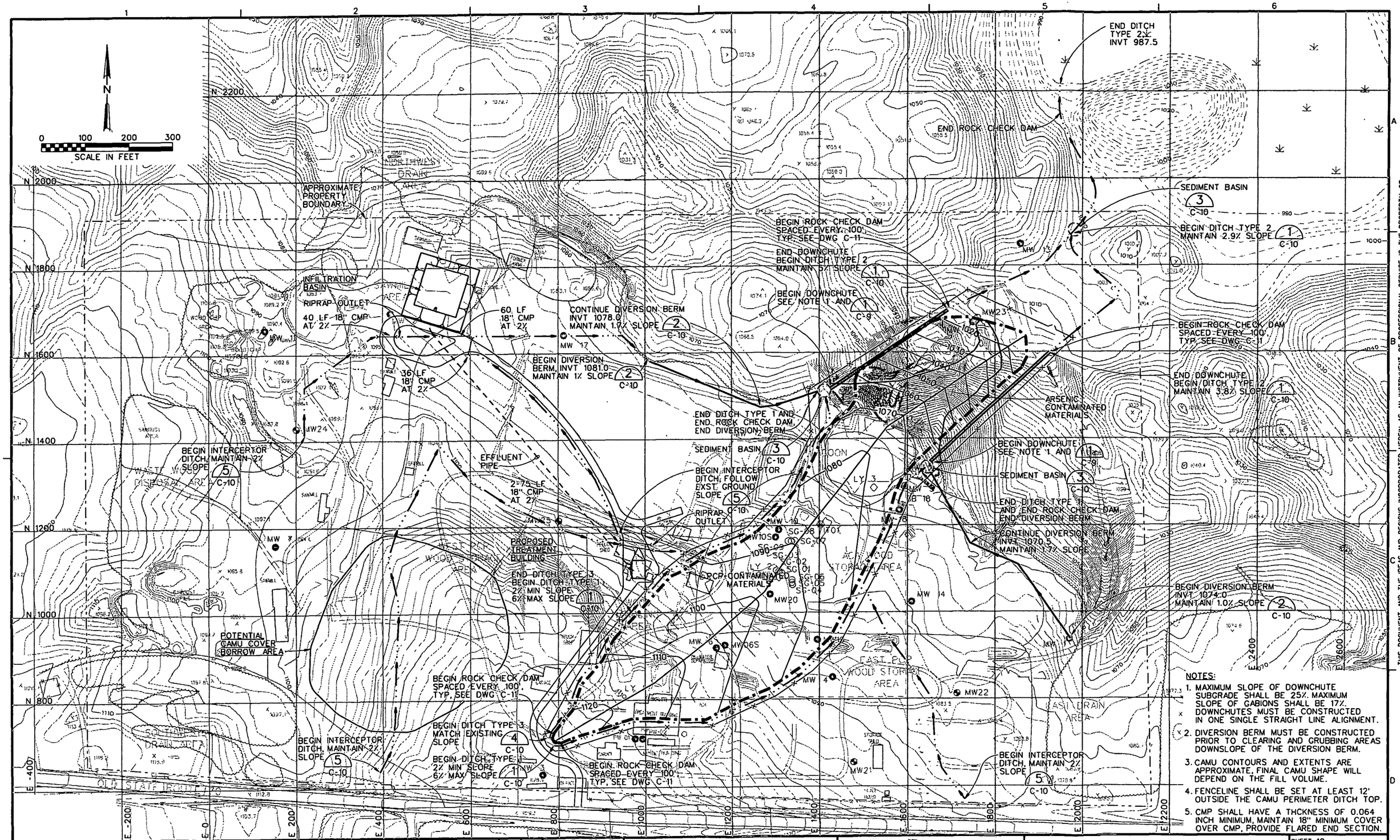
PENTA WOOD PRODUCTS SITE
REMEDIAL ACTION
TOWN OF DANIELS, WISCONSIN
SITE PREPARATION/EARTHWORK

SITEWORK

SOIL EXCAVATION AREAS

SHEET	4
DWG	C-2
DATE	OCTOBER 1999
PROJ	151745.PD

FILENAME: pwec02.dlv PLOT DATE: 15-OCT-1999 MODIFY TIME: 14:00:03



NOTES:

1. MAXIMUM SLOPE OF DOWNCHUTE SUBGRADE SHALL BE 25%. MAXIMUM SLOPE OF GABIONS SHALL BE 17%. DOWNCHUTES MUST BE CONSTRUCTED IN ONE SINGLE STRAIGHT LINE ALIGNMENT.
2. DIVERSION BERM MUST BE CONSTRUCTED PRIOR TO CLEARING AND GRUBBING AREAS DOWNSLOPE OF THE DIVERSION BERM.
3. CAMU CONTOURS AND EXTENTS ARE APPROXIMATE, FINAL CAMU SHAPE WILL DEPEND ON THE FILL VOLUME.
4. FENCELINE SHALL BE SET AT LEAST 12' OUTSIDE THE CAMU PERIMETER DITCH TOP.
5. CMP SHALL HAVE A THCKNESS OF 0.064 INCH MINIMUM, MAINTAIN 18" MINIMUM COVER OVER CMP, PROVIDE FLARED END SECTION.

DSGN M.D.MITTAG					VERIFY SCALE
DR M.A.REICHERT					BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
CHK D.G.ANDERSON					
APVD P.R.SMITH	NO.	DATE	REVISION	BY	APVD

CH2MHILL

PENTA WOOD PRODUCTS SITE
REMEDIAL ACTION
TOWN OF DANIELS, WISCONSIN
SITE PREPARATION/EARTHWORK

SITEWORK

SURFACE WATER CONTROL PLAN

SHEET	10
DWG	C-8
DATE	OCTOBER 1999
PROJ	151745.PD

FILENAME: pwec08.dlv PLOT DATE: 15-OCT-1999 MODIFY TIME: 14:36:43