Received 10-15-12

Focused NAPL and Sediment Removal Action Former Marinette MGP Site

Marinette, Wisconsin

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9/19/2012

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TRANSMITTAL

To:	**Wisconsin Department of Natural Resources**	**Date:**	**October 10, 2012**
	Remediation & Redevelopment Program	**Project #:**	**2098**
	2984 Shawano Avenue	**From:**	**Eric Tlachac**
	Green Bay WI 54313-6727		
Attn:	**Kristin DuFresne**	**Direct No:**	**262-522-1214**
Cc:	**Margaret Gieniewski, USEPA (via e-mail, w/o attachments)** **Naren Prasad, Integrys (via e-mail, w/o attachments)**		
Re:	**Wisconsin Public Service Corporation Marinette MGP Sediment Removal Action**		

For Your Files ____ **As Requested** X **For Review** ____ **Approve & Return** ____

Copies:	**Description**
1	Plans and Specifications, Focused NAPL & Sediment Removal Action, Former Marinette MGP Site, City of Marinette, Marinette County, WI, Revision 1, September 7, 2012, Natural Resource Technology, Inc.
1	Preliminary Work Plan, Focused NAPL & Sediment Removal Action, Former Marinette MGP Site, Marinette, Wisconsin, September 19, 2012, Envirocon, Inc.

Message:

Kristin,

As requested via e-mail earlier this week, please find enclosed hard copies of the documents referenced above.

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1.0 PRELIMINARY WORK PLAN

Preliminary Remedial Action Work Plan
Focused NAPL and Sediment Removal Action
Former Marinette MGP Site

SUMMARY

Envirocon, Inc. (EI) presents this Preliminary Remedial Action Work Plan (RAWP) as a part of our proposal. The Preliminary RAWP encompasses the work elements that will be included in the detailed Final RAWP, which will be prepared within 4 days of Notice to Proceed.

The proposed Scope of Work generally comprises dredging sediment contaminated with NAPL and PAHs. Items required to complete the Work generally include, but are not limited to: temporary sheet pile cofferdam installation and removal, dredging, sediment stabilization and transportation to the approved landfill for disposal, backfill placement, contact water management, odor control, sanitary sewer/storm water management, and site restoration. Access has been established to the City of Marinette's Boom Landing Boat Ramp, located immediately adjacent to the largest dredge area, to serve as an upland support area for the removal action. Use of this property shall be in accordance with the associated access agreement.

Due to the presence and pervasive nature of wood debris in the sediment, dredging will be accomplished by mechanical methods. Sediment dredging and backfill activities will be performed with the least amount of environmental impact as practicable. Sediments will likely become suspended during remedial work and will require one or more best management practices (BMP) to control sediment transport and protect aquatic habitat. The area adjacent to the boat launch, impacted with NAPL, requires installation of a temporary cofferdam as a BMP. The area adjacent to Nestegg Marine (adjacent property to the west) requires use of silt curtain.

Two sewer outfalls, a 30-inch diameter Storm sewer and a 48-inch diameter sanitary effluent discharge pipe, discharge into the river in the dredge area just west of the boat landing. These sewer outfalls will be bypassed around the area contained by the temporary cofferdam until the cofferdam is removed and a new outfall structure is constructed as part of this project. The new outfall structure includes a section of buried sheet pile cutoff wall extending to the boat ramp.

Existing shoreline structures in the dredge areas will be protected during dredging. This will be accomplished through deliberate sequencing of dredging within a specified distance from the structures. Excavated contaminated materials will be disposed off-site at Waste Management's Menominee Landfill in Menominee, Michigan. Soil and sediment will be dewatered and stabilized, as necessary, prior to being loaded into trucks and transported to the landfill.

Dredging activities will be sequenced and carefully monitored to contain sediment materials during dewatering, staging, and transport. Contact water generated during dredging/dewatering

activities will be collected, treated and monitored in accordance with substantive Wisconsin Pollution Discharge Elimination System (WPDES) requirements prior to discharge into the Menominee River.

Following dredging, a 6-inch sand layer will be placed if necessary over dredged areas in accordance with the requirements of the CQAPP (Appendix F). In addition, the dredge areas will be partially backfilled (to support shorelines and shoreline structures). Sand and backfill will be imported by EI. Following backfill activities, a new outfall structure and sheet pile wall will be constructed.

The Final RAWP will include the following individual work plans:

- Construction Quality Control Plan;
- Site Preparation and Management Plan;
- MGP Contact Water Management Plan; and
- Mechanical Dredging and Backfill Plan.

The Preliminary RAWP will provide a means and methods summary of the technical approach for the most important work elements. The complete work scope that will be detailed in the Final RAWP is referenced. To meet the project defined objectives of Substantial Completion by December 31, 2012 (i.e., completion of dredging, backfill and removal of temporary cofferdam), time is of the essence to complete the project and meet the Substantial Completion date.

1.0 PROPOSED EQUIPMENT

The proposed equipment together with proposed manpower projected per work activity is presented as follows:

No.	Description of Work Task/ Bid Item	Management Personnel	Construction Workers	Subcontractors	Equipment
1	Mobilization	4	0	1	♦ Subcontractors ♦ Over the Road Trucks and Trailers Provided by Subcontractor
2	Site Preparation	4	7	2	♦ Tracked Skid Steer 100 HP ♦ Loader 5 CY ♦ Excavator 80,000 lbs. with Thumb ♦ Steam Cleaner ♦ McMullen & Pitz – Marine Contractor ♦ 20-ft. by 10-ft. Shallow Draft Aluminum Push Boat – 225 HP; ♦ 18-ft. Jon Boat w/ 55 HP Outboard Motor; ♦ Manitowoc 3000W (65 ton) lattice boom crawler crane; ♦ Caterpillar 350L Excavator; ♦ John Deer TC54H Wheel Loader/Material Handler ♦ 1 set of 34-ft. hardwood reinforced "running sticks" to bridge equipment on/off barges
3	Clearing & Grubbing	4	3	1	♦ Excavator 80,000 lbs. with Thumb ♦ Loader 5 CY ♦ Wood Chipper
4	Storm & Sanitary Sewer Bypass System	4	2	2	♦ Storm Sewer By Pass Equipment Provided by Rain for Rent ♦ Primary Pump - 12"x8" DV-200e Sound ♦ Attenuated Primary Pump with Floats ♦ Back-up Pump - 12"x8" DV-200e Sound ♦ Attenuated Primary Pump with Floats ♦ Hoses, Valves & Fittings as Needed

No.	Description of Work Task/ Bid Item	Management Personnel	Construction Workers	Subcontractors	Equipment
					♦ Remote Notification Alarm Telemetry ♦ Sanitary Sewer By pass Equipment provided by Rain for Rent ♦ Primary Pump - 12"x8" DV-200e Sound ♦ Attenuated Primary Pump with Floats ♦ Back-up Pump - 12"x8" DV-200e Sound ♦ Attenuated Primary Pump with Floats ♦ 700 Linear Feet of 18" Diameter HDPE Pipe ♦ 18" x 20' Road Crossing ♦ Hoses, Valves & Fittings as Needed ♦ Remote Notification Alarm Telemetry
5	Temporary Cofferdam	4	4	1	♦ McMullen & Pitz – Marine Contractor ♦ 20-ft. by 10-ft. Shallow Draft Aluminum Push Boat – 225 HP; ♦ 18-ft. Jon Boat w/ 55 HP Outboard Motor; ♦ 40-ft. by 70-ft. by 6-ft. six-tank "Manitowoc" steel sectional barge with spuds ♦ Manitowoc 3000W (65 ton) lattice boom crawler crane; ♦ Caterpillar 350L Excavator; ♦ 48-ft. by 40-ft. by 3-ft. four-tank sectional steel barge with spuds (material barge) ♦ MKT V-17 Vibratory Hammer/Extractor with Diesel Power Pack ♦ HVR 100 Excavator Mounted Vibratory Hammer/Extractor ♦ John Deer TC54H Wheel Loader/Material Handler ♦ 3CY Excavator Bucket ♦ 1 set of 34-ft. hardwood reinforced "running sticks" to bridge equipment on/off barges

No.	Description of Work Task/ Bid Item	Management Personnel	Construction Workers	Subcontractors	Equipment
5a	Pre-excavate and Remove Debris from Cofferdam	4	8	4	♦ Excavator 80,000 lbs. with Thumb ♦ Material Handler ♦ Loader 5 CY ♦ Subcontractor – McMullen & Pitz ♦ 20-ft. by 10-ft. Shallow Draft Aluminum Push Boat – 225 HP; ♦ 18-ft. Jon Boat w/ 55 HP Outboard Motor; ♦ 40-ft. by 70-ft. by 6-ft. six-tank "Manitowoc" steel sectional barge with spuds ♦ Manitowoc 3000W (65 ton) lattice boom crawler crane; ♦ Caterpillar 350L Excavator; ♦ 48-ft. by 40-ft. by 3-ft. four-tank sectional steel barge with spuds (material barge)
6	Contact Water Management	4	2	1	♦ Subcontractor – Baker Tank ♦ 20,000 Gallon Wier Tank ♦ 3 Pod Sand Filter ♦ Dual Bag Filter ♦ Oil Water Separator ♦ 2 Activated Carbon Cells ♦ 20,000 Gallon Effluent Storage Tank ♦ 3" DD Pump ♦ 150 CFM Air Compressor ♦ Pre-Filter Bag
7a	Sequenced Dredging and Backfilling Along Shoreline Structures	4	4		♦ Excavator 100,000 lbs w/Environmental Bucket & GPS Grade Control ♦ 40' x 60'' x 5' Working Barge ♦ Two 40' x 30' x 5' Transport Barges ♦ Push Boat ♦ Material Handler ♦ 42" Wide x 100' Long Jump Conveyor

No.	Description of Work Task/ Bid Item	Management Personnel	Construction Workers	Subcontractors	Equipment
					♦ Loader 5 CY ♦ Two Trench Boxes
8	Management of Debris	4	3		♦ Excavator 80,000 lbs. with Thumb ♦ Tracked Skid Steer 100 HP
9	Sediment Stabilization	4	3	1	♦ Loader 5 CY ♦ Tracked Skid Steer 100 HP
10	VOC & Odor Control	4	2		♦ Rusmar Foam Application Machine ♦ Four Odor Control Fans
11	Loading & Transporting Sediment to Menominee Landfill	4	3	1	♦ Excavator 80,000 lbs. with Thumb ♦ Tracked Skid Steer 100 HP ♦ Subcontractor

2.0 SITE PREPARATION AND SITE MANAGEMENT PLAN

Site preparation activities and site infrastructure operations include the following:

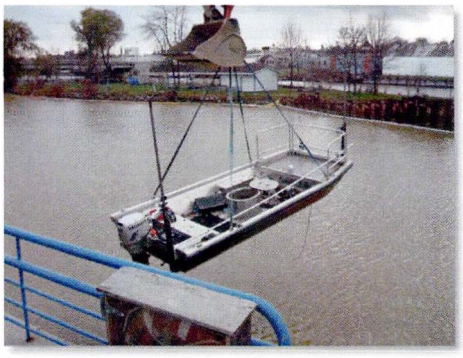
- Equipment Mobilization;
- Utility Locates;
- Erosion Controls;
- Clear and Grub;
- Office Trailers;
- Temporary Removal of Boat Docks;

- Stabilization Pad Construction;
- Water Treatment System Install;
- Storm/WWTP Effluent Line Bypass Install;
- Mobilize Marine Equipment and Pre clear;
- Install Temporary Sheet Pile Cofferdam;
- Operate Storm/Sanitary Bypass System;
- Operate Water Treatment System;
- Operate Stabilization Pad;
- Mechanically Dredge Sediments
- Transport Stabilized Sediments; and
- Outfall Construction.

2.1 Equipment Mobilization, Deployment and Staging

EI will mobilize according to our proposed schedule and will consolidate mobilization activities to expedite schedule where possible. All necessary personnel, equipment, supplies, job trailers, temporary utilities, and incidentals to the work will be provided. Equipment will be mobilized and deployed for upland work activities, work in-stream and adjacent to the shoreline.

Equipment operating in the upland areas will be deployed in a conventional manner. The marine equipment planned for in-stream operations for both EI and our Sheetpile installation subcontractor, McMullen and Pitz (M&P), will be deployed using a crane which will be located on the river bank adjacent to the boat ramp. Tanks will be 'flown' into the water and the excavator will be loaded onto the barge at the boat ramp. This will require access to the middle lane of the boat ramp for this activity.



The in- and near-stream equipment will be staged in a manner that the equipment will be secured safely during off-work hours. Upland equipment will be staged for operations with access provided by using a haul route as indicated on Figure 1.

Equipment that will be mobilized and demobilized includes the following (or as equivalent):

Envirocon Equipment

- Material Handler
- PC 490 Dredge Excavator
- GPS for Excavator
- Bucket & Thumb

- Loader
- Excavator w/ Thumb
- Skid Steer
- Skid Steer Broom
- Conveyor
- Pick Up Trucks
- Mechanic Truck
- GPS Base
- GPS Rover
- Lube Truck
- Rusmar Foam Unit
- Ecosorb Odor Misters
- Steel Containers
- 20-ft. by 10-ft. Shallow Draft Aluminum Push Boat – 250 HP;
- Pontoon Boat
- Working Barge with spuds and winch
- Transport Barges

Specialized Equipment Set-up

- Dredge Excavator Bio Oil and Auxiliary Hydraulic Lines
- Modify Owned Bucket & Thumb for Dredge Excavator
- Install & Calibrate GPS on Dredge Excavator
- Install Scale on Loader

Water Treatment and Sewer By Pass Systems

- Baker WT System
- Storm/Sanitary ByPass Systems

M&P Equipment

Listed in Section 2.4.

2.2 Site Security Measures

EI will install a temporary chain link security fence upon mobilization at the west side of the site. The layout of the temporary fencing is indicated on Figure 1. The fencing encloses the upland operational and staging areas including the construction entrance, employee parking area, site

trailers, decontamination pad, material load out area, material stockpiling area, stabilization area and water treatment plant. The temporary fence will be removed in December. Depending upon the degree of restoration completed at that time, if disturbed areas of the site remain which require protection for safety, they will be secured by temporary fence.

Truck traffic signage will be provided for public safety and notification outside work areas. The site is manned during operational hours (7 am to 7 pm Monday through Saturday), where deliveries and visitors will sign in at the office trailer. During off-work hours, the gates will be locked and the site secured.

2.3 Site Layout Plan

Figure 1, Site Plan illustrates the following site infrastructure areas which will be installed or constructed:

- Vehicle Access Gate;
- Site Haul Route;
- Job trailers;
- Worker parking;
- Site Haul Route;
- Truck loading area;
- Vehicle Tracking Pad;
- Piling delivery and Staging Areas;
- Backfill and rip rap stockpile areas;
- Decontamination and Dry Truck Decontamination area;
- MGP contact water treatment area;
- Storm and WWTP Effluent Line bypass equipment;
- Sediment off-loading and conveyance to Stabilization Pad; and
- Sediment stabilization area with water collection sump.

Erosion and sedimentation controls will be installed initially. EI estimates that we will install approximately 1,000-LF of silt fence for the project total. A tracked skid steer with trencher attachment will be used to install the silt fence. Silt fence will be installed around material stockpiles to be maintained that are outside of the stabilization pad, including rip rap stockpiles. Approximately 9,000-SF of both CETCO Ultrashield non-woven geotextile and poly sheeting will be placed for sediment migration control and to secure the upland off-loading area from cross-contamination.

The far majority of the site haul route utilizes existing asphalt. No additional haul road construction will be conducted where it is located on grassed areas. The job trailers and worker parking will be located at the western side of the site, as well as MGP contact water treatment area location. Equipment lay down, piling staging and backfill/rip rap stockpiling will occur on October 10, 2012. The sediment stabilization area is located just east of the MGP contact water treatment area. The vehicle tracking pad is located north of the vehicle access gate as recommended by the Engineer and will be built on top of the existing asphalt. The river access area, including the locations where the dredged sediments are off-loaded and conveyed to the stabilization pad during dredging operations, are indicated on Figure 1. The stabilization pad is discussed in Section 2.5.

The dry decontamination pad is approximately 50-ft. by 20-ft. located on asphalt with poly placed on it. The decontamination pad will be used for dry decontamination of equipment before it egresses the Exclusion Zone, and is located on Figure 1. If wet decontamination procedures are necessary based on prevailing weather conditions, or for equipment leaving the site, it will be conducted within the stabilization pad, where decontamination water will be safely contained and collected for subsequent treatment.

The Vehicle Tracking Pad will be prepared and located as indicated on Figure 1. The pad will be constructed on top of existing asphalt with 3-in. clear stone placed and contained on two sides by Jersey Barriers. The stone will be maintained by the Jersey Barriers and by using a skid steer to maintain in place on open ends of the pad.

As part of site preparation, EI will also:

- Clear and grub approximately 4,300-SF on northwest corner of site;
- Temporarily remove boat docks, steel piles will remain in-place;
- Temporarily remove and stockpile rip rap;
- Pre-excavate along cofferdam alignment;
- Set up Water Treatment System (WTS) and Storm and WWTP Effluent Line systems; and
- Install survey control and complete initial survey.

EI will clear and grub approximately 4,300-SF of primarily bushy vegetation on the northwest portion of the site. Rip rap will be removed using an excavator and will be placed for staging. EI estimates rip rap will be removed over an area approximately 370-ft. by 10-ft, resulting in approximately 200 tons of rip rap to be stockpiled for replacement during restoration activities.

Due to pervasive wood debris in the sediment, pre-removal of debris is expected to be required in advance of driving the sheetpile cofferdam. This includes removal from the river and management/handling in roll off boxes or other containers on shore provided by Integrys. Our cofferdam installation subcontractor, M&P, will remove debris from the cofferdam alignment and will transport to EI's off-loading Material Handler. Here the Material Handler will be used to off-load debris from the barge and load into roll-off boxes. EI anticipates approximately three roll-boxes may be filled during cofferdam pre-excavation operations.

EI will complete Construction Quality Control (CQC) Report Forms, including Daily Activity Log, Daily CQC Report Form, and Stormwater Management Plan Field Investigation Reports.

2.4 Temporary Sheetpile Cofferdam Installation, Maintenance and Removal

The area adjacent to the boat launch which is impacted with NAPL and PAH's requires the installation of a temporary cofferdam as a BMP for sediment dredging operations. The area adjacent to Nestegg Marine to the west will require the use of turbidity curtains as a BMP during sediment dredging operations.

EI's proposed subcontractor, M&P, will perform the temporary sheet pile cofferdam installation and removal, and construct the new outfall structure. M&P equipment will be deployed using a crane in the boat launch area. The following represents a summary of the major activities that will be completed as a part of the temporary cofferdam construction and removal work scope.

The following equipment will be mobilized to the jobsite:

- 18-ft. Jon Boat w/ 55HP tiller;
- 21-ft. V-hull w/ twin 55HP outboards;
- 40-ft. by 70-ft. by 6-ft. six-tank "Manitowoc" steel sectional barge with spuds;
- Manitowoc 3000W (65 ton) lattice boom crawler crane;
- Caterpillar 350L Excavator;
- 48-ft. by 40-ft. by 3-ft. four-tank sectional steel barge with spuds (material barge);
- MKT V-17 Vibratory Hammer/Extractor with Diesel Power Pack;
- HVR 100 Excavator Mounted Vibratory Hammer/Extractor;
- John Deer TC54H Wheel Loader/Material Handler;
- 3CY Excavator Bucket;

- 1 set of 34-ft. hardwood reinforced "running sticks" to bridge equipment on/off barges;
- Miscellaneous small tools: welding machines, slings, shackles, hand tools, etc.; and
- All equipment will be fitted out and loaded at the jobsite (Boom Landing). All equipment has been sized for the intended use(s).

Layout the Cofferdam:

- Locate work points for each cofferdam leg;
- Inspect the "drive lines" and remove any obstructions that would impede on driving the sheet piles. Materials will be removed with the excavator on the 40-ft. by 70-ft. sectional barge and taken to shore where they will be offloaded by EI and treated as impacted material.

Unload and Stage Steel Sheet Piling:

- Unload steel sheet piling off flatbed trailers with material handler and stack near shoreline, but no closer than 15-ft. from existing dock wall structures.
- Load sheet piles with the crawler crane onto 40-ft. by 48-ft. material sectional barge; this barge will support 20% of the sheet piling for the project (5 loads required).
- Transport the loaded material barge with the push boat to the excavator/pile driver location.
- The excavator/pile driver will take the sheet piling off the material barge as needed.

Set and Drive Steel Sheet Pile Cofferdam:

- Begin cofferdam installation at the east wall segment to allow uncontained dredging activities to occur near "Nestegg Marine" while the cofferdam is being constructed. Proceed installing the cofferdam upstream to the tie-in location at the west end of the project.
- Sheet Pile Installation Process:
    - Use the 40-ft. by 70-ft. sectional spud barge with the excavator/pile driver (CAT 350L w/ HVR 100 Vibratory Hammer) to set the sheet piling in position.
    - The 40-ft. by 70-ft. sectional spud barge will also serve as a guide to keep the cofferdam segments as straight as possible.
    - The excavator/pile driver will "mate" the steel sheet piling to the previous sheet and drive it vertically to the plan elevation.
    - The 40-ft. by 48-ft. sectional barge will serve as a material barge to transport the sheet piling from the shore to the pile driving barge.
- Install navigational hazard buoys and lights on the upstream and downstream ends of the project to provide proper warning to boaters. Inform the USCG and WIDNR of the navigational hazard so the proper "notice to mariners" can be made.
- Stage materials and equipment on the job site for removal as directed.

- Monitor debris build-up on the outside of cofferdam and remove as needed to eliminate unnecessary loading on the cofferdam structure.

Extract and Remove Temporary Cofferdam:

- The cofferdam removal will begin with the eastern wall segment and continue upstream to the western tie-in point near "Nestegg Marine".
- Use the 40-ft. by 70-ft. sectional spud barge with the excavator/pile driver (CAT 350L w/ HVR 100 Vibratory Hammer) to extract the sheet piling and stack it on the material sectional barge.
- Transport the contaminated sheet piling on the material sectional barge to the staging area at "Boom Landing". The sheet piling will be offloaded by McMullen & Pitz personnel and decontaminated by EI personnel. A steam cleaner will be used at the stabilization pad. Decontamination liquid will be collected and pumped to the water treatment system... The liquid disposition will be managed by EI. If solids are recovered which are not disposed with the liquid waste stream, the solids will be stabilized, managed and transported to Waste Management Menominee landfill for disposal.
- After sheet piling is decontaminated, it will be loaded onto flatbed trailers with the crane and removed from the jobsite.

Demobilize Equipment:

- Ensure all work has been completed and accepted;
- Ensure all materials have been decontaminated and removed from the jobsite;
- Ensure any equipment that has been contaminated is properly cleaned; and
- Breakdown and load out all equipment and remove from jobsite.

2.5 Dewatering/Stabilization Pad Design and Materials of Construction

The stabilization pad will be constructed for temporary staging, decanting, stabilization and load-out of dredged sediments. The staging pad sizing as indicated on Figure 1 will correspond to approximately 12,800 SF which includes 375-SF for the Collection Sump and Geo-bag filter. The pad will drain to a sump for decant and contact water collection, management and treatment.

The stabilization pad sizing allows necessary staging, drying and stabilization residence duration on the stabilization pad before sediments are confirmed and loaded into haul trucks. The stabilization pad sizing will allow a total staging duration of approximately 4 days for sediments on the stabilization pad

using our estimated dredge production rate of 300-CY dredge spoils per day. The anticipated sediment storage volume on the stabilization pad is expected to correspond to approximately 1,200-CY at any one time.

The pad will be constructed with the following:

- CETCO 16 oz. Non-Woven Fabric;
- 30 Mil LLDPE Rufco Panel;
- Cetco 16 oz. Non-Woven Fabric;
- 4-in. of Dense Grade Aggregate Road Base;
- 3.75" Thick Compacted Asphalt;
- Asphalt Access Ramp;
- Concrete Barriers;
- Pre-fabricated Sump;
- 1 HP Submersible Pump; and
- Tarps.

Generally, 16 oz fabric will be placed on the existing asphalt, 30-mil liner panel will be subsequently placed, and then another layer of 16 oz. fabric, followed by a 4-in. layer of Aggregate Road Base, and topped with a 3.75-in. thick layer of compacted asphalt. Associated access ramps will be installed. Concrete jersey barriers will also be placed. The sump will be installed with a submersible pump to collect decant and precipitation water and pump to the WTS for treatment.

2.6 Measures to Mitigate Dust, Mud, Noise and Odor Generation

EI will take extra precautions and will pro-actively manage the site conditions to mitigate potential cross contamination due to the prevalence of muddy or dusty site conditions. Muddy site conditions will be managed which will minimize the potential for mud to migrate and cross-contaminate into clean areas.

Further, a decontamination program will ensure mud is removed from site equipment tires and tracks. Dry decontamination procedures are used when prevailing site conditions allow. However, when prevailing site conditions are predominately muddy, wet decontamination procedures will be employed to mitigate the migration of mud. Cross-contamination due to spillage of sediments during barge off-loading and truck loading operations will be minimized by use of spill aprons and plastic liners covering potentially exposed surfaces. Best Management Practices will also be used to minimize spillage and potential cross-contamination.

Potential migration of airborne dust particulates during prevailing dry weather will be mitigated by use of a water hose to wet dry surfaces and roadways. Because the site is predominately overlain by asphalt pavement, EI expects that fugitive particulate generation will be minimized.

Potential odor generation will be mitigated by use of RUSMAR foam applied where and when necessary based on odor detection and VOC monitoring. IN addition, EI will use ECOSORB odor control agent to mitigate the detection of odoriferous conditions. Fans with atomizers will be strategically deployed based on prevailing wind direction if necessary to mask odor detection. EI successfully used ECOSORB to mitigate odor detection during the Campmarina project. Noise generation will be managed by schedule of operating hours from 7:00 AM to 7:00 PM,6 days per week. The sheetpile installation requires a 6 days per week schedule to assure schedule objectives will be met. Maintaining equipment in good repair with appropriate sound attenuation will further manage noise.

2.7 Management of Public Right-of-ways and Streets

EI will instruct hauling subcontractors to utilize the truck route as defined by Figure 1 of the Plans and Specifications. A site haul route will be planned with and approved by the Engineer prior to any hauling operations. The public right-of-ways near the site, as well as Mann Street will be managed and inspected to assure minimal intrusion to the public. Decontamination procedures and the use of the Vehicle Tracking Pad will assist in minimizing mud and sediment migration from the site into Mann Street. EI will utilize street sweepers to assist with street maintenance and assure streets are free of mud and sediments. Proper signage will be posted to establish and protect right-of-ways. Daily inspections will be conducted and appropriate measures taken to remedy any right-of-way or street maintenance concerns.

2.8 Measures for Protection of Subsurface Features

Planned excavations and penetrations will be more clearly identified in the field in conjunction with Engineer review and input. EI understands that excavation and/or ground penetrations will not be generally allowed within the upland area. Work will be maintained off-set from the edge of the dock in the boat ramp area by 15-ft.

2.9 Craft Personnel and Equipment for Each Work Task

EI proposes to perform the site work activities with the following manpower and equipment allocation of resources as listed in Section 1.0.

2.10 Proposed Sequencing and Schedule

The optimal scheduling sequence has been determined to meet the challenging schedule objectives and to provide the best opportunity to meet the substantial completion date. EI defines

the substantial completion date to include the completion of dredging, backfilling and temporary cofferdam removal operations. EI proposes the general scheduling sequence as follows:

- Mobilize Sheet Pile Subcontractor (M&P) / Install Sheet Pile Cofferdam;
- Mobilize Upland facilities (office trailers, WTP, Storm and Sanitary Bypass);
- Construct Stabilization Pad;
- Clearing and Grubbing;
- Mobilize Dredging facilities;
- Start WTS Operations;
- Operate Stabilization Pad,
- Transport Removed Stabilized Sediments to Landfill;
- Dredge Area 2, Area 3;
- Backfill Area 2;
- Sheet Pile Cofferdam installation complete;
- Start Storm and Sanitary Bypass Operations;
- Dredge Area 1 at Outfall;
- Backfill Area 1 at Outfall;
- Construct New Outfall;
- Dredge Boat Launch Area requiring sequenced excavation/backfill;
- Dredge Remainder Area 1;
- Backfill Remainder Area 1;
- Remove Sheet Pile Cofferdam;
- Demobilize Storm and Sanitary Bypass;
- Decontaminate Equipment;
- Demobilize Upland Facilities;
- Demobilize WTP;
- Secure site and demobilize for winter; and
- Restoration of disturbed upland area and parking lot as needed in the Spring.

Many of these activities listed above will be performed concurrently to consolidate schedule. The proposed Project Schedule is included in Section 2 of the proposal package.

3.0 CONTACT WATER MANAGEMENT PLAN

The MGP Contact Water Management Plan is incorporated as part of the Preliminary RAWP as follows. The MGP Contact Water Management Plan includes the following sections:

- Methods, Equipment and Power for Water Treatment System;
- Location for WTS Operations;
- Dewatering Sumps and Conveyance Facilities;
- Secondary Containment Measures;
- Meeting Substantive Requirements of WPDES; and
- Schedule of Installation and Operations.

3.1 Methods, Equipment and Power Supply

EI has performed a water mass balance for all site operations. The mass balance accounts for potential MGP contact water that may be generated from the following sources:

- Dredge spoils decant water (from the dredge spoil containers and the stabilization pad from sediment decanting and stabilization operations);
- Precipitation contact water collected from the stabilization pad;
- Other potential direct contact water; and
- Decontamination water.

EI analysis indicates that a treatment system with the capability to treat an average of 50-gpm over one 10-hr. shift per day will be adequate to meet the total MGP contact water generated throughout the project. EI estimates that water from the sources listed above will correspond to less than one million gallons over the three month project duration. This would result in an average flow rate of approximately 28-gpm over one shift per day, not including weekend treatment work. If due to unforeseen circumstances, additional capacity were needed, the water treatment system (WTS) could accommodate a much greater capacity.

The WTS will be powered by a site power drop with 480 Three Phase Power, located just south of the office trailer location, where conduit will be run to the WTS pumps and Connex Box. The 2-in. submersible pump and backflush for the sand filters use 110 Volt 30 AMP power. The heat source for winterizing the Connex Box will be 230V 60 amps.

The WTS setup includes pre-treated and post-treated storage tanks. EI's approach is to start operations on a batch basis, and using sampling and analysis in a startup phase (proof of performance). After analysis confirms that WPDES discharge criteria are continually met, EI will request Engineer's approval to discharge on a continuous operating basis, with appropriate sampling and analysis confirmation.

Water Treatment System Details

The proposed WTS for the project is supplied by Baker Corporation (Baker). Baker will provide the necessary treatment units that will meet the WPDES discharge criteria. The WTS also includes a proprietary, efficient and cost-effective means for removing potential NAPL in the water stream. The Baker approach uses a specific filtration process to filter out NAPL and recover it, following solids removal, and prior to granular activated carbon (GAC) adsorption. In addition, based on operating experience gained at the Campmarina project in meeting the required 10-mg/L Total Suspended Solids (TSS) effluent criteria, Baker has included a final 0.5-micron bag filter following the GAC adsorption to remove residual fine particulates. This will assure the TSS effluent criteria will be met.

The main process units in the WTS include the following, not listed in order. The proposed WTS Process Schematic is indicated in Figure 3. Data Information data sheets for the primary WTS components are included in Attachment A.

System Components

No.	Description
1	3" SS Duplex Bag Filter
2	3" Elec Submersible Pump
10	3" x 25' Suction Hose
2	2K HP Vessels
1	21,000 Gal. Frac Tanks
4	3" x 50' Discharge Hose
2	4" x10' Suction Hose
1	3 POD Sand Filter
1	3" Flow Meter
4	3" Sample Ports
1	21,000 Gal. Weir Tank

1	50 GPM OWS
	3" SS Duplex Bag Filter

Carbon Media

- 4,000 Lbs. 8X30 VCC Media Loaded in Vessel;
- GAC Media Regeneration;
- Media Service (Vacuum and DOT Super Sack); and
- TCLP Test.

Sediment Media

- 2,700 Lbs. Sand and Gravel Media;
- Media Disposal;
- Media Service (Vacuum and DOT Super Sack);
- 500 – 10 Micron Filter Bag; and
- 500—0.5 Micron Filter Bags.

The initial weir tank will serve as WTS surge capacity and will provide for initial NAPL separation and collection if it is present. Oil boom and diapers will be used to absorb accumulated NAPL in the mix tank. Residual NAPL and emulsified organics will be removed efficiently by the oil/water separator media following particulate filtration. Polymers will not be used to assist in settling of suspended solids without prior approval and are not expected to be required.

The system operational units in order include:

- Weir tank;
- 3-POD sand filter;
- Dual bag filtration system;
- Oil/water media separator with product recovery;
- Two 2,000 lb. HPV media vessels;
- (2) Dual bag filtration systems;
- Post-treatment storage frac tank; and
- In-line turbidity meter and flow meter.

The consumable media for the WTS includes filter bags, sand filter media, oil/water separation media and GAC. Since the WTS is operating at a relatively low flow rate, EI estimates 100-200 Filter Bags may be consumed per month. The sand media contained in the 3-POD sand filter should last the life of the project, while backwashing greatly extends the life of the sand. The

GAC media is virgin coconut carbon. The relatively low flow rate and low levels of contaminants (low mass loading) will allow the GAC to last the life of the project. The oil/water separation media will be good for the life of the project. EI and Baker Corporation are confident that the WTS will meet the discharge levels specified in the WPDES, including the TSS requirement, with the addition of the polishing filtration step after the GAC treatment step.

EI considered the possibility that use of Calciment bed ash reagent would raise the pH of collected MGP contact water at the stabilization pad. EI expects the total contribution of collected MGP contact water at the stabilization pad to correspond to less than 20% of the total MGP contact water generated, collected and treated from all the project sources. As such, the contact water collected at the stabilization pad with a relatively higher pH will be mixed with the other sources of MGP contact water (primarily decant water from the dredge spoil containers) at the water treatment system surge control tank. The net result is that the pH of the water to be treated will be effectively buffered through dilution which will meet the WPDES pH discharge requirements. In the case that pH neutralization was needed to meet WPDES requirements, EI will provide the required treatment step at the water treatment system surge control tank using a carbon dioxide infusion pH control system.

The WTS effluent will be discharged by either hose or hard line to water contained within the cofferdam enclosure. Scour protection and velocity reduction will be provided at the discharge area by preparing a rock discharge structure. Flow meter and turbidity meter data will be manually recorded hourly by the WTS operator. The data will be provided as a separate table and attached with the daily Quality Control Report forms.

3.2 Location for WTS Operations

The WTS will be set up and operated off the east side of the Stabilization Pad at the location indicated on Figure 1.

3.3 Dewatering Sumps and Conveyance Facilities

The WTS will be set up and located in the area indicated on Figure 1. Decant water pumped from the dredge spoil containers at the off-loading area will be pumped to the WTS location for treatment. A diaphragm pump will be used to pump decant water from the dredge spoil containers to the geo bag on the stabilization pad for primary solids removal. The filtrate from the geo bag will flow into the stabilization pad sump. A 2 inch submersible pump will send the water to the WTS surge/weir tank. Two inch HDPE pipe will be used to convey decant water from the containers to the geo bag, where 2-in. HDPE pipe will convey the decant water to the WTS. Similarly, 2-in Whacker submersible pumps will be used to convey water collected at the stabilization pad sump and decontamination pad sump to the WTS surge/weir tank.

3.4 Secondary Containment Measures

Our WTS vendor, Baker, will supply the necessary secondary containment for the WTS as part of the WTS facilities mobilized and serviced during the project.

3.5 Meeting Substantive Requirements of WPDES

The WTS is designed to meet the WPDES discharge criteria as listed in the expected WPDES Permit, as listed in the example WPDES permit provided in the RFP. The main constituents of concern to be removed in the WTS listed with the effluent criteria include the following:

- PCB's—0.8 ug/L daily maximum (not a specific chemical of concern at Marinette);
- PAH's—0.1 mg/L monthly average; and
- Total Suspended Solids (TSS)—10 mg/L daily maximum.

As indicated, EI responded to lessons learned from Campmarina project operations with respect to meeting the TSS requirement of 10 mg/L by providing an additional 0.5 Micron filtration step following the GAC units. This additional filtration step will provide the necessary factor of safety to meet the TSS requirement.

3.6 Schedule of Installation and Operations

The WTS will be operated by trained EI personnel. The EI operators will be trained by Baker Corporation personnel during system startup. We anticipate operating the WTS on single daily shifts Monday through Friday, and weekends only if necessary. The WTS will be mobilized and will be operational in early October 2012 before MGP contact water will be generated. The WTS will be operational through the end of dredging and sediment decanting operations in late December 2012, and while any potential MGP contact water may be generated on the stabilization pad. Following removal of the WTS, if MGP contact water is generated for any reason (e.g., from decontamination operations), the contact water will be collected and taken to a licensed off-site treatment facility for treatment and disposal.

The WTS will be winterized by housing the unit in a heated Connex box. Tankage and piping existing outside the Connex box will be protected sufficiently so that contained water will not freeze, including use of heat trace and insulating blankets.

With respect to meeting turbidity requirements for the standing water contained within the cofferdam system before removing the cofferdam, EI does not believe that this water will require treatment before the cofferdam is removed. It is estimated in the unlikely event that the turbidity requirement is not satisfied after dredging and backfilling work is completed, the turbidity will be mitigated sufficiently to meet turbidity requirements after 2 or 3 days. This time will allow additional sedimentation of suspended solids under quiescent conditions. The additional settling

time is included in the proposed schedule. In the unlikely event that the standing water would require water filtration treatment for turbidity removal, the schedule duration for this event is not included in the project schedule.

In the unlikely case that standing water within the cofferdam required filtration in order to meet turbidity requirements prior to cofferdam removal, the water would be pumped, filtered and recirculated within the cofferdam. EI has estimated that the volume of standing water contained within the cofferdam system is approximately 4 million gallons. If absolutely necessary, EI would mobilize a 500-gpm filtration system, and house it within a heated enclosure. EI's water treatment subcontractor, Baker, would mobilize and setup the filtration system, which is a 10-Plex Filtration Unit comprised of a 10-bag multi stage filtration bank. The bags would be able to be changed out while the system is operating continuously.

In reference to this case, EI estimates that up to 100% of the standing water volume may need to be pumped, filtered and returned within the cofferdam in order to meet turbidity requirements (less than 70-ntu above background). This would require approximately six days of pumping and filtration. It is likely that a lesser volume of standing water may be able to be filtered and returned which will meet turbidity requirements. EI would utilize a 4-in. diesel pump hard hose intake and HDPE pipe to convey the water within the cofferdam to the filtration system and return. A water withdrawal sump would be located and the water return would be located and installed in a manner that would minimize the additional generation of turbidity. EI would be able to operate the water extraction, filtration and return operation if ice forms on the standing water surface. By running the system continuously, the conveyance hosing will not freeze. The system would operate until turbidity levels are confirmed to meet the turbidity requirements so that the cofferdam can be removed.

4.0 MECHANICAL DREDGING AND BACKFILL PLAN

The Mechanical Dredging Plan is incorporated as part of the Preliminary RAWP as follows. The Mechanical Dredging Plan includes the following sections:

- Means and Methods for Sediment Stabilization;
- Location for River Access to Operations;
- Dredging Means and Methods;
- Sequence of Dredging Operations;
- Dredge Sequencing around Shoreline Structures;
- Dredge Residual Containment within Water Column;
- Dredging Production Rates;
- Stabilization Production Rate and Loading for Off-site Hauling;

- Removal and Management of Debris and Wood Pilings;
- Methods for Achieving Dredge Depth and Specified Tolerance;
- QC and QA Bathymetric Surveys;
- Means and Methods for Placing Residual Sand Layer;
- Means and Methods for Backfilling Dredged Areas;
- Restoration;
- Proposed Project Personnel;
- Proposed Schedule for Operations; and
- Self-performed versus Subcontracted Work.

4.1 Means and Methods for Sediment Stabilization

While dredging operations are underway for each of the Area 1, 2 and 3 Scope Items, the dredge spoils will be placed in water tight roll--off box type containers with two containers placed on each of two transport barges. The dredging operations will minimize to the extent practicable the amount of water that will be removed with the dredged sediments. EI expects that the amount of water that will be contained in each dredge spoil container will correspond to approximately 40% water and 60% solids.

EI further estimates that each dredge spoil container will hold a working volume of approximately 18-CY dredge spoils, which is close to 2/3 of nominal volume capacity. This will allow sufficient free-board on the containers to ensure no spillage may occur. Each container will contain a maximum of approximately 1,200 gallons of water, including both free liquid and sediment pore-water. EI plans to transport the barges to the off-loading area indicated on Figure 1 for off-loading.

While the transport barges are moved into place for off-loading, some supernatant/decant water will rise to the top of the container. When the transport barge is moved into position for off-loading, the standing decant water in the container (estimated at up to 8- 12-in. depth) will be pumped off using a diaphragm pump. The decant water will be pumped to the geo bag and then to the MGP contact water treatment system surge tank for treatment according to the specifications. The

conveyance of the decant water to the MGP contact water treatment system is discussed in Section 3.3.

The transport barge dredge spoil offloading location and stabilization pad location for Area 1, 2 and 3 dredging operations are shown on Figure 1. The sediments will be off-loaded by a Material Handler, placed in a feed hopper and conveyer system and conveyed to the stabilization pad via the conveyor system, which is designed to accommodate dredge spoils. The Jump conveyor belt system will lie nearly flat while conveying the dredge spoils. The proposed conveyor system product information sheets are located in Attachment B.

Offloading barge and Transfer Sediments to Stabilization Pad

- Material Handler—with a 2 cubic yard clam; and
- Feed Hopper and Jump Conveyor System- 42-in. by 100-ft length.

During Area 1, 2 and 3 dredging operations, the Material Handler will be used to off-load dredge spoils from the dredge spoil containers and will load dredge spoils into the feed hopper. Spill aprons, plastic liner and Best Management Practices will be used to collect any potential spillage from the off-loading operation. Spill Aprons will consist of plastic liners supported and sloped for potential spill collection. The aprons can be easily moved, cleaned and maintained. The conveyor will transport the dredge spoils for dumping on the stabilization pad.

Stabilization Pad Operations

At the stabilization pad, the dredge spoils will be decanted, dried and stabilized as necessary before being loaded for off-site transport and disposal (T&D). The dredge spoils will be placed on the stabilization pad, mixed and stockpiled for decanting, drying and stabilization. After the sediment has been initially mixed, EI will again mix and stack the dredge spoils an average of approximately 4-ft. high. Mixing and drying will continue as needed for stabilization of the sediment. The maximum projected daily dredge rate is 300-CY of in-place dredge spoils per day, while the sequenced shoreline daily dredge rate will be approximately 150-CY/day. The average storage time for dredge spoils on the stabilization pad will be 4-days. The average daily stabilization rate will correspond to the maximum average daily dredge rate of approximately 300-CY of in-place sediments per day.

EI will air dry the sediments by bucket turning stockpiled materials using a loader. The weight of the stockpile will aid in passive gravimetric dewatering. All decant water (as well as any precipitation contact water) will be collected on the stabilization pad in the sump and will be

pumped to the MGP contact water treatment system for treatment. EI expects to add some stabilization reagent to the sediments for strength gain and to meet the 1,600-PSF UCS or 800-PSF shear strength, paint filter, and friction angle test requirements. EI proposes to use a relatively granular lime bed ash product known as Calciment™ as provided by Mintek. The bed ash product has approximately 35% to 40% of available calcium oxide content. Calciment has been used successfully for strength stabilization of MGP impacted sediments on other sites, including Campmarina. The MSDS for this reagent product is included in Attachment C.

The project schedule of values reflects an average reagent usage for sediment stabilization of approximately 8% wt/wt of reagent to dredge spoils. EI did not perform any treatability testing of Menominee River sediments. We have experience using Calciment bed ash reagent at 8% wt/wt additive rate on other similar sediment stabilization projects, including Campmarina. EI's experience on similar sediment stabilization projects includes using additive rates for reagents similar to Calciment from 2% up to approximately 15% (for sediments containing higher proportions of NAPL or free-product). EI cannot guarantee the final global reagent dose rate required for stabilization of sediments. EI will work closely with the Engineer to ensure reagent is used optimally and only as necessary to meet project requirements and maintain the proposed production rates to meet the proposed schedule. While using reagent, we also have to account for the relatively short daylight of the season, low sun angle and colder temperatures experienced during stabilization operations.

Since the use of Super Absorbent Polymer (SAP) is not allowed to be added in the dredge spoil containers prior to off-loading sediments, EI may need to add and mix a relatively low proportion of Calciment (e.g. 1-2%) in with dredge spoils in the dredge spoil containers for pre-conditioning. EI would only add this pre-conditioning step using Calciment if needed in order to manage dredge spoils properly during off-loading operations to minimize spillage and cross-contamination.

The Calciment will be delivered to the site in end or live floor / walking floor dump trucks and will be placed and stored in a prepared and tarped reagent storage area. From there, the Calciment will be off-loaded and used as needed for strength stabilization of sediments. A tracked skid steer and loader will be used to mix the Calciment in with the sediments in discrete batches. The volumes and weight of discrete sediment batches and reagent usage will be tracked and reported on daily Construction Quality Control Report forms.

To track and optimize the reagent usage, EI will weigh 10 average loader bucket scoops utilizing the loader bucket scale. This will then establish a baseline average weight of reagent per bucket load so that the number of scoops added to the wet sediment batches can be tracked by the loader operator, or a prescribed dosage can be easily communicated to the operator. Ultimately however, the reagent usage will be reconciled against the weigh tickets supplied on Mintek's bills of lading. At first, and as the sediment type changes, it will be necessary to add reagent by trial and error to establish a mix that works well for passing the aforementioned acceptance criteria for a particular sediment type.

By tracking the bulk density of the sediments and the weight of reagent added to a given sediment batch, the percent by weight addition can be determined and utilized for forecasting purposes. Additionally, the weight of amended sediments leaving the site will be known from weigh tickets, as will the amount of reagent brought on site. With an average bulk density and volume measurements of the removed sediments, EI will track the weight percentage of amendment required.

EI will ensure that potential dust and odor generation is minimized during reagent mixing operations. Tarps will be used to minimize precipitation water impacts and contribution to MGP Contact Water on the stabilization pad. EI will use tarps, will cover exposed sediments with stabilized materials and will potentially use foam to cover materials for mitigation of potential odors and/or dust generation where appropriate.

4.2 Location for Access to River Operations

The river access for equipment mobilization and demobilization is located at the boat ramp area for both EI and M&P operations as indicated in Section 2.1. This will be the access for deploying equipment for in-stream operations, sheetpile material deployment for the cofferdam installation and removal, dredge spoil off-loading and backfill placement. EI and M&P will coordinate our operations to ensure work flows smoothly and without interruption while utilizing the relatively small area available for access to river operations.

4.3 Dredging Means and Methods

Dredging means and methods are summarized as follows. The equipment proposed to be used for dredging operations is included in Section 1.0 for Area 1, 2 and 3 dredging activities. Dredging within Areas 2 and 3 will be conducted outside of the cofferdam (using turbidity curtain as BMP), while Area 1 dredging will be conducted within the cofferdam. Existing shoreline structures in the dredge areas will be protected during dredging. This will be

accomplished through deliberate sequencing of dredging within a specified distance from the structures, as discussed in Section 4.5.

Dredging Equipment:

- Excavator 106,000 lbs w/Environmental Bucket & GPS Grade Control;
- 40' x 60' x 5' Working Barge (mechanical dredge);
- Two 40' x 30' x 5' Transport Barges (each with two dredge spoil containers); and
- Push Boat.

For dredge operations, a PC 490 Excavator (or equivalent), fitted with a specialty fabricated 2-CY capacity environmental bucket will be operated for mechanical dredging of sediments. The mechanical dredge will be positioned on a 40-ft. by 60-ft. Poseidon work barge. Two spuds are positioned in back and will be lifted and lowered using a double drum winch when the barge is to be repositioned. The barge will be relocated as necessary when the final dredge cut lines and grades have been verified using the GCS 900 software and additional surveying support. When dredging specifically identified areas, visual confirmation will be used to determine if additional dredging is warranted as directed by the Engineer.

When the final dredge surface Autocad figures are Issued for Construction (IFC), EI will load the information into the GCS 900 dredge template. EI will load the IFC Autocad into a Trimble surface model to be used for our surveying services. El may submit these models to the Engineer if desired when generated for informational purposes.

The mechanical dredge and transport barges operate in cycles. The dredge cut is made while minimizing the over-dredge cut depth, generation of turbidity and amount of water in the environmental bucket. Some free water will be allowed to drain out while the bucket is lifted from the water and before it is loaded into the dredge spoil container. The dredge spoils will be loaded into one of two dredge spoil containers positioned on one of two transport barges. Each dredge spoil container is expected to contain a working dredge spoil volume of approximately 18-CY, or approximately 36-CY for each transport barge.

When both of the dredge spoil containers are loaded on each transport barge, the transport barge will be maneuvered using a work boat to the dredge spoil off-loading area. Another transport barge will be positioned adjacent and tied off to the work barge for loading dredge spoils. El's approach of using two transport barges (each with a capacity to hold approximately 36-CY of

dredge spoils), ensures that except during transit, one transport barge is being loaded at the dredge area, while another transport barge is being off-loaded at the off-loading location. This will ensure nearly continuous dredging, transport and off-loading operations.

4.4 Sequence of Dredging Operations

Area 2 and Area 3 dredging operations must be completed first in order to meet the Substantial Completion date. Coordination with Nestegg Marine will be critical as well as obtaining the required Access Agreements. After Areas 2 and 3 are completed (including any required backfill), the Outfall Area will be subsequently dredged, followed by the Dock Area and remaining Area 1..

The salient points of dredging sequencing are as follows:

- Existing shoreline structures in the dredge areas shall be protected during dredging;
- Deliberate sequencing of dredging within a specified distance from the structures;
- Pre-removal bathymetric survey;
- Turbididty Curtain needed outside cofferdam during dredging & backfill (Areas 2 and 3);
- Provide Oil Boom;
- 6-in. overdredge allowed;
- Dredging will not be considered complete until at least 90% of the dredge area has achieved the elevations specified on the Contract Drawings;
- Engineer's post Dredge Sampling may result in additional dredging in specified areas; and
- Progress Survey and Final Survey Required.

The anticipated sequence and number of operating days for each of the areas to be dredged corresponds to the following:

- Dredge Area 2 = 5 Days;
- Dredge Area 3 = 2 Days;
- Dredge Outfall Area = 7 Days;
- Shoreline Area = 7 Days;
- Dredge Remaining Area 1 = 16 Days; and
- Total Operational Dredging Days = 37 Days.

4.5 Dredge Sequencing Around Shoreline Structures

Engineering Partners noted during dredging a concern for adequate support of the shoreline sheet pile extending from Maritime Marine to the west side of the boat launch. Due

to the sheet pile encountering bed rock and thus poor embedment at or near the planned dredge surface, Engineering Partners requests a limited span of exposed sheet pile. Envirocon plans a sequenced excavation and backfill method to address this concern.

With dredge depths of up to 10-ft. at the sheet pile, open excavation of a "slot" will allow sloughing adjacent to the slot, allowing an undesired span of sheet pile to be unsupported. The "slot" or vertical excavation area must be supported to allow dredging to the depths desired to recover NAPL impacted sediments. Envirocon plans to use a series of trench boxes to achieve "slot" support. Another issue is backfilling the "slot" and not excavating the backfill during adjacent "slot" dredging. Figure 2 shows the typical layout of the sequenced "slots".

Excavation / Backfill Description

Starting at the western side of the boat launch, a trench box measuring 8'H X 16'L with 5' spreaders (54" environmental bucket) will be installed during excavation of slot A. The sediments will be removed to the designed elevation or until clean (NAPL free) sediment is observed. The trench box is forced down into the sediments during the removal thus maintaining adjacent sediments in place. The engineer will confirm the excavation as clean and the surface will be surveyed with a rod (no sonar access). The trench box in slot A is now against the sheet pile with the bottom of the shield at or below the clean elevation. A second trench box of the same measurements is placed next to the sunken trench box in slot B and the sediments removed while forcing the trench box down into the sediments. Again the excavation stops at the designed surface or absence of NAPL.

The engineer will confirm the excavation as clean and the surface will be surveyed. At this time, slot A will be backfilled inside the trench box. The trench box must be raised as the backfill proceeds to prevent voids and shield entrapment. Backfill is confined by the sheet pile wall to the south, existing sediment to the west and adjacent trench box to the east. Once the backfill in slot A meets design elevation the trench box is lifted free and positioned in slot C. The excavation of slot C and then backfill of slot B proceeds; in this manner the span of shore line sheet pile from the boat ramp to Maritime Marine is dredged and backfilled.

4.6 Dredge Residual Containment within Water Column

For Area 1, dredging operations will be conducted within a temporary sheetpile cofferdam, thereby isolating the dredge operations from the Menominee River. EI will use Best Management Practices (BMP's) to minimize the generation of turbidity and the re-suspension of

sediments while dredging and capping operations are underway.

Suspended solids and turbidity will be further contained in the active dredging and backfilling work areas by using a working turbidity curtain for all dredge Areas, including Area 1 and Area 2 which are outside of the cofferdam. The working curtain is affixed stationary to the work barge and will help contain suspended solids and turbidity directly within the water column of the active work area. Turbidity monitoring will be conducted by the Engineer outside of the cofferdam to verify turbidity criteria of less than 70-ntu above background is maintained. The Engineer will also periodically monitor turbidity levels inside the cofferdam and provide results to EI for engineering analysis and confirmation of controls.

These BMP's will be used for Areas 1, 2 and 3. If necessary in order to maintain allowable turbidity levels, engineering analyses may be conducted and corrective measures implemented to maintain allowable turbidity levels. Corrective measures may include for example operator control of environmental bucket, the manner in which free water is allowed to drain, cycle times, manner of placement of backfill materials, etc. EI will work closely with the Engineer when performing these types of analyses and implementing potential corrective measures.

Equipment will be decontaminated at the completion of dredging and excavation operations and before backfilling operations will be undertaken and/or demobilization. If practicable, decontamination operations will be conducted on the barges and/or on the shoreline, while decontamination water is collected and pumped to the MGP contact water treatment system for treatment.

4.7 Dredging Production Rates

The proposed dredging equipment is listed in Section 1.0 while dredging means and methods are summarized in Section 4.3. The production rate analysis incorporates those sections by reference. For dredging operations, EI has evaluated dredge cycle times and time to load the two dredge spoil containers on each of the two transport barges. With a dredge cycle time for each dredge bucket requiring approximately 90 seconds, and including barge movement inefficiencies, EI has concluded that each transport barge (with approximately 36-CY capacity) will be loaded in approximately 45-min. EI has also estimated that the off-loading of one transport barge (approximately 36-CY capacity) will similarly require approximately 45-min, including the time needed for removal of decant water.

We have assumed at least 10-hr. operating time is available per day including available sunlight as the season progresses. With an estimated system availability (up time) of approximately 80%, EI has estimated our daily dredging production rate of NAPL and PAH impacted sediments at approximately 300-CY of in-place dredged spoils per day.

As indicated in Section 4.4, Area 2 and Area 3 impacted sediments will be removed first, followed by the Outfall Area and then the remaining Area 1. EI anticipates the daily dredge rate for sequenced shoreline dredging will correspond to approximately 150-CY per day.

4.8 Stabilization Production Rate and Loading for Off-site Hauling

From the stabilization pad, the sediments which are verified to meet the disposal criteria will be loaded onto haul trucks for off-site transport and disposal. The paint filter test as well as UCS/shear strength criteria (using a calibrated pocket penetrometer) will be verified before loading. EI expects to load-out at a rate matching our global dredging production rate, which will correspond to approximately 300-CY/day, or up to approximately 435-CY/day.

The loadout of stabilized sediment to transport occurs at the haul route/ stabilization pad interface. An excavator will be used to load the 22-ton capacity trucks. The truck will pull forward and engage the tarp system. The truck will be inspected and dry decontaminated as needed. A Manifest will be provided to the driver for the Waste Management Menominee, MI landfill. EI expects to load and ship approximately 13 to 20 trucks per day.

The haul trucks will be tarped and decontaminated before egressing the site. EI will instruct the hauling subcontractor to utilize the truck route as defined by Figure 1 of the Plans and Specifications. The haul plan using the preapproved haul routes will be developed and confirmed with the Engineer for routing through local streets. The site haul traffic will use the haul route indicated on Figure 1 – Site Plan. A bucket scale will be used to optimize truck loading weights. During all staging and loading operations, potential odors will be controlled by using RUSMAR foam spray application on exposed sediment surfaces as necessary and Ecosorb Odor neutralizer.

4.9 Removal and Management of Debris and Wood Pilings

EI anticipates some wooden debris will be encountered during the cofferdam installation. During cofferdam installation, M&P will remove the debris and any other debris encountered as required. EI will manage debris using Integrys supplied roll-off containers. EI will load the Integrys supplied roll-off containers after the debris is off-loaded from EI Transport Barges. EI assumes that removed debris will be classified as Subtitle D material and will be sized and transported appropriately meeting the landfill criteria.

Significant debris is expected to be encountered during dredging operations. The environmental bucket will be used to extract the debris in advance of the dredge cut where practicable. While the 'flapper lid' that is attached to the environmental bucket isn't as sturdy as a regular thumb, the dredge operator will curl the bucket under the debris and use the flapper to hold it in place for extraction. EI does not anticipate the need to use a grapple for debris removal, but if an inordinate amount of debris were encountered, the excavator is plumbed so that the environmental bucket/flapper could be removed and a grapple could be installed. The debris will be managed and disposed as referenced above.

4.10 Methods for Achieving Dredge Depth and Specified Tolerance

The dredge depth and tolerance criteria will be continuously met and verified. Qualified dredge operators with experience using GPS Real Time Kinetics (RTK) equipment will help ensure compliance with requirements. The dredge excavator will be fitted with the GCS 900 GPS software. The software allows the dredge operator to maintain and confirm his dredge cut position relative to horizontal and vertical alignment coordinates. The dredge operator's objective is to meet the dredge template lines and grades in an efficient manner, while minimizing extra dredge cut volume due to over-dredging or having to re-dredge a potential "high" area.

EI together with FOTH Engineering support and verification will create the dredge templates for dredge surfaces Areas 1, 2 and 3. The dredge templates will be generated using the IFC Autocad figures of the dredge lines and grades to be issued by the Engineer. EI will install and integrate all position/motion sensors on the excavator with GCS 900 and associated RTK-GPS antennae. The EI GPS base station will support both the GCS 900 systems and the RTK-GPS bathymetric survey.

During dredging operations, the EI surveying and dredging teams will work together to provide real-time topographic survey data of the area being dredged utilizing RTK in conjunction with GCS 900 software. This real-time information will be displayed on a monitor mounted in the dredge excavator cab to provide a visual reference for the operators and will be used to guide the excavation. The Contractor will provide staffing for surveys, calculation of dredged volumes from the QC survey and generate daily reports.

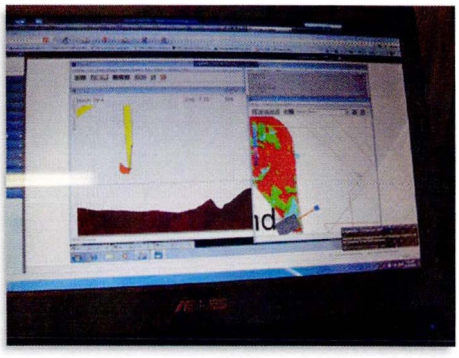
On the dredge barge, position and depth of dredging will be determined using RTK for real-time x, y and z coordinate control. Calibration of instruments will be confirmed once daily or as needed to verify position. One RTK GPS unit will be mounted on the dredge excavator and the

correction signal will be broadcast by the base station located on shore. This will provide x, y and z coordinate corrections to the dredge.

The RTK information will be transmitted to the GCS 900 software program where in real time the excavator operator will see the digging elevation of the bucket as well as its x and y position. Information recorded in the software will be downloaded for the generation of dredge reports and will become part of the projects records.

The software provides real time confirmation to the operator that the dredge tolerances are being met. The data is also downloaded for confirmation of target dredge template lines and grades and in-place sediment volumes removed. The dredge lines and grades are confirmed by bathymetric survey as discussed in Section 4.11.

The GCS 900 software will provide the dredge operator a plan, cross section and front view of the dredging operations on a monitor located in the excavator cab. The dredging monitor will show the following:



- The plan view showing the progress of the dredging in a color matrix of the elevations with planned cuts displayed on the screen. As the excavator bucket passes through an area and removes sediment to the designed cut lines, the area is "painted" and the operator knows to stop dredging.

- The cross section and front view showing when the dredge has reached the designed dredging depth.

Vertical Accuracies of the GNSS RTK GPS include inclinometers that are accurate to 0.08 degree. Using similar equipment on previous projects, accuracies in the 0.1-ft range in the vertical were achieved. Using the GCS 900 Software, measurements for boom, stick and bucket are entered prior to calibration. For the best results, measurements from pin to pin are done with a total station. Similarly, once the measurements are entered and the bucket is calibrated in GCS 900 (XYZ of the middle of the Bucket Cutting edge) RTK Rover is used to confirm the values in GCS 900 which will match that of the Rover/Data collector within the 0.1-ft. range.

QA and QC surveys will be taken from the dredged areas to verify that the actual dredge cuts are consistent with those reported by the GCS 900 software. Daily or every couple days, QC surveys will be performed to ensure accuracy and/or make any adjustments to the dredge depth as necessary. The QC surveys will be run as soon as possible after the dredge has cleared the

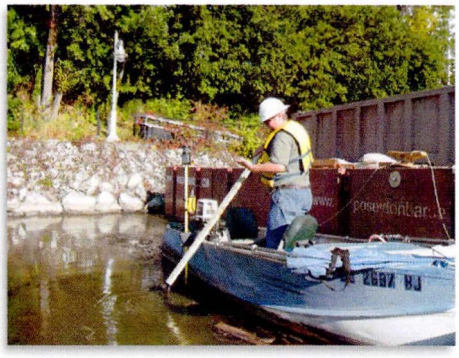
digging area and will be used to determine dredge volumes for confirmation of the GCS 900 results. QA surveys will be conducted to generate an isopach map which will show that the area meets or exceeds the required elevations. Survey elevations and state plane coordinates (or NAVD88 elevations) will be derived from the on-site control points established by our surveyor.

The methods used for QA and QC surveys will largely be the same. Single beam sonar will be utilized (or rover with 1 square foot topo shoe/disk if conditions warrant), with transects located between 10 and 25-ft. apart and according to EM1110-2-1003. The Engineer need not be present during QC surveys; however, the Engineer will observe the QA surveys. The QA surveys are used for measurement and payment. The QC surveys are used to:

- Guide the excavation and ensure the operators are working correctly and the equipment correlates; and
- Track progress (grade, volume or other progress).

Until an area is confirmed to grade, the shots taken on it do not constitute a QA survey. EI must provide 24-hours notice to the Engineer before performing a QA survey. The pre-dredging survey will be a QA survey. After an excavation area is to depth, EI will perform the QA survey. The points taken while helping guide or track an excavation constitute a QC survey. The data quality will be the same for both as the equipment and methods are the same. The QA data will be used to generate the as-built surfaces. The QA surveys may still be frequent, particularly since the "grids" (as identified in the plans) are small. So as soon as one of these "grids" is to grade, EI will provide notice to shoot the QA survey of that area.

4.11 QC and QA Bathymetric Surveys



Methodology

EI proposes to use FOTH Infrastructure and Environment (FOTH) for bathymetric survey support and RTK GPS set up and interface with EI.. During mobilization, Site Project Control will be established by our surveyor with input from EI and FOTH personnel. After this control is established, the base station will be set up within the EI field office trailer (or other location as field conditions warrant). Next, the site calibration file is created on the Trimble TSC2, by taking control grade survey shots at the Aero-metric established control points. This base station and calibration file will be available for any other parties wishing to utilize compatible survey equipment on the project.

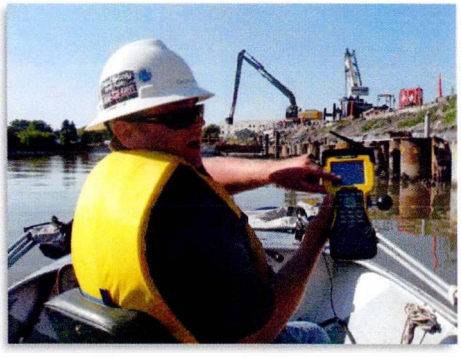
The TSC2 can then be utilized with the sonar, the GPS rover, and the robotic total station. It is anticipated that Trimble SCS 900, a software package on the TSC2 will be utilized to collect the survey data, regardless of instrument attached to the TSC2. This software will work with the sonar, the robotic total station, and the RTK GPS.

Immediately after the project control, base station and data collector are set up; FOTH will perform the initial pre-construction bathymetric survey to establish the original ground model on the water areas. EI will perform the upland topographic survey. This data will be submitted to the Engineer and Owner. This data will be supplied electronically in AutoCAD Civil3D 2012 format as specified, as well as neatly compiled into a PDF exhibit. Next, EI will place the excavation and original ground models onto the TSC2 for the rover and dredge excavator. This will make it possible to determine in real time the cut or fill to the designed limits and realtime cut or fill from the original ground surface in both the excavators and the survey rovers.

Daily QC bathymetric survey will be conducted to ensure that the excavator and the sonar based rover are both reading accurately and cut/fill data align between the two systems. Additionally, as soon as practicable after a defined dredge area is excavated to the prescribed limits, the QA bathymetric survey will be conducted with FOTH and NRT personnel.

Equipment

FOTH will supply a Hydrolite single beam sonar. El will provide a cleaned Trimble TSC2 with SCS900, Sonarmite, and Survey Controller software packages on the data collector, a GNSS enabled Rover (Trimble R8 or construction grade equivalent SPS 881), as well as the GNSS base station (SPS 850 extreme, with a Zephyr Model 2 (non-geodetic receiver). The base station will broadcast at 900 MHz A, SPS 850 extreme will broadcast the 900 MHz signal.



The GNSS capability will help ensure the greatest degree of accuracy, precision, and limited down time associated with satellite coverage and DOP at the project. Should satellite coverage become problematic, a robotic total station can be utilized during this time to keep operations on pace. This same technology may be utilized when the rover and sonar are in areas that may have difficulty receiving the GPS signal or accessibility may require the prismless technology.

The Precision of the sonar is 1 cm or 0.1% of depth, (whichever is larger). While 0.1% of 8-ft. (assumed as high-end depth for the project) is 0.008 feet, the random error in the sonar is 0.03 feet. Accounting for the random error in the GPS (we're using a Trimble R8 rover, as stated to be

+/- 10mm +/-1ppm RMS in the Horizontal for RTK, and +/- 20 mm +/- 1ppm RMS in the vertical for RTK), the overall accuracy achievable should be about +/-0.1-ft. The greatest source of error with the sonar is not calibrating the sound velocity. FOTH will calibrate the sound velocity as follows.

The Rover will be checked into a control point. That ensures the GPS or robotic total station component is fully functioning. Then a grade rod (or weighted tape) will be placed on the river bottom in a spot and the depth will be measured. The sonar's sound velocity will be calibrated to read the same depth through a representative water column. Factors affecting the sound quality in fresh water include water temperature (or density of the water) and turbidity. This bias is removed by calibrating the sonar sound velocity, leaving only the random error, which should be less than 1-cm on this project. The robotic total station (SPS 730) has an accuracy of 5 arc seconds in the horizontal and 2 arc seconds in the vertical. This is more accurate than RTK GPS.

Bathymetric Survey Procedures

1) EI will setup a GNSS enabled Trimble RTK GPS Base Station at the construction trailer near the active operation. This base station will provide position data for all surveying equipment at the Site, including the Hydrolite rover and the RTK equipped excavator. It is also available for any other parties to use so that multiple base stations need not be deployed at the Site.

2) EI will set up the dredging excavator with GPS positioning system equipment. This system is an indicate-only system that provides real time position data to the operator in the cab. It has several pitch sensors that mount onto the excavator, along with GPS receivers to determine the position of the bucket. Models (Dredge Prism) will be created which then allows the system to compare the current position to the modeled position and inform the operator of the cut or fill needed to get to the designed position.

3) FOTH will set up a surveying boat provided by EI. A boat as needed will be provided for survey operations for the work. Next, the Trimble R8 RTK GPS Rover, with a TSC2 data collector and SCS900 software will be mounted to the side of the boat. Next the Hydrolite package is installed, which consists of a sonarmite single beam sonar and mounting system for the sonar and rover. The sonar fits at the end of the rover pole, much as a topo shoe would be installed. The Sonar and the Rover antenna then connect to the TSC2 via Bluetooth signal. The Rover antenna receives correction data from the base via a 900 MHZ radio. The rod height between the rover receiver and the sonar is known and fixed. The pings from the sonar determine a depth which is then added to the rod height (automatically with the software).

4) The actual X, Y, and Z of the point just pinged is then known and can be recorded, just as with other traditional GPS or robotic total station topographic methods. According to the manufacturer, this system meets the requirements of EM 1110-2-1003. The TSC2 will contain models of the design strata, allowing the surveyor to determine in realtime whether a particular area is to grade or not. Comparisons to multiple surfaces can be made, while still collecting record data at the density specified. So if the oversight would like to know the cut or fill from original ground while collecting a point, that is possible, or if the cut or fill to the designed strata is what is desired, that too can be displayed while displaying the current positional data.

5) Should sonar methods be impractical due to the water depth being too shallow, the sonar is simply removed and a large 1-ft diameter topo shoe placed onto the rover and then conventional readings can be captured using the rover in a standard topographic configuration. As noted above, the TSC2 data collector with SCS900 software is capable of capturing this data from multiple equipment setups, including the sonar setup, GPS set up, and robotic total station configuration.

6) Data from the TSC2 is then downloaded to a Laptop with Autodesk Civil 3D 2012. The data is then placed into layers and used for building surfaces for further analyses.

4.12 Means and Methods for Placing Residual Sand Layer

EI has developed an approach for backfilling excavated and dredged areas. The following equipment is anticipated to be used for in-stream backfill of sand and gravel layers and general backfill.

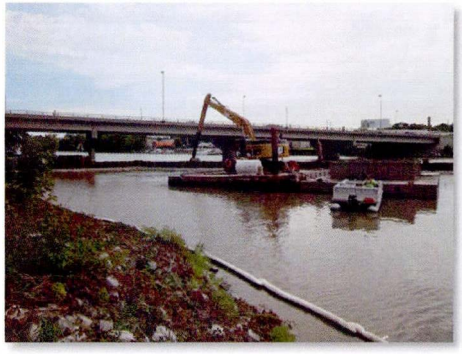
In-Stream Backfill

- Work Boat;
- Excavator 106,000 lbs w/Environmental Bucket & GPS Grade Control;
- 40' x 60' x 5' Working Barge;
- Two 40' x 30' x 5' Transport Barges (each with two dredge spoil containers 18-CY capacity each);
- Placement guidance utilizing RTK GPS; and
- Material Handler.

When directed by the Engineer based on confirmation sampling and analysis, specific areas dredged will be placed with a 6-in. layer of sand to cap the residual layer. The backfill operation means and methods will essentially be the reverse of the dredge operations. The same equipment

will be used as was used during the dredging operations. Prior to capping operations, the equipment will be decontaminated after dredging operations.

The sand will be imported to the site and temporarily staged near the transport barge off-loading location. From here, one of the transport barges which each contain two dredge spoil containers will be loaded with the sand backfill material using the Material Handler. Each container will be loaded to approximately 18-CY capacity (36-CY total capacity per transport barge). Each transport barge will be maneuvered to the residual layer placement location. When the transport barge is tied off to the work barge, the excavator will be used to access the material from the container, and will slowly spread it in the water column where the residual layer is placed. EI expects an average in-stream backfill production rate will correspond to approximately 300-tons per day. The expected production rate for sequenced backfilling is estimated to be approximately 150-tons per day.



EI expects up to a 2-minute cycle time will be required for placing the capping materials for each bucket. The bucket will be placed in the water column and slowly released in a sweeping motion to spread the backfill materials. The bucket GPS will be used to verify real-time the backfill placement tolerances as operations are proceeding. Where the material elevation is verified to be too high, the bucket will be used to even out the material elevation. A rake attachment may also be utilized to help make the cap surface more uniform in elevation. Real time probing and bathymetric survey will be performed to confirm backfill placement tolerances are continually met.

4.13 Means and Methods for Backfilling Shoreline Areas

EI will import and place approximately 2,300-tons of common fill. EI will place the shoreline and bank general backfill from above the bank (upland) using a PC 300 Excavator and the Dredge Excavator to shape the fill. EI anticipates to backfill the bank general fill at a rate of approximately 300-tons per day.

4.14 Restoration

The following refers to the salient points regarding site restoration. The existing asphalt pavement will be removed and replaced as directed by the engineer. This work will be completed by North East Asphalt, Inc. The full depth of asphalt will be removed and transported to a recycling facility. Once removed, the base will be graded, supplemented as necessary, and

compacted. New asphalt will be furnished and placed to the pre-construction lines and grades. Additionally, damaged site features and damaged trees will be replaced.

Replace Salvaged Rip Rap on Shoreline

As the shoreline soils are backfilled, brought to grade and compacted, the riprap previously salvaged will be installed. Additional riprap will be added as needed.

Removal of Temporary Sheetpile Cofferdam

Upon completion of bathymetric survey, confirmation sampling and backfill as directed by the engineer, the sheetpile cofferdam will be removed, decontaminated and demobilized.

Removal of Upland Site Support Areas

During spring 2013, the existing Site support areas including the Vehicle Tracking Pad, decontamination pad, and sediment stabilization pad will be removed. Erosion controls will remain in place until the re-vegetation is complete in the spring of 2013.

Replacement of Boat Docks

EI does not anticipate replacing any boat docks.

Grass Restoration

EI anticipates preparing and hydro-seeding in the spring of 2013.

4.15 Proposed Project Personnel

EI's proposed key project personnel include the following:

- Alan Buell—EI Project Director (overall direction and management of project, on-site and off-site);
- Brian Bell—EI Technical Director (overall technical guidance on project, on-site and off-site);
- Skip Simpson—EI dredging adviser (startup, troubleshooting and technical guidance of dredging and dewatering operations, on-site and off-site);
- Jeff Habegger—EI Project Manager (on-site);
- Robert Hall – EI Project Superintendent (on-site);
- Beau Bronken—EI Project Engineer; and
- Scott Mahoney—EI Site Health and Safety Officer.

The resumes for these key project personnel and Envirocon's project team organization chart can be viewed in Section 3.0 of the proposal package, List of Key Personnel.

4.16 Proposed Schedule for Operations

EI's detailed proposed Project Schedule is included in Section 2 of our proposal package. Some salient points offered by our proposed schedule include the following:

- Expedited completion of site preparation and access for marine operations;
- Expedited completion of temporary sheet pile cofferdam;
- Begin dredging Areas 2 and 3 while temporary sheet pile cofferdam is installed;
- Remove material by Outfall as soon as practicable;
- Perform sequenced shoreline excavation in an expedited manner while protecting existing structures; and
- Ability to manage MGP contact water and operate WTS in freezing conditions if necessary.

EI's proposed schedule is based on performing work activities concurrently where possible which consolidates schedule, and allows substantial completion to be attained as early as practicable. The critical-path schedule work is thereby revealed, which is dredging Areas 2 and 3 as soon as possible while the cofferdam is installed, followed by Outfall and remaining Area 1 mechanical dredging. The proposed work is based on a six day per week operation typically, and the cofferdam installation is proposed on a six day per week basis, which allows the schedule to be met.

4.17 Subcontracted Work

EI will self perform the majority of the work at the Campmarina project. The only major work scope items to be subcontracted include the following specialty work scope:

- Cofferdam installation, and Outfall Construction—McMullen and Pitz;
- MGP Contact Water Treatment System—Baker Corporation;
- Storm and WWTP Effluent Line bypass operations—Rain for Rent;
- Offsite Transport – Peters Concrete;
- Bathymetric survey support—FOTH;
- Paving for stabilization pad and site restoration—North East Asphalt, Inc.; and
- Registered land surveyor to establish control points-- TBD.

5.0 STORM AND WWTP EFFLUENT LINE

The following addresses the Storm and WWTP Effluent Line bypass operations as well as the new Outfall construction.

5.1 Proposed By-Pass Operations

The following describe the equipment to be used for the Storm and WWTP Effluent Line bypass operations. The equipment will be provided by Rain for Rent.

Storm Sewer Bypass

During mechanical dredging operations, a Storm sewer effluent pipe and discharge structure will need to be bypassed. The effluent water will need to be pumped from a manhole to a temporary discharge location at Nestegg Marine (outside the temporary sheet pile). The Storm effluent water has been estimated to have a maximum flow of 2,000-gpm.

Sound attenuation is necessary, and all pumps will need to have telemetry to remotely assist with pump failure notifications.

Parameters for the Storm bypass:

- Jobsite elevation: Estimated 580' ASL;
- Desired or Peak Flow rate: 2000 gpm;
- Suction Lift: 12Ft Static, 17.33' Total Suction Lift; and
- TDH: 60.49Ft.

The proposed storm bypass system includes:

- One (1) SA DV200c pump @ 2,000-gpmm discharging into (1) 8-in. Heavy Duty Tank hose. This will run approximately 20-ft. to connect into one (1) 8-in. HDPE SDR 26 pipeline to discharge;
- One (1) SADV200c pump manifolded into above pipeline as mechanical failure redundancy;
- Suction Stringers are a minimum 12-in. Spirolite Hose;
- HDPE discharge fittings are a minimum rating of SDR 26;
- Air/vacuum vents are located at the pump station, discharge location and at high points along the pipeline; and
- Suction stringer requires a minimum submergence of 2.5-ft. to reduce possibility of vortexing and cavitation.

WWTP Effluent Bypass

During mechanical dredging operations, the WWTP effluent pipe and discharge structure will be removed. The effluent water will need to be pumped from a manhole to a temporary discharge location at Nestegg Marine (outside the temporary sheet pile). The WWTP effluent water has been determined to flow between 1,400 and 6,000 gpm.

Sound attenuation is necessary, and all pumps will need to have telemetry to remotely assist with pump failure notifications.

Parameters for the WWTP Effluent Line bypass:

- Jobsite elevation: Estimated 580' ASL;
- Desired or Peak Flow rate: 1400-6000gpm;
- Suction Lift: 12Ft Static, 18.59' Total Suction Lift; and
- TDH: 59.81Ft.

The proposed WWTP Effluent Line bypass system includes:

- Two (2) SA DV200c pumps @ 3,000-gpmm discharging into two (2) 12-in. Heavy Duty Tank hose. This will run approximately 20-ft. to connect into one (1) 18-in. HDPE SDR 26 pipeline to discharge; Discharge off the 8-in. check valve must be increased to 12-in hose;
- One (1) SADV200c pump manifolded into above pipeline as mechanical failure redundancy;
- Suction Stringers are a minimum 12-in. Spirolite Hose;
- HDPE discharge fittings are a minimum rating of SDR 26;
- Air/vacuum vents are located at the pump station, discharge location and at high points along the pipeline; and
- Suction stringer requires a minimum submergence of 4-ft. to reduce possibility of vortexing and cavitation.

The bypass systems will be diligently operated and maintained until the bypass operations are completed and the equipment is removed.

5.2 Equipment, means, and methods of constructing the New Outfall Structure and Sheetpile Cutoff Wall

A permanent sheetpile cut off wall will be installed by M&P. Granular fill will be installed as well as a rip rap apron.

The means and methods for constructing the new outfall structure are as follows.

<u>New Outfall Structure:</u>

- The new outfall construction will begin after dredging and backfill occurs in the area so no contamination will be present during construction.
- The existing 30" and 48" RCP outfall pipes will be bypassed throughout this project and therefore will not be discharging water during the construction of the new outfall structure.
- A temporary steel sheet pile cofferdam (cantilevered) will be installed around the new outfall structure to allow for a dewatered work area. The temporary cofferdam is expected to be approximately 80-ft. long by 20-ft. high and will tie into the embankments on both ends to seal off the river.

- Maintenance pumps will keep the work area dewatered during construction.
- The existing concrete collars around the existing outfall pipes will be saw cut and then removed using the CAT 350L excavator, jack hammer, and cutting torch.
- The concrete rubble will be loaded into trucks and disposed of in a legal manner.
- The new steel sheet pile bulkhead will be installed with excavator/pile driver (CAT 350L w/ HVR 100 Vibratory Hammer) to the lines and grades indicated in the project documents. The top of the new wall will be trimmed with a cutting torch to plan elevation.
- The penetration holes for the new outfalls will be cut through the new sheet pile bulkhead.
- The existing RCP outfall pipes will be excavated and exposed landward back to the nearest joint to allow the new sections to be installed on 6" of pipe bedding material (sand).
- The new RCP outfall extensions will be installed through the new steel sheet pile bulkhead. The new extensions will be checked for proper alignment and invert elevation; adjustments will be made as necessary.
- Concrete formwork will be built and installed with the #4 reinforcing bar as shown in the project documents.
- Concrete will be placed via chutes from the redi-mix trucks or with a concrete bucket attached to the excavator. Concrete will be consolidated and finished per project specifications. Formwork will be removed when directed by the project engineer.
- The new outfall extensions will be backfilled and compacted after the formwork is removed.
- The temporary cofferdam will be removed upon acceptance of the new outfall structures.
- The rip rap will be placed in a wet condition with an excavator after the temporary cofferdam is removed.
- Site restoration will occur after all construction activities are completed and accepted.

6.0 Proposed Work Deviating from Contract Documents

Envirocon is not proposing work deviating from contract documents. Our Assumptions and Clarifications for the project are listed in Section 7 of the proposal package.

FIGURES

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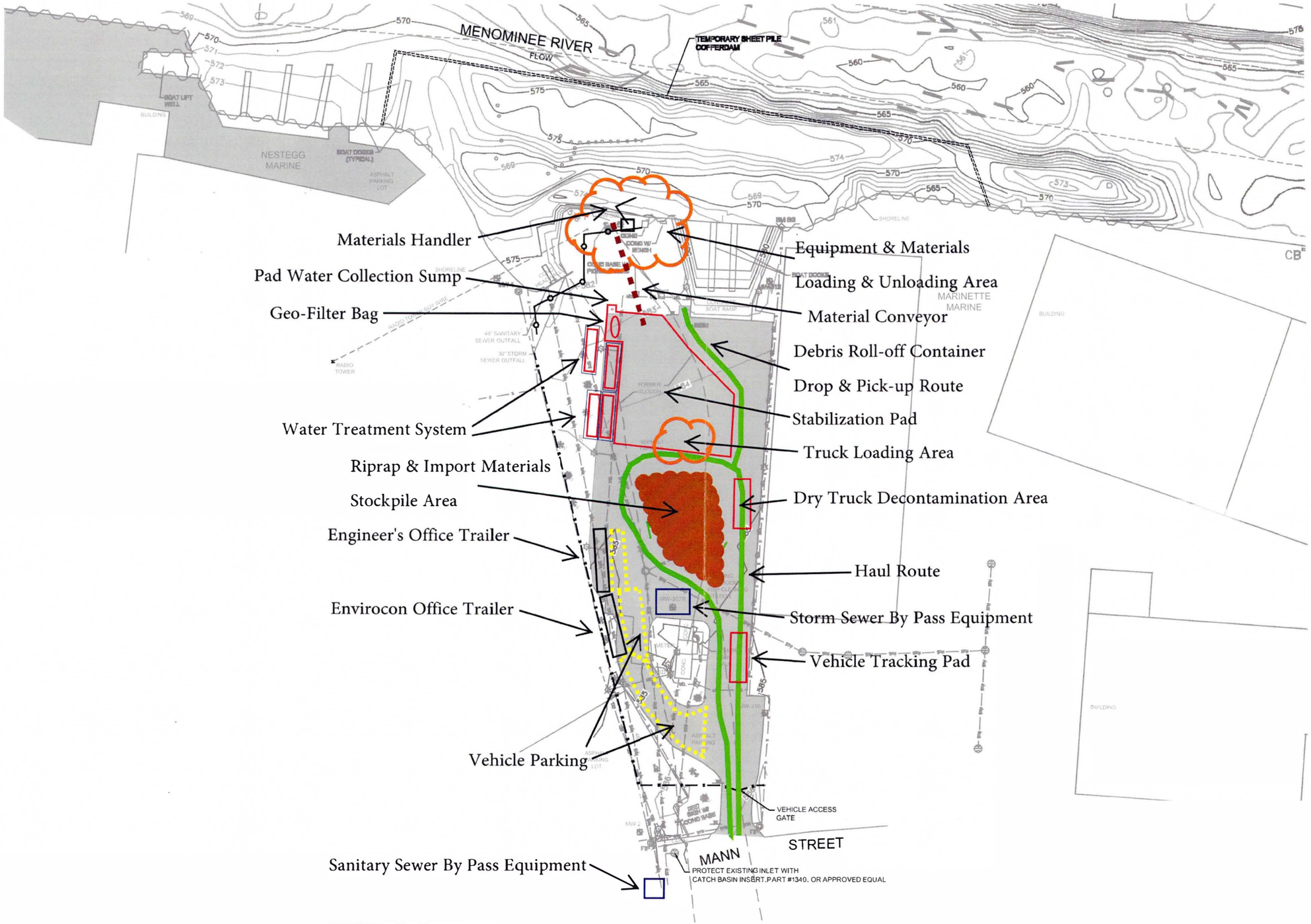
FIGURE 1.
SITE LAYOUT



PREPARED FOR:

WPSC

FORMER MARINETTE MGP SITE

PREPARED BY:

Envirocon
651 Corporate Circle, Ste.114
Golden, CO 80401

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

TITLE

FIGURE 1
SITE LAYOUT

DRAWN BY: WW	LOCATION: MARINETTE, WI		FIGURE: 1
REVIEWED BY: BB	SCALE N.T.S.	DATE 09.19.12	SHEET 1 of 3

Envirocon

FIGURE 2.
SEQUENCED DREDGING & BACKFILLING

Figure 2
Sequenced Dredging and Backfilling

1.0 Using Trench Boxes 16 feet long and 5 feet wide each, excavate in Stages so that no more than two slots are open excavations at any given time during the progression of the work.
2.0 Excavate two slots to start, then backfill the first slot, then excavate the third, then repeat the process moving in eastern direction until required excavations are 1 foot or less.

MENOMINEE RIVER
FLOW

AREA 1

A B C D E F

Stage 1 Excavate Slot A
Stage 2 Excavate Slot B
Stage 3 Backfill Slot A
Stage 4 Excavate C
Stage 5 Backfill Slot B
Stage 6 Excavate Slot D
Stage 7 Backfill Slot C
Stage 8 Excavate Slot E
Stage 9 Backfill Slot D
Stage 10 Excavate Slot F

TREES & BRUSH
GRAVEL
SHORELINE
MW-309
CONC
CONC W/ BENCH
BM SG
BOAT DOCKS
FUTURE BUILDING (UNDER CONSTRUCTION)
FORMER SLOUGH
CONC HEADWALL
MW-1
CONC BASE W/ PICNIC TABLES
MW-312
CONCRETE BOAT RAMP
ASPHALT PARKING LOT
SIGN
RADIO TOWER GUY WIRE
48" SANITARY SEWER OUTFALL
30" STORM SEWER OUTFALL

PREPARED FOR:
WPSC
FORMER MARINETTE MGP SITE

PREPARED BY:
Envirocon
651 Corporate Circle, Ste.114
Golden, CO 80401

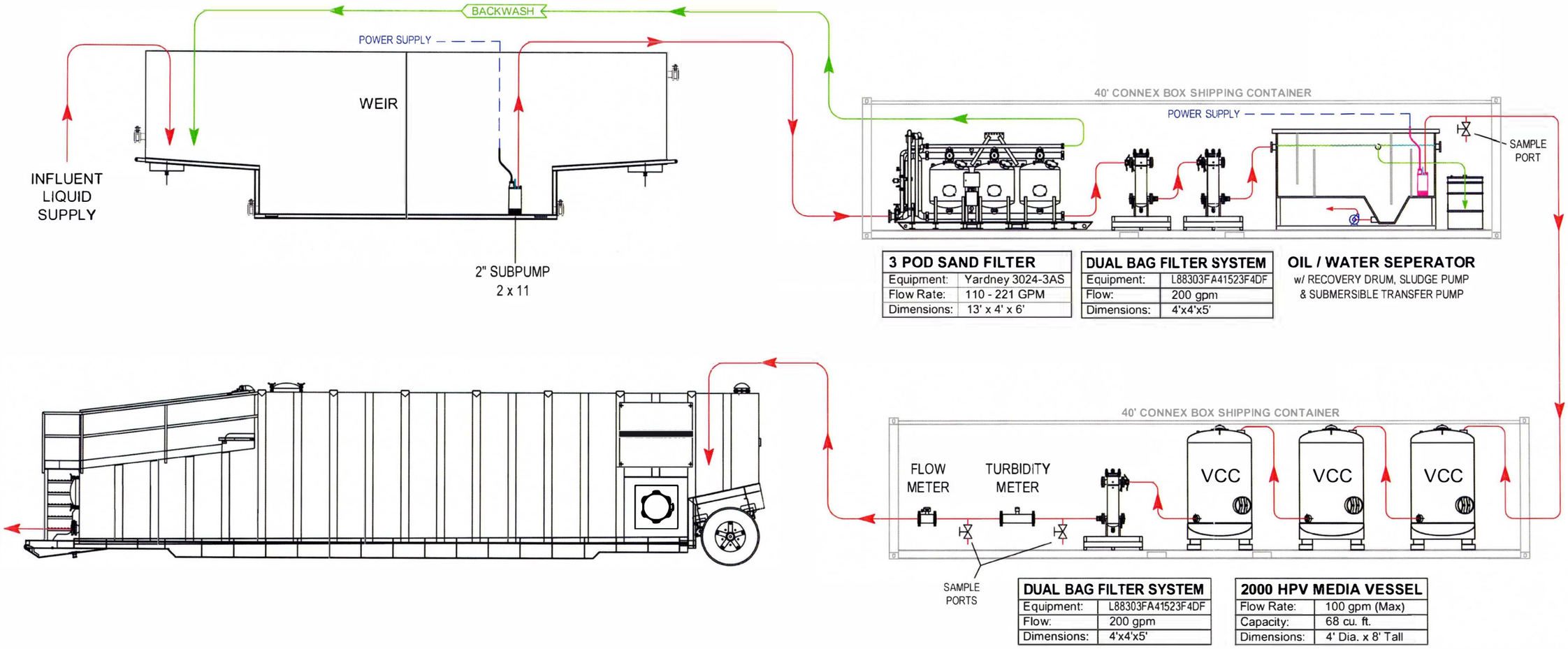
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

TITLE
FIGURE 2
SEQUENCED DREDGING & BACKFILLING

DRAWN BY: WW	LOCATION: MARINETTE, WI		FIGURE: 2
REVIEWED BY: BB	SCALE N.T.S.	DATE 09.19.12	SHEET 2 of 3

Envirocon

FIGURE 3.
WATER TREATMENT SYSTEM SCHEMATIC



3 POD SAND FILTER	
Equipment:	Yardney 3024-3AS
Flow Rate:	110 - 221 GPM
Dimensions:	13' x 4' x 6'

DUAL BAG FILTER SYSTEM	
Equipment:	L88303FA41523F4DF
Flow:	200 gpm
Dimensions:	4'x4'x5'

OIL / WATER SEPERATOR
w/ RECOVERY DRUM, SLUDGE PUMP
& SUBMERSIBLE TRANSFER PUMP

DUAL BAG FILTER SYSTEM	
Equipment:	L88303FA41523F4DF
Flow:	200 gpm
Dimensions:	4'x4'x5'

2000 HPV MEDIA VESSEL	
Flow Rate:	100 gpm (Max)
Capacity:	68 cu. ft.
Dimensions:	4' Dia. x 8' Tall

PREPARED FOR:

WPSC

FORMER MARINETTE MGP SITE

PREPARED BY:

Envirocon
651 Corporate Circle, Ste.114
Golden, CO 80401

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

TITLE

FIGURE 3

WATER TREATMENT SYSTEM SCHEMATIC

DRAWN BY: WW	LOCATION: MARINETTE, WI		FIGURE: 3		
REVIEWED BY: BB	SCALE N.T.S.	DATE 09.19.12	SHEET 3 of 3		

Envirocon

ATTACHMENTS

Envirocon

ATTACHMENT A.
BAKER WTS COMPONENT DATA SHEETS

PRODUCT DATA SHEET
January, 2007

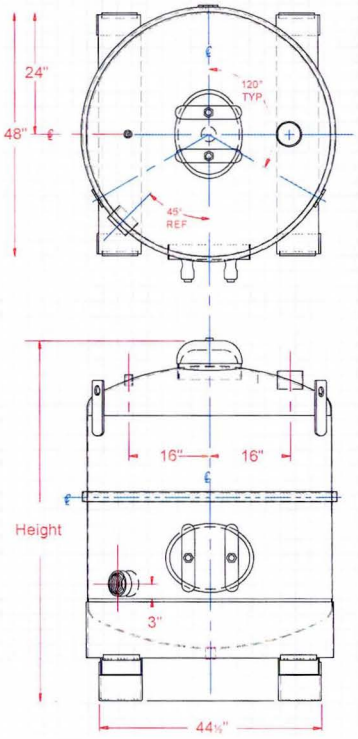
KLEEN.WATER 1000HPV & 2000HPV

GENERAL INFORMATION

These units are designed for the efficient purification of contaminated water or liquid streams. These filters have the ability to remove contaminants to non-detectable levels. The vessels are constructed of heavy-duty mild steel and are lined with a double-layer epoxy coating.

WEIGHTS AND MEASURES

» **Max. Flowrate:**	*1000HPV:* 80 gpm *2000HPV:* 100 gpm
» **Max. Pressure:**	75 psi
» **Max. Temp:**	150°F
» **Height:**	*1000HPV:* 70" *2000HPV:* 96"
» **Diameter:**	48"
» **Shipping Wt*:** (drum + media) (** Media dependent*)	1000HPV: 2050 lbs. – 3050 lbs. 2000HPV: 3100 lbs. – 5100 lbs.



Downflow operation is recommended

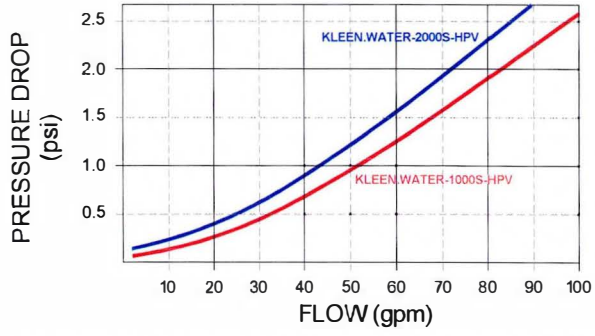
FILTER MEDIA

» **Types:**	▪Activated Carbon ▪Organoclay ▪Ion Exchange Resin ▪Specialty Media
» **Volume:**	*1000HPV:* 34 cu. ft. *2000HPV:* 68 cu. ft.
» **Weight*:** (** Media dependent*)	*1000HPV:* 1000 lbs. – 2000 lbs. *2000HPV:* 2000 lbs. – 4000 lbs.

MISCELLANEOUS

» **Inlet:**	4" FNPT
» **Outlet:**	4" FNPT
» **Interior Coating:**	Double-layered epoxy coating
» **Internals:**	PVC underdrain
» **Media Access:**	Top & side 12"x16" manways (neoprene gaskets)

PRESSURE DROP DATA



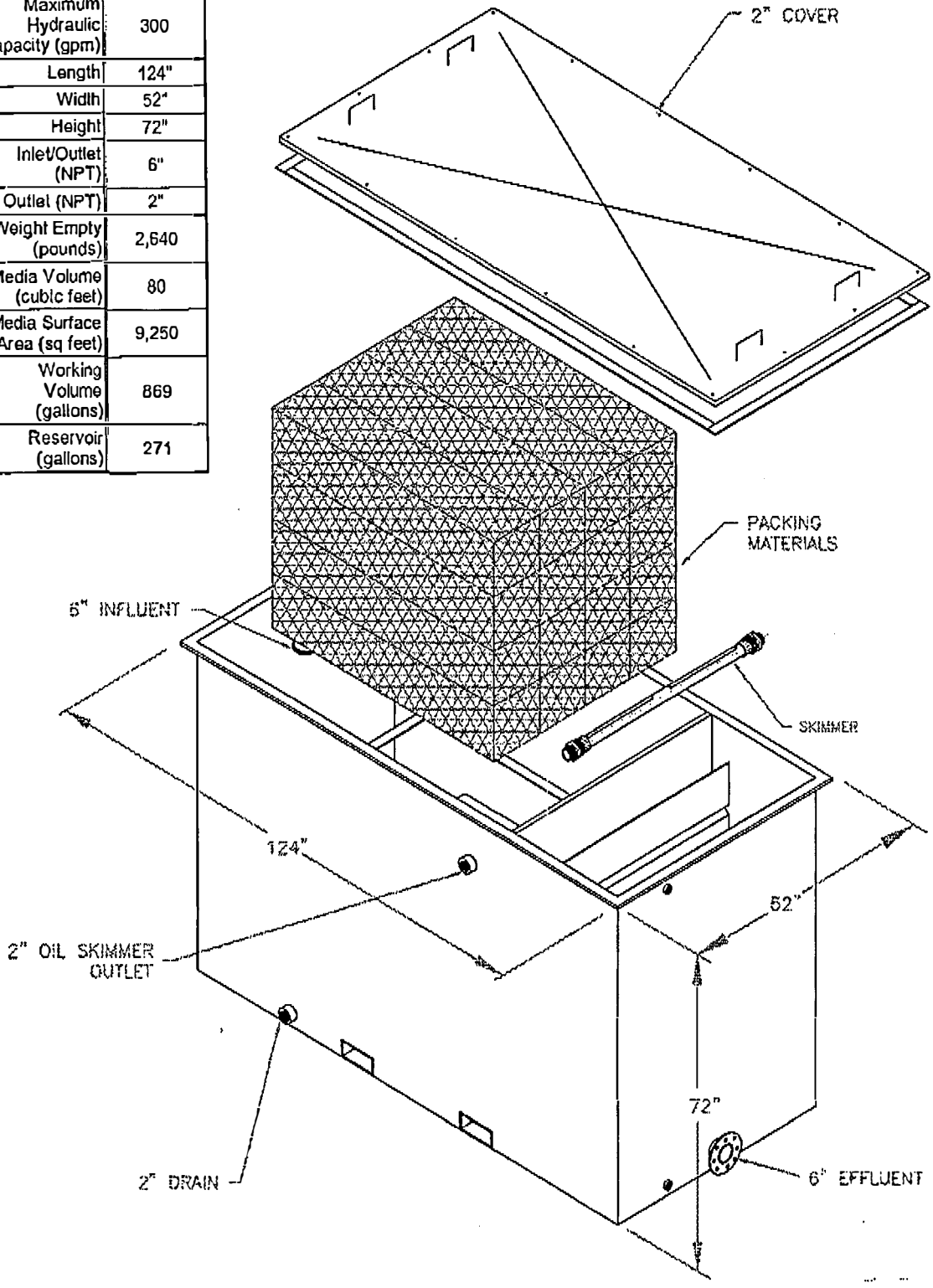
NOTE:

1. Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate procedures for potentially low oxygen spaces must be followed, including all federal and state requirements.

BAKERCORP

COWS 250S
250 GPM STEEL OIL/WATER SEPARATOR

Model> F=FRP; S=Steel	COWS 250S
Nominal Flow (gpm)	250
Maximum Hydraulic Capacity (gpm)	300
Length	124"
Width	52"
Height	72"
Inlet/Outlet (NPT)	6"
Oil Outlet (NPT)	2"
Weight Empty (pounds)	2,640
Media Volume (cubic feet)	80
Media Surface Area (sq feet)	9,250
Working Volume (gallons)	869
Reservoir (gallons)	271



BAKERCORP™
PEOPLE. EQUIPMENT. SOLUTIONS.

PRODUCT DATA SHEET

January, 2007

YARDNEY 3-POD SAND FILTER SYSTEM (IL3024-3AS)

GENERAL INFORMATION

Skid mounted sand media filters [3 tanks (pods)] with automatic backwashing designed for general-purpose water filtration of organic and inorganic solids. Powered by 120 V external power supply.

WEIGHTS AND MEASURES

» **Capacity:**	110 – 221 gpm (Normal flow range) 295 gpm (Peak flow)
» **Design Pressure:**	100 psi maximum
» **Temperature:**	Limit to ambient. Consult Baker if temperature exceeds 100 degrees.
» **Filtration:**	Down to 20 - 50 microns
» **Height:**	6'-3" (overall)
» **Width:**	3'-10" (skid rail to skid rail)
» **Length:**	12'-10" (overall); 12'-3" (skid)
» **Weight:**	2,325 lbs. – equipment only 2,700 lbs. – media only 6,525 lbs. – operational
» **Backflush:**	74 gpm, automatic

OPERATING REQUIREMENTS

» **Compressed Air:**	5 cfm minimum at 60 psi
» **Sand Media:**	Crushed silica, 0.47MM (#80 grit); 7 cu. ft. per vessel
» **Gravel Media:**	#3 crushed rock, ½" x ¾"; 2.5 cu. ft. per vessel
» **Input Power:**	120 V AC (customer supplied)

FEATURES

» **System Controller:**	Automatic Filter Controller. Flush activation based on elapsed time and/or pressure differential.
» **Piping:**	Inlet & outlet pipe is 4" A53B,; weld fittings are A234; flanges are A106. Backflush piping is 2" schedule 40 PVC.

FEATURES – con't

» **Press. Gauge:**	2" face, ¼" NPT bottom connection, stainless steel case, plexiglass lens, brass bourdon tube, 0-100 psi range.
» **Flowmeter:**	Four-inch propeller type meter, AWWA C704-92 compliant. Instantaneous flowrate indicator and six-digit totalizer. Accuracy is ±2% of reading. Repeatability of 0.25%. Tube: epoxy-coated carbon steel; Impeller: high-impact plastic.
» **Butterfly Valves:**	Effluent / Influent: 4" with cast iron body (epoxy coated), EPDM seat, 304 SS stem and aluminum bronze disc. Tank Isolation: 3", grooved ends, EPDM disc coating
» **Differential Pressure Switch:**	0-30 psid. Two-inch dial, plated steel case, ±3% accuracy.
» **Air / Vacuum Release Valve:**	2" valve, mounted on backwash, influent and effluent lines
» **Tubing:**	Pressurized – ¼" 304 ss w/ Hoke fittings; Drain - ¼" polypropylene; Vent – schedule 80 PVC

SURFACE DETAILS

» **Interior Coating:**	3M Skotchkote 134
» **Exterior Coating:**	High Gloss Polyurethane

TESTS/CERTIFICATIONS

» **Tests Performed:**	OEM pressure tested. BakerCorp performs scheduled QMS inspections.

BAKERCORP

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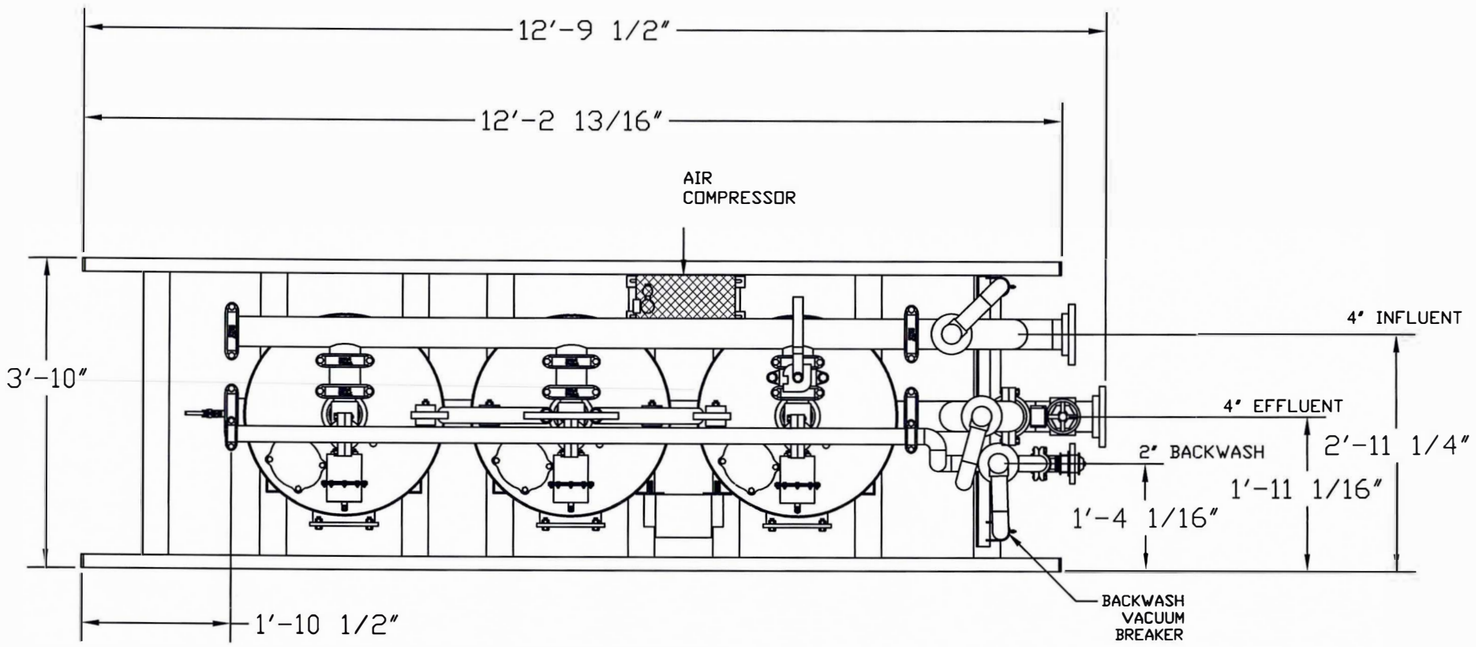
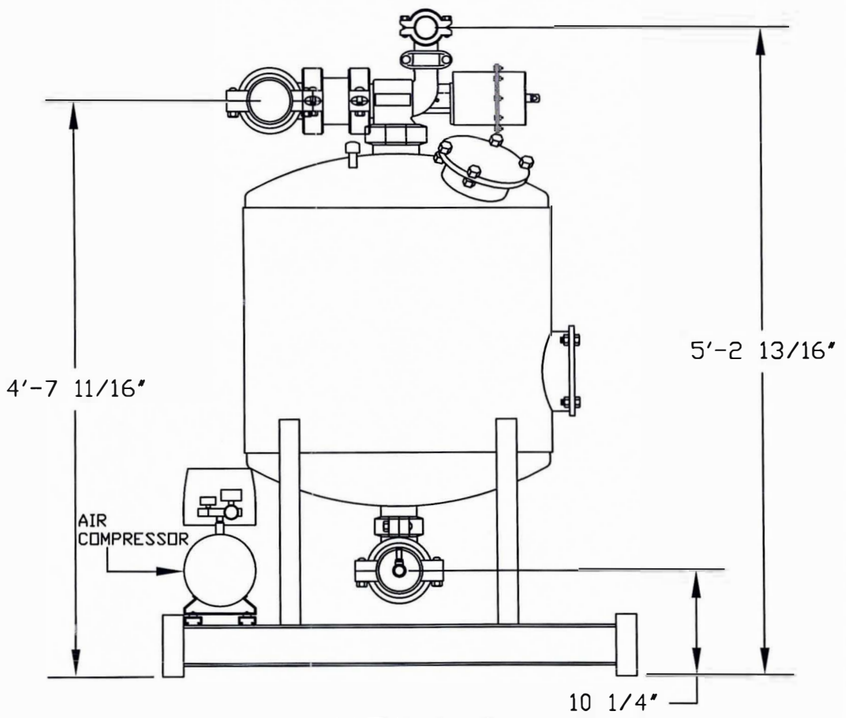
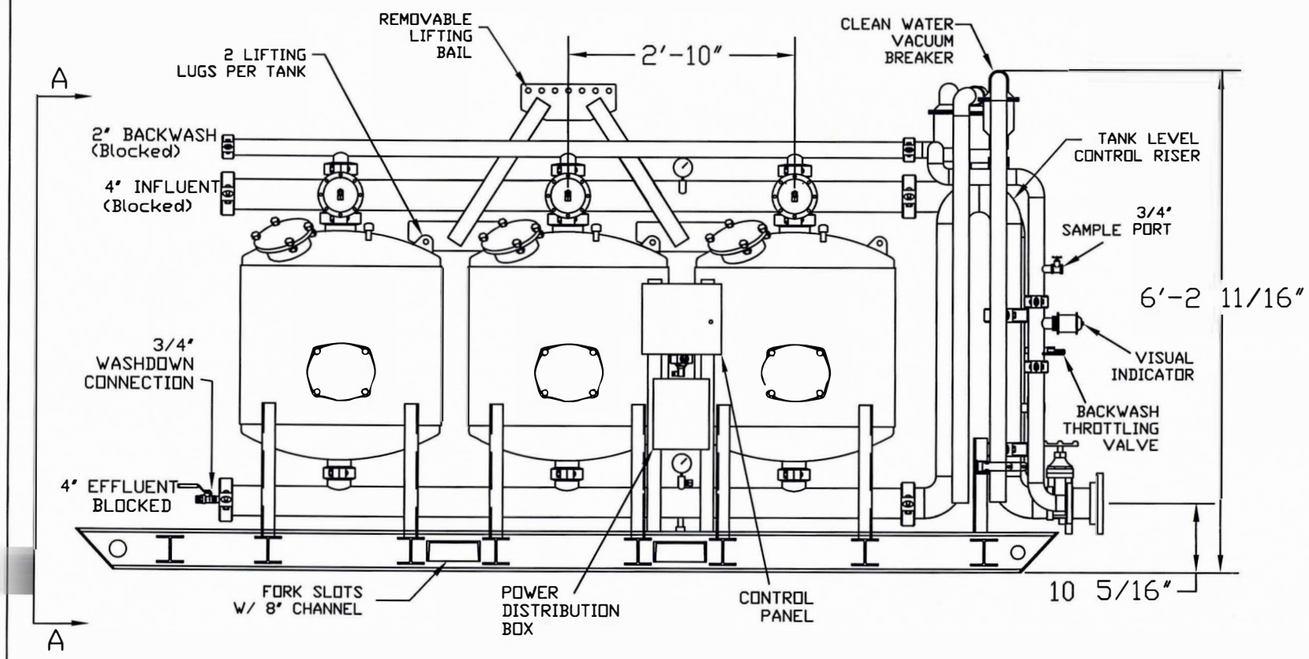




VIEW A-A



IL 3024-3AS

NOTES:
1. FLOW RATE DESIGN - 110-221 GPM
   BACKWASH RATE - 15 GPM / FT^2 74 GPM
2. MAXIMUM WORKING PRESSURE - 100 PSI.
3. ELECTRICAL:
   - CONTROLLER 120V / 1A; 12VDC SOV's
   - CONTROLLER 120V / 5A
4. MEDIA REQUIREMENT PER TANK:
   A. 1/2"x3/4" CRUSHED ROCK - 2.5 CU. FT.
   B. 0.47mm CRUSHED SILICA SAND - 7.0 CU. FT.
5. WEIGHT: (APPROX.)
   SHIPPING - 2,325 LBS (LESS MEDIA)
   MEDIA - 2,700 LBS
   OPERATION - 6,525 LBS
6. PNEUMATICALLY ACTUATED VALVES W/ SS TUBE
7. STEEL CONDUIT
8. TUBE TANK VENT VALVES TO GROUND

NOTES:
1. THIS DRAWING IS A BASELINE REPRESENTATION FOR THIS SIZE SKID. VARIATIONS BETWEEN THIS DRAWING AND THE ACTUAL EQUIPMENT IN THE FIELD MAY EXIST, PRIMARILY WITH APPURTENANCES. CONSULT YOUR LOCAL BAKER REPRESENTATIVE IF SPECIFIC NEEDS EXIST.

REV.	DESCRIPTION	DATE	BY
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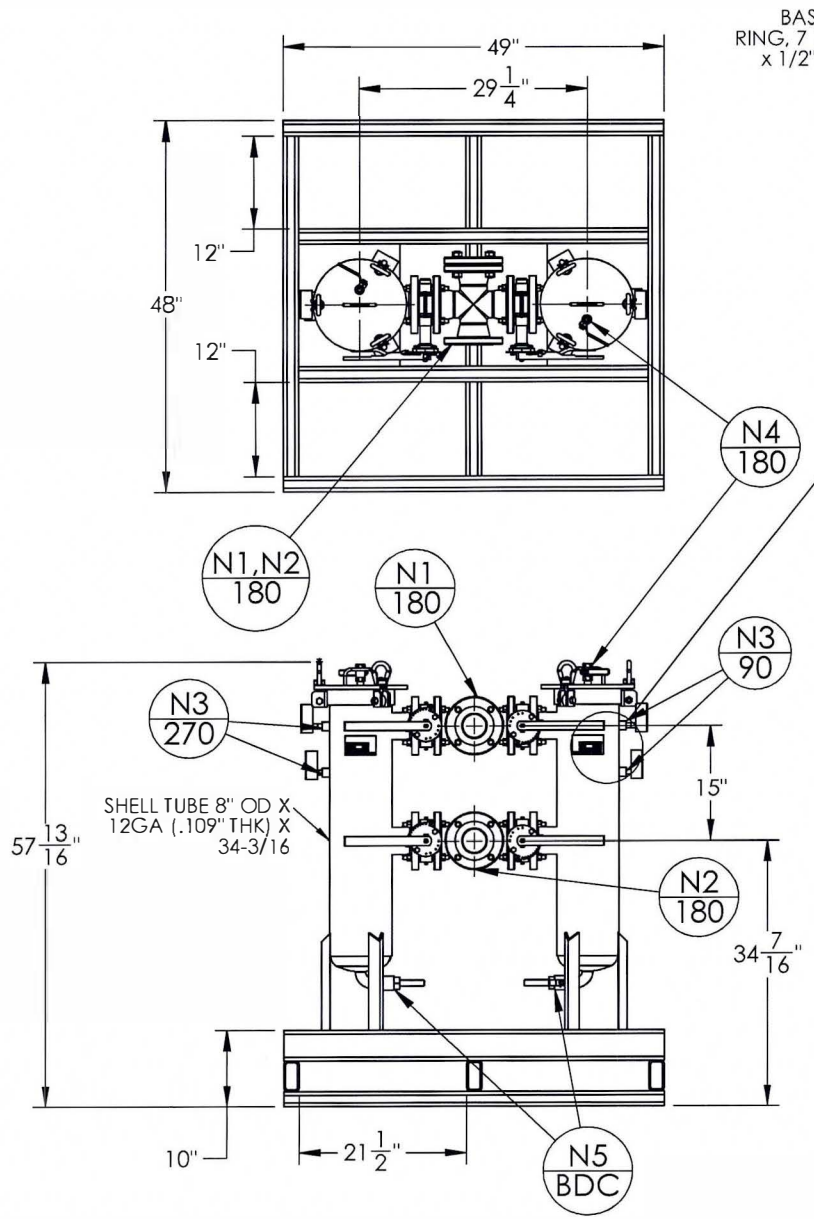
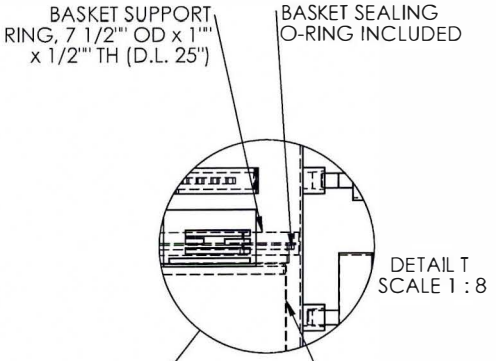
D			
C			
B			
A	FIXED TEXT ERROR	7/12/05	Z.E.R

BAKERCORP
3020 OLD RANCH PARKWAY
SEAL BEACH, CA 90740-2751

SCALE: Do Not Scale	SIZE B	ORIGINAL DWG. DATE 31MAY05
DRAWN BY: P.J.B.	APPROVED BY: -	CAT/CLASS --
TITLE 3-POD SAND FILTER SYSTEM YARDNEY MODEL IL 3024-3AS		SHEET 1 OF 1
DRAWING NO. S-9-M0021-1-		REV. A

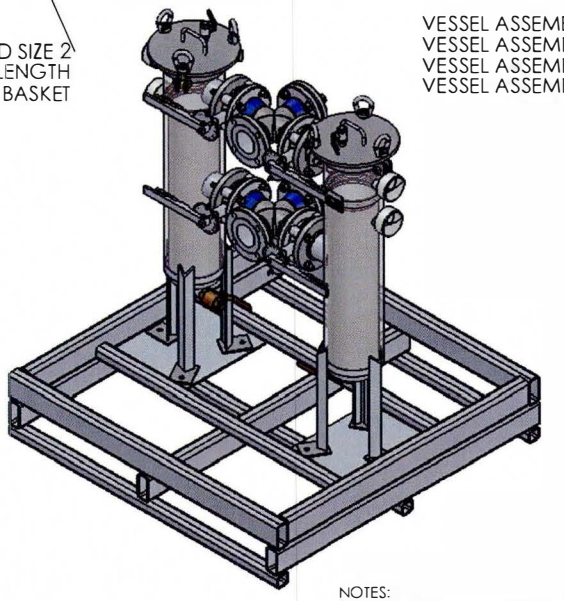




NOZZLE SCHEDULE			
MARK	QTY	SIZE / RATING	DESCRIPTION
N1	1	3" 150# RFSO	INLET
N2	1	3" 150# RFSO	OUTLET
N3	4	1/2" 3000# NPT	PRESS GA
N4	2	1/2" 3000# NPT	VENT
N5	2	1/2" 3000# NPT	CLEAN DRAIN
N6	-	-	DIRTY DRAIN

VESSEL DESIGN CONDITIONS			
CODE:	BEST COMMERCIAL PRACTICE		
M.A.W.P.:	150 PSI @ 250°F	M.D.M.T.:	-20° F @ 150 PSI
M.A.E.P.:	15 PSI @ 250°F		
CORROSION ALLOWANCE:	NONE	HYDROTEST PRESS:	195 PSI
STAMP:	NONE	SERVICE:	NON LETHAL
PWHT:	N/A	RADIOGRAPHY:	N/A
MATERIAL:	SS304	GASKET:	BUNA-N

VESSEL ASSEMBLY DRY WEIGHT: 375 #'s
VESSEL ASSEMBLY FLOODED WEIGHT: 425 #'s
VESSEL ASSEMBLY SHIPPING WEIGHT: 385 #'s
VESSEL ASSEMBLY VOLUME: 2.3 C.F.



NOTES:
1. VESSEL WILL HOUSE (QTY=2) DOUBLE LENGTH BASKETS.
2. BAKERCORP STANDARD CARBOLINE FLEET MAC GREEN ON ALL CARBON STEEL SURFACES.

TOLERANCES-UNLESS OTHERWISE NOTED
DECIMAL .X =±.1" .XX =±.02" .XXX =±.005"
FRACTIONAL ≤24" =±1/16" >24" =±1/8"
ANGULAR =± 1°
MAX. MACHINED SURFACE FINISH 125

REV.	DATE	REVISION	DRAWN	APP'D

FIL-TREK CORPORATION
CAMBRIDGE ONTARIO – CANADA
www.fil-trek.com • Tel: 519.623.7448 • Fax: 519.623.8807

EQUIPMENT:	BAG FILTER DUPLEX
MODEL NO:	S4EBDV212-3F-SW-V2-SK
CUSTOMER:	BAKER CORP

PARENT:	NONE	DRAWN:	JJJ	DATE:	JUNE 10 2011	JOB No.	DWG. No.	REV. No.
PAGE:	OF 6	CHK'D:	PT	SCALE:	NTS	V-5565	030-0005	0

4306 West 190th Street, Torrance, CA 90504
Tel: 310.303-3700 ♦ Fax: 310.406-3001

Activated Carbon and Specialty Media
Pollution Control Systems and Filtration Equipment Rental

MATERIAL SAFETY DATA SHEET

DATE OF ISSUE: June 6, 2005

SECTION I- GENERAL INFORMATION

MANUFACTURER NAME: **BakerCorp 310.303.3700**
4306 West 190th Street, Torrance, CA 90504

CHEMICAL NAMES & SYNONYMS: Activated Carbon, Activated Coconut, Activated Charcoal, Char
TRADE NAMES & SYNONYMS: **Activated Carbon**
CHEMICAL FAMILY: Amorphous Carbon, Activated Coconut FORMULA: Carbon atom in a crystallite structure has an infinite molecular weight, Anthracite Coal, Sub-Bituminous Coal, Bituminous Coal CAS NO. 7440-440

SECTION II- HAZARDOUS INGREDIENTS

CHEMICAL NAME (Ingredients) [% TLV (Units)]: No Hazardous Ingredients
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASSES [% TLV (Units)]: LIQUIDS
Activated Carbons that have adsorbed other carbon or non-carbon liquids or gasses may lower or raise the ignition point and must be laboratory checked for ignition point when expended.

SECTION III- PHYSICAL DATA

BOILING POINT (DEG F): 4200
SPECIFIC GRAVITY (H2O-1): 1.8-2.1
VAPOR PRESSURE (MM HG) N/A
PERCENT VOLATILE BY VOLUME: none
VAPOR DENSITY (AIR=1): N/A
EVAPORATION RATE: none
SOLUBILITY IN WATER: insoluble
IGNITION TEMPERATURE: 600 deg C
APPEARANCE & ODOR: Odorless, black granular solid

SECTION IV- FIRE HAZARD & EXPLOSIVE DATA

FLASH POINT (method used): none
FLAMMABLE LIMITS: Lower Explosive Limit: N/A Upper Explosive Limit: N/A
EXTINGUISHED MEDIA: Use media for class A fires: Foam, multipurpose dry chemical and water type extinguishers.
SPECIAL FIRE FIGHTING PROCEDURES: none
UNUSUAL FIRE & EXPLOSION HAZARDS: Provide for the handling of dry flowing solids in grounded equipment to prevent build up of static electric charge especially when explosive dust or vapor mixtures may exist in confined areas. Also provide for pressure relief devices following the principles set forth in the National Fire Protection Association Explosion Preventing Guide
NFPS68-1854.

SECTION V- HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: Avoid exposure to dust levels 15 mg per cubic meter. (Federal), 10 mg per cubic meter (California State).

EFFECTS OF OVEREXPOSURE: Temporary dryness to mucous membrane causing coughing and minor nose and throat irritation.

EMERGENCY AND FIRST AID PROCEDURES: Wash mouth with water-no other treatment required. Use protective respiratory equipment to avoid inhaling carbon dust.

SECTION VI- REACTIVITY DATA

STABILITY: UNSTABLE→ STABLE→ **X**

CONDITIONS TO AVOID: Activated Carbon is chemically inert

INCOMPATABILITY (Materials to avoid): none

HAZARDOUS DECOMPOSITION PRODUCTS: none

HAZARDOUS POLYMERIZATION: MAY OCCUR→ WILL NOT OCCUR→**X**

SECTION VII- SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Spills can create nuisance dust and house keeping problems. Vacuuming is best clean up procedure.

WASTE DISPOSAL METHOD: Wet or dry activated carbon is best disposed of by landfill.

SECTION VIII-PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify Type): Respiratory classifications table G-2 part 1910.93 (OESHA) Rules & Regulations.

VENTILATION: LOCAL EXHAUST: Vacuum to control dust

PROTECTIVE GLOVES: None required

EYE PROTECTION: For airborne dust

OTHER PROTECTIVE EQUIPMENT: Protective clothing should be worn during handling to protect against airborne dust.

SECTION IX- SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Packaged activated carbon is not resistant to weather or outside storage and requires indoor Type I and Type II storage facilities.

OTHER PRECAUTIONS: Check oxygen content of atmosphere of any vessel containing activated carbon before allowing entry of personnel.

SECTION X- TRANSPORTATION DATA

PROPER SHIPPING (Article) NAME: Steam Activated Carbon, Non-Regulated ***OR*** Carbon, Activated, Non-Regulated

DOT CLASSIFICATION: NMFC 40560 / DOT MARKING: N/A / DOT PLACARD: N/A

EMERGENCY ACCIDENT PRECAUTIONS AND PROCEDURES:

Contact: BakerCorp

Phone: 310.303.3700

PRECAUTIONS TO BE TAKEN IN TRANSPORTATION: N/A

The information contained herein is based on data considered accurate in light of current formulation. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

4306 W. 190th Street, Torrance, California 90504
Phone: 310.303.3700 ♦ Fax: 310.406.3001

PRODUCT DATA SHEET
November, 2007

FRAC TANK

GENERAL INFORMATION

This tank is sloped downward from working surface at rear of tank to the front. The rear axle is fixed to the tank (permanent).

WEIGHTS AND MEASURES

» **Capacity:**	500 BBL. (21,000 gal.)
» **Height:**	Front: 9'-0", Rear: 12'-5" Handrail up: 16'-1"
» **Width :**	8'-0"
» **Length:**	36'-4" (tank only) 42'-3" (manifolded tank overall)
» **Weight:**	18,000 lbs. (est.)

STRUCTURAL DESIGN

» **Floor:**	Carbon steel
» **Sides/Ends:**	Carbon steel
» **Top Deck:**	Carbon steel
» **Internal Cross Bracing:**	Round stock, 3/4" – 7/8" depending on manufacturer

FEATURES

» **Manifold:**	Some are equipped, some are not
» **Valves:**	Rear: one (1) - 4" butterfly valve Front Fill: one (1) - 4" butterfly valve Front Manifold: four (4) - butterfly valves
» **Relief Valve:**	Standard style: None Safety Vapor style: Buna-N seal, 16 oz. Pressure setting, 0.4 oz. Vacuum setting

FEATURES – cont.

» **Top Access:**	One (1) access door
» **Front Access:**	One (1) access door
» **Side Access:**	One (1) access door (passenger side)
» **Guardrails:**	At rear platform only
» **Exterior Ladder:**	One (1) at rear of tank
» **Internal Ladder:**	One (1) located at top access door
» **Front Drain:**	One (1) 4" connection
» **Rear Flush:**	One (1) 4" capped nipple
» **Level Gauge:**	None
» **Rear Wheels:**	Fixed axle
» **Overflow:**	One (1) 3" overflow pipe at rear of tank
» **Vent:**	Original design tanks have flip open hatch

SURFACE DETAILS

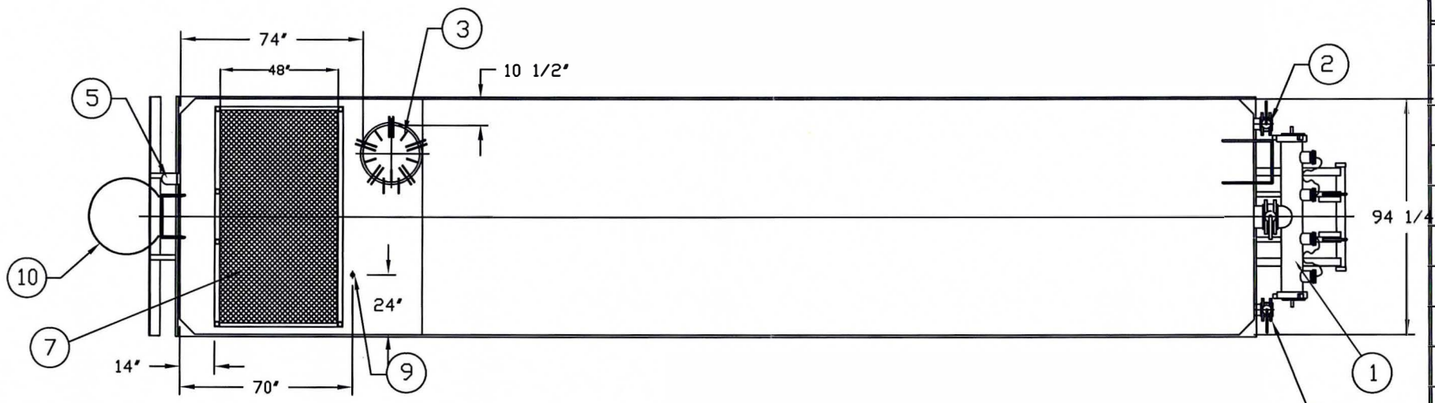
» **Exterior Coating:**	High gloss polyurethane
» **Interior Coating:**	Both lined & unlined available. Consult your local Baker representative.

TESTS/CERTIFICATIONS

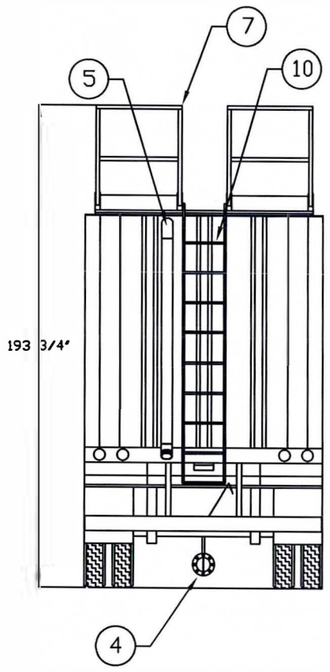
» **Test Performed:**	Scheduled QMS inspections

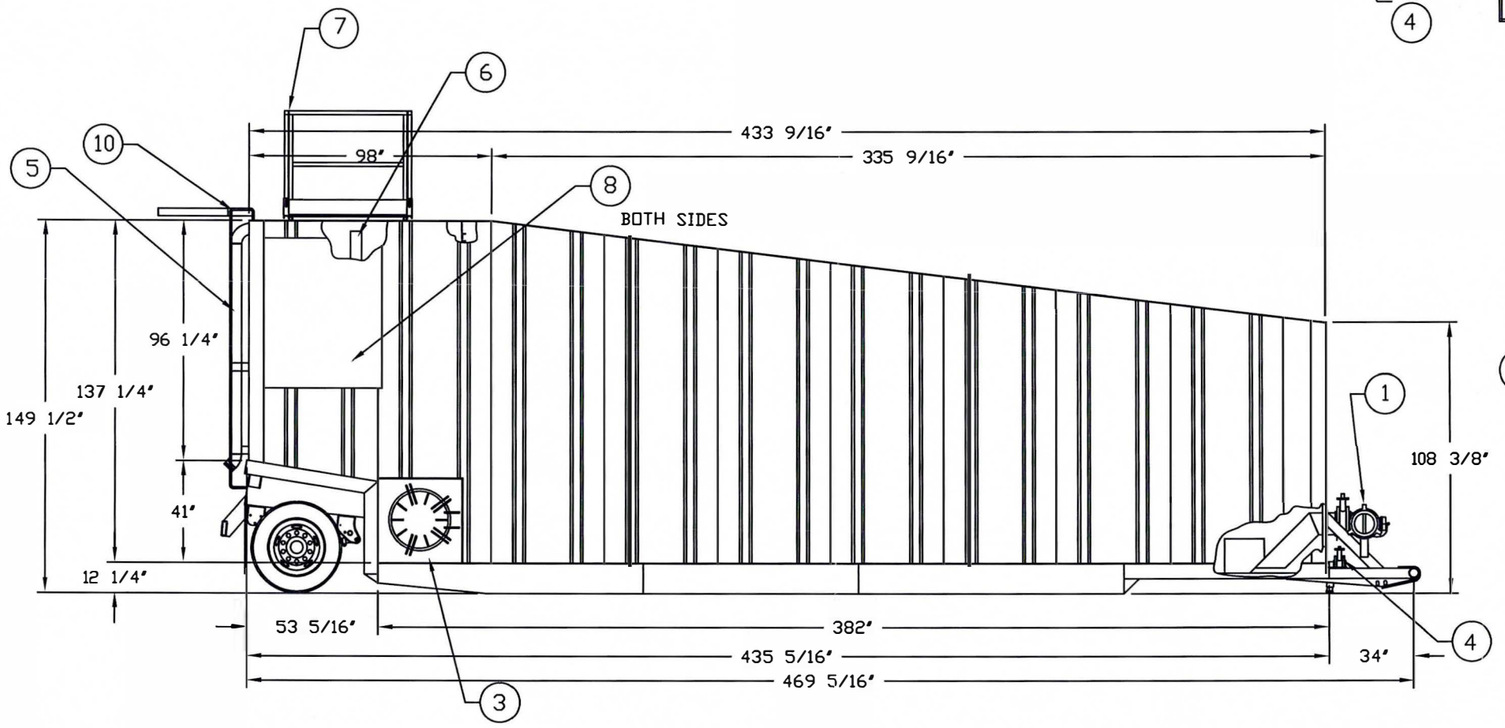
BAKERCORP

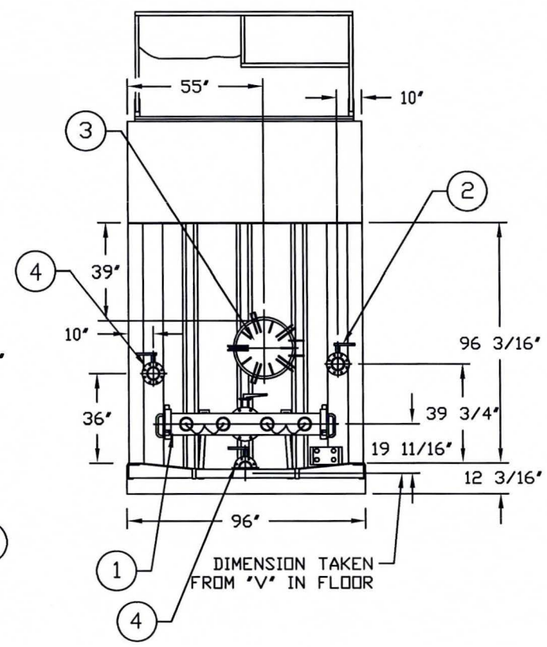
3020 OLD RANCH PARKWAY • SUITE 220 • SEAL BEACH, CA • 562-430-6262



ITEM	QTY	DESCRIPTION
1	1	8" header w/two knock-on half unions & 4-4" nipples
2	1	4" gel line
3	3	22" diameter manwoy
4	4	4" connection with butterfly valve
5	1	3" fill pipe
6	1	4" overflow pipe
7	1	Rear platform with romp and handrails
8	2	60"x48" Boker Tonks sign plate
9	1	1 1/4" pipe vent
10	1	Rear ladder







SPECIFICATIONS:

1) Tank Capacity: 21,000 gallons (500 BBL)
2) Tank Weight: 18,000 lbs. (empty)

NOTES:

1. This drawing is a baseline representation for this model of tank. Variations between this drawing and the actual equipment in the field can and do exist, primarily with appurtenance locations, sizes and quantities. Consult your local BakerCorp representative if specific needs exist.
2. THIS TANK IS *NOT DESIGNED FOR TRANSPORTING LIQUIDS*. It should be moved only when empty.

REV.	DESCRIPTION	DATE	BY
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B			
A			

BAKERCORP 3020 OLD RANCH PARKWAY SEAL BEACH, CA 90740-2751

SCALE: Do Not Scale	SIZE B	ORIGINAL DWG. DATE 16JUL02
DRAWN BY: P.J.B.	APPROVED BY:	CAT/CLASS --
TITLE: VE ENTERPRISES FRAC TANK		SHEET 1 of 1
DRAWING NO. S-2-M0004-1-		REV. 0

PRODUCT DATA SHEET

January, 2007

EASY ACCESS TANK

GENERAL INFORMATION

Hinged deck lid sections form a permanent catwalk yet permit visual inspection of all internal surfaces. Lid sections are torsion bar counterbalanced for easy lifting. This style of tank is not vapor tight.

WEIGHTS AND MEASURES

» Capacity:	Standard tank – 500 BBL. (21,000 gal.) Short tank – 475 BBL. (19,950 gal.)
» Height:	Standard – 12'-6" Short – 11'-10"
» Width :	Standard – 8'-0" Short – 8'-0"
» Length:	Standard & Short – 35'-0" (36'-0" including rear ladder or 37'-6" with stairway)
» Weight:	Standard – 21,000 lbs. (approx.) Short – 20,500 lbs. (approx.)

STRUCTURAL DESIGN

» Floor:	¼" thick ASTM A36 carbon steel
» Sides/Ends:	¼" thick ASTM A36 carbon steel
» Roof Deck:	¼" thick ASTM A36 carbon steel
» Wall Frame:	Structural steel channel/angle on interior
» Floor Frame:	6" carbon steel I-beam on exterior side
» Roof Frame:	4" steel channel
» Internal Cross Bracing:	15 – 3"x3"x¼" angle iron

FEATURES

» Valves:	May be fitted with a combination of 4" and 6" butterfly valves.
» Relief Valve:	None
» Front Collar:	4" threaded nipple extension, plugged or capped
» Bottom Sump:	One on each end of tank, either flat bottomed, 12" diameter, 3" deep, or domed, 14" diameter, 4" deep
» Top Access Doors:	4 - 186" x 32" x 1/8" thick steel plate with torsion bars
» Internal Ladder:	1 – 16" wide x 140" long
» Manways:	None
» Roof Access:	Ladder or stairway mounted on rear of tank
» Guardrails:	Around top deck, fold-down, 1" x 1½" tubing
» Level Gauge:	None
» Rear Wheels:	Removable dolly (not a fixed axle)

SURFACE DETAILS

» Exterior Coating:	High Gloss Polyurethane
» Interior Coating:	None

TESTS/CERTIFICATIONS

» Test Performed:	New construction and skin repairs: hydrotest Scheduled: Level I, II & III inspections

BAKERCORP™

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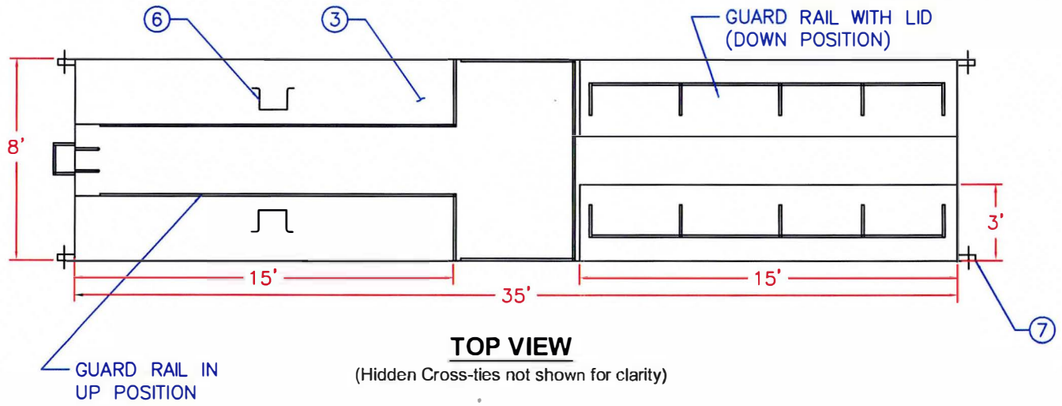
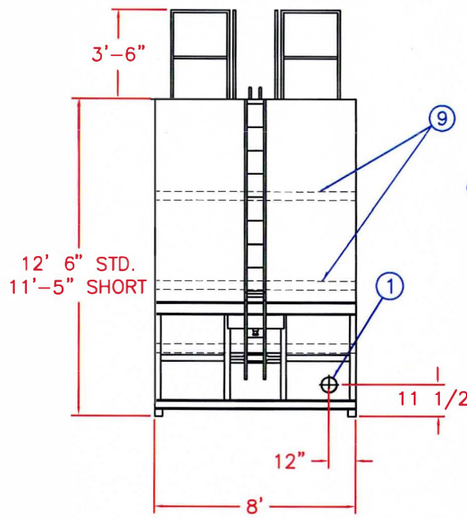


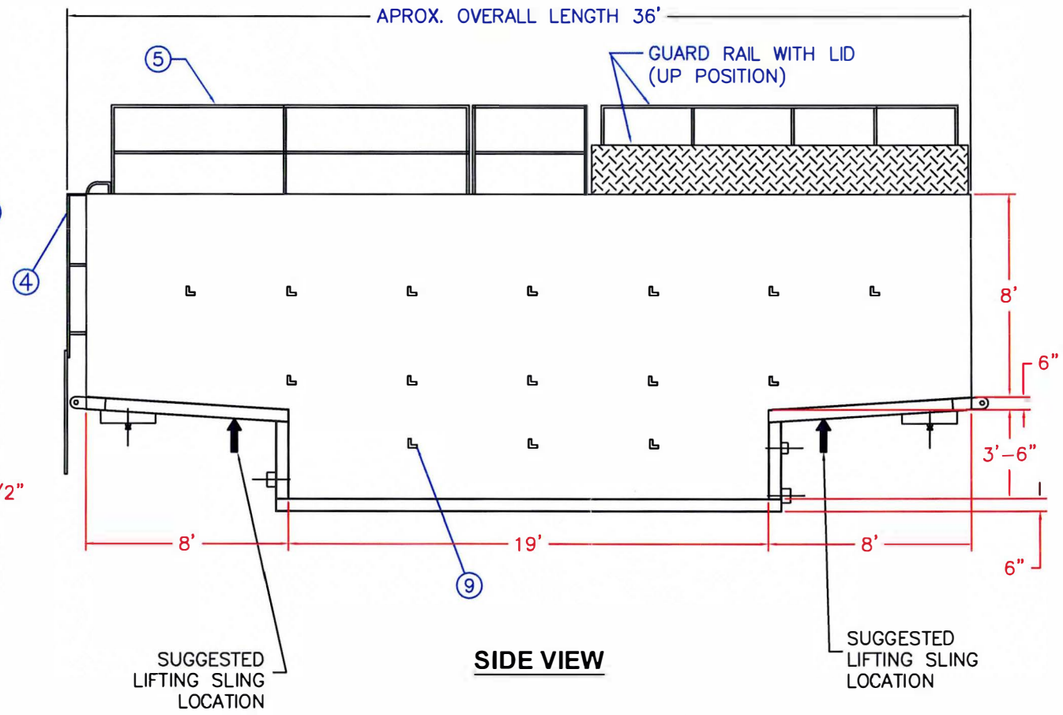
TOP VIEW

(Hidden Cross-ties not shown for clarity)

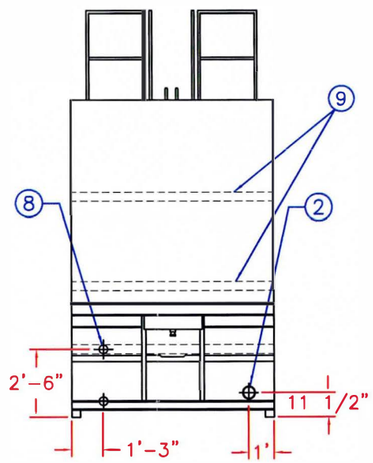
ITEM	QTY	DESCRIPTION
1	1	6" BUTTERFLY VALVE
2	1	4" BUTTERFLY VALVE
3	4	15'X3' ACCESS HATCH, C'BALANCED
4	1	EXTERNAL LADDER
5	1	OSHA COMPLIANT GUARD RAIL
6	2	PULL HANDLES FOR LIFTING LID
7	2	PULL EYES FOR LOADING TANK
8	2	4" NIPPLE WITH CAP
9	17	INTERNAL CROSS TIES



DOLLY END



SIDE VIEW



TRACTOR END

SPECIFICATIONS:

1) Tank Capacity
   Standard: 21,000 gallons (500 BBL)
   Short: 19,950 gallons (475 BBL)
2) Tank Weight
   Standard: 21,000 - 22,000 lbs. (empty)
   Short: 20,000 - 21,000 lbs (empty)
3) Material of Construction: A36 Carbon Steel

NOTES:

1. This drawing is a baseline representation for this model of tank. Variations between this drawing and the actual equipment in the field can and do exist, primarily with appurtenance locations, sizes and quantities. Consult your local BakerCorp representative if specific needs exist.
2. THESE TANKS ARE NOT DESIGNED FOR *TRANSPORTING* LIQUIDS. Tanks should be moved only when empty.

REV.	DESCRIPTION	DATE	BY
G			
F			
E			
D			
C			
B			
A	ADDED HIDDEN LINES AND TEXT	7/12/05	Z.E.R

BAKERCORP
3020 OLD RANCH PARKWAY
SEAL BEACH, CA 90740-2751

SCALE: NOT TO SCALE	SIZE: B	ORIGINAL DWG. DATE: 28FEB02
DRAWN BY: A. R.	APPROVED BY: –	CAT/CLASS: ––
TITLE: EASY ACCESS TANK (LADDER VERSION)		SHEET: 1 OF 1
DRAWING NO.: S-1-M0003-1-		REV.: B

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ATTACHMENT B.
JUMP CONVEYOR PRODUCT INFORMATION SHEET

Portable Jump Conveyors

Maximum Strength Design

- Engineered truss for longer life
- Easy to use and handle

Hopper Designed for Tough Conditions

- Vertical skirting adds to belt life and increases material centering
- Tail support keeps conveyor from dust and debris
- Radial extensions increase load zone target size

Adjustable Height Axle System

- Allows accurate feed into varying heights
- Easy to adjust for changes in terrain

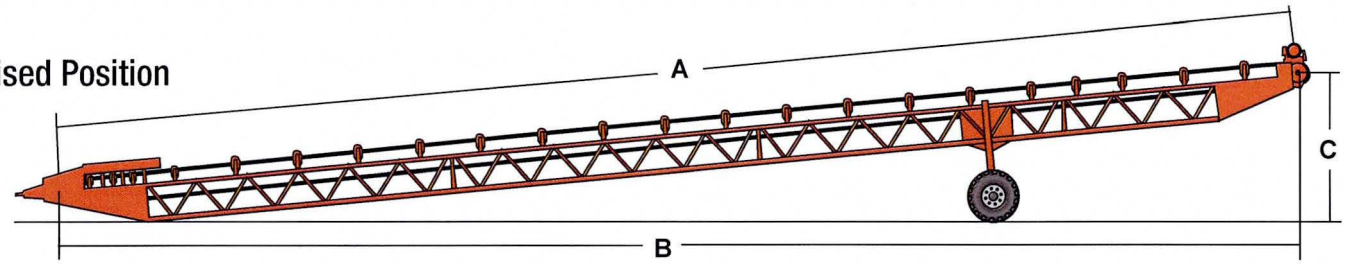
Conveyor Components by Superior

Designed to be the problem solvers in your operation, Superior's conveyor components will reduce maintenance related issues and improve your efficiencies.

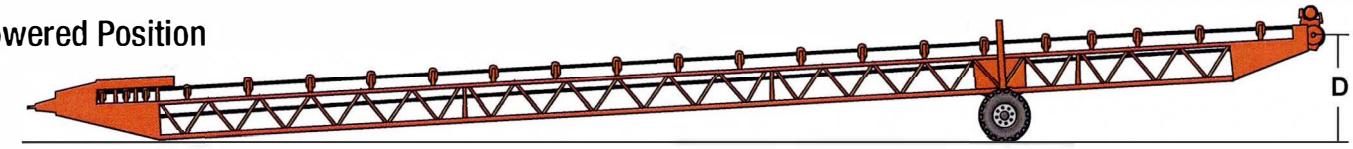
- Exterra® belt cleaner packed with 15-40% more urethane than the competition
- Standard SpinGuard® seal technology provides bullet proof protection for idler bearings

Portable Jump Conveyor Dimensions

Raised Position



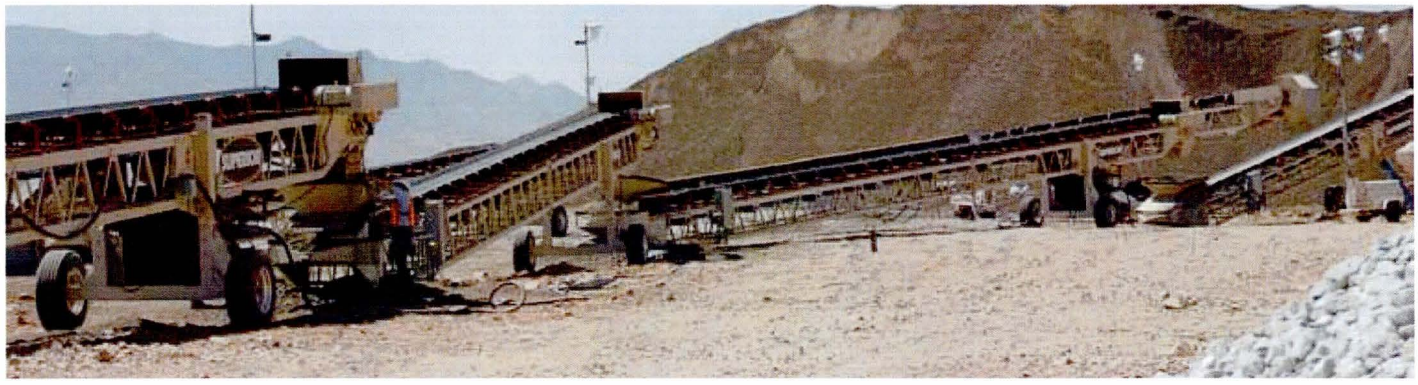
Lowered Position



Conveyor Length	A	40'	50'	60'	70'	80'	100'
Conveyor Ground Length	B	43'-3"	49' 3"	59'-8"	69'-8"	79'-9"	94'-9"
Fully Raised Height to Center of Pulley	C	10'-4"	10'-10"	11'-10"	11'-5"	11'	13'-11"
Lowered Height to Center of Pulley	D	6'-9"	4'-2"	6'-11"	7'-2"	6'-10"	7'


Tail Support

Adjustable Height



For more information or to locate a dealer near you:
www.superior-ind.com or call 1-800-321-1558

COMMITTED TO CUSTOMERS
2 YEAR COMPLETE CONVEYOR WARRANTY
5 YEAR COMPLETE STRUCTURAL WARRANTY

SUPERIOR

Superior 42" X 100' Jump Conveyor

Conveyor Frame	
Main frame	36" deep truss
Chord angles	4" x 3" x 1/4"
Lattice members	1 3/4" x 1 3/4" x 3/16"

Drive specifications	
Drive	Class I head end
Gear reducer	shaft mount
Backstop	not included
Motor	25 HP 1800 RPM TEFC
V-belt drive	with drive guard
Capacity	1200 STPH of 100 PCF material, 25 degree surcharge (90% fines, 10% spherical lumps 8" minus), 8' of lift
Belt speed	400 fpm
Superior pulleys	
Drive pulley	16" diameter, 3/8" herringbone lagged drum
Tail pulley	14" diameter, CEMA Chevron® wing
Shafts	Turned and polished
Bearings	Sealmaster, with Auto Greaser
Take ups	Screw type

Portability	
Conveyor splice	bolt splice / unassembled for shipment
Support	not included
Axle	not included
Fifth wheel	not included
Brakes	not included
Lights	not included
Mud flaps	not included
Landing gear	not included
Towing eye	not included

Conveyor Components	
Belting	3-ply 3/16 x 1/16 330 PIW
Belt splice	Flexco mechanical steel fasteners
Primary scraper	not included
Superior Idlers	CEMA C, 5" dia. Moxie® rolls (trough), sealed for life ball bearings
Load area	20° trough, 12-16" spacing
Trough	35° on 3.5' spacing
Returns	steel rolls, on 10' spacing
Radial hopper	not included
Gathering trough	5' long with adjustable rubber flashing

Additional Specifications	
Guarding	for drive and tail pulleys, v-belt drive and return idlers. Guards may not meet all local codes; customer is responsible to have guarding inspected.
Voltage	480 v / 3 ph / 60 hz
Electrical	Control panel and wiring not included
Paint	1 coat primer, 1 coat finish enamel (*available colors below)
Idler Paint	powder coated Superior Orange
Owner's Manual	(1) copy included for operation and maintenance

*The following colors are available at no extra charge:

Superior Orange
Superior Beige
Superior White
Superior Sandstone

Other colors are available for $250 per item, plus a one-time $500 custom color match, if applicable.

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ATTACHMENT C.
CALCIMENT BED ASH REAGENT MSDS

MATERIAL SAFETY DATA SHEET

SECTION I. PRODUCT IDENTIFICATION

Date: 01//01/10
Code: CBA

Product Name	Distributor	Telephone
Calciment®	Mintek Resources, Inc.	937-431-0218 Office
Bed Ash	PO Box 340187	937-431-1305 Fax
	Beavercreek, OH 45434	800-424-9300 CHEMTREC

SECTION 2. TYPICAL COMPOSITION

Component	Formula	% Wt.	CAS No.	PEL
Calcium Oxide	CaO	~50	1305-78-8	10mg/m^3
Silica	SiO	~23	60676-86-0	0.1mg/m^3
Aluminum Oxide	Al_2O_3	~ 3	1344-28-1	10mg/m^3
Ferric Oxide	Fe_2O_3	~ 4	1309-37-1	10mg/m^3
Magnesium Oxide	MgO	~ 3	1309-48-4	15mg/m^3
Sulfur	SO_3	~ 1	7704-34-9	10mg/m^3

SECTION 3. HAZARD IDENTIFICATION

This product may cause irritation to the eyes, skin and respiratory tract. The reaction of boiler ash to perspiration can cause burns to exposed areas.

Carcinoginicity:

NTP: Known carcinogen (silica).
OSHA: Not listed as a carcinogen IARC Monographs: Group 1 Carcinogen (silica).
California Proposition 65: Known carcinogen (silica).
NTP: The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al.*, Hind *et al.*, 1997) IARC: The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans* (Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates..." (1997).

Effects of Overexposure:

Acute: Irritation of eyes, skin and mucous membranes.
Chronic: Fibrotic diseases of the lungs and potential carcinogenicity.

Emergency and First Aid Procedures:

Skin: Wash with mild soap and water.
Ingestion: Keep warm, at rest, and drink large amounts of water. See Physician.
Eyes: Flush with water for 15 minutes. See Physician.
Inhalation: Move to fresh air.

Medical Conditions Aggravated by Exposure: Persons with history of respiratory illness and reduced pulmonary function should avoid work places with high dust levels. Persons with skin disorders may experience aggravation of the condition.

Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive and individuals may develop an allergic dermatitis. Respirable crystalline silica (quartz) can cause silicosis, a fibrous (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

NFPA Rating: Health – 2, Flammability – 0, Reactivity – 1

SECTION 4. FIRST AID MEASURES

Skin: Wash skin thoroughly with plenty of soap and water. Remove contaminated clothing and thoroughly clean before reuse.
Eyes: Flush eyes with clean, low-pressure water for at least 15 minutes, occasionally lifting eyelids. If pain or redness in eyes persists after flushing, obtain medical attention.
Inhalation: Remove personnel from contaminated area to fresh air. Obtain medical attention if there are signs of breathing difficulties.
Ingestion: Do not give anything to eat or drink. Seek medical aid immediately.

SECTION 5. FIRE FIGHTING MEASURES

Fire and Explosion Hazard: None.
Fire Fighting Procedures: Coal fly ash is the final product of combustion and does not create a fire hazard. The reaction of boiler ash to perspiration can cause burns to exposed areas.
Protective Equipment: Gloves, goggles, particulate respirator, and protective clothing.

SECTION 6. ACCIDENT RELEASE MEASURES

Personal Protection: Wear protective equipment during cleanup.
Environmental Precautions: Prevent material from entering waterways.
Spills: Wear protective equipment during cleanup. Sweep up material being sure to minimize creating a dusty environment and place in closed container. Clean up material for use or disposal. Dampen with a water mist to control dust (airborne dust) before removal. Do not use compressed air. If loaded on trucks, wet down ash to prevent dusting during transport.

SECTION 7. HANDLING AND STORAGE

Handling: Handle product to prevent contamination from any source. Avoid high-pressure wash and conditions that may generate dusts.
Storage: Store product to prevent contamination from any source. Keep containers closed.

SECTION 8. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	N/A
Flash Point:	Greater than 200° C
Color:	Brownish Red granular
Odor:	Virtually Odorless

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures, but reacts with water.
Conditions to avoid: Exposure to high heat and humidity may degrade quality of product.
Materials to avoid: None known.

SECTION 11. TOXILOGICAL INFORMATION

No date available.

SECTION 12. ECOLOGICAL INFORMATION

Do not discharge into drains or watercourses. Avoid ground contamination.

SECTION 13. DISPOSAL CONSIDERATIONS

This product, as supplied, when discarded or disposed of, will not be a hazardous waste according to U.S. federal regulations. Care should be taken to ensure that the material or its containers are disposed of in an approved facility in accordance with current federal and local regulations.

SECTION 14. TRANSPORTATION INFORMATION

U.S. DOT: Non-Regulated.
International Maritime Organization (IMO)/International Maritime Dangerous Goods Code (IMDG): Not regulated by IMO or IMDG.
International Air Transport Association (IATA): Not regulated by IATA.

SECTION 15. REGULATORY INFORMATION

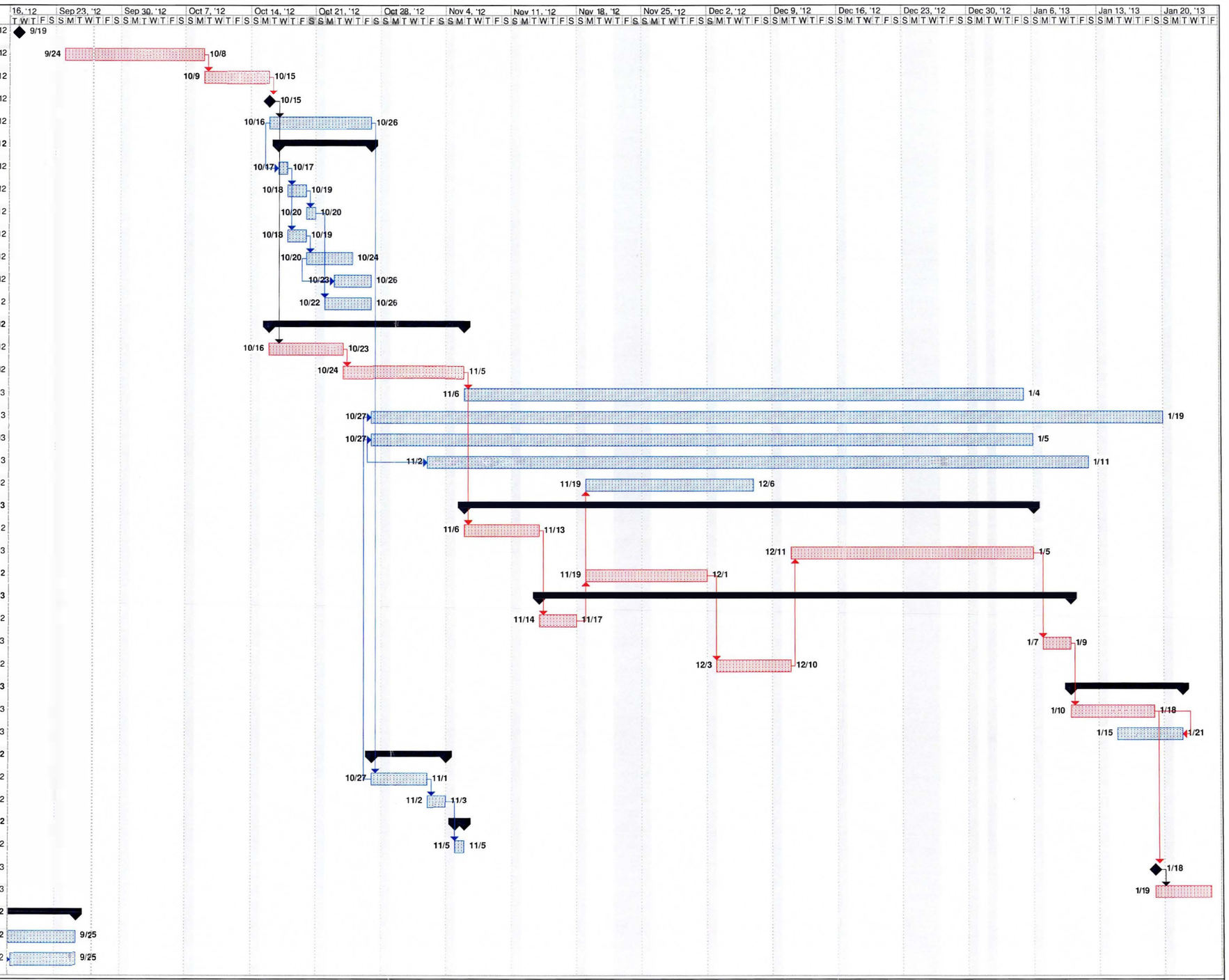
United States
TSCA (Toxic Substance Control Act)
TSCA Status: All components are listed on the TSCA inventory.

SECTION 16. MISCELLANEOUS OTHER INFORMATION

The information in this data sheet does not constitute any contractual warrant as to product properties and is based on the current state of knowledge. For all chemical emergencies, call Chem Trek at 01 703 527-3887

2.0 PROPOSED CONSTRUCTION SCHEDULE

ID	Task Name	Duration	Start	Finish
1	Proposal Submital	0 days	Wed 9/19/12	Wed 9/19/12
2	Contract Award	11 days	Mon 9/24/12	Mon 10/8/12
3	Project Submitals	5 days	Tue 10/9/12	Mon 10/15/12
4	Notice to Proceed	0 days	Mon 10/15/12	Mon 10/15/12
5	Mobilize	10 days	Tue 10/16/12	Fri 10/26/12
6	**Site Prep**	**9 days**	**Wed 10/17/12**	**Fri 10/26/12**
7	Utility Locates	1 day	Wed 10/17/12	Wed 10/17/12
8	Erosion Controls	2 days	Thu 10/18/12	Fri 10/19/12
9	Clear and Grub	1 day	Sat 10/20/12	Sat 10/20/12
10	Office Trailers	2 days	Thu 10/18/12	Fri 10/19/12
11	Stabilizaton Pad Construction	4 days	Sat 10/20/12	Wed 10/24/12
12	Water Treatment System Install	4 days	Tue 10/23/12	Fri 10/26/12
13	SS / SW Bypass Install	5 days	Mon 10/22/12	Fri 10/26/12
14	**Sheet Pile Coffer Install**	**18 days**	**Tue 10/16/12**	**Mon 11/5/12**
15	Mobilize SP Equipment and Pre clear	7 days	Tue 10/16/12	Tue 10/23/12
16	Install Temp Sheet Pile Coffer	11 days	Wed 10/24/12	Mon 11/5/12
17	Operate SS / SW Bypass System	45 days	Tue 11/6/12	Fri 1/4/13
18	Operate Water Treatment System	66 days	Sat 10/27/12	Sat 1/19/13
19	Operate Stabilization Pad	54 days	Sat 10/27/12	Sat 1/5/13
20	Transport Stabilized Sediments	45 days	Fri 11/2/12	Fri 1/11/13
21	Outfall Construction	12 days	Mon 11/19/12	Thu 12/6/12
22	**Dredge Area 1**	**46 days**	**Tue 11/6/12**	**Sat 1/5/13**
23	Outfall Area 1	7 days	Tue 11/6/12	Tue 11/13/12
24	Remaining Area 1	19 days	Tue 12/11/12	Sat 1/5/13
25	Dock Area	9 days	Mon 11/19/12	Sat 12/1/12
26	**Backfill Area 1**	**42 days**	**Wed 11/14/12**	**Wed 1/9/13**
27	Outfall Area 1	4 days	Wed 11/14/12	Sat 11/17/12
28	Remaining Area 1	3 days	Mon 1/7/13	Wed 1/9/13
29	Dock Area	7 days	Mon 12/3/12	Mon 12/10/12
30	**Sheet Pile Coffer Removal**	**10 days**	**Thu 1/10/13**	**Mon 1/21/13**
31	Temporary Sheet Pile Removal	8 days	Thu 1/10/13	Fri 1/18/13
32	Sheet Pile Decon	5 days	Tue 1/15/13	Mon 1/21/13
33	**Dredge Area 2 & 3**	**7 days**	**Sat 10/27/12**	**Sat 11/3/12**
34	Dredge Area 2	5 days	Sat 10/27/12	Thu 11/1/12
35	Dredge Area 3	2 days	Fri 11/2/12	Sat 11/3/12
36	**Backfill Area 2 & 3**	**1 day**	**Mon 11/5/12**	**Mon 11/5/12**
37	Backfill Area 2	1 day	Mon 11/5/12	Mon 11/5/12
38	Substantial Completion	0 days	Fri 1/18/13	Fri 1/18/13
39	Demobilize	5 days	Sat 1/19/13	Thu 1/24/13
40	**Restoration**	**12 days**	**Tue 9/11/12**	**Tue 9/25/12**
41	Asphalt Remove / Replace (April 2013)	10 days	Tue 9/11/12	Tue 9/25/12
42	Revegetation (April 2013)	5 days	Tue 9/18/12	Tue 9/25/12

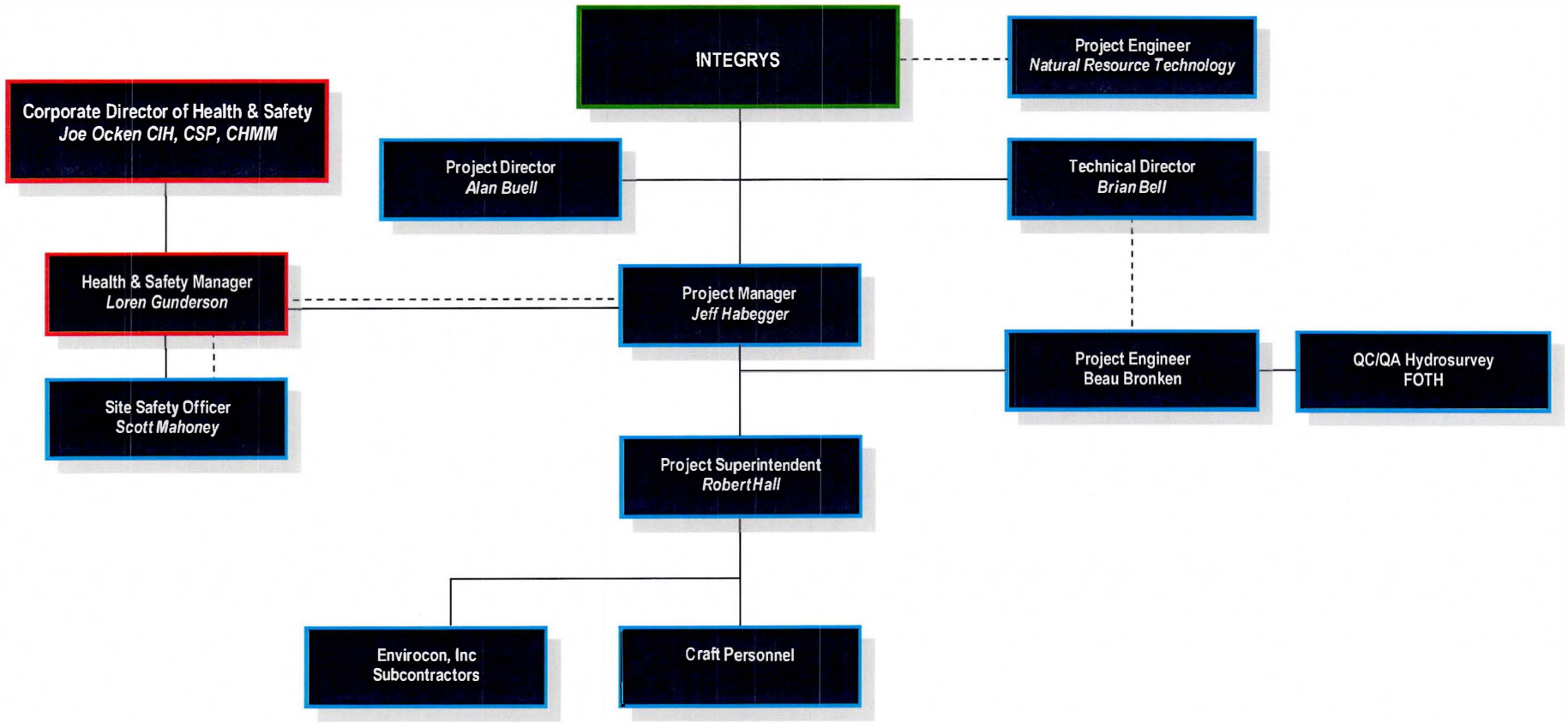


Project: Marinette 092612 Critical Path
Date: Thu 9/27/12

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

3.0 KEY PERSONNEL

Project Organization Chart
Focused NAPL and Sediment Removal Action Former Marinette MGP Site



= *Off-Site Personnel*
= *On-Site Personnel*

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ALAN BUELL
Project Director

Qualifications

Mr. Buell has over 32 years of experience in the mining, construction, and environmental remediation industries. His broad range of experience includes supervision and management of both operations and engineering. Mr. Buell has demonstrated skills in cost control, safety performance, team building, and communication.

As a Project Director, his responsibilities include preparation of project budgets, assisting project managers in project preparation, subcontractor selections, resource development, project procedures, and overall project oversight. During the construction phase of a project, his responsibilities include project administration, production and schedule tracking.

Experience Highlights

- Mine Reclamation
- Mechanical Dredging
- Contaminated Soil Removal
- Hazardous Waste Handling
- Demolition
- Pipe Removal
- Sheet Pile Installation
- Construction of underground ventilation facilities
- Operations and engineering management
- Blasting

Experience

- Campmarina Sediment Removal – Sheboygan, Wisconsin. Technical Director for the removal of contaminated soil/sediment from a park and marina adjacent to the Sheboygan River shoreline. The primary contaminants were PAHs and PCBs. Sheet pile cofferdam was installed to contain the working area, as well as, an upland OU vertical barrier wall stabilization system. The scope of work also included, removal of under-shore soil, mechanical dredging of near-shore sediment, stabilization of the sediments with reactive blending materials, water treatment of MGP contact water, and disposal of approximately 20,725 cubic yards (cy) of contaminated sediments from the site. Envirocon used a specially fabricated 1-3/4 cubic yard environmental bucket for the mechanical dredging, with the excavator positioned on a 40- by 40-foot barge. Final dredge cut lines and grades were verified using Real Time Kinematics (RTK) Dredgepack software and additional surveying support. Mechanically-dredged sediments were loaded into transport barges within two concurrent dredging operations, where sediments were offloaded and stabilized. Approximately 300,000 gallons of decant and contact water was continuously treated, sampled, and verified before release into the Sheboygan River. Envirocon targeted the TSCA-impacted sediments for initial removal to minimize cross contamination potential. TSCA sediments were staged and loaded for off-site transportation and disposal before the non-TSCA sediments were dredged. The careful segregation reduced disposal costs.

- Doe Run Snap Parcel Remediation – Webb City, Missouri. Project Director for the excavation, placement and capping of mine tailings at the Doe Run Snap project in Jasper County, Missouri. Mine tailings totaling 325,000 CY from 2 properties was excavated, hauled and placed in an on site repository. The repository was constructed on an existing tailings area requiring extensive dewatering and management of soft soil conditions. Over 200,000 CY of clay and topsoil were excavated, hauled and placed as a cap on the repository and excavated areas. Revegetation of disturbed areas and borrow area pond construction completed the remediation. The two property owners were present during the 9 month project; both expressed regret of the crew leaving upon project completion as they had grown attached.

- Former Sinclair Refinery Remediation & Restoration - Wellsville, New York. Project Director for the impacted soil removal, sheet pile installation, and on site landfill construction at the Former Sinclair Refinery, Wellsville, NY. 15,000 cy of hydrocarbon impacted sediments were excavated from a drainage swale and the Genesee

River and then transported and placed in an on site landfill. The existing landfill was reopened and a new cap and cover system installed. Steel sheet pile installed in the Genesee River provided protection from water and saturated soils. An engineered backfill system replaced the excavated sediments. GPS guided excavator and dozer supported precise line and grade excavation, backfill and landfill construction.

- Waco Subsite Waco Designated Area RD/RA – Waco, Kansas. Project Director for the excavation, placement and capping of mine tailings at the Waco RD/RA project in East Cherokee County, Kansas. Mine tailings totaling 110,000 CY from 3 properties was excavated, hauled and placed in two existing mine subsidence features and an existing tailings pond. Over 80,000 CY of clay and topsoil were excavated, hauled and placed as a cap on the mine waste and existing 28 acre tailings pond. Remediation of a 2200 foot drainage slough through a heavily timbered area was performed with small equipment to meet the property owner's demands of no disturbance beyond the banks of the stream. The former mine waste areas and caps were sampled, amended and vegetated. Water management of existing ponds and storm runoff was a critical part of the project. Building and maintaining a working relationship with the property owner and the adjacent Acme #1 contractor added a dimension to the project.

- Decommissioning and Demolition Project – Hastings on Hudson, New York. Project Director for the decontamination and demolition of nine buildings, asbestos abatement prior to demolition, transportation of waste materials and salvage and recycling of steel. Interior abatement of piping, floor tiles and miscellaneous asbestos-containing material (ACM) was performed prior to demolition of the structure. Controlled demolition of the buildings was utilized as the abatement technique on roofs which were deemed unsafe for entry due to deterioration. Standard roof ACM abatement was performed on approximately 40,000 SF of roof. Most of the buildings were demolished by conventional means utilizing excavator –mounted hydraulic shears and excavator with bucket and thumb attachment. Brick and masonry was segregated for future use on site as fill material, saving the owner thousands of dollars in disposal and transportation costs. Clean demolition debris was segregated from ACM material and placed in end-dump trailers to the client-approved landfill. Controlled demolition of the roofing material required specialized handling of debris which was generated. All ACM material was placed in either double-lined roll-off containers or double –lined end dump trailers.

- Former Glenrock Oil Refinery Remediation – Glenrock, Wyoming. Project Director for the installation of a cofferdam, excavation of PAH soils, and placement of riprap on river bank. Envirocon's project scope involved removing contaminated sediments adjacent to the river channel and homogenizing sediments between the removal area and the HDPE wall. Envirocon established a river channel dike, erosion control, grubbed the river bank, removed debris, and stockpiled overburden for reuse. A water treatment system designed by Baker was mobilized and pumping systems installed. Sediments were homogenized in the designated area and excavation of sediments adjacent to the river channel began. Water flowed into the excavation at such a rate the water treatment system failed. The saturated sediments also flowed into the excavation preventing sediment removal to design depth. Envirocon suggested using sheet pile to support the excavation walls and reduce water inflow. A change order was approved. Envirocon brought value to the sheet pile effort by utilizing used sheet pile from the Milltown project and self performing the sheet pile installation/removal with an existing excavator and rented vibratory sheet pile hammer. The excavation area was divided into cells. Once a cell was excavated, a horizontal injection system was installed with a gravel cover, then sand and borrow material were used to complete backfill; the sheet pile was removed and installed in the next cell. Stockpiled overburden covered the backfilled cells and the river bank re-established. Grass seed mix covered with erosion control mat completed the river bank restoration.

- Landfill Redevelopment – Denver, Colorado. Project Manager for the excavation, sorting and disposal of 750,000 yards of contaminated soils found in portions of the former Arapahoe County (Arapco) Landfill and the Herbertson's Pay Dump. After cleanup of the contaminated soils, the crew was responsible for the

excavation and placement of 650,000 yards clean soil, installation of methane gas collection system, removal of USTs and petroleum contaminated soil, rough grade of access roads, building pads and parking areas. The crew also encountered Anticipated Special Waste including ACM and wastewater sludge containing NORM.

- International Smelting and Refining – Tooele, Utah. Project Manager for the consolidation, grading and capping of waste smelter tailings at the Former IS&R Smelter site. This project was essentially cap repair on an existing tailings cap. The work was done late in the season with schedule pressure, and in direct proximity to the local community who often used the site for various outdoor recreation activities. The work was done to meet the requirements of an EPA consent decree. Envirocon established a well water pumping system, water storage, and load-out facility; excavated or capped approximately 53 individual sites; placed excavated impacted soils in IS&R Tailings Repository Site; established borrow areas for fill material on IS&R property; replaced all excavated soils and cap areas with clean on-site borrow fill material; constructed soil berms to divert water flow to existing; and constructed new waterways in existing channels and placed riprap.

- 21st Street Pond – Ogden, Utah. Project Manager for the construction of a cofferdam and sediment cap system near an operating railyard in Ogden, Utah. This work was done to mitigate DNAPL contamination emanating from railyard property and potentially threatening the 21st Street Pond and Ogden River. The work was performed in accordance with strict design specifications and subject to EPA and UDEQ oversight in a procedural setting closely paralleling a CERCLA closure. Envirocon lowered the pond water surface by closing the influent structure valve and adding a barrier to stop flow from the Ogden River from entering the pond. When the construction area could no longer be dewatered by this procedure, the pond level was lowered by pumping so all the remediation work could be performed in the dry. Envirocon constructed the cap and containment system for DNAPL and DNAPL impacted sediments including: placement of coarse aggregate, HDPE lining system (associated with the DNAPL cofferdam and DNAPL extraction trench/collection system), filter fabric, hydrocarbon absorbent, permeable material, import fill, rodent control barrier, construction of interlocking sheet pile wingwalls, and groundwater discharge drains. The construction of the cap system will allow groundwater movement and flow towards the 21st Street Pond.

- Refinery Subsurface Pipe Investigation & Removal – Greybull, Wyoming. Project Manager for the remediation of the former Amoco Greybull Refinery. The project began with the removal of lead contaminated soils from a Wyoming DOT Right-of-Way in preparation for a road widening project. After completing the lead contaminated soils removal, Envirocon demobilized and subsequently re-mobilized in to start buried pipe exploration. The first objective was to physically locate and characterize any remaining subsurface pipe within the FRP. The second objective was to remove all remaining subsurface pipe and properly dispose of all pipe, pipe liquids, and impacted soil.

- White Mountain Quarry Reclamation – Wheatland, Wyoming. Project Manager for the White Mountain Quarry reclamation. The scope of work included excavation and grading of 600,000 cy of quarry spoil materials, construction of multiple drainage features, top soil application, and seeding and fencing to return the site to its original grazing use. The existing highwall was blasted to provide features in line with long-term stability and enhanced public safety.

- Amoco Casper Refinery Redevelopment Project – Casper, Wyoming. Project Manager for the remediation of the former Amoco Casper Refinery and construction of the Platte River Commons development. The nationally recognized and awarded Platte River Commons and Salt Creek Heights development was considered a Brownfield project. The scope of these reused projects included the rough grading of an eighteen hole golf course whose water features doubled as a water treatment system, site development for two business parks, pedestrian trails, conversion of a 400 ft rail road bridge to a pedestrian bridge, five feature kayak park, and concrete bridge demolition.

- Pipe and Soil Removal - Casper, Wyoming. Project Manager for a project at the above former gas refinery site after successfully completing CAMU construction in the previous month. The scope of work for this pipe and soil removal project included excavation, decontamination, sizing, and recycling of 1,000,000 lf of refinery process piping. In addition, Envirocon was responsible for the excavation, stockpiling, and crushing of 355,000 tons of concrete, and demolition of seven crude oil storage tanks, several buildings, and electrical power systems.

- North Properties Area Waste Unit Removal and CAMU Construction Project - Casper, Wyoming. Project Manager for another project at the above site after successfully completing the CAMU construction projects. The scope of work for North Properties Area Waste Unit Removal Project included excavation, stabilization, transportation, and disposal of materials from public properties including business, industrial properties, and a high school. Over 500,000 cy of refinery waste and contaminated soils from thirteen refinery waste units and the former refinery was placed in the CAMU constructed by Envirocon.

- CAMU Construction Phase II – Casper, Wyoming. This project required the construction of a thirteen-acre lined CAMU cell, and access roads in preparation for placement of remediation wastes from a former refinery located approximately four miles away. The cell was constructed with a design capacity of 500,000 cubic yards of waste. The work required clearing, grubbing, and stripping of fifteen-acres of native vegetative cover materials. The topsoil was stockpiled for use on the outside embankment slopes of the CAMU cell and for construction of the cover and cap. The lining system consisted of geosynthetic (GCL) contacting the embankment and cell bottom, a textured 60-mil HDPE as the second layer, and a geocomposite netting as the final layer. Envirocon then placed twelve inches of native soil and twelve inches of approved waste material as a cover/protective layer for the liner system.

- East Boulder Mine – Big Timber, Montana. Chief Engineer responsible for managing an engineering team to accomplish mine planning and underground and surface infrastructure design. Mr. Buell also coordinated and directed outside engineering firms in designing mine related facilities.

- East Boulder Mine – Big Timber, Montana. Manager of Project Development responsible for facilitating and overseeing expansion projects through the design/build phases.

- Stillwater Mine - Nye, Montana. Mine Manager responsible for directing and managing personnel and resources in the safe development and production of platinum and palladium ore from an underground hard rock mine. Mr. Buell also negotiated a revised incentive based contract system, implemented new mining methods to increase productivity and lower cost, steadily improved safety performance, and solved many logistical/production issues to increase efficiency.

- Mt. Taylor Mine – San Mateo, New Mexico. Senior Engineer responsible for engineering support for a 1,000-tpd underground uranium operation. Directed the design and construction of a $600,000 underground ventilation facility, and supervised mine activities.

- Ambrosia Lake Mines – Grants, New Mexico. Mine Foreman and Engineer at an underground uranium mine. Responsible for supervising production activities, mine infrastructure activities, and mine development.

Education

- B.S., Mining Engineering - Colorado School of Mines (1979)

Envirocon

Training & Certifications

- 40-Hour Hazardous Waste Operations Training
- 8-Hour Hazardous Waste Operations Supervisor Course
- 1st Class Construction Blasting License, State of Montana
- Member of CSM Alumni Association

Envirocon

BRIAN M. BELL, P.E.
Technical Director

Qualifications

Mr. Bell has over 29 years of experience in management of design, construction, and remediation of hazardous waste sites. His technical expertise includes the knowledge and utilization of a wide variety of soil, sludge, waste and groundwater treatment technologies. Mr. Bell also is an expert in the management of material handling operations. His current responsibilities include overall management of engineering, remedial design and action, field technical and construction management responsibilities, the development of work plans, health and safety plans, QA/QC plans, permitting, and overall operations management of complex and multi-disciplined environmental remedial actions.

Experience Highlights

- Operations and technical management of complex and multi-disciplined environmental remedial actions
- Soil, sludge, waste, and water treatment technologies, including water bypass and dewatering operations
- Material handling operations
- Sediment remedial action projects
- Remedial design/Constructability Reviews
- Development of Technical Work Plans, Health & Safety and QA/QC plans
- Application of on-site, in-situ and ex-situ treatment technologies
- 27 Years of remedial construction experience

Mr. Bell has served as Project Director/Manager responsible for technical and operations management of all aspects of projects, including remedial actions and remedial investigations. He is responsible for management of multiple projects, the on-site project management team and field crews. Mr. Bell is also responsible for bid preparation, contract administration, project tracking, management of engineering and field personnel, subcontracting, and preparation of all technical work plans, permits, and reports.

Experience

- Sheboygan Campmarina Sediment Removal – Sheboygan, Wisconsin. Project Director at a former manufactured gas plant site located in Sheboygan, WI. The primary contaminants of concern associated with the removal were polycyclic aromatic hydrocarbons (PAH) and polychlorinated biphenyls (PCB). Envirocon's primary cleanup goal for the project was removing sediment with visual observations of NAPL. The scope work performed involved installation of a sheetpile cofferdam to contain the working area, installation of an Upland OU vertical barrier wall stabilization system, removal of under-shore soil, mechanical dredging of near-shore sediment, stabilization of the sediments with reactive blending materials as needed, water treatment of MGP contact water, and disposal of approximately 21,000 cy of contaminated sediments from the site. This volume includes 1,000 cy TSCA and 20,000 cy non-TSCA impacted sediments. Mechanically-dredged sediments were loaded into transport barges within and outside the cofferdam area in two concurrent dredging operations, where sediments were offloaded and stabilized (e.g., blended with a lime based reagent) as needed to meet solid waste landfill disposal criteria.

- ERP Site SS_63 Langley AFB – Langley AFB, Virginia. Project Director for the installation and construction of temporary containment areas (including cofferdams and turbidity curtains) for dewatering and prevention of sediment transport. The scope of work also included the installation of sheetpile, removal by excavation, decanting and off-site disposal of 4,200 cy of polychlorinated biphenyl (PCB)/polychlorinated terphenyl (PCT) impacted sediment, and complete site restoration.

- Operable Unit 1 Remediation Construction Stauffer Chemical Superfund Site – Tarpon Springs, Florida. Project Director for the excavation, handling and on-site consolidation of approximately 220,700 cubic yards of phosphorus mine tailings, roadway and former railroad bed slag, waste fill, contaminated soil, and sediment. The scope of work also included construction of groundwater cut-off wall using fiberglass composite sheeting

(2,800 lf), shoreline restoration and vinyl seawall (1,350 lf), construction of two low-permeability geo-membrane caps, 18 and 25 acres respectfully.

- Former Refinery Remedial Action – Wellsville, New York. Project Director for a former refinery located adjacent to a river. Work focused on swale remediation adjacent to the river and includes construction of a decon pad, staging area, diversion of water, dewatering, excavate, load, and haul swale sediments and soils, import and place structural fill in swale area, import and place topsoil in swale area, restore vegetation within main drainage swale, demobilization and winterization of site. Also completed was the on in-river remedial activities and included construction of a permanent mid-slope steel sheetpile system, diversion of water, construction/installation of temporary steel sheetpile, dewatering, excavate, load, haul and stage river sediments, backfill in-river with specified materials, construct on-site landfill expansion, remove existing stockpiles, place all excavated soils/sediments in on-site landfill, close landfill, site restoration, and construct a slurry wall (as Alternate).

- Creek Sediment Bypass, Removal, and Stabilization Project - Chattanooga, Tennessee. Project Director for remedial action project. Approximately 100,700 tons of coal tar sediments were excavated from the 1.9-mile span of creek. The creek water was bypassed in five major reaches by pumping operations. Following reach dewatering and excavation of the coal tar impacted sediments, the sediments were transported to a constructed 200 foot by 200 foot drying bed. The drying bed was constructed with a 10-foot berm to prevent run-on with a layer of sand followed by a 40-mil PVC geosynthetic liner, and another layer of sand. The drying bed included a leachate system where liquid is collected by pumping to a water treatment system. The coal tar was then treated in the drying bed with 10% lime kiln dust (LKD) to stabilize the material. The LKD was mixed with the coal tar using a SS250 which blended the material and promoted drying. Stabilized sediments were then transported to an off-site facility for disposal. Restoration techniques are employed on all disturbed creek bed and bank areas.

- Former Refinery Remedial Action – Sugar Creek, Missouri. Project Director for a remedial project at a former refinery. All above ground demolition was completed and the site was earmarked for re-development. The project included utility abandonment, excavation and backfill of approximately 150,000 cubic yards of soil, installation of 1,400 feet of RCP pipe, and construction of a 2,900 foot inline channel with liner and cover system. Culvert headwalls and riprap grouted spillways were constructed as part of the drainage system. Additional features included roadway construction, bridge work and pedestrian trail installation, water service construction including 3,000 feet of 10-in. HDPE pipe, installation of 2,600 feet of Sanitary Sewer and Dry Utility construction. A major re-vegetation program was completed.

- Pneumo Abex Corporation for Light Non-Aqueous Phase Liquid (LNAPL) Phase II Remediation- Kalamazoo, Michigan. Impacted Soil Excavation - Kalamazoo, Michigan. Served as Project Director on this phase as a follow-on to earlier work performed there with Envirocon. Special features of this included slope stability below the plant walls for vertical cuts to excavate all the soils. This was an active facility involved with manufacturing and testing hydraulic components for commercial and military aircraft. Soil and water sample results indicated the presence of LNAPL. Envirocon performed the first soil removal effort at this facility in December 02- thru March 03. The chemicals of concern in 2003 and for 2007 are TPH's, PNA's, VOC's- betx, vinyl chloride, tetrachloroehene, 1,1,1-trichloroethane, and PCB's; the 2007 area/work has some higher concentrations. The project included: (1) containing an area of concern (approximately 50-ft x 90-ft x 13 to 15-ft deep) from adjacent facility work areas, (2) construct a "tunnel" for transporting waste materials from the AOC to disposal containers without releasing VOC's into the facility, (3) installing an air handling system to put the AOC and "tunnel" under negative air pressure, (4) cutting the concrete floor into manageable pieces, (5)excavation and removal of soils, (6) backfilling area with pea gravel and top two feet with gravel and compact (7)install rebar and concrete to match existing floor grade. Because the shoring design spec was performance (vs. prescriptive), Envirocon acquired the services of a civil/structural engineer (P.E.) to design

those elements and a specialty subcontractor with low-height drilling equipment to place the jet grout structures and tiebacks prior to excavation.

- Cannelton Superfund Site - Sault Ste Marie, Michigan. Project Director for Envirocon and its marine subcontractors successful dredging operations in Tannery Bay located on the St. Mary's River in 2006 and 2007. Over 48,000 cy of material was dredged, transported to a sediment off-loading/processing facility, dewatered, and ultimately loaded into haul trucks for off-site Transport and Disposal. The sediment contains tannery waste with significant oversized debris, primarily old lumber. During the winter shutdown, Envirocon retooled the operations to remove inefficiencies relative to the screening/slurry process and to address historically low water levels. Additional operations included the use of a barge mounted crane with a 2-cy Environmental Clamshell bucket. The dredged sediment/debris were then placed on transport 'shuttle' barges for in-bay transport to the dump scow barges. The shuttle barges contained a 'pig-pen' containment hold for the dredged sediment/debris, each up to 100 cy capacity. At the location of the dump scow barges, the shuttle barges were off-loaded by a second barge mounted crane into the dump scow barges. The dump scow barges and then transports the sediment/debris two miles down river to the off-loading/processing facility. Each shuttle barge had approximately 800 to 1,000 cy capacity for dredged sediment/debris.

- Visteon Storm Water Pond Improvement - Sterling Heights, Michigan. Project Technical Director responsible for the improvements of an existing storm water pond at the Visteon Corporation-Sterling Plant. The improvements included sediment removal and disposal, excavation of the clay bottom to increase the pond capacity, pump station refurbishment and site restoration. The storm water pond collects storm water for the 160-acre property, of this; approximately 155 acres are building roofs and parking lots. The pond sediment has accumulated over the last 40 years. Under direction from the State of Michigan Department of Environmental Quality and Macomb County Drain Commission, Visteon was required to increase the capacity of the storm water pond to meet the current capacity requirements. Prior to conducting onsite activities a temporary storm water by-pass system was installed; this by-pass system diverted all storm water to the existing outfall thereby maintaining the pond in a dry condition. The pond was then dewatered; approximately four feet of sediments were solidified with lime, stockpiled and loaded into trucks for disposal. Two feet of the ponds clay bottom was excavated and placed into landscape mounds at various locations on the property. Approximately 19,000 cubic yards of solidified sediments were disposed as non-hazardous material at local landfill and 5500 cubic yards of the clay bottom was placed in the onsite landscaping mounds. The restoration activities included installation of the pond slopes, placement of topsoil, installation of various trees, shrubs and hydro-seeding all disturbed areas. The pump house was refurbished with three new pumps, floats and an electrical control panel for maintaining the pond at a designed operating elevation. The project was completed on schedule and within budget.

- Former Refinery Remediation/Closure – Okmulgee, Oklahoma. Project Director for remediation and closure of a former refinery site. Envirocon was awarded a contract to stabilize two types of sludge found at the former Okmulgee, Oklahoma Refinery and place the stabilized sludge into a repository to be constructed on site. The work included stabilization of two types of sludge totaling 325,000 cubic yards of material: approximately 162,000 yards of acid filter clays with a pH of 2 that emits substantial amounts of SO2 when disturbed, and 162,000 cubic yards of petroleum sludge that emits substantial amounts of benzene when disturbed. Also, contaminated sediment from 1.2 miles of Okmulgee Creek is removed and stabilized. Envirocon developed our unique approach that differed from the approach listed in the RFP and that was based on bench scale studies. Envirocon performed an extensive treatability testing program. The overall project approach developed is a comprehensive program which takes advantage of the fact that half the sludges on-site are acidic, and half are near neutral pH. The comprehensive program takes advantage of this fact by mixing the two wastes together, thereby reducing reagents necessary for the initial neutralization reactions. The neutral pH sludges act as a buffer when mixed with the acid refinery sludges.

- Subaqueous Sand Cap/Surcharge Placement – Duluth, Minnesota. Project Director for the work which was performed within Stryker Bay, in the St. Louis River estuary, approximately 4 miles up river from Lake Superior in Duluth, Minnesota, at the St. Louis River/Interlake/Duluth Tar Site (SLRIDT) site. The scope of work for this phase of the project required the installation of a 2,020 LF sheet-pile containment wall around an 11-acre area in the Bay, with subsequent placement of a sub-aqueous sand cap (~90,000 cubic yards), followed by conventional/civil sand cap/surcharge placement effort (~90,000 cubic yards). A comprehensive computer program was developed for precise control of subaqueous sand feed rate, tied with GPS positioning control and velocity of spreader barge. This ensured precise control of thickness of each lift placed. The scope of work also included site preparation; spill boom and silt curtain installation and maintenance; installation of deep and shallow sediment monitoring instrumentation; performing a sub-aqueous capping demonstration lift; and sub-aqueous installation of approximately 53,000 square yards of a Reactive Carbon Mat (RCM) geo-textile material between the first 6" lift of sand and the remaining material placed.

- Landfill Cap – US Steel - Gary, Indiana. Project Manager for a 55-acre landfill cap for a major steel manufacturer. This 11-month project included 3 1/2 feet of cover materials, more than 2 million square feet of 40-mil PVC liner, and 725,000 square feet of geocomposite drainage material. More than 300,000 cubic yards of granular slag sand was screened and transported from 5 miles away within the steel plant and placed for liner sub-base and protective cover. The cover also included installation of a gas vent and underdrain (8,900 linear feet) system, stormwater control channels, and a 260,000 square foot armor cover system consisting of a polyethylene geocell material. The 4-inch deep geocell was placed on the steeper slopes (approaching 1:1) for stability and erosion control. The geocell was anchored to the slopes and infilled with slag. Envirocon was then required to incorporate compost, fertilizer, and seed over the entire slag cover, using an innovative soil amendment mix to enhance growth in this difficult soil matrix. The project was completed ahead of schedule and incorporated significant cost-saving suggestions initiated by Envirocon.

- Arizona Chemical (International Paper) Covers - Dover, Ohio. Project Director for remedial activities at a major paper manufacturing/chemical production facility. The project involved the expedited cover placement over contaminated areas within the active chemical production facility and sewer piping system inspection and cleaning. Part of the construction included a cover and erosion control system placed over a steep (1:1) riverbank to the toe of slope in the river. Amendments were made to USACE permit to allow a more constructible approach.

- Arizona Chemical (International Paper) Lagoon Closure - Dover, Ohio. Project Director for this project that involved the geotechnical strength stabilization of sediments contained in a former wastewater treatment lagoon and subsequent cap/cover placement. Engineering and Operations plans were developed initially to define parameters for assessing methods to re-enforce the sludge/sediments. An approach was developed using a state-of-the-art high strength geotextile instead of cement stabilization. The load bearing capacity of the sludge/sediments in the former lagoon were strengthened with high strength geotextile deployment, resulting in significant savings to the client. In the end, approximately 678,000 square feet of re-enforcing geotextile was installed. A total of approximately 85,000 tons of off-site borrow material was imported and together with approximately 13,000 tons of existing berm material was safely placed to bring the cap/cover system to final grade.

- Phelps Dodge Environmental Closure of the Wire and Cable Facility - Hopkinsville, Kentucky. Project Director for the decontamination, demolition and removal of piping and tanks and decontamination of flooring, sumps and tunnels at a large motor wire manufacturing facility. Pure product organic solvents (phenols and crecylic acids) were removed form piping and tanks contained in the building, tunnels and sump rooms. Approximately 100,000 linear feet of piping was decontaminated, removed and scrapped along with approximately 60 tanks. State-of-the-art procedures were developed to mitigate health and safety risks, and to decontaminate the piping/tankage in-place as much as possible before removal. A decontamination water recycling system was

designed and implemented to reduce volume of decontamination wash waters requiring off-site disposal, with great savings to the client. This fast-track project was completed in three months and ahead of schedule.

- Radioactive Waste Removal Project – Cushing, Oklahoma. Project Director for an expedited low-level radioactive waste removal and shipping operation in two phases. Nuclear Regulatory Commission-Licensed waste materials were excavated, mixed and stabilized as necessary, and loaded into Intermodal Containers for shipment and disposal. Sludge-like materials required stabilization prior to loading and shipping to meet facility disposal restrictions. All required work plans were developed by Envirocon on an expedited basis for NRC review and approval. Building demolition work including low level radioactive materials and asbestos abatement was completed also. Materials excavated in a trash dump were conducted under Asbestos Abatement Procedures. Operations were under continual direct review by NRC. A total of more than 26,500 cubic yards of materials were successfully excavated and shipped in a period of approximately 4 months. An additional 18,000 cy of low level radioactive waste materials were successfully excavated and shipped in Intermodal Containers during the second phase of the project.

- Sub-Aqueous Sand Cap Placement, Dredging and Stabilization Project - Muncie, Indiana. Directed a metallic hydroxide sludge dredging, dewatering, and sub-aqueous sand cap placement remedial operation for a specialty steel manufacturer. The project also included the excavation and stabilization of approximately 13,000 cubic yards of lead impacted waste using a pug mill and chemical reagents. A Pilot-scale test program was designed and performed and the reagent mix design was subsequently optimized. The landfill was capped after pug mill treatment operations were completed. After hydraulic dredging operations were completed on the 2.5-acre pond, a strengthening geo-textile was placed on the dredged bottom. A two-foot sand cap was subsequently placed on top of the geotextile in three-inch lifts using sand slurry fed by way of the dredging barge operating in reverse.

- Pneumo Abex Corporation for Light Non-Aqueous Phase Liquid (LNAPL) Phase I Remediation- Impacted Soil Excavation - Kalamazoo, Michigan. Project Technical Director responsible for the removal of concrete and excavation of impacted soils in two areas within an active manufacturing facility. The first area, measuring 100' x 100', located inside a building with 20 ft high ceiling was excavated in Level B personal protection equipment and under negative air because of VOC's released from the soils during excavation and the high concentration of carbon monoxide generated from the heavy equipment. The second area was adjacent to the first area, but located outside and measured 100' x 75'. Slopes of both area 1 & 2 had to be maintained at 1:1 ratio to maintain existing structure stability. Survey monuments were located every 20' and on columns and monitored twice/week for movement. Pea-gravel was used as structural backfill and 10 inches of concrete replaced in area one. Area two was also backfilled with pea-gravel and 6 inches of asphalt placed. Both area 1 and 2 had oil recovery piping installed at the floor of excavation prior to backfilling and a soil vapor extraction system installed under a vapor barrier approximately 4 ft below finish grade.

- VOC Sludge Stabilization and Solidification – Madison, New Jersey. Project Manager for two phases of a project involving the conditioning and stabilizing of 44,000 cubic yards of a clay/sludge soil matrix contaminated with a high concentration of VOCs. The project began with the modification and upgrade to the vapor control system in the existing treatment building on site. Envirocon then mobilized and erected a pugmill for the treatment of the contaminated soils. Envirocon worked closely with the client to develop a procedure for successfully mixing the conditioning agent (lime) and the stabilizing agent (Portland cement) in a two-stage process. In the first stage, the objective was to thoroughly mix the lime into the soils to volatilize the organic compounds as a result of the exothermic reaction. After mixing, the materials were staged within the enclosed structure to allow sufficient retention time to drive the organics from the soils. The vapor/odor control system was designed to create a negative pressure atmosphere within the structure, and included a baghouse and vapor phase carbon to capture the particulate and VOCs generated from the process. Frequent maintenance and change-outs were required on the vapor system due to the heavy loading and the success of the process. During

the second phase, the conditioned soils were again processed through the pugmill. Portland cement was mixed with the soils for stabilization, and to meet structural requirements that would allow the treated soils to be placed back in the excavations. Preconditioning of the soil was required for some of the materials due to the groundwater encountered in the excavation. Magnesium lime was added to the soil before removal from the excavation to increase the solids content and alter the sludge-like material for handling through the pugmill. All work performed in the enclosed structure required workers to suit up in Level B (air-supplied respirators) personal protective equipment.

- Alcoa Former Wearever Facility - Chillicothe, Ohio. Project Director for a remedial action including significant clearing and grubbing activities, construction of site infrastructure and haul roads, construction of a permanent Containment Area repository, excavation of lead impacted plant waste in a number of source areas, and hauling and placement of lead impacted waste in the constructed repository. Approximately 29,000 cubic yards of material was placed, graded and compacted in the Containment Area. A cap was constructed on the repository consisting of a 30-in. cover and vegetation.

- Kings Run Channel Project - Belmont County, Ohio – Project Technical Director for the solidification of approximately 24,000 cubic yards of sediment in a northern impoundment. The purpose of the project was to provide a solid and stable foundation for the future construction of the Kings Run Channel. The material requiring solidification was a combination of tailings and sediment from a mining and landfill operation. The landfill was closed in preparation for capping. Lime fines and cement were selected as the reagents to be used for the solidification and they were delivered in pneumatic tankers and offloaded into pits in the mixing area. Reagents ranged from 3% to 5% for the lime to up to 10% for the cement. The moisture content ranged from 60% to 130% with some areas covered with water. A Link Belt 4300 and Cat 330 excavator were used for the mixing of the sediments and reagents to a depth of over 15 feet. Quantities increased to 41,044 cubic yards with 1,117 tons of lime and 3,490 tons of cement added for solidification.

- Hexavalent Chrome Stabilization - Kearny, New Jersey. Project Manager for a stabilization project involving hexavalent chrome contaminated soil. The ex-situ remediation used a ferrous sulfate chemical reagent and Portland Cement as the stabilization reagent to chemically fix and stabilize the chrome waste. Total chrome levels were reduced from 4,000 mg/kg to <100 mg/kg. 7,500 tons of soil was successfully stabilized at multiple sites in Kearny, New Jersey. Mobile equipment including two pugmills were utilized to complete the project in a two-month period at multiple sites in Kearny, NJ.

- Technical Director on projects, including incineration, thermal desorption, stabilization/solidification, vacuum extraction, chemical treatment, bioremediation, air stripping, carbon adsorption, filtration, ion exchange, and chemical precipitation/removal.

- TP Industrial and Cannons Engineering Superfund Sites - New Jersey and Massachusetts. Performed and managed two hazardous waste thermal desorption projects in New England.

- RI/FS Peak Oil Superfund Site – Tampa, Florida. Managed an area-wide RI/FS project; negotiated settlement with PRP Groups and U.S. Environmental Protection Agency for one RI/FS out of three Superfund sites; subsequently managed overall project and field personnel.

- McKin Superfund Site. Completed McKin Superfund site remediation in 1986, first ever application of thermal desorption to hazardous waste soils, as Project Coordinator/Engineer.

- Thermal Desorption System - Vicksburg, Arizona. Performed the installation and startup of a fixed base thermal desorption system. Scope of work included construction, startup, shakedown, and verification of compliance operations.

- Sand Creek Industrial Superfund Site - Denver, Colorado. Managed the remediation of the Sand Creek Industrial Superfund Site. This project consisted of thermal treatment of soils contaminated with pesticide compounds. Complex water treatment systems were employed. Designed and procured equipment for a $1.5 million thermal desorption system, first such full-scale system in the country. Designed and managed the construction of a $2.2 million state-of-the-art thermal desorption system for hazardous soils utilizing many different treatment technologies. Fourth generation system was developed using improvements from three generations of system completed previously in work history.

- Corporate Operations Manager for all projects involving unit process/treatment technologies. Responsibilities included management of all technical projects, recommending and soliciting purchases of capitalized equipment, development and tracking of amortization schedules for capitalized equipment, bid preparation, contract negotiation and administration, and oversight of respective regional office operations utilizing the technologies on specific projects. Responsible for all technical aspects of operations. Expertise in the design, construction, and management of hazardous impacted water treatment operations. Wrote and received two patents for thermal desorption technology. Responsible for office and field management of a wide variety of site remedial actions and investigations, using many different technologies. Specializes in ground water treatment technologies, such as air stripping, carbon adsorption, and metals treatment/removal. Managed wide variety of material handling operations which are integral to remedial activities, including screening, sorting, crushing, washing, and conveyance operations. Managed the QA/QC programs as a third party engineer for HDPE liner installations on haz-waste cell construction.

- Lake Michigan Superfund Project - Michigan. Member of design team responsible for the design and construction of a large dredge waste containment and de-watering cell for a Superfund project on Lake Michigan. Designed water treatment operations to treat de-watering flows impacted with PCB's.

- Waldick Aerospace Devices Superfund Site Remediation - Sea Girt, New Jersey. Managed work performed at the Waldick Aerospace Devices Superfund Site remediation for the U.S. Army Corps of Engineers. Soils impacted with chlorinated VOCs and metals were treated using thermal treatment. Also stabilized soils for metals and conducted water treatment operations.

- Textron Site and Old Marsh Site Remediation - New Jersey and Arizona. Successfully completed Textron site remediation in Newark, NJ. Negotiated, planned, pilot tested and developed the thermal desorption technology to remediate pesticide-contaminated soil for the Old Marsh site in Goodyear, Arizona. This was the first application of the technology for pesticide impacted soils in the United States.

Education

- B.E., Chemical Engineering/Environmental and Water Resources Engineering - Vanderbilt University (1983)

Training & Certifications

- Registered Professional Engineer, Indiana and Tennessee
- 40-Hour Hazardous Waste Operations Training
- 8-Hour Hazardous Waste Operations Supervisor Course
- 8-Hour Lockout/Tagout Training
- 8-Hour Confined Space Training

Envirocon

JEFFREY HABEGGER
Project Manager

Experience Highlights

- Dredging / Sediment excavation
- Wetlands treatment system
- Cofferdams and earthen containment
- Construction of river bypass
- In-water excavation
- Supervision of field crews

Qualifications

Mr. Habegger has 28 years of experience in environmental, civil and industrial construction in a supervisory capacity. He has successfully managed and completed more than 300 projects ranging in value from $1,000 to $8,000,000. Mr. Habegger has preformed projects for Government Agencies including the US Army Corp of Engineers and the US EPA. Mr. Habegger has been responsible for contract management, subcontract procurement, cost tracking cost forecasting, and project scheduling. He has been involved in technical approach development for numerous project proposals and completion of multiple projects involving a full spectrum of construction technologies. Mr. Habegger has acquired on-site experience in project involving road construction, demolition, large-scale soil excavation and transportation, facility decontamination, asbestos abatements, PCB cutting and bulking, hazardous waste disposal, contaminant sampling, drum recovery, wastewater treatment, underground recovery, filtration and dewatering, radioactive waste recovery and disposal, derailments and shock sensitive, explosives and reactive handling and disposal.

Experience

- Campmarina Sediment Removal – Sheboygan, Wisconsin. Project Manager for the removal of contaminated soil/sediment from a park and marina adjacent to the Sheboygan River shoreline. The primary contaminants were PAHs and PCBs. Sheet pile cofferdam was installed to contain the working area, as well as, an upland OU vertical barrier wall stabilization system. The scope of work also included, removal of under-shore soil, mechanical dredging of near-shore sediment, stabilization of the sediments with reactive blending materials, water treatment of MGP contact water, and disposal of approximately 20,725 cubic yards (cy) of contaminated sediments from the site. Envirocon used a specially fabricated 1-3/4 cubic yard environmental bucket for the mechanical dredging, with the excavator positioned on a 40- by 40-foot barge. Final dredge cut lines and grades were verified using Real Time Kinematics (RTK) Dredgepack software and additional surveying support. Mechanically-dredged sediments were loaded into transport barges within two concurrent dredging operations, where sediments were offloaded and stabilized. Approximately 300,000 gallons of decant and contact water was continuously treated, sampled, and verified before release into the Sheboygan River. Envirocon targeted the TSCA-impacted sediments for initial removal to minimize cross contamination potential. TSCA sediments were staged and loaded for off-site transportation and disposal before the non-TSCA sediments were dredged. The careful segregation reduced disposal costs.

- Navassa Non-Time Critical Removal Action (NTCRA) for Upland Soil, River Sediment, Marsh Sediment and groundwater remedy Project - Navassa, North Carolina. Project Manager for marsh sediment removal, stabilization, waste transportation, saturated zone amended backfill, and backfill material sampling and analyses.

- Sludge Lagoon Cap Closure - Grenada, MS. Project Manager for this lagoon cap closure project involving sludge stabilization with lime and Portland cement, followed by installation of low permeability clay cap, geomembrane liner, and restoration including on site borrow area.

- Lenz Oil Water Treatment Plant Construction and Slurry Wall Construction - Lemont, IL. Project Manager for a water treatment plant and slurry wall containment barrier system, involving site clearing, demolition, waste excavation, rock trenching, slurry wall construction, grout curtain installation, vacuum enhanced recovery system installation, and water treatment system construction.

- Phase 8 Cell Construction Phase 6 Cell Landfill Closure - Johnsonville, TN. Project Manager for this landfill cell construction and landfill cell capping construction project, involving site clearing, excavation and consolidation of non-hazardous industrial waste, construction of stormwater drainage systems, and multilayer cap system construction. Managed the excavation of approximately 46,000 cy of waste from outside the landfill, placement of 44,000 cy of compacted clay liner, placement of 8,000 cy of general fill, placement of 11,200 cy topsoil, installation of leachate collection system, installation of 4,000 liner feet of rip rap and gabion lined channels, and installation of 250,000 square felt of geo-synthetic liner material.

- Velsicol Cypress Creek Remediation Project - Memphis, TN. Project Manager for remediation of residential properties contaminated with pesticides. Project work included the excavation, backfill, and restoration of the impacted residential yards. Project also included construction of a waste consolidation area equipped with HDPE liner cap, installed upon completion of the remediation. Mr. Habegger was responsible for the management of all personnel and subcontractors.

- Marcon Facility Site Remediation - Buffalo, NY. Responsibilities included the contractual, financial, and operation management of the project, including health and safety. The project included the excavation of approximately 37,000 tons of petroleum-contaminated soils, pre-treatment of 700,000 impacted ground water, removal of four underground storage tanks, placement of approximately 35,000 tons of backfill material, and other restoration activities.

- Doe Run Site - Herculaneum, MO. Project Manager for remediation of residential properties contaminated with lead-impacted soil. This long-term project extended over several years and included the excavation, backfill, and restoration of approximated 180 impacted residential properties per year. Mr. Habegger was responsible for the management of all personnel and subcontractors.

- Marion Engineering Depot (MED) Soil Excavation and Transportation - Marion, OH. Managed the hazardous waste excavation and transportation of contaminated materials from MED under the total environmental restoration contract (TERC). Site soils were contaminated with volatile organic compounds (VOCs), particularly trichloroethylene (TCE), and required excavation and removal. Oversaw site mobilization and began preparation activities. These activities included: clearing of utilities, delineating site access areas, establishing control zones and establishing truck entrance and exit areas, installation of erosion- control measures, clearing and grubbing of work areas with chipped wood to be used as on-site material, verifying existing power utility facilities and equipment were deengergized, demolishing and disposing of all existing structures, constructing and repairing perimeter fencing, ensuring adequate protection around monitoring wells, installing portable truck scales, mobilizing, setting up and testing contact water treatment system; erecting facilities to house the VOC suppression equipment and materials and establishing a staging pad.

- Forestall & Supply Side Landfills - Waukegan, IL. Managed the capping and closure of two landfills. At the Forrestal Landfill, managed the excavation and relocation of waste material; acquisition, transportation, placement and compaction of 6,200 cy low permeability clay and 2,400 cy of topsoil; and installation of gas collection system and site restoration. At the supply side landfill, managed the regrading of 46,300 cy of waste material; excavation of borrow soils; placement and compaction of 36,200 cy of low permeability clay; excavation, placement and compaction of 23,000 cy of topsoil; and installation of the gas collection system and site restoration.

- Soil Stabilization Projects in Metropolitan - Dayton & Cincinnati, OH. Managed the soil stabilization of several roads, streets and building pads with lime, fly ash, and Portland cement. Also managed the reclamation and stabilization of several asphalt parking lots, streets, and roads with lime, fly ash, and Portland cement.

- Brownfield Development at the Former Tenneco Automotive Manufacturing Facility - Cleveland, OH. Project Manager for the Brownfield development project, involving excavation of hazardous waste and nonhazardous

waste demolition of former plating facility, demolition of non-load-bearing walls, utility relocation, backfilling, and compaction revegetation/restoration.

- RCRA Hazardous Waste Landfill Closure - Catlettsburg, KY. Project manager at this capping and closure project. Tasks included waste consolidation, waste/subgrade regrading, borrow area development and restoration, low-permeability clay liner and geocomposite drainage layer placement, gas/leachate collection, grouted rip rap lined channel installation, and gabion-lined letdown channel installation.

- Demolition and Decontamination - Parkersburg, WV. Project manager for the selective demolition and decontamination of a 25,000 sq ft manufacturing, research and development facility contaminated with PCBs. Also managed the related asbestos abatement activities.

- Water Treatment - Louisville, KY. Managed the treatment of water contaminated with hexavalent chrome and other heavy metals. Approximately 6,000 gallons of wastewater was treated per day and sludge was dewatered in a recessed chamber filter press.

- Manufacturing Facility Decontamination - Toledo, OH. Project manager of the decontamination of a manufacturing facility contaminated with PCBs. Facility structures and process equipment were decontaminated using high pressure washing and hand scrubbing techniques, rinse water generated during the decontamination operations was collecting using wet/dry vacuums equipped with HEPA filters. Decontamination feasibility studies were successfully performed to determine the optimum decontamination procedures.

- RCRA Closure - Findlay, OH. Project manager for the RCRA closure of a hazardous waste storage unit. Excavated and disposed of 330 tons of xylene-contaminated soil. Closure activities were performed in full compliance with OEPA's approved closure plan.

- Laboratory Decontamination EI DuPont - Louisville, KY. Managed a project to decontaminate a laboratory facility contaminated with F-listed solvent waste and heavy metal contaminated waste. Performed the successful volume reduction of the waste volume recovered by 70% through the use of a plate and frame filter press system.

- Manufacturing Facility Decontamination-Michigan. Managed the decontamination of a manufacturing facility. Recovered 2,000 pounds of mercury and managed the disposal of mercury contaminated process equipment.

Education

- B.S. B.A., Accounting and Business Management, May 1984, Ohio Northern University

Training

- OSHA 40 Hazwoper
- OSHA 8 Hour Supervisor Refresher Training
- OSHA 10 hour Construction and Health Course
- Envirocon, Inc Health & Safety Officer Training 2011
- OHM Site Safety Officer, 1989
- Leadership Institute Management
- Lead Remediation Supervisor's Training-Missouri
- Excavation Competent Person
- Confined Space Competent Person
- Lead Abatement (OSHA, CFR 1962.62)
- Certified Asbestos Supervisor, 1989

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ROBERT WAYNE HALL II
Project Superintendent

Qualifications

Mr. Hall has over 13 years of experience in construction, and remediation of hazardous waste sites as a Foreman and a Heavy Equipment Operator. He operates a variety of equipment including equipment utilizing GPS units. He has vast experience with dredging, constructing containment berms and treating contaminated water.

Experience Highlights

- Operation of GPS Tremble Unit
- Removal of contaminated materials including petroleum, VOC's, vinyl chloride and coal tar sediment
- Field Foreman and Heavy Equipment Operator experience
- 13 Years of remedial construction experience
- Constructed silt fencing and containment berms

Experience

- Campmarina Sediment Removal – Sheboygan, Wisconsin. Senior Dredge Operator for the removal of contaminated soil/sediment from a park and marina adjacent to the Sheboygan River shoreline. The primary contaminants were PAHs and PCBs. Sheet pile cofferdam was installed to contain the working area, as well as, an upland OU vertical barrier wall stabilization system. The scope of work also included, removal of under-shore soil, mechanical dredging of near-shore sediment, stabilization of the sediments with reactive blending materials, water treatment of MGP contact water, and disposal of approximately 20,725 cubic yards (cy) of contaminated sediments from the site. Envirocon used a specially fabricated 1-3/4 cy environmental bucket for the mechanical dredging, with the excavator positioned on a 40- by 40-foot barge. Final dredge cut lines and grades were verified using Real Time Kinematics (RTK) Dredgepack software and additional surveying support. Mechanically-dredged sediments were loaded into transport barges within two concurrent dredging operations, where sediments were offloaded and stabilized. Approximately 300,000 gallons of decant and contact water was continuously treated, sampled, and verified before release into the Sheboygan River. Envirocon targeted the TSCA-impacted sediments for initial removal to minimize cross contamination potential. TSCA sediments were staged and loaded for off-site transportation and disposed before the non-TSCA sediments were dredged. The careful segregation reduced disposal costs.

- Giant Refinery Phase I SWMU Remediation/CAMU Construction – Yorktown, Virginia. Camu Manager and Heavy Equipment Operator for a $5 million hydrocarbon impacted soil cleanup. The scope of work included CAMU preparation work including cleaning and removal of a sub grade oily water sewer line in the East CAMU, berm construction, dewatering, waste excavation and relocation, demolition work, backfill with offsite borrow material. The project included difficulties such as removing impacted material from pipes below sea level and open pit excavation form large areas as much as 20 below sea level. In charge of QA/QC documentation, all excavation and backfill grade control. Managed all GPS grade control and drawing generation.

- Yorktown Refining Phase II – Yorktown, Virginia. Field Forman for the second phase of work at the Yorktown Refinery site. The second phase of work included a $10 million contract for the construction of a 20-acre RCRA Compliant CAMU which was designed by AECOM to contain 150,000 yards of solidified soil and sludge. Project used in-line pneumatic inline mixing as well as physical mixing methods. In-line mixing was used to mitigate the dust common to all reagents. Envirocon imported 400,000 tons of approved offsite backfill source 25 miles away from the site, placed and graded it to within 1 inch of final grades. Envirocon was able to incorporate and increase in sludge quantity of 63% with only a 25% increase in the duration of the activity including the time impacts of several necessary design changes to accommodate the added waste and backfill. Envirocon was tasked to develop a mix design to make a stable structural material out of a sludge containing 75% water, 10% oil and 15% solids oust of a material where the water couldn't be mechanically

separated. Envirocon had to manage 25 acres area where any contact, surface, or ground water is considered impacted while excavation up to a depth of 12 feet below sea level. Instillation of select low and high permeability soils to control the influx of ground water.

- 12 Mile Creek PCB Sediment Remediation Project, Pickens, South Carolina. Heavy Equipment Operator for the design/build 12 Mile Creek project. Successfully provided community interface for the client in a very contentious environment and obtained access agreements that had not been granted for years. Also managed the construction of a 25-acre RCRA-equivalent landfill in mountainous terrain.

- Indiana Steel & Wire Project - Muncie, Indiana. Laborer. The project included the excavation and stabilization of 17,000 cubic yards of Lead contaminated soils. The stabilized soils were then placed and covered with a designed cap that was constructed in a 5-acre area onsite. The project included the excavation, disposal and soil cover of other areas located at the site including heavily wooded areas, wetland areas and an old landfill area. The project also included the dredging, dewatering and disposal of waste sludge from a 2.5-acre pond. Once dredging and dewatering were completed a stabilization fabric and 2-foot subaqueous sand cover was placed in the bottom of the entire pond.

- Chattanooga Creek Remediation - Chattanooga, Tennessee. Field Foreman and Heavy Equipment Operator for a $10 million coal tar stream remediation project in Tennessee. Approximately 1.9 miles of a large stream was isolated and dewatered. Coal tar-impacted sediments were solidified and sent to either the drying pad for further stabilization or local subtitled D landfill. Stream water was diverted via large diesel pumps and piping system. Contact water was treated on site and disposed downstream. Installed a 6 inch engineered clay liner to separate stream water from impacted ground water. Monitored for VOC emissions as part site safety and assisted with quality assurance testing.

- Visteon Storm Water Pond Improvement - Sterling Heights, Michigan. Union Laborer for the improvements of an existing storm water pond at the Visteon Corporation-Sterling Plant. The improvements included sediment removal and disposal, excavation of the clay bottom to increase the pond capacity, pump station refurbishment and site restoration. The storm water pond collects storm water for the 160-acre property, of this; approximately 155 acres are building roofs and parking lots. The pond sediment has accumulated over the last 40 years. Under direction from the State of Michigan Department of Environmental Quality and Macomb County Drain Commission, Visteon was required to increase the capacity of the storm water pond to meet the current capacity requirements. Prior to conducting onsite activities a temporary storm water by-pass system was installed; this by-pass system diverted all storm water to the existing outfall thereby maintaining the pond in a dry condition. The pond was then dewatered; approximately four feet of sediments were solidified with lime, stockpiled and loaded into trucks for disposal. Two feet of the ponds clay bottom was excavated and placed into landscape mounds at various locations on the property. Approximately 19,000 cubic yards of solidified sediments were disposed as non-hazardous material at local landfill and 5500 cubic yards of the clay bottom was placed in the onsite landscaping mounds. The restoration activities included installation of the pond slopes, placement of topsoil, installation of various trees, shrubs and hydro-seeding all disturbed areas. The pump house was refurbished with three new pumps, floats and an electrical control panel for maintaining the pond at a designed operating elevation. The project was completed on schedule and within budget.

- Gypstack 4 Closure Project Phase I – Pasadena, Texas. Heavy Equipment Operator and Foreman for a constructability report prior to commencing field activities for the Owner's representative in accordance with the construction drawings. Upon acceptance of the constructability report the project went to the field and consisted of installing an under-drain seepage collection system and existing drainage piping connections to capture processed acidic water from inactive 46-acre Gypstack. Approximately 14,000 linear feet of drainage piping was installed with an estimated 9,800 tons of drainage coarse and geo-textile fabric to facilitate the conveyance of the seepage water. In order to perform this activity safely Envirocon utilized aqua-barriers and

pumping systems to execute the work in dry conditions while re-routing the seepage water. Envirocon re-contoured and graded approximately 7,800 linear feet of the toe ditch to promote drainage and installed over 350,000 square feet of 60 mil HDPE liner to segregate the acidic process water from contact storm water. The project also included the installation of concrete headwalls, sluice gates, installation of 775 feet of 48-inch subsurface drainage piping and the installation of a lift station to transfer contact water from the toe-ditch to a designated moat system onsite during excessive rain events.

- Gypstack 4 Closure Project Phase II – Pasadena, Texas. Hazardous Waste Foreman for the side slope closure and auxiliary holding pond construction project at 46-acre Gypstack. The project included dewatering, excavating, transporting and placement of 215,000 cubic yards of gypsum. The mass excavation area was contoured into a 16-acre auxiliary holding pond lined with 60mil HDPE liner; 92,000,000 gallon capacity. The excavated material was used to grade a uniform 3:1 slope along the 26-acres of side slopes. As the side slopes were graded the surface area was amended with agricultural lime slurry then covered with sod rolls to establish vegetation

- Arizona Chemical (International Paper) Lagoon Closure - Dover, Ohio. Labor Worker for the study and evaluation of lagoon sludge stability, liner installation for stability, and approximately 80,000 tons of cover soils over a 10-acre area.

- Arizona Chemical (International Paper) Covers - Dover, Ohio. Labor Worker for the stabilization and final covers of five different Solid Waste Management Units (SWMU) and Areas of Concern (AOC) located within the active facility. Highlights of the project included the restoration of a five acre coal contaminated area and of a contaminated riverbank slope (which included the installation of an erosion control blanket, rip-rap wall, and concrete and asphalt road construction). The project also included restoration of an internal contaminated slope which entailed the installation of a backfilled geoweb system. Another phase included the excavation, truck loading, backfill and concrete cover of a PCB contaminated area. Another phase included an extensive sewer cleaning and inspection phase.

- Pneumo Abex Corporation for Light Non-Aqueous Phase Liquid (LNAPL) Phase I Remediation- Impacted Soil Excavation - Kalamazoo, Michigan. Project Manager responsible for the removal of concrete and excavation of impacted soils in two areas within an active manufacturing facility. The first area, measuring 100' x 100', located inside a building with 20 ft high ceiling was excavated in Level B personal protection equipment and under negative air because of VOC's released from the soils during excavation and the high concentration of carbon monoxide generated from the heavy equipment. The second area was adjacent to the first area, but located outside and measured 100' x 75'. Slopes of both area 1 & 2 had to be maintained at 1:1 ratio to maintain existing structure stability. Survey monuments were located every 20' and on columns and monitored twice/week for movement. Pea-gravel was used as structural backfill and 10 inches of concrete replaced in area one. Area two was also backfilled with pea-gravel and 6 inches of asphalt placed. Both area 1 and 2 had oil recovery piping installed at the floor of excavation prior to backfilling and a soil vapor extraction system installed under a vapor barrier approximately 4 ft below finish grade.

- Pneumo Abex Corporation for Light Non-Aqueous Phase Liquid (LNAPL) Phase II Remediation- Impacted Soil Excavation - Kalamazoo, Michigan. Served as Project manager on this 2007 follow-on to earlier work. Special features of this included slope stability below the plant walls for vertical cuts to excavate all the soils. This is an active facility involved with manufacturing and testing hydraulic components for commercial and military aircraft. Soil and water sample results indicated the presence of light non-aqueous phase liquid. Envirocon performed the first soil removal effort at this facility in December 02- thru March 03. The chemicals of concern in 2003 and for 2007 are TPH's, PNA's, VOC's- betx, vinyl chloride, tetrachloroehene, 1,1,1-trichloroethane, and PCB's; the 2007 area/work has some higher concentrations. The project included: (1) containing an area of concern (approximately 50-ft x 90-ft x 13 to 15-ft deep) from adjacent facility work areas, (2) construct a "tunnel" for transporting waste materials from the AOC to disposal containers without

releasing VOC's into the facility, (3) installing an air handling system to put the AOC and "tunnel" under negative air pressure, (4) cutting the concrete floor into manageable pieces, (5)excavation and removal of soils, (6) backfilling area with pea gravel and top two feet with gravel and compact (7)install rebar and concrete to match existing floor grade. Because the shoring design spec was performance (vs. prescriptive), Envirocon acquired the services of a civil/structural engineer (P.E.) to design those elements and a specialty subcontractor with low-height drilling equipment to place the jet grout structures and tiebacks prior to excavation.

Education

- Automotive Associates Degree- Northwestern Auto/Diesel College (1999)

Training & Certifications

- 40-Hour Hazardous Waste Operations Training
- 8-Hour Hazardous Waste Operations Site Supervisor
- 8-Powered Industrial – Truck Operator
- Polyethylene Pipe Electro Fusion Coupling Training
- Polyethylene Butt Fusion Training (McElroy Fusion M)
- West Virginia Miner's Surface Apprentice Card
- Confined Space Entry & Competent Person
- Excavation Competent Person
- Transportation Worker Identification Credentials Card
- Safety Incentive Hours – 20,000 (+) hours

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BEAU BRONKEN
Project Engineer

Qualifications
Mr. Bronken is a Field Engineer assisting in project development, project management, estimating, and the development and implantation of quality control programs. Bronken is a recent graduate of Colorado State University with a B.S. in Construction Management and holds a Minor in Business Administration.

Experience Highlights
- Quality Assurance
- Production and schedule tracking
- Budget preparation
- Installation of ABS Building
- Field Documentation

Experience

- BTL Phase I – Butte, Montana. Field Engineer for improving specific components of the water treatment and collection systems previously installed at Lower Area One (LOA) and associated peripheral sites required by the Butte Priority Soils Operable Unit. Project work included upgrades to West Camp Pump Station (WCP-1), Construction of new IPS building, and installation of new ASB building in accordance to Butte Priority Soils Operable unit Record of Decision (EPA, 2006).

- Moab UMTRA Site, Atlas Mill Tailings - Moab, Utah. Envirocon Intern for off pile remediation and on pile excavation, conditioning and load out of 2.5 million tons of uranium contaminated soil. Envirocon's scope of work included management of the on-pile dust control/sprinkler system; off-pile remediation of approximately 375,000 tons of Residual Radioactive Material (RRM); development of the on-pile excavation work plan; procurement and mobilization of on-pile equipment; and excavation, conditioning, stockpiling, and load-out of roughly 2.5M tons of RRM from the main tailings pile. Mr. Bronken assisted in overall project safety; client relations; quality; budget tracking and compliance; operational and technical direction of projects; enforcing company policies and procedures; insuring project was performed in accordance with design, budget, and schedule requirements; coordinating with field engineering to ensure compliance with the plans and specifications; coordinating, planning, and supervising subcontractors and craft labor; ensuring that all required materials, equipment, and inspections support the project schedule; and fulfilling design and construction duties.

- Former Sinclair Refinery Remediation & Restoration - Wellsville, New York. Envirocon Intern for the impacted soil removal, sheet pile installation, and on site landfill construction project at the Former Sinclair Refinery. Envirocon excavated 15,000 cubic yards of hydrocarbon impacted sediments from a drainage swale and the Genesee River and then transported and placed in an onsite landfill. The existing landfill was reopened and a new cap and cover system installed. Steel sheet pile installed in the Genesee River provided protection from water and saturated soils. An engineered backfill system replaced the excavated sediments.

- ERP Site SS_63 Langley AFB – Langley AFB, Virginia. Envirocon Intern for the installation and construction of temporary containment areas (including cofferdams and turbidity curtains) for dewatering and prevention of sediment transport. The scope of work also included the installation of sheet pile, removal by excavation, decanting and off-site disposal of 4,200 cubic yards of polychlorinated biphenyl (PCB)/polychlorinated terphenyl (PCT) impacted sediment, and complete site restoration.

- Operable Unit I Remediation Construction Stauffer Chemical Superfund Site – Tarpon Springs, Florida. Envirocon Intern for the excavation, handling and on-site consolidation of approximately 220,700 cubic yards of phosphorus mine tailings, roadway and former railroad bed slag, waste fill, contaminated soil, and sediment. The scope of work also included construction of groundwater cut-off wall using fiberglass composite sheeting (2,800 lf), shoreline restoration and vinyl seawall (1,350 lf), construction of two low-permeability geo-membrane caps, 18 and 25 acres respectfully.

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Phase I Removal Action for PCB Contaminated Soil – Marion, Illiniois. Envirocon Intern for the excavation of 750 tons of hazardous PCB impacted soil (>50 ppm PCB) and 2,000 tons of non-hazardous PCB impacted soil (<50 ppm PCB), transportation and disposal of PCB (TSCA) impacted soil and excavation backfill. At the conclusion of the Crab Orchard project the total amount of PCB impacted soil that was excavated, transported, and disposed of was 11,200 tons of hazardous soil (+1,500% increase) and 19,000 tons of non-hazardous soil (950% increase). Additionally, an excessively wet spring resulted in the generation of 300,000 gallons of PCB-impacted construction water that required disposal. The dramatic increase in soil volume resulted from the discovery of previously unidentified PCB impacted soil in one particular area identified as the Tree Stand Area.

Education

- Bachelor of Science in Construction Management/Minor Business Administration Colorado State University 2011.

Training & Certifications

- 40-Hour Hazardous Waste Operations Training
- Forklift Operation Certified
- Smith System Defensive Driving Training
- American Institute of Constructors Certified

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SCOTT D. MAHONEY
Health and Safety Officer

Qualifications

Mr. Mahoney has over 27 years of experience in the Health and Safety Industry and brings with him extensive experience in managing safety support for challenging projects. He is well versed in fundamental safety procedures, developing and implementing corporate and site-specific Health and Safety Plans. He has provided H&S support in work involving hazardous materials where personal protective equipment levels included not only the conventional PPE of D and C associated with construction and production, but also Levels A and B. He is well versed in integrated safety management including incident reporting, investigation and lessons learned.

Experience Highlights

- Health and Safety program implementation
- Familiar with Industrial Hygiene Principles
- Incident Reporting and Investigations
- Confined Spaces Competent Person
- Respiratory Protection Qualified
- Lead Worker Trained
- Beryllium Worker Trained
- Asbestos Awareness Trained
- Supervisor Field Sampling Team
- Emergency Response
- Daily equipment inspections

Experience

- Campmarina Sediment Removal – Sheboygan, Wisconsin. Health and Safety Officer for the removal of contaminated soil/sediment from a park and marina adjacent to the Sheboygan River shoreline. The primary contaminants were PAHs and PCBs. Sheet pile cofferdam was installed to contain the working area, as well as, an upland OU vertical barrier wall stabilization system. The scope of work also included, removal of under-shore soil, mechanical dredging of near-shore sediment, stabilization of the sediments with reactive blending materials, water treatment of MGP contact water, and disposal of approximately 20,725 cubic yards (cy) of contaminated sediments from the site. Envirocon used a specially fabricated 1-3/4 cubic yard environmental bucket for the mechanical dredging, with the excavator positioned on a 40- by 40-foot barge. Final dredge cut lines and grades were verified using Real Time Kinematics (RTK) Dredgepack software and additional surveying support. Mechanically-dredged sediments were loaded into transport barges within two concurrent dredging operations, where sediments were offloaded and stabilized. Approximately 300,000 gallons of decant and contact water was continuously treated, sampled, and verified before release into the Sheboygan River. Envirocon targeted the TSCA-impacted sediments for initial removal to minimize cross contamination potential. TSCA sediments were staged and loaded for off-site transportation and disposal before the non-TSCA sediments were dredged. The careful segregation reduced disposal costs. Mr. Mahoney was responsible for writing and maintaining the Health and Safety Plan (HASP), initial training of all workers reporting to the project, generation of Activity Hazard Analysis (AHA) for task specific work, and ensuring all personnel training/physicals were maintained current. Conducted morning safety meetings prior to start of work each day, and provided training for other site subcontractors during site subcontractor monthly meetings. Performed incident reporting and investigations. Performed air monitoring for dust, benzene, and Volatile Organic Compounds (VOC's)

- Crab Orchard Plume 1& 3, PCB Contaminated Soil Removal – Marion, Illinois. Health and Safety supervisor during removal of PCB contaminated soil. Mr. Mahoney was responsible for writing and maintaining the Health and Safety Plan (HASP), initial training of all workers reporting to the project, generation of Activity Hazard Analysis (AHA) for task specific work, and ensuring all personnel training/physicals were maintained current. Conducted morning safety meetings prior to start of work each day, and provided training for other site subcontractors during site subcontractor monthly meetings. Performed incident reporting and investigations. Performed air monitoring for dust, benzene, and Volatile Organic Compounds (VOC's). Provided project coordination with state and private agencies for identifying underground utilities. Coordinated with General Dynamics and US Fish and Wildlife Service to ensure all of their site and security regulations were met.

- Stauffer Chemical Superfund Site – Tarpon Springs, Florida – Performed mobilization for Radiation Safety portion of project. Provided training for H&S personnel regarding survey techniques for personnel, area, and equipment monitoring; also instructed them on the technique for performing daily performance tests. Generated all documentation required for performing all surveys, in addition to providing the training required to perform the documentation. Provided Radiation Safety training for all site personnel regarding any radiological hazards associated with the site; also instructed them on the technique to perform personal monitoring.

- 12 Mile Creek – Cateechee, South Carolina. Provided H&S support at 12 Mile Creek during initial cover of PCB sediment repository. Performed PCB monitoring for equipment release. Conducted morning safety meetings prior to start of work each day.

- Rocky Mountain Arsenal, Enhanced Landfill Cover Construction Project – Commerce City, Colorado. Health and Safety Supervisor providing project safety oversight during the cap construction for the Enhanced Landfill at Rocky Mountain Arsenal, a Voluntary Protection Program (VPP) site. This project involved the construction of a cover over a landfill used to contain hazardous waste generated during years of operation at Rocky Mountain Arsenal. Mr. Mahoney was responsible for writing and maintaining the Health and Safety Plan (HASP), initial training of all workers reporting to the project, generation of Activity Hazard Analysis (AHA) for task specific work, and ensuring all personnel training/physicals were maintained current. Conducted morning safety meetings prior to start of work each day, and provided training for other site subcontractors during site subcontractor monthly meetings. Performed incident reporting and investigations. Provided work care case management for employee injuries, which involved no OSHA recordable incidents for the duration of the project. Performed air monitoring during all stages of construction for control of dust, silica, and quartz.

- Denver Radium Streets Project – Denver, Colorado. Health and Safety / Radiological Safety Supervisor providing project safety oversight during the removal of Radium-226 impacted asphalt and soils for the Denver Radium Streets Project. This project was a multi-year contract to remove radium-contaminated asphalt and underlying subgrade soil material from a number of impacted streets located in residential areas of Denver. Envirocon developed management, health and safety, demolition, and surface and subsurface sampling plans, as well as conducted construction oversight, radiological sampling, air and water monitoring, and street reconstruction oversight for the City and County of Denver. Envirocon also provided radiological training for City and County of Denver employees. The project was extremely high profile and under public scrutiny, and required the management of multiple City subcontractors, public relations, and compliance with regulatory agencies. Mr. Mahoney prepared and reviewed the Envirocon Health and Safety Plan (HASP) and Work Plan prior to final approval. Conducted daily safety meetings prior to work commencing each day. Performed air monitoring to verify absence of airborne contamination. Responsible for survey and sampling of soil to determine levels of contamination remaining following excavation.

Education

- Old Dominion University, Norfolk, VA - 1991
- Naval Nuclear Power School and Prototype Training - 1984

Training and Certifications

- Leadership & Management – The US Navy
- OSHA 510 Basic Construction Safety
- Chevron Loss Prevention System (LPS)
- Respiratory Protection Qualified
- Lead Worker Trained
- Beryllium Worker Trained
- Asbestos Awareness Trained

- Supervisor Field Sampling Team (Emergency Response)
- Lead Daily Safety Meetings
- HAZCOM: Maintained and updated MSDS File
- Daily equipment inspections
- Lockout/Tagout Trained
- OSHA 500 Trainer Course for Construction Industry
- Radiation Safety Officer
- First Aid/CPR