
Construction Report

**Penta Wood Products Superfund Site
Extraction/LNAPL Recovery Well and
Conveyance System Installation**

Prepared for



March 2012

CH2MHILL®

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Acronyms and Abbreviations

CAMU	corrective action management unit
CLP	contract laboratory program
PW	Penta Wood Products Superfund Site
RA	remedial action
WDNR	Wisconsin Department of Natural Resources

SECTION 1

Introduction

CH2M HILL, Inc. has been contracted by the United States Environmental Protection Agency (USEPA), Region 5 to perform additional remediation activities for the Penta Wood Products Site in Siren, Wisconsin conducted under USEPA Region 5 Contract No. EP-S5-06-01. The additional remedial activities consisted of installing three nested groundwater extraction/LNAPL recovery wells including integration of the new wells into the existing treatment system. The work was completed between November 8th, 2010 and March 3rd, 2011.

1.1 Site Description

The Penta Wood Products site is an inactive wood treating facility located at 8682 Daniels 70 (former State Route 70), Daniels Township, Siren, Wisconsin, 54872. The existing groundwater and free product treatment and extraction system was installed in 2001. Additional upgrades were required before the system was fully operational in 2004 and has been fully operational since. In 2010 the WDNR and USEPA agreed that installation of three additional extraction well nests would enhance the remediation occurring at the site prior to transfer of the operations to the WDNR in August of 2014. Two additional monitoring wells were also installed to supplement the existing monitoring network.

The site stratigraphy consists of an upper sand, a glacial till, and a lower sand. The upper sand is fairly continuous across the site extending from the surface or beneath the fill material to depths of 90 to 120 feet. The upper sand consists of well graded sand with some minor amounts (<10 percent) of silt and clay, well graded sand with silt, poorly graded sand, or poorly graded sand with gravel. During previous site work, discontinuous lenses of till up to 25 feet in thickness were encountered within the upper sand between elevations of 975 and 1,002 feet mean sea level (MSL), or depths of about 65 or 70 feet.

1.2 Construction Activities

The following is a summary of the major activities:

- Mobilization.
- Utility locate activities (for well drilling locations).
- Pilot hole drilling and soil sampling at three locations.
- Installation of three extraction well nests which each include a free product recovery well and a groundwater extraction well.
- Installation of two groundwater monitoring wells.
- Development of all wells installed.
- Construction of well completions for groundwater monitoring wells.
- Installation and testing of LNAPL recovery pumps and groundwater extraction well pumps, including pitless adaptors.
- Excavation of trenches for the installation of well vaults and piping to the treatment facility.
- Installation of piping from the well heads to the treatment system including floor slab penetration for the piping.
- Installation of piping instrumentation.
- Reprogrammed the PLC to incorporate the new wells into the system.
- Site restoration and demobilization.

Table 2-1 presents a chronological summary of major events and dates associated with the 2010/2011 construction activities.

TABLE 2-1
2010/2011 Construction Activities

Date	Activity
8-Nov-10	Mobilized drilling rig for soil borings; completed initial health and safety briefing
22-Nov-10	Completed first soil boring at EW-14
1-Dec-10	Began installation of the nested extraction wells.
7-Dec-10	Completed soil borings at EW-13 and 12
20-Dec-10	Completed installation of MW-27 and MW-28
30-Dec-10	Completed installation of nested extraction well at EW-14
10-Jan-11	Earthworks mobilized to the site.
17-Jan-11	Installed conveyance piping to EW-14
19-Jan-11	Completed installation of well EW-13; conveyance piping was extended to EW-13
24-Jan-11	All electrical conduits, VFD's, PLC's were installed in the building
2-Feb-11	Completed installation of the nest well at EW-12
3-Feb-11	Placed vault for EW-12; placed conveyance piping to EW-12
4-Feb-11	Completed piping manifold for LNAPL and groundwater inside the building. Completed hydrostatic testing on the piping
10-Feb-11	Completed installation of pitless adapters on all wells
18-Feb-11	Installation and wiring of all pumps was completed
3-Mar-11	PLC was reprogrammed to incorporate the new extraction wells and new extraction wells were put into service

SECTION 2

Pre-Construction Activities

Pre-construction activities conducted prior to the start of field work include the completion of the design for the installation of the three extraction wells, procurement of subcontractors and utility clearance. The design was completed to incorporate the new extraction wells into the existing system. A required pre-bid site meeting was held on October 20, 2010 for the two solicited subcontracts; drilling and earthworks. The procurement was completed as a lowest technically acceptable bid. HIS Constructors was awarded the earthworks subcontract and Layne Christensen was awarded the drilling subcontract.

Site preparation activities were performed according to the project specifications and the contractor's approved work plan. The following subsections provide additional details of the site preparation activities performed during the project. Preparation for the start of construction activities included the following items:

- Establishment of staging areas
- Utility clearance
- Review of submittals
- Review of Health and Safety Plans

2.1 Design

CH2M HILL designed system modifications associated with installing and connecting three additional groundwater extraction and LNAPL recovery wells. The design was completed using similar construction to the existing extraction wells and conveyance system which has been used successful at the site to date.

The extraction wells were installed within the area where LNAPL was known to be present historically. Locations EW-12, EW-13 and EW-14 corresponded with monitoring wells with elevated levels of PCP and measurable amounts of LNAPL. The monitoring wells MW-27 and MW-28 were installed as replacements to ensure that delineation of the edges of the PCP plume is continuing to occur.

2.2 Utility Clearance

The utility clearance was completed by calling Diggers Hotline; several utilities visited the site and confirmed that no public utilities were located on the east side of the treatment system building. A third party clearance was not completed due to documented underground piping previously installed by CH2MHILL. The earthworks subcontractor located and exposed the existing piping prior to using heavy equipment.

2.3 Mobilization

On November 8, 2010 Layne Christensen (Layne) mobilized a roto sonic drilling rig to the site to begin installation of the pilot holes; the Barber rig was mobilized on December 1st to begin installation of the extraction wells. HIS Construction Inc. (HIS) mobilized to the site on January 4th, 2011 to begin the earthworks portion of the work. Layne set up a staging area northwest of the treatment system at the site where they constructed a decontamination pad and materials lay down area. HIS used the same area for a lay down area. Sensitive equipment including PIDs and 4 gas meters were stored inside the treatment system building.

Submittals were reviewed prior to work taking place; this included review of health and safety plans and project plans and materials submittals all which were compared to the engineering plans. Hazardous waste and health and safety certifications were reviewed for all workers at the site and copies were kept on site during the entire field effort. Additional reviews were required for welding and crane lifting which were required for operation of the Barber rig and installation of the extraction wells. The well locations at the site were identified and marked by CH2M HILL to ensure proper location.

Construction Activities

3.1 Well Installation

The following well installation and associated tasks occurred throughout the project.

3.1.1 Monitoring Well Installation

Two monitoring wells were installed, one located in the semi-confined aquifer (MW-28) and one in the unconfined aquifer (MW-27). MW-27 was a replacement well for MW-6S which has been found to be dry more frequently due to declining water tables at the site. MW-27 is important to define the southern boundary of the plume in the unconfined aquifer. MW-28 characterizes the semi-confined aquifer in the eastern direction and is a replacement for MW-10 which is screened much lower in the aquifer and would not effectively detect contamination in this direction.

The monitoring wells were installed using a rotary sonic drilling rig and continuous cores were collected for soil logging. Soil logs and construction diagrams are located in Appendix A and Appendix B respectively. The wells were constructed of 2 inch Schedule 80 PVC with a slot size of 0.01-inch. The #2 sand pack was installed in the annulus with a #20 fine sand seal and 3 feet of bentonite seal installed using bentonite chips. The remaining annulus above the seal is comprised of bentonite slurry. The completion was an above ground pipe with protective bollards. The first attempt at installing the well in MW-27 ended with the well breaking at depth, the broken well was removed and the boring was over-drilled and set in the hole successfully.

3.1.2 Soil Boring Advancement

Soil borings were advanced prior to the installation of the three extraction wells (EW-12, EW-13, and EW-14) to determine proper well screen intervals and for collection of soil samples. The soil borings were advanced using a sonic drill rig (SDC500-28E). Soils were collected continuously in ten foot intervals; soils were logged for soil characteristics. Each. In addition, head space monitoring was performed on each 10 foot soil interval using a 14.5 eV PID. The highest head space samples from the upper fill area, the vadose zone and the smear zone were submitted to the lab for analysis for PCP and TPH oil. The upper fill area is typically the upper 10 feet of soil where woodchips could be encountered. The vadose zone is typically from 10 bgs to 100 feet bgs. (10-15 feet above the water table). The smear zone is typically the 10 feet above and 10 feet below the water table or usually 100 to 120 feet bgs. The soil samples collected during the advancement of the soil borings were compared to historical soil samples to determine the progress on cleaning up the contamination with the soil at the site. The soil boring at EW-14 was initially advanced to 85 feet before encountering refusal and the location was moved over 10 feet and was re-attempted, this boring was named AT-14A.

3.1.3 Extraction Well Installation

Once the soil borings were completed at each well location a DR-24 Barber rig was mobilized to each site to install the extraction wells. The extraction wells were drilled several feet from the original soil boring location to avoid complications with installing the wells in the soil boring location.

The Barber rig advanced a temporary 16 inch diameter steel casing to a total depth of 50 ft below the groundwater surface or approximately 145-165 ft bgs. The groundwater extraction well and the LNAPL recovery wells were nested in the same borehole. The screen for the LNAPL recovery well was completed across the groundwater table with approximately 15 feet above the water and 15 feet below the water. The groundwater extraction well was installed approximately 30 below the elevation of the groundwater. Construction of each nested extraction well consists of a 6 inch groundwater extraction well and a 4-inch LNAPL recovery within a single 16-inch borehole. The groundwater extraction wells are typically installed with the top of the screen 40 feet below the water table.

The 4-inch LNAPL recovery wells were installed across the water table; fifteen feet above and fifteen feet below the water table. Specific well construction details are located in Appendix B.

The temporary casing advanced to total depth was welded in 20 foot section as the drill was advanced. Due to health and safety concerns associated with the methane present in the subsurface, additional precautions were taken when welding the casing in place including monitoring of the air space for elevated levels of explosive gases. A supply of nitrogen gas (inert gas) was available to pump into the casing to replace air with explosion potential prior to welding. No explosive environments were encountered and nitrogen was not used.

During the installation of the LNAPL recovery pump in EW-13, an obstruction was identified which prevented the installation of the pump. A downhole video camera was brought in to identify the obstruction. It was determined that the screen had been bent inward likely by a boulder during construction. The screen was deformed but still intact and would function as designed. The well construction details were submitted to the WDNR on July 25, 2011; a copy of these submittals including pump installation is located in Appendix C.

3.1.4 Well Development

Each pair of groundwater extraction/LNAPL recovery wells were developed by pumping and surging. Each well was bailed to removed fines; wells were then surged to improve connection between the screen and the sand pack. Alternately the well was pumped until remaining sand, silt and turbidity were removed. Turbidity was measured routinely and pumping was continued until turbidity was reduced below 10 NTUs or the well was pumped for 5 hours. The 6 – inch groundwater extraction wells were purged of approximately 1000 gallons of water and the 4 – inch LNAPL recovery wells were purged of approximately 300 gallons. The 2-inch monitoring wells were developed for 30 min and were purged of 100 gallons each. All development water was treated with the treatment system.

3.1.5 Waste Management

Soil cutting were consolidated into roll off containers. Water was decanted off the top and treated through the treatment system. Once dewatered, the soil cuttings were consolidated in the conveyance piping trenches. The soils were covered with two feet of clean earthen cap in accordance with the previous cover design.

3.2 Waste Water Conveyance Construction

3.2.1 Installation of Pumps

Three 2 HP 460 volt Grundfos Redi-flo4 groundwater extraction pumps were installed in the 6" groundwater extraction wells and three AP4+ pneumatic pumps were installed in the nested LNAPL recovery wells. The groundwater extraction pumps were installed with 1.25" galvanized steel piping and connected with MAAS-Midwest type model 6J1.25N pitless adapters to convey groundwater below ground to the treatment system. The LNAPL pumps were installed with ¾" HDPE piping water from the groundwater surface piped below ground to the treatment system.

When installing the LNAPL pump in EW-13 it was discovered that the designed pump with an outer diameter of 3.6 inches was not able to be installed in the well due to an obstruction in the well. A downhole video camera was brought in to determine what sort of obstruction was occurring in the well. After viewing the obstruction with the camera it was determined that although the screen was bent inward. It was determined that the screen was deformed but was still intact and will function as designed. A QED pump model # AP2T with an outer-diameter of 1.75" was used to replace the designed pump. The pump was able to fit past the damaged portion of the screen to the groundwater surface and was an acceptable replacement.

3.2.2 Excavation and Installation of Piping

The conveyance piping for each well was buried in trenches extending 7 feet deep to bury the piping below the frost line. A well vault that extends 8 feet deep and is 4'6" in diameter was installed for each nested extraction well. The conveyance piping was placed in a second 6-inch HDPE pipe from the well vault to the building for containment purposes. The HDPE containment pipe buried in each trench extends from each of the well vaults to

the treatment system carrying a ¾" free product pipe and a 1 ½" groundwater pipe. Electrical wiring was buried at 4 feet deep in the same trench. The piping was brought up to the building where the pipes enter the building through a slab penetration. The HDPE was electro-fused together once the penetrations into the building were made. Each of the pipes was pressure tested to ensure there are no leaks.

3.2.3 Pump Installation

The individual HDPE lines from each well are equipped with a flowmeter, check valve, and sample tap prior to connecting to the main manifold inside the treatment building.

The groundwater extraction pumps and the LNAPL recovery pumps are controlled by the existing programmable logic controller (PLC). The pumping rate of each of the groundwater extraction wells will be adjusted with variable frequency drives (VFD). The LNAPL recovery pumps are situated at the water table and will be adjusted regularly to ensure maximum LNAPL recovery. The groundwater pumps are set approximately three feet above the top of the screen to allow for water to flow across the motor of the pump to allow for proper cooling. Actual depths are located in Appendix D.

3.3 Treatment System Upgrades

The treatment system maximum designed flow rate is 126 gpm but was previously operating at approximately 60 gpm. The new wells will operate at the same flow rate as the older wells resulting in a total flow rate of for the current system of approximately 85 gpm.

LNAPL collected from the recovery wells is pumped to an oil/water separator in the treatment building which transfers oil to an outside storage tank and excess water back into the influent groundwater treatment stream. The previous flow from the four operating LNAPL recovery wells was approximately 5 gpm. The additional LNAPL pumps operate at approximately 1 gpm for a total flow rate to the oil/water separator of 8 gpm. The LNAPL wells after installation did not immediately have measureable amounts of LNAPL so the new LNAPL pumps were not turned on.

3.4 Restoration

The excavated trench material was placed back into the trenches as backfill. The existing CAMU cover (2 feet of clean material) was removed and stockpiled until it could be placed back over the excavation to maintain the cover within the CAMU. Drill cuttings were dewatered and then consolidated in the CAMU under the clean cover.

Disturbed areas from earthworks activities re-seeded with a selected grass mixture that included quick-growing grasses for early stabilization and slow-growing grasses more suitable to site conditions. The grasses were covered with straw to protect the seeds and allow for quick germination.

Appendix A

Boring Logs and Well Construction Details



PROJECT NUMBER: 344511	BORING NUMBER: EW-12	SHEET 1 OF 2
SOIL BORING LOG		

PROJECT : Extraction Well Installation 2011, Siren, WI LOCATION : Siren, WI
 ELEVATION : DRILLING CONTRACTOR : Layne Christensen
 DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonic

WATER LEVELS : 102.0 ft below ground surface START : 12/2/2010 END : 12/7/2010 LOGGER : Haas/Lippincott

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		RECOVERY (in)	SAMPLE ID (TIME)	SOIL DESCRIPTION	SYMBOLIC LOG	PID (ppm)	COMMENTS
	DEPTH	DEPTH						
0					SAND (SP) 0-18' - brown, moist, (loose), fill with wood chips			
25.0	33.0	12.0	25-26'		SAND (SM) 18-53' - reddish brown, moist, (loose), little silt, cobbles			oil sheen observed in sample @ 45' PID (25'): 5ppm PID (34'): 7ppm PID (43'): 13ppm
33.0	42.0	12.0	33-34'					
42.0	58.0	12.0	42-43'					
58.0	69.0	12.0	58-59'		SAND (SM) 53-58' - brown, moist, (dense), with some silt, cobbles and pebbles			
69.0	75.0	12.0	69-70'		SAND (SP) 58-82' - brown to reddish brown, moist, (loose), trace of silt, Pebbles, cobbles			PID (58'): 12ppm PID (75'): 68ppm PID (81'): 28ppm
75.0	81.0	12.0	75-76'					
81.0	96.0	12.0	81-82'		SAND (SM) 82-84' - reddish brown, moist, (dense), very fine to coarse grained, some silt. Pebbles, cobbles			
96.0	100	12.0	96-97'		SILTY SAND (SP) 84-97' - reddish brown, moist, (loose), medium to fine grained, some gravels, Some black staining/mottling at 96-97' bgs			PID (90'): 6.0ppm
								LNAPL well screen from 95 to 125



PROJECT NUMBER: 344511	BORING NUMBER: EW-12
SHEET 2 OF 2	
<h2 style="margin: 0;">SOIL BORING LOG</h2>	

PROJECT : Extraction Well Installation 2011, Siren, WI **LOCATION :** Siren, WI
ELEVATION : _____ **DRILLING CONTRACTOR :** Layne Christensen
DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonic

WATER LEVELS : 102.0 ft below ground surface **START :** 12/2/2010 **END :** 12/7/2010 **LOGGER :** Haas/Lippincott

DEPTH BELOW EXISTING GRADE (ft)			SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL (ft)	RECOVERY (hr)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	PID (ppm)	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
		SAMPLE ID (TIME)			
110			SILTY SAND (SP) 97-98' - boulder encountered, shatter zone recovered SAND (ML) 98-110' - reddish brown, moist, (loose), coarse to fine grained, little silt and gravels		
			SANDY SILT (SP) 110-115' - reddish brown, moist, very fine grained, some cobbles and gravels		PID (110'): 0.2ppm
120			SILTY SAND (SP) 115-120' - reddish brown, (medium dense), medium to fine grained, little gravels and trace cobbles, some poorly sorted coarse sand lenses, mostly well sorted sands with silt.		PID (125'): 2.2ppm
			(SP) 120-130' - Same as 115-120 except reddish brown		
130			(ML) 130-132' - Same as 115-120 except reddish brown		Extraction well screen installed from 130 to 150
			SANDY-CLAYEY SILT (ML) 132-144' - reddish brown to brown, fine grained, some gravels and cobbles.		PID (130'): 0.8ppm PID (135'): 1.1ppm
140			BOULDERS/SHATTERS ROCK PIECES AND COBBLES (ML) 144-148' - some clay/silts in matrix and coatings		PID (145'): 9.2ppm
			GRAVELLY, SANDY, CLAYEY SILT (ML) 148-150' - reddish brown, (dense), coarse grained, some cobbles and pebbles		PID (154'): 1.3ppm PID (155'): 2.2ppm
150			SANDY, CLAYEY, SILT (SP) 150-160' - reddish brown, moist, (dense), some gravel and cobbles, wetter/sandier lense from 156-157 and 158-160'		
			POLVERIZED BOULDERS AND COBBLES 160-164' - dry, coarse grained, some clays and silts, some cemented till chunks Bottom of Boring at 164.0 ft below ground surface		PID (160'): 1.2ppm EOB @ 164' bgs
160					



PROJECT NUMBER: 344511	BORING NUMBER: EW-13	SHEET 1 OF 2
SOIL BORING LOG		

PROJECT : Extraction Well Installation 2011, Siren, WI LOCATION : Siren, WI
 ELEVATION : DRILLING CONTRACTOR : Layne Christensen
 DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonic

WATER LEVELS : 105.0 ft below ground surface START : 11/23/2010 END : LOGGER : Haas

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		RECOVERY (in)	SAMPLE ID (TIME)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG	PID (ppm)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	DEPTH	RECOVERY						
	DEPTH	RECOVERY						
6.0	12.0	6-7'		SAND (SM) 0-3' - Reddish brown, moist, medium coarse to fine, sorted, medium dense			PID (6'): 12ppm	
12.0	12.0	12-13'		ORGANICS (SM) 3-8' - Brown, wet, fill, wood fragments, loose		12		
12.0	12.0	12-13'		SAND (SP) 8-12' - Brown, moist, slightly silty, little clay, medium stiff to medium dense		24	PID (13'): 24ppm	
25.0	12.0	25-26'		SAND (SM) 12-22' - Brown, reddish brown, moist, medium coarse to coarse			PID (25'): 18ppm	
37.0	12.0	37-38'		SAND (SM) 22-28' - Brown, moist, dense, with trace clay		18		
43.0	12.0	43-44'		SILTY SAND (SM) 28-40' - Brown, moist, medium dense, coarse, little clay,			PID (37'): 1ppm	
54.0	12.0	54-55'		SAND (SP) 40-58' - Red, reddish brown, moist, very coarse, loose		1	PID (44'): 3ppm PID (55'): 81ppm	
65.0	12.0	65-66'		SAND (SP) 58-72' - Brown, reddish brown, moist, medium sorted, loose		3		
78.0	12.0	78-79'		SAND (SW) 72-88' - Red, brown, black, moist, loose, very coarse		61	PID (65'): 1ppm	
86.0	12.0	86-87'		SAND (SW) 72-88' - Red, brown, black, moist, loose, very coarse		1	PID (79'): 34ppm PID (85'): 1ppm	
97.0	12.0	97-98'		SAND (SP) 88-100' - wet, poorly sorted, loose with small to large cobbles		34		
100	12.0	97-98'				1	PID (97'): 3ppm	
						3	LNAPL well screen from 95 to 125	



PROJECT NUMBER: 344511	BORING NUMBER: EW-13 SHEET 2 OF 2
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SOIL BORING LOG

PROJECT : Extraction Well Installation 2011, Siren, WI	LOCATION : Siren, WI
ELEVATION :	DRILLING CONTRACTOR : Layne Christensen
DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonic	

WATER LEVELS : 106.0 ft below ground surface START : 11/23/2010 END : LOGGER : Haas

DEPTH BELOW EXISTING GRADE (ft)	SOIL DESCRIPTION			SYMBOLIC LOG	PID (ppm)	COMMENTS
INTERVAL (ft)	RECOVERY (in)	SAMPLE ID (TIME)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
101.0	12.0	101-102'	SAND (SP) 100-125' - Reddish brown, wet, loose, stiff, very coarse, with cobbles, lenses of clayey silt with some sand	9		PID (110'): 9ppm Observed water table at 108' bgs.
117.0	12.0	117-118'				
126.0	12.0	126-127'	SAND (SP) 125-143' - Reddish brown, wet, loose, very coarse	4		PID (120'): 3ppm
135.0	12.0	135-136'	SILT (SM) 143-155' - Brown, moist, dense, some cobbles	3		Extraction well screen from 135 to 155
143.0						
155.0			SAND (SM) 155-170' - Reddish brown, wet, loose, silt and cobbles			PID (169'): 10ppm EOB @ 170' bgs
170.0			Bottom of Boring at 170.0 ft below ground surface			



CH2MHILL

PROJECT NUMBER:

344511

BORING NUMBER:

EW-14

SHEET 1 OF 2

SOIL BORING LOG

PROJECT : Extraction Well Installation 2011, Siren, WI

LOCATION : Siren, WI

ELEVATION :

DRILLING CONTRACTOR : Layne Christensen

DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonic

WATER LEVELS : 105.0 ft below ground surface

START : 11/19/2010

END : 11/22/2010

LOGGER : Haas/Niebauer

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		RECOVERY (in)	SAMPLE ID (TIME)	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLIC LOG PID (ppmv)	COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
	DEPTH	RECOVERY					
4.0					DARK TOPSOIL 0-2' - (loose)		PID: 7.5
6.0	12.0		4-5'	SILT (ML) 2-15' - Dark brown, moist, (loose), With little sand (Fill), 7.5YR 3/3, odor, wood chips, stained organic soil			
12.0	12.0		6-7'				
12.0	12.0		12-13'				
20.0					SAND (SP) 15-20' - Brown, moist to dry, w/ silt, no organics, 7.5YR 4/4, odor		PID: 5.5 PID: 4.6
20.0					SANDY SILT (ML) 20-25' - moist		PID: 0.0
29.0					SAND (SP) 25-30' - Dark brown, moist, trace clay, 7.5YR, 2.5/3		PID: 3.5 PID: 8.8 PID: 10.6
30.0	12.0		29-30'				Some water injected PID: 6.0
30.0	12.0		30-31'	SAND (SP) 30-32' - Dark brown, moist			
36.0					SILT W/ GRAVEL (ML) 32-39' - Pinkish gray, dry, (loose)		
36.0	48.0		36-40'				
46.0					GRAVEL W/ SAND (GW) 39-41' - Pinkish gray, dry, (loose)		PID: 42.2 Injected Water
46.0	12.0		45-46'		SAND (SP) 41-48' - Brown w/ black specks, moist, (dense), coarse grained		
50.0					SILT W/ GRAVEL (ML) 46-50' - Pinkish gray, dry, (loose), coarse grained		
55.0					SAND W/ SILT (SP) 50-55' - Brown to dark brown, moist, (loose), coarse grained		PID: 1.2
55.0	12.0		55-56'		SAND (GW) 55-60' - Reddish brown, moist, (loose), coarse grained		PID: 6 PID: 11 PID: 23 PID: 80
60.0					SAND AND GRAVEL (GW) 60-70' - Reddish brown to brown, moist, (loose)		
70.0					SAND AND COBBLES (GW) 70-85' - Brown, moist, (loose), coarse grained		PID: 1130 PID: 2315 PID: 4630 PID: 1715 PID: 2900 PID: 4300 PID: 2160
76.0	12.0		76-77'				
83.0					SAND AND COBBLES (GW) 85-90' - Reddish brown, moist, (medium dense), coarse grained		PID: 1300 PID: 810 PID: 230
83.0	12.0		83-84'		SAND AND COBBLES (GW) 90-105' - Brown to reddish brown, moist, (loose), coarse grained		
100.0							LNAPL well screen from 98 to 128



PROJECT NUMBER: 344511	BORING NUMBER: EW-14
SHEET 2 OF 2	
<h2 style="margin: 0;">SOIL BORING LOG</h2>	

PROJECT : Extraction Well Installation 2011, Siren, WI **LOCATION :** Siren, WI
ELEVATION : _____ **DRILLING CONTRACTOR :** Layne Christensen
DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonite

WATER LEVELS : 105.0 ft below ground surface **START :** 11/19/2010 **END :** 11/22/2010 **LOGGER :** Haas/Niebauer

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		RECOVERY (In)	SAMPLE ID (TIME)	SOIL DESCRIPTION	SYMBOLIC LOG	PID (ppm)	COMMENTS
103.0								
			12.0	103-104'				
110					SAND AND COBBLES (GW) 105-120' - Brown, moist, (medium dense), coarse grained	●●●●●		Water Table observed at 113'
120					SAND (SP) 120-135' - Brown, wet, (medium dense), medium to fine grained	●●●●●		PID: 5 PID: 3
130					SAND (SP) 135-150' - Brown to dark brown, wet, (stiff), (dense), fine grained	●●●●●		Extraction well screen from 133 to 153 PID: 4 PID: 3 PID: 2 PID: 3
140					SAND (SP) 135-150' - Brown to dark brown, wet, (stiff), (dense), fine grained	●●●●●		
150					SILTY SAND W/ COBBLES (GW) 150-160' - Brown to dark brown, wet, (soft to stiff), (loose to dense), coarse to very fine grained	●●●●●		PID: 3 PID: 4 PID: 6
160					SAND (SP) 160-175' - Dark brown, wet, (stiff), (dense), coarse to fine grained	●●●●●		PID: 5 PID: 1 PID: 15 PID: 3
170					SAND (SP) 160-175' - Dark brown, wet, (stiff), (dense), coarse to fine grained	●●●●●		EOB: 175'
					Bottom of Boring at 176.0 ft below ground surface			



PROJECT NUMBER: 344511	BORING NUMBER: MW-27
SHEET 1 OF 2	
SOIL BORING LOG	

PROJECT : Extraction Well Installation 2011, Siren, WI **LOCATION :** Siren, WI
ELEVATION : _____ **DRILLING CONTRACTOR :** Layne Christensen
DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonic

WATER LEVELS : 122.0 ft below ground surface **START :** 12/15/2010 **END :** 12/16/2010 **LOGGER :** Scherir/Mass

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		RECOVERY (in)	SAMPLE ID (TIME)	SOIL DESCRIPTION	SYMBOLIC LOG	PID (ppm)	COMMENTS
	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY							
	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION							
5.0					WOOD CHIPS 0-15' - Brown, wet, (loose), Fill	1		PID (5'): 1ppm
18.0	12.0		5-8'		SAND (SP) 15-35' - Reddish Brown, moist to wet, (loose)	2		PID (18'): 2ppm PID (29'): 29ppm
29.0	12.0		18-19'			29		
39.0	12.0		29-30'		SAND W/ COBBLES (GW) 35-45' - Brown, moist to wet, (loose)	38		PID (39'): 38ppm
49.0	12.0		39-40'			38		
56.0	12.0		49-50'		SAND W/ COBBLES (GW) 45-70' - Brown, moist to wet, (loose), coarse grained	18		PID (49'): 18ppm PID (55'): 17ppm
67.0	12.0		56-57'			17		
78.0	12.0		67-68'		SAND W/ COBBLES (GW) 70-82' - Brown, wet, (loose), coarse grained	3		
82.0	12.0		78-79'			714		
97.0	12.0		82-95'		SAND W/ COBBLES (GW) 82-95' - Brown, wet, (very loose), coarse grained			
97.0	12.0		97-98'		SANDY SILT W/ COBBLES (SP-SM) 95-125' - Brown, moist, (very dense)	5		PID (96'): 5ppm PID (108'): 3ppm PID (115'): 2ppm



PROJECT NUMBER: 344511	BORING NUMBER: MW-27
SHEET 2 OF 2	
<h2 style="margin: 0;">SOIL BORING LOG</h2>	

PROJECT : Extraction Well Installation 2011, Siren, WI **LOCATION :** Siren, WI
ELEVATION : _____ **DRILLING CONTRACTOR :** Layne Christensen
DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonic
WATER LEVELS : 122.0 ft below ground surface **START :** 12/15/2010 **END :** 12/16/2010 **LOGGER :** Scherini/Hass

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		RECOVERY (In)	SAMPLE ID (TIME)	SOIL DESCRIPTION	SYMBOLIC LOG	PID (ppm)	COMMENTS
110	108.0	12.0		108-109'		3		
120	116.0	12.0		116-117'		2		
130					SILTY SAND W/ COBBLES (SP-SM) 125-135' - Brown, moist to wet, (very dense)			TD: 135'
					Bottom of Boring at 135.0 ft below ground surface			



PROJECT NUMBER:
344511

BORING NUMBER:
MW-28

SHEET 1 OF 2

SOIL BORING LOG

PROJECT : Extraction Well Installation 2011, Siren, WI

LOCATION : Siren, WI

ELEVATION :

DRILLING CONTRACTOR : Layne Christensen

DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonic

WATER LEVELS : 97.0 ft below ground surface

START : 12/8/2010

END :

LOGGER : Caitlin Lippincott

DEPTH BELOW EXISTING GRADE (ft)			SOIL DESCRIPTION	SYMBOLIC LOG	PID (ppm)	COMMENTS
INTERVAL (ft)	RECOVERY (ft)	SAMPLE ID (TIME)				
0.0	72.0					



PROJECT NUMBER: 344511	BORING NUMBER: MW-28	SHEET 2 OF 2
SOIL BORING LOG		

PROJECT : Extraction Well Installation 2011, Siren, WI LOCATION : Siren, WI
 ELEVATION : DRILLING CONTRACTOR : Layne Christensen
 DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonic
 WATER LEVELS : 97.0 ft below ground surface START : 12/8/2010 END : LOGGER : Cailin Lippincott

DEPTH BELOW EXISTING GRADE (ft)			SOIL DESCRIPTION	SYMBOLIC LOG	PID (ppm)	COMMENTS
INTERVAL (ft)	RECOVERY (in)	SAMPLE ID (TIME)				
100.0	240.0		SILTY SAND (SP) 80-85' - reddish brown to tan, moist, (loose), medium to fine grained, well sorted, some gravel PULVERIZED ROCK 85-87'			PID: 1ppm
110			SILTY SAND (SP) 87-90' - reddish tan to tan, dry, (loose), medium to fine grained, loose and dry, little cobbles and gravels. Bottom 6" is moist and siltier and slightly denser. SILTY SAND (SP) 90-97' - brown, wet, (loose), coarse grained, poorly sorted, some pebbles and gravel		6.4	PID: 1ppm
120	120.0		GRAVELLY SILT (GM) 97-100' - reddish brown to brown, wet, (dense), More fractured from drilling. Some dense clumps. Some cobbles and pebbles. SILTY GRAVEL (SP) 100-110' - brown, wet, (loose), poorly sorted, mostly gravels and pebbles with some silty sand and cobbles SILTY SAND (SP) 110-118' - reddish brown, moist to wet, (medium dense to loose), fine grained, Trace gravels.		0.4	PID: 1ppm EOB @ 140' bgs To set well from 115-135' bgs
130			(GM) 118-120' - Same as 100-110 except silty gravel with sand and pebbles Bottom of Boring at 140.0 ft below ground surface			
140						

Appendix B
Well Construction Diagrams



CH2MHILL

PROJECT NUMBER

344511

WELL NUMBER

EW-12

SHEET 1

Extraction Well Next Completion Diagram

PROJECT : Extraction Well Installation

LOCATION :

Pentawood Products Superfund Site

DRILLING CONTRACTOR Layne Christensen

3682 Daniels 70, Siren WI

DRILLING METHOD AND EQUIPMENT USED :

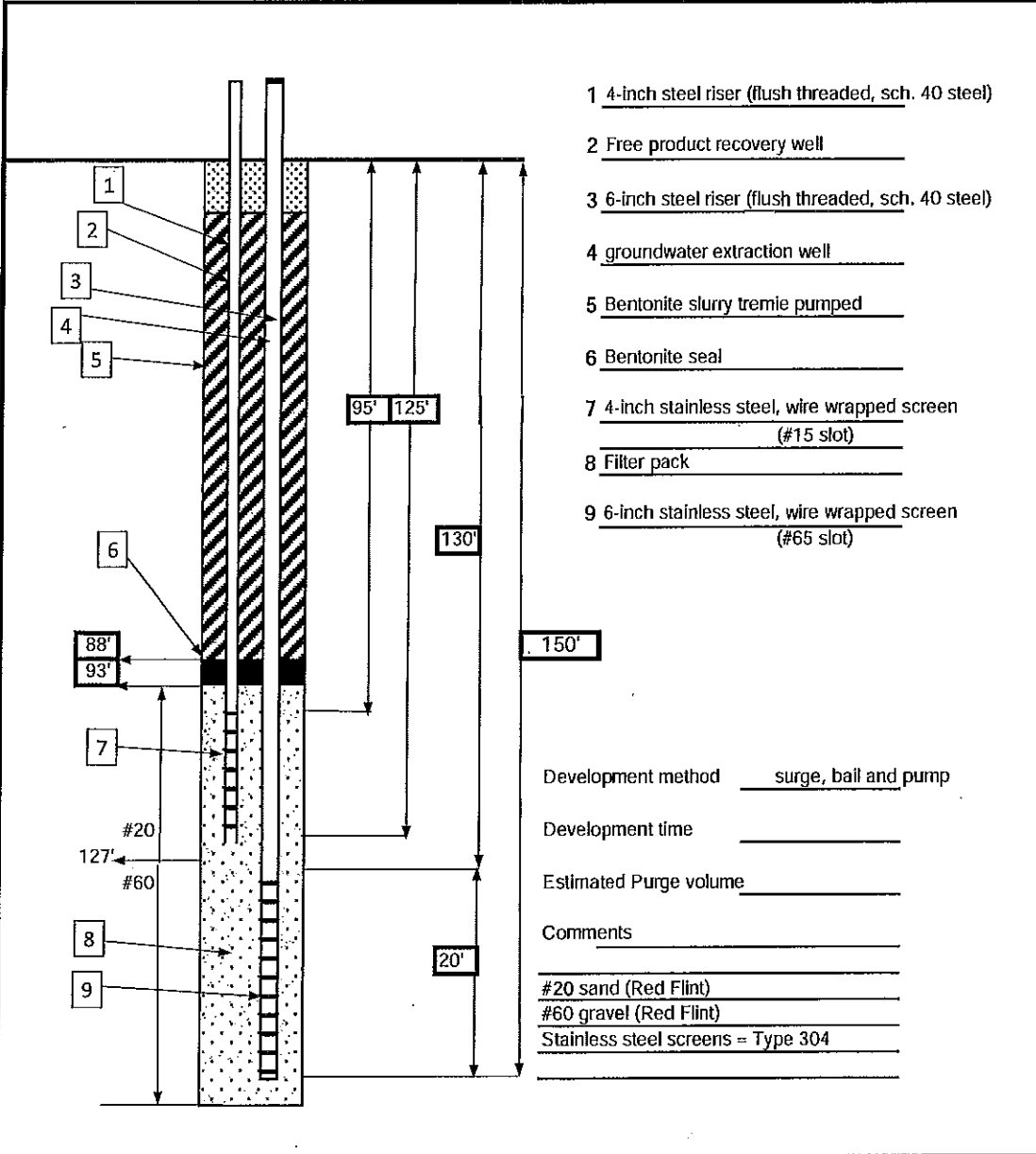
Sonic Drill, SDC500-28E

WATER LEVELS : ~102 ft bgs

START: 12/2/2010

END: 12/7/2010

LOGGER : Craig Haas



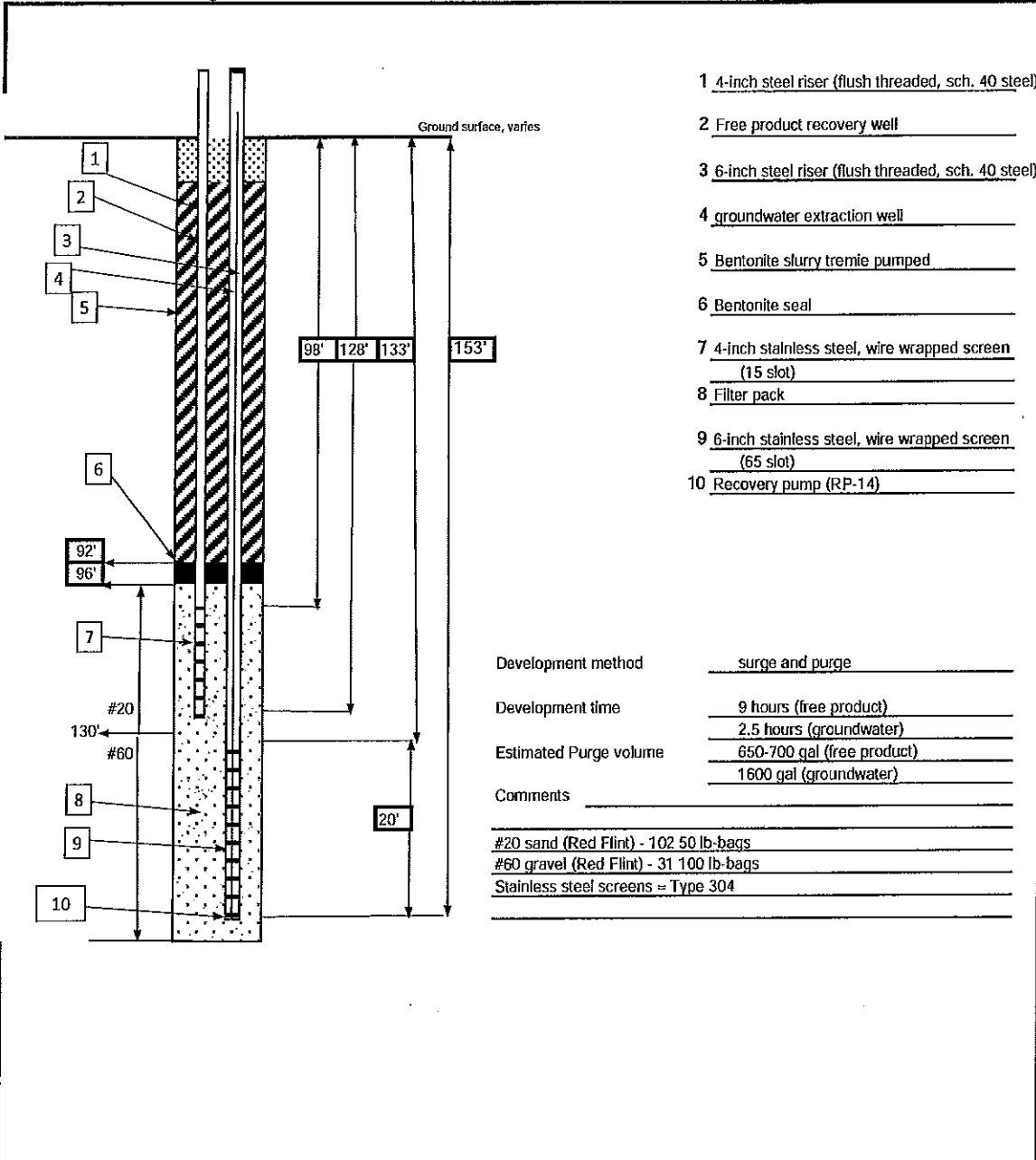


PROJECT NUMBER
344511

WELL NUMBER
EW-14 SHEET 1 OF 1

Extraction Well Next Completion Diagram

PROJECT: Extraction Well Installation LOCATION: Pentawood Products Superfund Site
 DRILLING CONTRACTOR: Layne Christensen 3682 Daniels 70, Siren WI
 DRILLING METHOD AND EQUIPMENT: Sonic Drill, SDC500-28E
 WATER LEVELS: -113 ft bgs START DATE: 11/9/2010 END DATE: 11/22/2010 LOGGER: Michael Niebauer





CH2MHILL

PROJECT NUMBER

344511

WELL NUMBER

EW-13

SHEET 1

OF 1

Extraction Well Next Completion Diagram

PROJECT : Extraction Well Installation

LOCATION Pentawood Products Superfund Site

DRILLING CONTRACTOR Layne Christensen

3682 Daniels 70, Siren WI

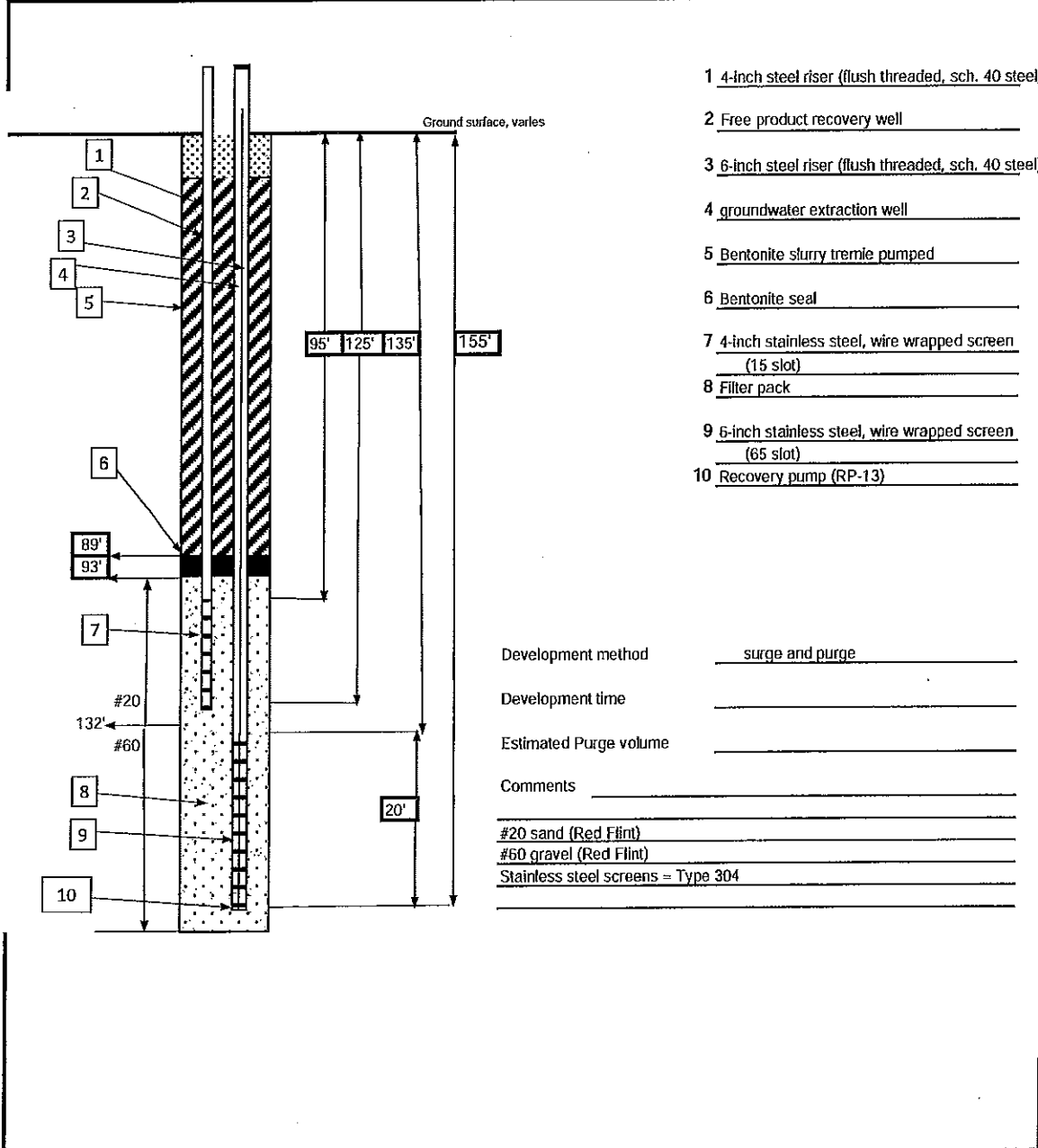
DRILLING METHOD AND EQUIPMENT Sonic Drill, SDC500-28E

WATER LEVELS : -106 ft bgs

START DATE 11/23/2010

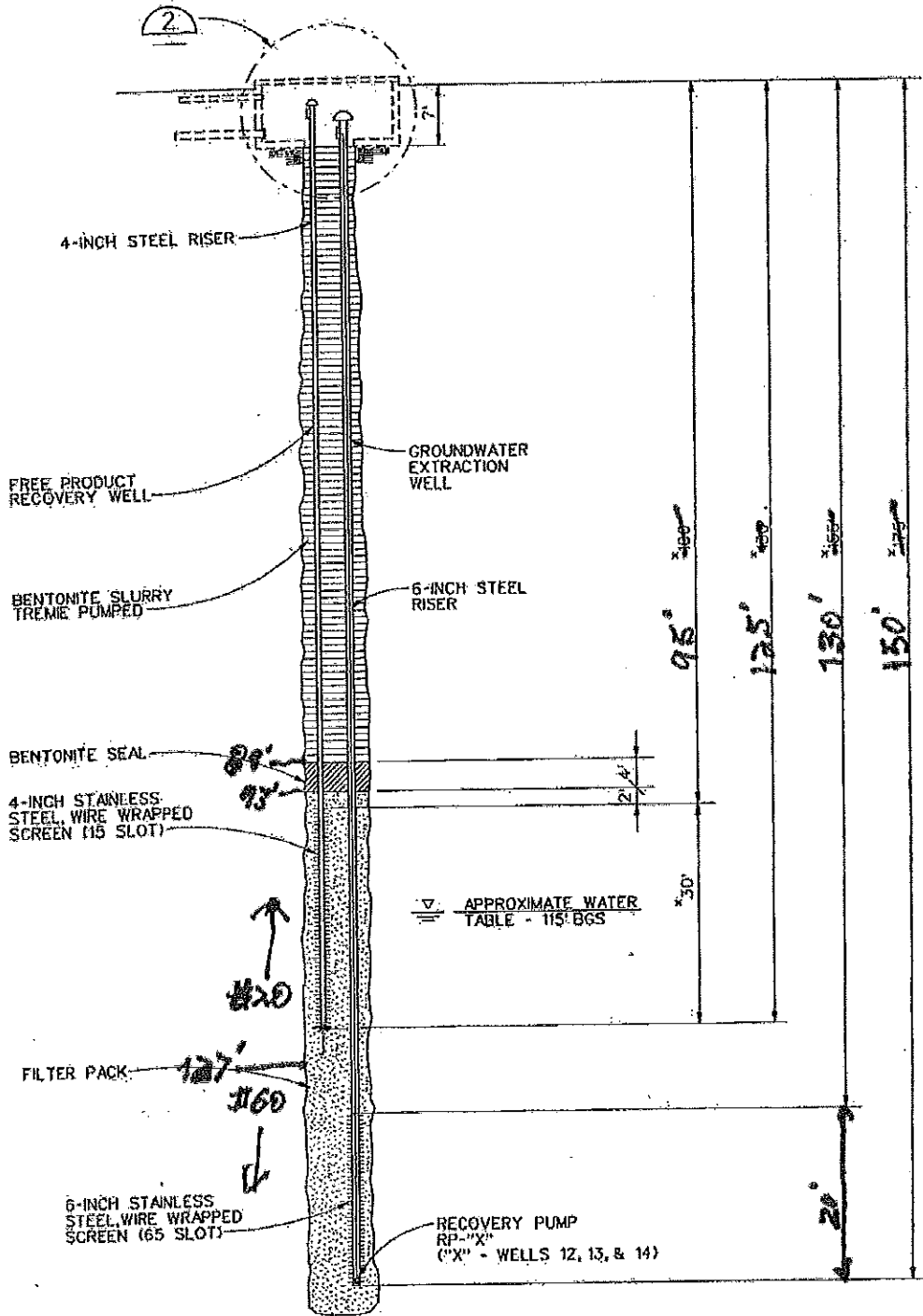
END DATE: 12/2/2010

LOGGER : Craig Haas



EW-12

GROUND SURFACE VARIES



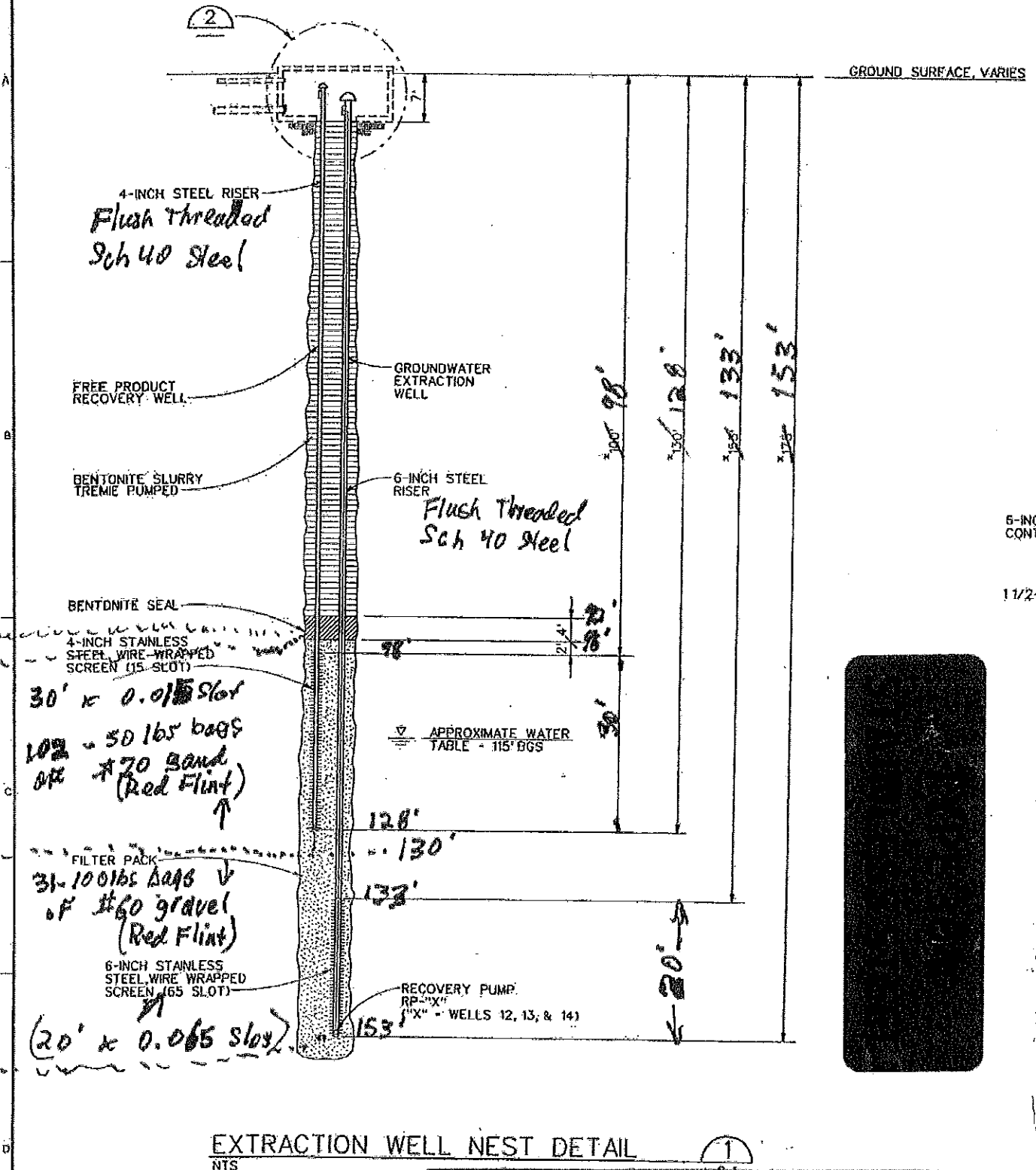
EXTRACTION WELL NEST DETAIL

NTS

1
C-1

EW-14

01-04-2011
C. Haas



LAYNE-NORTHWEST COMPANY
TEST OF WELL

DATE: 1-12-11
1-13-11

WELL NO.: 41000th well
WELL DEPTH: 128.6
OWNER: Reston
LOCATION: SIVEN

DIA. ORIFICE: FT. 1.12
STATIC LEVEL: FT. 121.6
LENGTH OF AIRLINE: WATER
DRILLED BY: J. W. WATKINS

CENTER OF GAUGE TO GROUND LEVEL:
PUMP SET TO DISCHARGE NOZZLE:
TO TAIL PIPE: 121.6
TESTED BY: MAYNOR

READING NUMBER	TIME	G.P.M.	INCHES ON ORIFICE	ALTA IN FEET	PUMPING LEVEL FT.	DRAWDOWN IN FEET	SPECIFIC YIELD	HEAD PRESSURE PSI	RATE OF RECOVERY OR AMPS	WATER APPEARANCE: CLEAR, CLOUDY, MURKY, MUDDY, SANDY, TEMP, ODOR
3:30	1	5		114.2				0		MURKY & CLOUDY
3:35	2	1		119.6				75		CLEAR, CLOUDY
3:40	3	2 1/2		114.4				80		START TO SEE SAND
3:45	4	1		117.7				80		Did not see sand any more
3:50	5	2 1/2		117.4				80		VERY MURKY
3:55	6	2 1/2		117.5				80		SCREEN ON WATER
4:00	7									
4:05	8									
4:10	9									
4:15	10	2 1/2		119.3				80		MURKY & BROWN
4:20	11	2 1/2		118.3				80		" " IN BUCKET " VERY LITTLE
4:25	12	2 1/2		114				80		CLOUDY
4:30	13	2 1/2		118.2				80		" "
4:35	14	1		118.2				80		SLIGHTLY CLOUDY
4:40	15	2 1/2								" "
4:45	16									
4:50	17									
4:55	18									
5:00	19									
5:05	20									
5:10	21	4 1/2		119.6						MURKY " NO SAND
5:15	22	2		118.5						" "
5:20	23	2 1/2		118						CLOUDY
5:25	24	2		117.8						CLEARING
5:30	25	2		116.9						CLEAR
5:35	26	2		116.8						CLEAR
5:40	27									LITTLE SCREEN ON WATER
5:45	28									
5:50	29									
5:55	30									

AFTER SURGE

SHOT DOWN

100% 2:55

SHOT DOWN

WATER TOTAL 300
TOTAL OUT OF WELL 650.7

Appendix C
WDNR Well Submittals

2-7-11

Facility/Project Name Pentawood Products	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name Pentawood MW#28
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input checked="" type="checkbox"/> X) or Well Location <input checked="" type="checkbox"/> X Lat. 45° 47' 13" Long. 92° 25' 8"	Wis. Unique Well No. <u>VX855</u> DNR Well ID No.
Facility ID	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed <u>12 / 10 / 2010</u> m m d d y y y y
Type of Well Well Code <u>12 / pz</u>	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N. R. <input type="checkbox"/> <input checked="" type="checkbox"/>	Well Installed By: Name (first, last) and Firm <u>Scott Schwerin</u> <u>Layne Christensen Company</u>
Distance from Waste/Source _____ ft.	Enf. Stds. Apply <input type="checkbox"/>	Gov. Lot Number _____
Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known		

- A. Protective pipe, top elevation 3 ft. MSL
- B. Well casing, top elevation 2.5 ft. MSL
- C. Land surface elevation _____ ft. MSL
- D. Surface seal, bottom _____ ft. MSL or 3 ft.

12. USCS classification of soil near screen:
 GP GM GC GW SW SP
 SM SC ML MH CL CH
 Bedrock

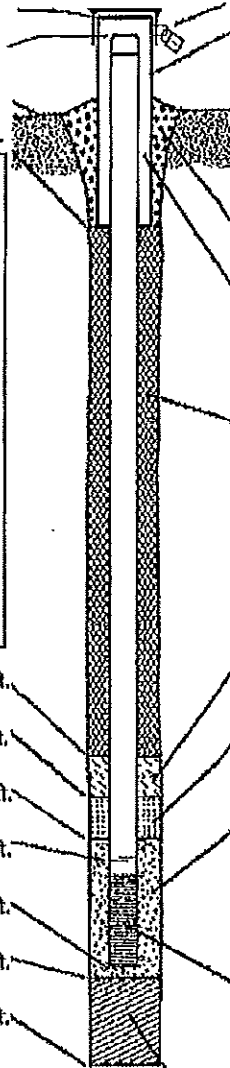
13. Sieve analysis performed? Yes No

14. Drilling method used: Rotary 50
 Hollow Stem Auger 41
 Other

15. Drilling fluid used: Water 02 Air 01
 Drilling Mud 03 None 99

16. Drilling additives used? Yes No
 Describe _____

17. Source of water (attach analysis, if required):



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: 6 in.
 - b. Length: 5 ft.
 - c. Material: Steel 04
Other
 - d. Additional protection? Yes No
If yes, describe: _____
- 3. Surface seal:
 - Bentonite 30
 - Concrete 01
 - Other
- 4. Material between well casing and protective pipe:
 - Bentonite 30
 - Other
- 5. Annular space seal:
 - a. Granular/Chipped Bentonite 33
 - b. _____ Lbs/gal mud weight... Bentonite-sand slurry 35
 - c. _____ Lbs/gal mud weight... Bentonite slurry 31
 - d. 20 % Bentonite... Bentonite-cement grout 50
 - e. 6 Ft³ volume added for any of the above
 - f. How installed: Tremie 01
Tremie pumped 02
Gravity 08
- 6. Bentonite seal:
 - a. Bentonite granules 33
 - b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 32
 - c. _____ Other
- 7. Fine sand material: Manufacturer, product name & mesh size
 - a. Red Flint Well Slot #10
 - b. Volume added 0.5 ft³
- 8. Filter pack material: Manufacturer, product name & mesh size
 - a. Red Flint Well Slot #15
 - b. Volume added 5 ft³
- 9. Well casing:
 - Flush threaded PVC schedule 40 23
 - Flush threaded PVC schedule 80 24
 - Other
- 10. Screen material: Sch 80 PVC
 - a. Screen type:
 - Factory cut 11
 - Continuous slot 01
 - Other
 - b. Manufacturer Monoflex
 - c. Slot size: 0.01 in.
 - d. Slotted length: 20 ft.
- 11. Backfill material (below filter pack):
 - None 14
 - Other

- E. Bentonite seal, top _____ ft. MSL or 107.5 ft.
- F. Fine sand, top _____ ft. MSL or 111 ft.
- G. Filter pack, top _____ ft. MSL or 113 ft.
- H. Screen joint, top _____ ft. MSL or 115 ft.
- I. Well bottom _____ ft. MSL or 135 ft.
- J. Filter pack, bottom _____ ft. MSL or 140 ft.
- K. Borehole, bottom _____ ft. MSL or 140 ft.
- L. Borehole, diameter 6.62 in.
- M. O.D. well casing 2.4 in.
- N. I.D. well casing 2 in.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

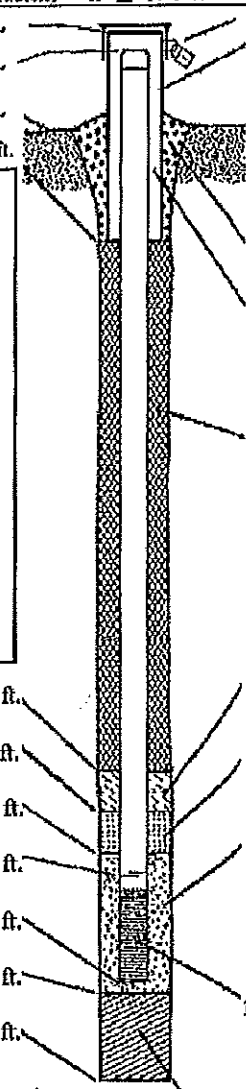
Signature _____ Firm Layne Christensen Company

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code, in accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Facility/Project Name: Pentawood Products
Local Grid Location of Well: _____ ft. N. _____ ft. E. _____ ft. S. _____ ft. W.
Well Name: Pentawood MW#27
Facility License, Permit or Monitoring No.: _____
Local Grid Origin (estimated:) or Well Location
Lat. 45° 47' 13" Long. 92° 25' 8" or _____
Date Well Installed: 12 / 20 / 2010
Facility ID: _____
St. Plane: _____ ft. N. _____ ft. E. S/C/N
Section Location of Waste/Source: _____
Well Installed By: Name (first, last) and Firm
Scott Schwerfn
Layne Christensen Company
Type of Well: Well Code 12 / PZ
Distance from Waste/Source: _____ ft. Enf. Stds. Apply
Location of Well Relative to Waste/Source: u Upgradient s Sidgradient d Downgradient n Not Known
Gov. Lot Number: _____

- A. Protective pipe, top elevation: 3 ft. MSL
- B. Well casing, top elevation: 2.5 ft. MSL
- C. Land surface elevation: _____ ft. MSL
- D. Surface seal, bottom: 3 ft. MSL or 3 ft.

12. USCS classification of soil near screen:
 GP GM GC GW SW SP
 SM SC ML MH CL CH
 Bedrock
 13. Sieve analysis performed? Yes No
 14. Drilling method used: Rotary 50
 Hollow Stem Auger 41
 Other
 15. Drilling fluid used: Water 02 Air 01
 Drilling Mud 03 None 99
 16. Drilling additives used? Yes No
 Describe: _____
 17. Source of water (attach analysis, if required): _____



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: 6 in.
 - b. Length: 5 ft.
 - c. Material: Steel 04
Other
 - d. Additional protection? Yes No
If yes, describe: _____
- 3. Surface seal:
 - Bentonite 30
 - Concrete 01
 - Other
- 4. Material between well casing and protective pipe:
 - Bentonite 30
 - Other
- 5. Annular space seal:
 - a. Granular/Chipped Bentonite 33
 - b. _____ Lbs/gal mud weight... Bentonite-sand slurry 35
 - c. _____ Lbs/gal mud weight... Bentonite slurry 31
 - d. 20% Bentonite... Bentonite-cement grout 50
 - e. 6 Ft³ volume added for any of the above
 - f. How installed: Tremie 01
Tremie pumped 02
Gravity 08
- 6. Bentonite seal:
 - a. Bentonite granules 33
 - b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 32
 - c. Other
- 7. Fine sand material: Manufacturer, product name & mesh size
 - a. Red Flint Well Slot #10
 - b. Volume added 0.5 ft³
- 8. Filter pack material: Manufacturer, product name & mesh size
 - a. Red Flint Well Slot #15
 - b. Volume added 5 ft³
- 9. Well casing:
 - Flush threaded PVC schedule 40 23
 - Flush threaded PVC schedule 80 24
 - Other
- 10. Screen material: Sch 80 PVC
 - a. Screen type:
 - Factory cut 11
 - Continuous slot 01
 - Other
 - b. Manufacturer Monoflex
 - c. Slot size: 0.01 in.
 - d. Slotted length: 20 ft.
- 11. Backfill material (below filter pack):
 - None 14
 - Other

- E. Bentonite seal, top: 108 ft. MSL or 108 ft.
- F. Fine sand, top: 111 ft. MSL or 111 ft.
- G. Filter pack, top: 113 ft. MSL or 113 ft.
- H. Screen joint, top: 115 ft. MSL or 115 ft.
- I. Well bottom: 135 ft. MSL or 135 ft.
- J. Filter pack, bottom: 136 ft. MSL or 136 ft.
- K. Borehole, bottom: 136 ft. MSL or 136 ft.
- L. Borehole, diameter: 6.62 in.
- M. O.D. well casing: 2.4 in.
- N. I.D. well casing: 2 in.

I hereby certify that the information on this form is true and correct to the best of my knowledge.
 Signature: _____ Firm: Layne Christensen Company

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

18
3-7-11

Facility/Project Name Pentawood Products	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name Penta EW12 6"
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input checked="" type="checkbox"/> X) or Well Location <input checked="" type="checkbox"/> X Lat. 45° 47' 13" Long. 92° 25' 8"	Wis. Unique Well No. <u>VX857</u> DNR Well ID No.
Facility ID	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed <u>02 / 02 / 2011</u> m m d d y y y y
Type of Well Well Code <u>26 / ew</u>	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N, R. <input type="checkbox"/> R <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Vince Mcindel Layne Christensen Company
Distance from Waste/Source _____ ft.	Enf. Stds. Apply <input type="checkbox"/>	
	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation _____ ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or 46 ft.

12. USCS classification of soil near screen:
GP GM GC GW SW SP
SM SC ML MH CL CH
Bedrock

13. Sieve analysis performed? Yes No

14. Drilling method used: Rotary 50
Hollow Stem Auger 41
Other

15. Drilling fluid used: Water 02 Air 01
Drilling Mud 03 None 99

16. Drilling additives used? Yes No
Describe _____

17. Source of water (attach analysis, if required):

E. Bentonite seal, top _____ ft. MSL or 89 ft.

F. Fine sand, top _____ ft. MSL or 93 ft.

G. Filter pack, top _____ ft. MSL or 126 ft.

H. Screen joint, top _____ ft. MSL or 130 ft.

I. Well bottom _____ ft. MSL or 150 ft.

J. Filter pack, bottom _____ ft. MSL or 151.5 ft.

K. Borehole, bottom _____ ft. MSL or 151.5 ft.

L. Borehole, diameter 16 in.

M. O.D. well casing 6.62 in.

N. I.D. well casing 6 in.

1. Cap and lock? Yes No

2. Protective cover pipe:
a. Inside diameter: 48 in.
b. Length: 8 ft.
c. Material: Steel 04
Other HDPE - below grade vault

d. Additional protection? Yes No
If yes, describe: _____

3. Surface seal: Bentonite 30
Concrete 01
Other

4. Material between well casing and protective pipe: Bentonite 30
Other

5. Annular space seal: a. Granular/Chipped Bentonite 33
b. _____ Lbs/gal mud weight... Bentonite-sand slurry 35
c. _____ Lbs/gal mud weight... Bentonite slurry 31
d. 20 % Bentonite... Bentonite-cement grout 50
e. 24 Ft³ volume added for any of the above
f. How installed: Tremle 01
Tremle pumped 02
Gravity 08

6. Bentonite seal: a. Bentonite granules 33
b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 32
c. _____ Other

7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint Well Slot #20
b. Volume added 40 ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint Well Slot #60
b. Volume added 34 ft³

9. Well casing: Flush threaded PVC schedule 40 23
Flush threaded PVC schedule 80 24
6" FJ CS Pipe Other

10. Screen material: FJ SS Screen 304
a. Screen type: Factory cut 11
Continuous slot 01
Other

b. Manufacturer Johnson Screen
c. Slot size: 0.065 in.
d. Slotted length: 20 ft.

11. Backfill material (below filter pack): None 14
Red Flint Well Slot #60 Other

I hereby certify that the information on this form is true and correct to the best of my knowledge.

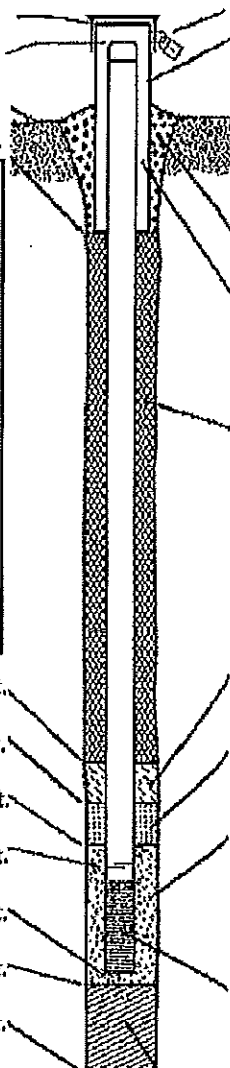
Signature _____ Firm Layne Christensen Company

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

3-7-11

Facility/Project Name Pentawood Products	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name Penta EW12 4"
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input checked="" type="checkbox"/>) or Well Location <input checked="" type="checkbox"/> Lat. 45° 47' 13" Long. 92° 25' 8" or	Wis. Unique Well No. <u>VX858</u> DNR Well ID No.
Facility ID	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed <u>02 / 02 / 2011</u> m m d d y y y y
Type of Well Well Code <u>64 / le</u>	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N. R. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Installed By: Name (first, last) and Firm Vince McIndel Layne Christensen Company
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Gov. Lot Number _____

- A. Protective pipe, top elevation ----- ft. MSL
- B. Well casing, top elevation ----- ft. MSL
- C. Land surface elevation ----- ft. MSL
- D. Surface seal, bottom ----- ft. MSL or 46 ft.
- E. Bentonite seal, top ----- ft. MSL or 89 ft.
- F. Fine sand, top ----- ft. MSL or ----- ft.
- G. Filter pack, top ----- ft. MSL or 93 ft.
- H. Screen joint, top ----- ft. MSL or 95 ft.
- I. Well bottom ----- ft. MSL or 125 ft.
- J. Filter pack, bottom ----- ft. MSL or 126 ft.
- K. Borehole, bottom ----- ft. MSL or 126 ft.
- L. Borehole, diameter 16 in.
- M. O.D. well casing 4.5 in.
- N. I.D. well casing 4 in.



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: 48 in.
 - b. Length: 8 ft.
 - c. Material: Steel 04
HDPE - below grade vault Other
 - d. Additional protection? Yes No
If yes, describe: _____
- 3. Surface seal: Bentonite 30
Concrete 01
Other
- 4. Material between well casing and protective pipe: Bentonite 30
Other
- 5. Annular space seal:
 - a. Granular/Chipped Bentonite 33
 - b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry 35
 - c. _____ Lbs/gal mud weight Bentonite slurry 31
 - d. 20 % Bentonite Bentonite-cement grout 50
 - e. 24 Ft³ volume added for any of the above
 - f. How installed: Tremie 01
Tremie pumped 02
Gravity 08
- 6. Bentonite seal:
 - a. Bentonite granules 33
 - b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 32
 - c. _____ Other
- 7. Fine sand material: Manufacturer, product name & mesh size
 - a. _____
 - b. Volume added _____ ft³
- 8. Filter pack material: Manufacturer, product name & mesh size
 - a. Red Flint Well Slot #20
 - b. Volume added 40 ft³
- 9. Well casing: Flush threaded PVC schedule 40 23
Flush threaded PVC schedule 80 24
4" FJ CS Pipe Other
- 10. Screen material: 304 SS FJ
 - a. Screen type: Factory cut 11
Continuous slot 01
Other
 - b. Manufacturer Johnson Screen
 - c. Slot size: 0.015 in.
 - d. Slotted length: 30 ft.
- 11. Backfill material (below filter pack): None 14
Other

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm Layne Christensen Company

Please complete both Form 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

3-7-11

Facility/Project Name Pentawood Products	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name Penta EW13 G"
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input checked="" type="checkbox"/>) or Well Location <input checked="" type="checkbox"/> Lat. 45° 47' 13" Long. 92° 25' 8"	Wis. Unique Well No. <u>VX859</u> DNR Well ID No.
Facility ID	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed <u>01</u> / <u>19</u> / <u>2011</u> m m d d y y y y
Type of Well Well Code <u>26</u> / ew	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N, R. _____ <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm <u>Vince Meindel</u> <u>Layne Christensen Company</u>
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidgradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	
Enf. Stds. Apply <input type="checkbox"/>	Gov. Lot Number _____	

A. Protective pipe, top elevation _____ ft. MSL.		1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL.		2. Protective cover pipe: a. Inside diameter: <u>48</u> in. b. Length: <u>8</u> ft. c. Material: Steel <input type="checkbox"/> 04 HDPE - below grade vault <input checked="" type="checkbox"/> Other <input checked="" type="checkbox"/> d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____
C. Land surface elevation _____ ft. MSL.		3. Surface seal: Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
D. Surface seal, bottom _____ ft. MSL or <u>15</u> ft.		4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Other <input type="checkbox"/>
12. USCS classification of soil near screens: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>		5. Annular space seal: a. Granular/Chipped Bentonite <input type="checkbox"/> 33 b. _____ Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 d. <u>20</u> % Bentonite ... Bentonite-cement grout <input checked="" type="checkbox"/> 50 e. <u>30</u> Ft ³ volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input checked="" type="checkbox"/> 02 Gravity <input type="checkbox"/> 08
13. Sieve analysis performed? <input type="checkbox"/> Yes <input type="checkbox"/> No		6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input checked="" type="checkbox"/> 32 c. _____ Other <input type="checkbox"/>
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 Other <input checked="" type="checkbox"/>		7. Fine sand material: Manufacturer, product name & mesh size a. <u>Red Flint Well Slot #20</u> b. Volume added <u>45</u> ft ³
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99		8. Filter pack material: Manufacturer, product name & mesh size a. <u>Red Flint Well Slot #60</u> b. Volume added <u>37</u> ft ³
16. Drilling additives used? <input type="checkbox"/> Yes <input type="checkbox"/> No		9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 <u>6" FJ CS Pipe</u> Other <input checked="" type="checkbox"/>
Describe _____		10. Screen material: <u>304 SS FJ</u> a. Screen type: Factory cut <input type="checkbox"/> 11 Continuous slot <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
17. Source of water (attach analysis, if required): _____	b. Manufacturer <u>Johnson Screen</u> c. Slot size: <u>0.065</u> in. d. Slotted length: <u>20</u> ft.	
E. Bentonite seal, top _____ ft. MSL or <u>89</u> ft.	11. Backfill material (below filter pack): <u>Red Flint Well Slot #60</u> None <input type="checkbox"/> 14 Other <input checked="" type="checkbox"/>	
F. Fine sand, top _____ ft. MSL or <u>93</u> ft.		
G. Filter pack, top _____ ft. MSL or <u>128</u> ft.		
H. Screen joint, top _____ ft. MSL or <u>135</u> ft.		
I. Well bottom _____ ft. MSL or <u>155</u> ft.		
J. Filter pack, bottom _____ ft. MSL or <u>157</u> ft.		
K. Borehole, bottom _____ ft. MSL or <u>157</u> ft.		
L. Borehole, diameter <u>16</u> in.		
M. O.D. well casing <u>6.62</u> in.		
N. I.D. well casing <u>6</u> in.		

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature _____ Firm Layne Christensen Company

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

LD
3-7-11

Facility/Project Name Pentawood Products	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name Penta EW13 4"
Facility License, Permit or Monitoring No.	Local Grid Origin (estimated: <input checked="" type="checkbox"/>) or Well Location <input checked="" type="checkbox"/> Lat. 45° 47' 13" Long. 92° 25' 8" or	Wis. Unique Well No. DNR Well ID No. VX860
Facility ID	St. Plane ft. N. ft. E. S/C/N	Date Well Installed 01 / 19 / 2011 m m d d y y y y
Type of Well Well Code 64 / 1e	Section Location of Waste/Source 1/4 of 1/4 of Sec. T. N, R. <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Vince Melndel Layne Christensen Company
Distance from Waste/Source ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient b <input type="checkbox"/> Sidgradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Gov. Lot Number

A. Protective pipe, top elevation	ft. MSL	1. Cap and lock?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation	ft. MSL	2. Protective cover pipe:	
C. Land surface elevation	ft. MSL	a. Inside diameter:	48 in.
D. Surface seal, bottom	ft. MSL or 15 ft.	b. Length:	8 ft.
12. USCS classification of soil near screen:		c. Material:	Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/>		d. Additional protection?	<input type="checkbox"/> Yes <input type="checkbox"/> No
SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/>		If yes, describe:	
Bedrock <input type="checkbox"/>		3. Surface seal:	Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
13. Sieve analysis performed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Bentonite Chips	Other <input type="checkbox"/>
14. Drilling method used:	Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 Other <input type="checkbox"/>	4. Material between well casing and protective pipe:	Bentonite <input type="checkbox"/> 30 Other <input type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99		5. Annular space seal:	a. Granular/Chipped Bentonite <input type="checkbox"/> 33 b. Lbs/gal mud weight... Bentonite-sand slurry <input type="checkbox"/> 35 c. Lbs/gal mud weight... Bentonite slurry <input type="checkbox"/> 31 d. 20% Bentonite... Bentonite-cement grout <input checked="" type="checkbox"/> 50 e. 30 Ft ³ volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input checked="" type="checkbox"/> 02 Gravity <input type="checkbox"/> 08
16. Drilling additives used?	<input type="checkbox"/> Yes <input type="checkbox"/> No	6. Bentonite seal:	a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input checked="" type="checkbox"/> 32 c. Other <input type="checkbox"/>
Describe		7. Fine sand material: Manufacturer, product name & mesh size	
17. Source of water (attach analysis, if required):		a.	
H. Bentonite seal, top	ft. MSL or 89 ft.	b. Volume added	ft ³
F. Fine sand, top	ft. MSL or ft.	8. Filter pack material: Manufacturer, product name & mesh size	
G. Filter pack, top	ft. MSL or 93 ft.	a. Red Flint Well Slot #20	
H. Screen joint, top	ft. MSL or 95 ft.	b. Volume added	ft ³
I. Well bottom	ft. MSL or 125 ft.	9. Well casing:	Flush threaded PVC schedule 40 <input type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 4" FS CS Pipe Other <input checked="" type="checkbox"/>
J. Filter pack, bottom	ft. MSL or 128 ft.	10. Screen material: 304 SS FJ	
K. Borehole, bottom	ft. MSL or 128 ft.	a. Screen type:	Factory cut <input type="checkbox"/> 11 Continuous slot <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
L. Borehole, diameter	16 in.	b. Manufacturer Johnson Screen	
M. O.D. well casing	4.5 in.	c. Slot size:	0.015 in.
N. I.D. well casing	4 in.	d. Slotted length:	30 ft.
		11. Backfill material (below filter pack):	None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature _____ Firm Layne Christensen Company

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104
307-11

Route to: Watershed/Wastewater Waste Management
 Remediation/Redevelopment Other

Facility/Project Name Pentawood Products	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name Penta EW14 6"
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input checked="" type="checkbox"/>) or Well Location <input checked="" type="checkbox"/> Lat. 45° 47' 13" Long. 92° 25' 8"	Wis. Unique Well No. <u>VX861</u> DNR Well ID No.
Facility ID	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed <u>12 / 30 / 2010</u> m m d d y y y y
Type of Well Well Code <u>26 / ew</u>	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N, R. <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm <u>Vince Meindel</u> <u>Layne Christensen Company</u>
Distance from Waste/Source _____ ft.	Enf. Stds. Apply <input type="checkbox"/>	Gov. Lot Number _____
Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known		

- A. Protective pipe, top elevation _____ ft. MSL
- B. Well casing, top elevation _____ ft. MSL
- C. Land surface elevation _____ ft. MSL
- D. Surface seal, bottom _____ ft. MSL or 36 ft.

12. USCS classification of soil near screen:
 GP GM GC GW SW SP
 SM SC ML MH CL CH
 Bedrock

13. Sieve analysis performed? Yes No

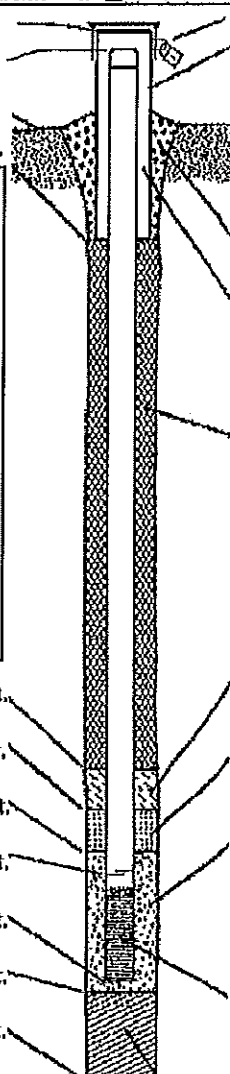
14. Drilling method used: Rotary 50
 Hollow Stem Auger 41
 Other

15. Drilling fluid used: Water 02 Air 01
 Drilling Mud 03 None 99

16. Drilling additives used? Yes No

Describe _____

17. Source of water (attach analysis, if required):



- 1. Cap and lock? Yes No
- 2. Protective cover pipe:
 - a. Inside diameter: 48 in.
 - b. Length: 8 ft.
 - c. Material: Steel 04
 HDPE - below grade vault Other
 - d. Additional protection? Yes No
 If yes, describe: _____
- 3. Surface seal:
 - Bentonite 30
 - Concrete 01
 - Other
- 4. Material between well casing and protective pipe:
 - Bentonite 30
 - Other
- 5. Annular space seal:
 - a. Granular/Chipped Bentonite 33
 - b. _____ Lbs/gal mud weight ... Bentonite-sand slurry 35
 - c. _____ Lbs/gal mud weight ... Bentonite slurry 31
 - d. 20 % Bentonite ... Bentonite-cement grout 50
 - e. 24 Ft³ volume added for any of the above
 - f. How installed: Tremie 01
 Tremie pumped 02
 Gravelly 08
- 6. Bentonite seal:
 - a. Bentonite granules 33
 - b. 1/4 in. 3/8 in. 1/2 in. Bentonite chips 32
 - c. _____ Other
- 7. Fine sand material: Manufacturer, product name & mesh size
 - a. Red Flint Well Slot #20
 - b. Volume added 51 ft³
- 8. Filter pack material: Manufacturer, product name & mesh size
 - a. Red Flint Well Slot #60
 - b. Volume added 31 ft³
- 9. Well casing:
 - Flush threaded PVC schedule 40 23
 - Flush threaded PVC schedule 80 24
 - 6" FJ CS Pipe Other
- 10. Screen material: 304 SS FJ
 - a. Screen type:
 - Factory cut 11
 - Continuous slot 01
 - Other
 - b. Manufacturer Johnson Screen
 - c. Slot size: 0.065 in.
 - d. Slotted length: 20 ft.
- 11. Backfill material (below filter pack):
 - None 14
 - Red Flint Well Slot #60 Other

- E. Bentonite seal, top _____ ft. MSL or 92 ft.
- F. Fine sand, top _____ ft. MSL or 96 ft.
- G. Filter pack, top _____ ft. MSL or 132 ft.
- H. Screen joint, top _____ ft. MSL or 133 ft.
- I. Well bottom _____ ft. MSL or 153 ft.
- J. Filter pack, bottom _____ ft. MSL or 154.5 ft.
- K. Borehole, bottom _____ ft. MSL or 154.5 ft.
- L. Borehole, diameter 16 in.
- M. O.D. well casing 6.62 in.
- N. I.D. well casing 6 in.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm Layne Christensen Company

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2/27-11

Facility/Project Name Pentawood Products	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.		Well Name Penta EW14 4"
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input checked="" type="checkbox"/>) or Well Location <input checked="" type="checkbox"/> Lat. 45° 47' 13" Long. 92° 25' 8" or	Wis. Unique Well No. VX862	DNR Well ID No.
Facility ID	St. Plane _____ ft. N. _____ ft. E. S/C/N	Date Well Installed: 12 / 30 / 2010 m m d d y y y y	
Type of Well Well Code 64 / Ic	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N, R. <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Vince Meindel Layne Christensen Company	
Distance from Waste/Source _____ ft.	Enf. Stds. Apply <input type="checkbox"/>	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Gov. Lot Number

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ ft. MSL	2. Protective cover pipe: a. Inside diameter: 48 in.
C. Land surface elevation _____ ft. MSL	b. Length: 8 ft.
D. Surface seal, bottom _____ ft. MSL or 36 ft.	c. Material: Steel <input type="checkbox"/> 04 HDPE - below grade vault <input checked="" type="checkbox"/> Other <input checked="" type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____
13. Sieve analysis performed? <input type="checkbox"/> Yes <input type="checkbox"/> No	3. Surface seal: Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 Other <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Other <input type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	5. Annular space seal: a. Granular/Chipped Bentonite <input type="checkbox"/> 33 b. _____ Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 d. 20% Bentonite ... Bentonite-cement grout <input checked="" type="checkbox"/> 50 e. 24 Ft ³ volume added for any of the above
16. Drilling additives used? <input type="checkbox"/> Yes <input type="checkbox"/> No	f. How installed: Tremis <input type="checkbox"/> 01 Tremie pumped <input checked="" type="checkbox"/> 02 Gravity <input type="checkbox"/> 08
Describe: _____	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input checked="" type="checkbox"/> 32 c. _____ Other <input type="checkbox"/>
17. Source of water (attach analysis, if required): _____	7. Fine sand material: Manufacturer, product name & mesh size a. _____ b. Volume added _____ ft ³
E. Bentonite seal, top _____ ft. MSL or 92 ft.	8. Filter pack material: Manufacturer, product name & mesh size a. Red Flint Well Slot #20 b. Volume added 31 ft ³
F. Fine sand, top _____ ft. MSL or _____ ft.	9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 4" RJ CS Pipe <input checked="" type="checkbox"/> Other <input type="checkbox"/>
G. Filter pack, top _____ ft. MSL or 96 ft.	10. Screen material: 304 SS RJ a. Screen type: Factory cut <input type="checkbox"/> 11 Continuous slot <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
H. Screen joint, top _____ ft. MSL or 98 ft.	b. Manufacturer Johnson Screen c. Slot size: 0.015 in.
I. Well bottom _____ ft. MSL or 128 ft.	d. Slotted length: 30 ft.
J. Filter pack, bottom _____ ft. MSL or 132 ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
K. Borehole, bottom _____ ft. MSL or 132 ft.	
L. Borehole, diameter 16 in.	
M. O.D. well casing 4.5 in.	
N. I.D. well casing 4 in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Firm: Layne Christensen Company


Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Pentafwood Products	County Name BURNETT	Well Name Pentafwood MW#28
Facility License, Permit or Monitoring Number	County Code <u>7</u>	Wis. Unique Well Number <u>VX855</u>
		DNR Well ID Number _____

1. Can this well be purged dry? Yes No

2. Well development method

surged with bailer and bailed	<input type="checkbox"/> 41
surged with bailer and pumped	<input type="checkbox"/> 61
surged with block and bailed	<input type="checkbox"/> 42
surged with block and pumped	<input type="checkbox"/> 62
surged with block, bailed and pumped	<input type="checkbox"/> 70
compressed air	<input type="checkbox"/> 20
bailed only	<input type="checkbox"/> 10
pumped only	<input checked="" type="checkbox"/> 51
pumped slowly	<input type="checkbox"/> 50
Other _____	<input type="checkbox"/> 

3. Time spent developing well 30 min.

4. Depth of well (from top of well casing) 137 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 100 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>110</u> ft.	<u>110</u> ft.
Date	b. <u>12 / 10 / 2010</u>	<u>12 / 10 / 2010</u>
Time	c. _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	_____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) _____	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe) _____
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Scott Last Name: Schverin

Firm: Layne Christensen Company

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party

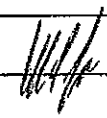
First Name: Keith Last Name: McKenna

Facility/Firm: CH2M Hill

Street: 135 South 84th Street

City/State/Zip: Milwaukee WI 53214

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Keith Meyers

Firm: Layne Christensen Company

NOTE: See instructions for more information including a list of county codes and well type codes.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Pentawood Products	County Name BURNETT	Well Name Pentawood MW#27
Facility License, Permit or Monitoring Number	County Code 7	Wis. Unique Well Number VX856
		DNR Well ID Number

1. Can this well be purged dry? Yes No

2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other

3. Time spent developing well 30 min.

4. Depth of well (from top of well casing) 137 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 100 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

11. Depth to Water (from top of well casing)

	<u>Before Development</u>	<u>After Development</u>
a.	<u>112</u> ft.	<u>112</u> ft.
Date	b. <u>12 / 20 / 2010</u>	<u>12 / 20 / 2010</u>
	m m d d y y y y	m m d d y y y y
Time	c. _____ <input type="checkbox"/> a.m. _____ <input type="checkbox"/> p.m.	_____ <input type="checkbox"/> a.m. _____ <input type="checkbox"/> p.m.

12. Sediment in well bottom _____ inches

13. Water clarity

Clear	<input type="checkbox"/> 10	Clear	<input checked="" type="checkbox"/> 20
Turbid	<input checked="" type="checkbox"/> 15	Turbid	<input type="checkbox"/> 25
(Describe)	_____	(Describe)	_____

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids _____ mg/l

15. COD _____ mg/l

16. Well developed by: Name (first, last) and firm

First Name: Scott Last Name: Schwerin

Firm: Layne Christensen Company

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party

First Name: Kell Last Name: McKenna

Facility/Firm: CH2M HILL

Street: 135 South 84th Street

City/State/Zip: Milwaukee WI 53214

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Keith Meyers

Firm: Layne Christensen Company

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Pentawood Products	County Name BURNETT	Well Name Penta EV12 6"
Facility License, Permit or Monitoring Number	County Code <u>7</u>	Wis. Unique Well Number <u>VX857</u>
		DNR Well ID Number _____

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other _____
3. Time spent developing well 300 min.
4. Depth of well (from top of well casing) 148 ft.
5. Inside diameter of well 6 in.
6. Volume of water in filter pack and well casing _____ gal.
7. Volume of water removed from well 999 gal.
8. Volume of water added (if any) _____ gal.
9. Source of water added _____
10. Analysis performed on water added? Yes No
(If yes, attach results)

11. Depth to Water Before Development After Development
(from top of well casing) n. 108 ft. 108 ft.

Date b. 02 / 09 / 2011 02 / 09 / 2011
m m d d y y y y m m d d y y y y

Time c. _____ a.m. _____ a.m.
_____ p.m. _____ p.m.

12. Sediment in well _____ inches _____ inches
bottom

13. Water clarity Clear 10 Clear 20
Turbid 15 Turbid 25
(Describe) (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended _____ mg/l _____ mg/l
solids

15. COD _____ mg/l _____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dan Last Name: Passamani
Firm: Layne Christensen Company

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party

First Name: Kell Last Name: McKenna

Facility/Firm: CH2M Hill

Street: 135 South 84th Street

City/State/Zip: Milwaukee WI 53214

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: Keith Meyers

Firm: Layne Christensen Company

NOTE: See instructions for more information including a list of county codes and well type codes.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Pentawood Products	County Name BURNETT	Well Name Penta EW12 4"
Facility License, Permit or Monitoring Number	County Code 7	Wis. Unique Well Number VX858
		DNR Well ID Number

1. Can this well be purged dry? Yes No

2. Well development method

surged with bailer and bailed	<input type="checkbox"/>	41
surged with bailer and pumped	<input checked="" type="checkbox"/>	61
surged with block and bailed	<input type="checkbox"/>	42
surged with block and pumped	<input type="checkbox"/>	62
surged with block, bailed and pumped	<input type="checkbox"/>	70
compressed air	<input type="checkbox"/>	20
bailed only	<input type="checkbox"/>	10
pumped only	<input type="checkbox"/>	51
pumped slowly	<input type="checkbox"/>	50
Other _____	<input type="checkbox"/>	

3. Time spent developing well 300 min.

4. Depth of well (from top of well casing) 123 ft.

5. Inside diameter of well 4 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 300 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>108</u> ft.	<u>108</u> ft.
Date	b. <u>02</u> / <u>10</u> / <u>2011</u>	<u>02</u> / <u>10</u> / <u>2011</u>
	m m d d y y y y	m m d d y y y y
Time	c. _____ : _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	_____ : _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input type="checkbox"/> 15 (Describe)	Clear <input type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l
16. Well developed by: Name (first, last) and Firm		
First Name: Dan	Last Name: Passanani	
Firm: Layne Christensen Company		

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party

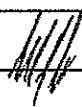
First Name: Kell Last Name: McKenna

Facility/Firm: CH2M Hill

Street: 135 South 84th Street

City/State/Zip: Milwaukee WI 53214

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Keith Meyers

Firm: Layne Christensen Company

NOTE: See instructions for more information including a list of county codes and well type codes.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Pentawood Products	County Name BURNETT	Well Name Penta EW13 6"
Facility License, Permit or Monitoring Number	County Code 7	Wis. Unique Well Number VX859
		DNR Well ID Number

1. Can this well be purged dry? Yes No

2. Well development method

- surged with bailer and bailed 4 1
- surged with bailer and pumped 6 1
- surged with block and bailed 4 2
- surged with block and pumped 6 2
- surged with block, bailed and pumped 7 0
- compressed air 2 0
- bailed only 1 0
- pumped only 5 1
- pumped slowly 5 0
- Other

3. Time spent developing well 300 min.

4. Depth of well (from top of well casing) 153 ft.

5. Inside diameter of well 6 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 999 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>109</u> ft.	<u>109</u> ft.
Date	b. <u>02 / 08 / 2011</u>	<u>02 / 08 / 2011</u>
Time	c. _____ : _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	_____ : _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 1 0 Turbid <input checked="" type="checkbox"/> 1 5 (Describe)	Clear <input checked="" type="checkbox"/> 2 0 Turbid <input type="checkbox"/> 2 5 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Dan Last Name: Passavant

Firm: Layne Christensen Company

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party

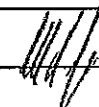
First Name: Kell Last Name: McKenna

Facility/Firm: CH2M Hill

Street: 135 South 84th Street

City/State/Zip: Milwaukee WI 53214

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Keith Meyers

Firm: Layne Christensen Company

NOTE: See instructions for more information including a list of county codes and well type codes.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Pentawood Products	County Name BURNETT	Well Name Penta EW13 4"
Facility License, Permit or Monitoring Number	County Code <u>7</u>	Wis. Unique Well Number <u>VX860</u>
		DNR Well ID Number _____

1. Can this well be purged dry? Yes No

2. Well development method

surged with bailer and bailed	<input type="checkbox"/> 41
surged with bailer and pumped	<input checked="" type="checkbox"/> 61
surged with block and bailed	<input type="checkbox"/> 42
surged with block and pumped	<input type="checkbox"/> 62
surged with block, bailed and pumped	<input type="checkbox"/> 70
compressed air	<input type="checkbox"/> 20
bailed only	<input type="checkbox"/> 10
pumped only	<input type="checkbox"/> 51
pumped slowly	<input type="checkbox"/> 50
Other _____	<input type="checkbox"/>

3. Time spent developing well 300 min.

4. Depth of well (from top of well casing) 123 ft.

5. Inside diameter of well 4 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 300 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>109</u> ft.	<u>109</u> ft.
Date	b. <u>02 / 08 / 2011</u>	<u>02 / 08 / 2011</u>
Time	c. _____ : _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	_____ : _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe)	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Dan Last Name: Passamani

Firm: Layne Christensen Company

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party

First Name: Keli Last Name: McKenna

Facility/Firm: CH2M HILL

Street: 135 South 84th Street

City/State/Zip: Milwaukee WI 53214

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: _____

Print Name: Kelth Meyers

Firm: Layne Christensen Company

NOTE: See instructions for more information including a list of county codes and well type codes.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Pentawood Products	County Name BURNETT	Well Name Penta EW14 6"
Facility License, Permit or Monitoring Number	County Code 7	Wis. Unique Well Number VX861
		DNR Well ID Number

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other

3. Time spent developing well 300 min.
4. Depth of well (from top of well casing) 151 ft.
5. Inside diameter of well 6 in.
6. Volume of water in filter pack and well casing _____ gal.
7. Volume of water removed from well 999 gal.
8. Volume of water added (if any) _____ gal.
9. Source of water added _____
10. Analysis performed on water added? Yes No
(If yes, attach results)

- | | Before Development | After Development |
|--|--|--|
| 11. Depth to Water (from top of well casing) | a. <u>112</u> ft. | <u>112</u> ft. |
| Date | b. <u>01 / 13 / 2011</u> | <u>01 / 13 / 2011</u> |
| Time | c. _____ a.m. / _____ p.m. | _____ a.m. / _____ p.m. |
| 12. Sediment in well bottom | _____ inches | _____ inches |
| 13. Water clarity | Clear <input type="checkbox"/> 10
Turbid <input checked="" type="checkbox"/> 15
(Describe) | Clear <input checked="" type="checkbox"/> 20
Turbid <input type="checkbox"/> 25
(Describe) |

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids _____ mg/l
15. COD _____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Dan Last Name: Passamani
Firm: Layne Christensen Company

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party

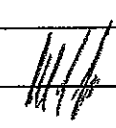
First Name: Kell Last Name: McKenna

Facility/Firm: CH2M Hill

Street: 135 South 84th Street

City/State/Zip: Milwaukee WI 53214

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Keith Meyers

Firm: Layne Christensen Company

NOTE: See instructions for more information including a list of county codes and well type codes.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Pentawood Products	County Name BURNETT	Well Name Penta EW14 4"
Facility License, Permit or Monitoring Number	County Code 7	Wis. Unique Well Number VX862
		DNR Well ID Number

1. Can this well be purged dry? Yes No

2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other

3. Time spent developing well 300 min.

4. Depth of well (from top of well casing) 126 ft.

5. Inside diameter of well 4 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 300 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>112</u> ft.	<u>112</u> ft.
Date	b. <u>01 / 13 / 2011</u>	<u>01 / 13 / 2011</u>
	m m d d y y y y	m m d d y y y y
Time	c. _____ <input type="checkbox"/> a.m. _____ <input type="checkbox"/> p.m.	_____ <input type="checkbox"/> a.m. _____ <input type="checkbox"/> p.m.

12. Sediment in well bottom _____ inches

13. Water clarity
 Clear 10
 Turbid 15
 (Describe) _____
 Clear 20
 Turbid 25
 (Describe) _____

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids _____ mg/l

15. COD _____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Dan Last Name: Passamani

Firm: Layne Christensen Company

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party

First Name: Keith Last Name: McKenna

Facility/Firm: CH2M Hill

Street: 135 South 84th Street

City/State/Zip: Milwaukee WI 53214

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Keith Meyers

Firm: Layne Christensen Company

Appendix D
Pump installation Records

PUMP INSTALLATION

1 Job Name Penta wood Products
 Address 3682 Daniels 70
 City, State Siren WI

2 Date 2 17 2011 Job Completed
 Month Day Year

3 Pump No. EW-13 (4") Oil or Water Lube
 Pump Trouble New or Repair

6 Motor or Gear Drive Motor CD _____
 Gear Drive CD _____
 Make Air Drive HP _____
Skimmer Pump 3
 Speed _____ Volts _____

Or Gear Drive Ratio _____ Standard Combination
 Frame Size _____ Non-Reverse -- Yes No
 Running Amps N/A
 Running Volts N/A
 Serial No. (Unable To read)

4 PUMP SIZE

	Diameter	Lengths
Discharge	<u>1/2"</u> <input checked="" type="checkbox"/> Above <input type="checkbox"/> Below	
Column	<u>Black Poly</u> <input type="checkbox"/> Screw <input type="checkbox"/> Flange	
Tubing	<u>Air supply line: 1/4"</u> <u>Exhaust: 3/8"</u>	
Shaft	<u>Stainless Carbon</u>	

7 WELL Readings are from top of casing
 Number EW-13 (4") Year Drilled 2011
 Location 4FT Vault
 Diameter 4" Depth 129.9 FT
 Measured from top of 4" diameter casing which is
4 FT Vault feet above ground
 Tape to Water 107.09
 Air Line Length 108 FT A.L. Material PVC
Drawing on fluid State Level Airline For Bubbler
 Pumping Gage _____ Pumping Level _____
 Discharge Pressure _____ feet when pumping into system

water is at 107.09 FT / Product just sheen at this time
Column setting to bowl Around 107 ft. Depending on product.

BOWL AP2C-42372 QED Auto Pump (Air Drive)
 Diameter 1 9/8" Shaft Diameter N/A
 Type Air Drive Stages N/A
 Cast Iron or Bronze S.S.
 Suction S.S. Diameter _____ Ft. Long Strn.
 Special Paint or Coating on: _____ Zinc Sleeves in: _____
 Column Total length of pump
 Tubing with fittings included: 32"

8 Installer Dan & Bob
 Rig Used None
 Foreman Hours to: _____ Rig Up _____
 To Pull _____ Inspect _____
 Repair _____ To Set _____

9 PUMP REPAIR

Condition of Pump When Pulled

Column Notes: there is 3/8", & 1/4" poly
from pump to top of casing.

Tubing 3/8" Exhaust line is under well cap

Shafting Notes: All poly line measurements are:
1/2", 3/8", 1/4" I.D.

Bowl Line are taped with 2" Hayne tape.

Suction _____

Machine Work _____

New Parts Installed

Column 3/8", 1/4" poly

Tubing Winch, cable, air supply,
fittings, etc. as per work order

Shafting 110 FT Airline For Bubbler

Bowl New
well cap, fittings, etc.

Suction S.S. safety cable & S.S.
cable for winch line connected to pump.

1. Drain Ports Open Yes No
 2. Chlorinate Well Yes No
 3. Pump Runs good
 4. Align Pump Head with Dial Indicator Yes No
 5. Grouted Head-Base Plate Yes No



Layne Northwest
 a div. of Layne Christensen Company

PUMP INSTALLATION

1 Job Name Pentawood Products
 Address 3682 Daniels Rd
 City, State Siren WI

2 Date 2 / 17 / 2011 Job Completed
 Month Day Year

3 Pump No. EW14(4") Oil or Water Lube
New or Repair
 Pump Trouble _____

6 Motor or Gear Drive Motor CD _____
 Gear Drive CD _____
 Make Air drive HP _____
Shimmer Pump
 Speed _____ Volts _____
 Or Gear Drive Ratio _____ Standard
 Combination _____
 Frame Size _____ Non-Reverse Yes No
 Running Amps N/A
 Running Volts N/A
 Serial No. 4-3000

4 PUMP SIZE

	Diameter		Lengths
Discharge	<u>3/4"</u>	<u>Above</u> Below	
Column	<u>Black Poly</u>	<u>Screw</u> Flange	
Tubing	<u>Air supply line: 3/8"</u> <u>Exhaust line: 1/2"</u>		
Shaft	<u>Stainless</u> Carbon		

Water is at 113.19 FT / Product at 113.18 FT T.O.C.
 Column setting to bowl around 113 ft. Depending on Product

BOWL AP4 + QED Auto Pump (Air drive)
 Diameter 3 5/8" Shaft Diameter N/A
 Type Air drive Stages N/A
 Cast iron or Bronze, S. S.
 Suction S.S. Diameter _____ Ft. Long Strn.
 Special Paint or Coating on: _____ Zinc Sleeves in:
 Column _____ Total Length of Pump with
 Tubing fittings included: 43"

7 WELL Readings Top of casing
 Number EW14(4") Year Drilled 2011
 Location 4" Vault
 Diameter 4" Depth 127.4 FT
 Measured from top of 4" diameter casing which is
4 FT Vault feet above ground
 Tape to Water 113.18 FT
 Air Line Length 1/4 N/A A.L. Material Black PVC
 Bubbler length 115 FT State Level Airline For Bubbler
 State Gage _____ Pumping Gage _____ Pumping Level _____
 Discharge Pressure _____ feet when pumping into System

8 Installer Dan + Bob
 Rig Used None
 Foreman Hours to: _____ Rig Up _____
 To Pull _____ Inspect _____
 Repair _____ To Set _____

PUMP REPAIR

Condition of Pump When Pulled

Column Note: There is 3/4", 1/2", 3/8" poly
from pump to top of casing.

Tubing 1/2" Exhaust line is under well cap.

Shafting Note: All poly line measurements
are: 3/4" ID, 1/2" ID, 3/8" ID

Bowl lines are taped together with
2" Kayne tape

Suction _____

Machine Work _____

New Parts Installed

Column 3/4", 1/2", 3/8" poly

Tubing Winch, cable, fittings,
air supply, etc, as per work order.

Shafting 115 FT Airline For
Bubbler

Bowl New pump
well cap, fittings, etc.

Suction S.S. safety cable + S.S. cable
for winch line connected to pump

1. Drain Ports Open Yes No
 2. Chlorinate Well Yes No
 3. Pump Runs good
 4. Align Pump Head with Dial Indicator Yes No
 5. Grouted Head-Base Plate Yes No



Layne Northwest
 a div. of Layne Christensen Company

PUMP INSTALLATION

1 Job Name Pentawood Products
 Address 3682 Daniels 70
 City, State Siren WI

2 Date 2 / 17 / 2011 Job Completed
 Month Day Year

3 Pump No. EW-12 (4") Oil or Water Lube
New or Repair
 Pump Trouble _____

4 PUMP SIZE

	Diameter	Lengths
Discharge	<u>3/4"</u> <u>Above</u> Below	
Column	<u>Black Poly</u> <u>Screw</u> Flange	
Tubing	<u>Air supply line: 3/8"</u> <u>Exhaust: 1/2"</u>	
Shaft	<u>Stainless</u> <u>Carbon</u>	

Water is at 100.91 FT / Product at 100.90 T.O.C.
 Column setting to bowl Around 100 FT ft. Depending on Product

BOWL AP4 + QED Auto Pump (Airdrive)
 Diameter 3/8" Shaft Diameter N/A
 Type Airdrive Stages N/A
Cast Iron or Bronze S.S.
 Suction S.S. Diameter _____ Ft. Long Strn. _____
 Special Paint or Coating on: _____ Zinc Sleeves in: _____
 Column Total length of pump with
 Tubing fittings included: 43"

6 Motor or Gear Drive. Motor CD _____
 Gear Drive CD _____
 Make Airdrive HP _____
Skimmer Pump
 Speed _____ Volts _____
 Or Gear Drive Ratio _____ Standard
 Combination _____
 Frame Size _____ Non-Reverse -- Yes
 Running Amps N/A
 Running Volts N/A
 Serial No. 4-3001

7 WELL Readings Top of Casing
 Number EW-12 (4") Near Drilled 2011
 Location 4' Vault
 Diameter 4" Depth 125.7 FT
 Measured from top of 4" diameter casing which is
4 FT Vault feet above ground
 Tape to Water 100.91 FT
 Air Line Length Around 100 A.L. Material PVC
 Static Gage Depending on Product Static Level Airline For Bubbler
 Pumping Gage _____ Pumping Level _____
 Discharge Pressure _____ feet when pumping into System

8 Installer Dan & Bob
 Rig Used None
 Foreman Hours to: _____ Rig Up _____
 To Pull _____ Inspect _____
 Repair _____ To Set _____

5 PUMP REPAIR

Condition of Pump When Pulled
Column <u>Note: There is 3/4", 1/2", 3/8" poly</u> <u>From pump to top of casing.</u>
Tubing <u>1/2" Exhaust line is under well cap.</u>
Shafting <u>Note: All poly line measurements are</u> <u>3/4" I.D., 1/2" I.D., 3/8" I.D.</u>
Bowl <u>Lines are taped with 2"</u> <u>Lexane tape</u>
Suction _____
Machine Work _____

New Parts Installed
Column <u>3/4", 1/2", 3/8" poly</u>
Tubing <u>Winch, cable, fittings,</u> <u>air supply, etc., as per work order</u>
Shafting <u>105 FT PVC airline For</u> <u>Bubbler use</u>
Bowl <u>New</u> <u>well cap, fittings, etc</u>
Suction <u>S.S. safety cable & S.S.</u> <u>Cable for winch line connected to pump</u>
1. Drain Ports Open Yes <input checked="" type="checkbox"/> No
2. Chlorinate Well Yes <input checked="" type="checkbox"/> No
3. Pump Runs <u>good</u>
4. Align Pump Head with Dial Indicator Yes <input checked="" type="checkbox"/> No
5. Grouted Head-Base Plate Yes <input checked="" type="checkbox"/> No



Layne Northwest
 a div of Layne Christensen Company

PUMP INSTALLATION

1 Job Name Penta wood Products
 Address 3682 Daniels 70
 City, State Siren W.F.

2 Date 2 / 15 / 2011 Job Completed
 Month Day Year

3 Pump No. EW13(6") Oil or Water Lube
 New or Repair
 Pump Trouble _____

4 PUMP SIZE

	Diameter	Lengths
Discharge	<u>1 1/4"</u> <input checked="" type="radio"/> Above <input type="radio"/> Below	<u>6 EA 21' 1"</u> <u>1 1/4" Pitless Adapter</u>
Column	<u>1 1/4"</u> <input checked="" type="radio"/> Screw <input type="radio"/> Flange	<u>6 EA: 21' 1"</u>
Tubing		
Shaft	<input type="radio"/> Stainless <input type="radio"/> Carbon	

Mod # B10010018-P11103 H366 FT
 Column setting to bowl 26.6 ft GPM: 160
From bottom of Pitless
 BOWL Ground FOS
 Diameter 3 5/8" Shaft Diameter N/A
 Type 16820-18 Stages 18
Cast Iron or Bronze S.S. Pump + Motor
 Suction S.S. on Pump Diameter 3 5/8" Ft. Long Strn.
 Special Paint or Coating on: _____ Zinc Sleeves in: _____
 Column Tubing Total length of motor + pump: 33 1/2"

6 Motor or Gear Drive _____ Motor CD _____
Mod # 2343252318 Gear Drive CD _____
3PH
 Make Franklin HP 2
 Speed 3450 Volts 460
#12 wire (chemical resistant)
 Or Gear Drive Ratio _____ Standard
 Frame Size _____ Non-Reverse -- Yes No
 Running Amps 4.1 MA 3.4 Amp
 Running Volts 460 5.5 1.25
 Serial No. 10M14-02-01013C

7 WELL (6")
 Number EW-13 Year Drilled 2011
 Location 3682 Daniels 70
 Diameter 6" Depth 153.4 FT. 00
 Measured from top of 6" diameter casing which is in
4 FT vault feet above ground 5' 4" T.O.C.P.
Pitless
 Tape to Water 108.7 FT T.O.G.
 Air Line Length N/A A.L. Material N/A
 Static Gage _____ Static Level 108.3 FT
 Pumping Gage _____ Pumping Level _____
 Discharge Pressure _____ feet when pumping into System

8 Installer Dan & Bob
 Rig Used T-35
 Foreman Hours to: _____ Rig Up _____
 To Pull _____ Inspect _____
 Repair _____ To Set _____

5 PUMP REPAIR

Condition of Pump When Pulled
Column
Tubing
Shafting
Bowl
Suction
Machine Work

New Parts Installed
Column <u>6 EA: 21' 1" X 1 1/4"</u>
Tubing
Shafting <u>wire is taped with 2" Layne tape</u>
Bowl <u>New bowl + motor and #12 chemical resistant wire</u>
Suction <u>1 1/4" pitless and 6" well caps as per work order</u>
1. Drain Ports Open Yes <input checked="" type="radio"/> No
2. Chlorinate Well Yes <input checked="" type="radio"/> No
3. Pump Runs <u>good</u>
4. Align Pump Head with Dial Indicator Yes <input checked="" type="radio"/> No
5. Grouted Head-Base Plate Yes <input checked="" type="radio"/> No



Layne Northwest
 a div. of Layne Christensen Company

PUMP INSTALLATION

1 Job Name Penta wood Products
 Address 3682 Daniels 70
 City, State Siren WI

2 Date 2 15 2011 Job Completed
 Month Day Year

3 Pump No. EW-12 (6") Oil or Water Lube
New or Repair
 Pump Trouble _____

4 PUMP SIZE

	Diameter	Lengths
Discharge	<u>1 1/4"</u> Above Below	<u>1 1/4" Pitless Adaptor</u>
Column	<u>1 1/4"</u> Screw Flange	<u>5 EA: 21'1"</u> <u>1 EA: 14 FT</u>
Tubing		
Shaft		<u>Stainless</u> <u>Carbon</u>

Mod # B10610018-P11103 H 366 FT of Head
 Column setting to bowl 119.5 ft. From Bottom of Pitless

BOWL Ground Fos. GPM: 216 US
 Diameter 3 5/8" Shaft Diameter N/A
 Type 16820-18 Stages 18
 Cast Iron or Bronze SS, Pump + motor
 Suction S.S. on Pump Diameter 3 5/8" Ft. Long Strn.
 Special Paint or Coating on: Zinc Sleeves in:
 Column Total Length of Motor + Pump: 33 1/2"
 Tubing

6 Motor or Gear Drive Motor CD
Mod # 2343252318
 #12 Chemical resistant wire Gear Drive CD
 Make Franklin HP 2
 Speed 3450 Volts 460
 Or Gear Drive Ratio 3PH Standard
 Frame Size Non-Reverse -- Yes No
 Running Amps 41 Max 3.4 Run
 Running Volts 460 S.F. 1.25
 Serial No. 10M14-02-01018C

7 WELL (6") readings top of casing
 Number EW-12 Year Drilled 2011
 Location 3682 Daniels 70
 Diameter 6" Depth 147.8' h.o.c.
 Measured from top of 6" diameter casing which is in
4 FT well feet above ground 56 FT T.O.C. TO
Pitless
 Tape to Water 102.5 FT T.O.C.
 Air Line Length N/A A.L. Material N/A
 Static Gage _____ Static Level _____
 Pumping Gage _____ Pumping Level _____
 Discharge Pressure _____ feet when pumping into System

8 Installer Dan + Bob
 Rig Used T-35
 Foreman Hours to: _____ Rig Up _____
 To Pull _____ Inspect _____
 Repair _____ To Set _____

5 PUMP REPAIR

Condition of Pump When Pulled
Column
Tubing
Shafting
Bowl
Suction
Machine Work

New Parts Installed
Column <u>5 EA: 21'1"</u> <u>1 EA: 14 FT</u>
Tubing
Shafting <u>wire is Taped with 2"</u> <u>Layne Tape</u>
Bowl <u>New Bowl + motor and #12</u> <u>Chemical resistant wire</u>
Suction <u>1 1/4" Pitless and 6" well</u> <u>caps as per work order</u>
1. Drain Ports Open Yes <input checked="" type="checkbox"/> No
2. Chlorinate Well Yes <input checked="" type="checkbox"/> No
3. Pump Runs <u>good</u>
4. Align Pump Head with Dial Indicator Yes <input checked="" type="checkbox"/> No
5. Grouted Head-Base Plate Yes <input checked="" type="checkbox"/> No



Layne Northwest
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PUMP INSTALLATION

1 Job Name Pentawood Products
 Address 3682 Daniels 70
 City, State Siren WI

2 Date 2 15 2011 Job Completed
 Month Day Year

3 Pump No. EW-14 (6") Oil or Water Lube
 New or Repair

Pump Trouble _____

4 PUMP SIZE

	Diameter	Lengths
Discharge	<u>1 1/4"</u> <input checked="" type="radio"/> Above <input type="radio"/> Below	<u>1 1/4" Pitless Adaptor</u>
Column	<u>1 1/4"</u> <input checked="" type="radio"/> Screw <input type="radio"/> Flange	<u>SEA: 21 FT 1"</u> <u>LEA: 17 FT</u>
Tubing		
Shaft		<input type="radio"/> Stainless <input type="radio"/> Carbon

Mod# B10010018-P11103 H 366 FT of Head
 Column setting to bowl 122.5 ft. From Bottom of Pitless

BOWL Ground For 6 GPM @ 160.5
 Diameter 3 5/8" Shaft Diameter N/A
 Type 16820-18 Stages 18
 Cast Iron or Bronze S.S. Pump + Motor
 Suction S.S. on pump Diameter 3 5/8" Ft. Long Strn.
 Special Paint or Coating on: _____ Zinc Sleeves in: _____
 Column _____ Total length of Motor + Pump: 33 1/2"
 Tubing _____

5 PUMP REPAIR

Condition of Pump When Pulled
Column
Tubing
Shafting
Bowl
Suction
Machine Work

6 Motor or Gear Drive _____ Motor CD _____
Mod# 2343252318 Gear Drive CD _____
#12 Chemical resistant wire
 Make Franklin HP 2
 Speed 3450 Volts 460
 Gear Drive Ratio 3 PH Standard _____
 Frame Size Non-Reverse Combination _____
 Running Amps 41 MAX 3.4 Run Yes No
 Running Volts 460 S.B.125
 Serial No. 10L14-05-01004C

7 WELL
 Number EW-14 (6") Year Drilled 2011
 Location 3682 Daniels 70
 Diameter 6" Depth 150.7 FT. r.o.c.
 Measured from top of 6" diameter casing which is 5 FT. top of casing
4 FT. VERT. feet above ground To Pitless
 Tape to Water 113 FT
 Air Line Length N/A A.L. Material N/A
 Static Gage _____ Static Level _____
 Pumping Gage _____ Pumping Level _____
 Discharge Pressure _____ feet when pumping into System

8 Installer Dan + Bob
 Rig Used T-35
 Foreman Hours to: _____ Rig Up _____
 To Pull _____ Inspect _____
 Repair _____ To Set _____

New Parts Installed
Column <u>SEA: 1 1/4" x 21' 1"</u> <u>LEA: 1 1/4" x 17 FT</u>
Tubing _____
Shafting <u>wire is Taped with 2" Layne Tape</u>
Bowl <u>New Bowl + motor and #12 Chemical resistant wire</u>
Suction <u>1 1/4" Pitless Adaptor and 6" well cap as per work order</u>
1. Drain Ports Open Yes <input type="radio"/> No <input checked="" type="radio"/>
2. Chlorinate Well Yes <input type="radio"/> No <input checked="" type="radio"/>
3. Pump Runs <u>good</u>
4. Align Pump Head with Dial Indicator Yes <input type="radio"/> No <input checked="" type="radio"/>
5. Grouted Head-Base Plate Yes <input type="radio"/> No <input checked="" type="radio"/>



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