COLEMAN ENGINEERING CO.
OF IRON MOUNTAIN

Civil Engineering • Environmental Engineering
Geotechnical Engineering • Land Surveying • Test Drilling
Construction Quality Control • Materials Laboratory Testing

Principals:
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January 18, 1996

Mr. Scott Watson
Wisconsin Department of Natural Resources
North Central District
107 Sutcliff
P.O. Box 818
Rhinelander, Wisconsin 54501

Re: C.M. Christiansen Co. , Phelps, Wisconsin - Project Update

Dear Mr. Watson:

Within this letter we identify the primary work efforts that have been completed with regard to the site investigation of the C.M. Christiansen Co. former pole treatment facility. We are also forwarding a site drawing which defines the locations of the latest work efforts, and a table of the preliminary soil and groundwater laboratory analysis results. In addition we have also attached a summary of the historical use for the facility.

The historical use summary was prepared by Mr. Raymond Roder, Attorney for C.M. Christiansen Co. The summary will be made part of the Site Investigation Report when it is prepared. We did however feel that it was important for you to have it at this time to further your understanding of past site activities. The information contained in the summary should also help when discussing site matters.

Field work with respect to implementation of the approved Site Investigation Work Plan occurred the week of August 21 and August 28, 1995. During field activities a total of eight (8) soil borings, three (3) groundwater monitoring wells and ten (10) hand auger soil borings were completed in the treatment vat area. Surface soils were also sampled at three (3) additional sites around the pole treatment vat area. At the upper wetland area, one (1) soil boring, one (1) groundwater monitoring well and eleven (11) hand auger soil borings were completed. Refer to the attached site drawing which shows the soil boring, monitoring well and surface soil sampling locations for both areas. The work was performed in accordance with the Work Plan with field adjustments to reflect actual site conditions.

Soil samples were collected at each location and laboratory analyzed. Soil samples from borings B-1 through B-4 and monitoring wells MW-5 and MW-8 were laboratory analyzed for Pentachlorophenol (PCP), Polynuclear Aromatic Hydrocarbons (PAH), Volatile Organic Compounds

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(VOC's) and metals. On the basis of the laboratory results of these soil samples it was proposed and agreed with by the Department that the remaining initial site soil samples did not have to be analyzed for VOC's or metals. Consequently soil samples collected at monitoring well MW-6; borings B-7 through B-11; hand auger borings HA-1 through HA-21; and surface soil samples SA-1 through SA-3 were laboratory analyzed only for PCP and PAH's. Based on field observations it appeared that samples from boring B-4 would have the highest level of PCP concentrations. As such, a sample from this location was also analyzed for dioxins and furans in accordance with the Work Plan. Refer to the attached summary tables for review of the preliminary laboratory results.

Soil impact has been identified around: the former 30,000 gallon above ground storage tank (B-4 and MW-7); the former treatment vat (B-1); the former pumphouse (B-3); the former boiler house (HA-2, HA-3, S-1, S-2) and in the wetlands adjacent to Military Creek (HA-17 and HA-19). Soil impact was also identified in the of the upper wetland study area (MW-8, B-11, HA-6, HA-7, HA-9, HA-12, HA-13, HA-15, and HA-16).

With regard to groundwater monitoring, the DNR constructed wells (MW-1 through MW-4) and the C.M. Christiansen Co. constructed wells (MW-5 through MW-8) have been sampled for two rounds. The groundwater samples have been laboratory analyzed for PCP, PAH, VOC's and metals. In addition to these parameters groundwater monitoring well MW-7 was also sampled and laboratory analyzed for dioxins and furans during the first round of sampling . The groundwater laboratory results for the first round are summarized in the attached tables. At the time of this letter the second round of groundwater laboratory analysis is not complete and as such are not included in the attached tables. When the second round analysis results are available they will be provided to the Department.

Groundwater laboratory analysis data identifies exceedance of Wisconsin's established NR140 enforcement standard at MW-6 through MW-8. It should be noted that on the basis of two rounds of groundwater elevation monitoring and review of boring logs it has been observed that the screens for the DNR constructed wells (MW-1, MW-3 and MW-4) do not properly intersect the water table surface. The groundwater data collected from MW-1 will most likely have to be interpreted as a piezometer because the well screen, filter pack and sand seal are significantly sealed below the surface of the water table. The well screens at monitoring wells MW-3 and MW-4 do not appear to intersect the surface of the groundwater table. However, the filter pack/sand seal in these monitoring wells appear to intersect or are very close to intersecting the surface of the water table. None the less, it is assumed that water quality data from these three wells is still useful. Refer to the attached groundwater monitoring field data sheets and a graphic sketch of the wells for review of the above scenario.

On the basis of the initial soil sample results and the first round of groundwater monitoring laboratory results it appears that further

delineation may be necessary in order to define the degree and extent of soil and groundwater conditions at the site.

Your review and comments of the soil and groundwater data collected to date will be helpful in establishing the future course of action. As your January 12, 1996 letter suggests, a meeting to discuss the findings of work performed by the C.M. Christiansen Co. at the former pole treatment facility and the DNR at Military Creek would be beneficial. Understanding all field findings and the Department's concerns prior to any subsequent effort will help to ensure that C.M. Christiansen Co. site investigation proceeds efficiently and effectively.

Should you have any questions or comments please feel free to contact our offices.

Sincerely,

COLEMAN ENGINEERING COMPANY
OF IRON MOUNTAIN

Mark A. Gregory
Environmental Scientist

MAG/lsr
Enclosure
cc: Raymond Roder - Reinhart, Boerner, Van Deuren, Norris & Reiselbach, S.C.
Robert Edstrom - White Water Associates

CEC Project # E-95042-A6

BACKGROUND INFORMATION

Pole dipping operations at the CMC site began in approximately 1954 and ceased in the early 1980s. The operations at the site involved treating wood electrical energy transmission and telephone poles and fence posts to retard decay.

Most poles were Western Red Cedar, but included Northern White Cedar and Red Pine. They were brought to the site on rail cars and trucks and were seasoned on site in stickered decks which were located on stringers throughout the site.

The treating solution consisted of #2 fuel oil mixed with 5% pentachlorophenol (the "Mixture"). Over the years of operation, the Mixture was purchased from several vendors. In addition, CMC reused the Mixutre in successive batches.

The Mixture was shipped to the site via car or tank trucks. Rail car deliveries were in 10,000 gallon quantities whereas truck volumes were more in the range of 6,000 gallons.

The Mixture was transferred from the rail car or tank truck to the pump house. The solution was in turn pumped to a 30,000 gallon aboveground storage tank ("AST") located on the hill above the treatment vat.

The untreated, precut poles were moved from their storage location to the treatment vat area via a forklift a/k/a carrylift. The poles were then placed into a plate steel treating vat via a swing boom device referred to as a "pole jammer." The treatment vat was fitted with a plate steel cover which kept precipitation out of the tank including during and after the treatment process.

A. SITE OPERATIONS

The operation proceeded in the following manner: precut poles approximately 20 to 30 feet in length were placed in the steel vat which was 45' long, 10' wide and 8' deep, by a device called a Jammer; approximately 5,000 to 6,000 gallons of the Mixture was pumped from the AST to the vat; the poles were soaked in the Mixture which was heated to 200°F through heating coils in the bottom of the vat, the poles remained immersed in the heated Mixture for approximately 8 hours; the heated Mixture was pumped from the vat either to the large AST or to a separate AST; approximately 5,000 gallons of the unheated (cold) Mixture was pumped into the vat where the poles were allowed to soak for an additional 6 hours; the cold Mixture was pumped from the vat into either a small separate AST or into the large AST; and, the

poles were allowed to "drip dry" in the vat at least until the next day. During treatment, the level of the Mixture in the vat was maintained at about 10 inches to one foot below the side boards. The average load of poles treated at one time was 200.

The vat which was approximately 60% below ground was fitted with heating coils that were connected to a boiler. A petroleum product was used as a heat transfer medium (#2 furnace oil). Since the heated liquid during that phase of the operation frequently reached 200°F any water which accumulated probably evaporated.

After a batch of poles had been dried in the vat, they were loaded directly onto delivery trucks. In the absence of available delivery trucks treated poles were stockpiled on the site. Treated poles not placed directly onto trucks were covered until loaded for delivery. However, stockpiling of treated poles was infrequent.

The poles were loaded by the carrylift onto delivery trucks whether from the direct vat drying or from the small inventory of treated poles that might be on the site at any one time.

The only other chemicals stored on site were fuel oil for the boiler and diesel fuel for vehicles. The small volume of vat materials which could not be pumped and reused accumulated in the vat as "sludges," which was cleaned periodically; on average every 2 to 4 weeks during periods of relatively high production. Less frequently in those weeks and months were production was lowest.

The production levels at the Company were highest during the months of July through October. The highest level of production on an annual basis was achieved in the early years of the facility and tapered off to very low quantities in the late 70's.

There were no other facilities on the property except those for wood treatment. However, there was some laboratory type equipment present at the office building for the limited purpose of determining the quality of wood preservative solutions.

The pole dipping vat was located immediately south of the concrete pedestal which remains. The concrete pedestal served as the base of the poles jammer which was located at the mid-point and along the north side of the treatment vat. On those occasions when treated poles were decked on site, the location was generally adjacent to the treatment vat.

In addition to the treating of poles, there were occasional batches of posts that were treated. At one time, several hundred such posts were decked at a location about 100' northeast of the treatment vat.

These posts were sold at an auction in the late 1980's. All Western Red Cedar poles where debarked by vendors prior to receipt. All native poles and posts were debarked by CMC Co. for proper seasoning and before treatment. Drilling, framing, cutting & incising all poles was primarily done by CMC Co. prior to treatment in order to promote better treatment. If culls developed (upon few occasions) after treatment they were remanufactured to meet specifications and then removed. There was also a short term (very brief) experiment in which poles previously treated with creosote were retreated with the Mixture. (An experimental effort to recycle telephone poles only, which was requested of CMC Co., but failed.)

The vat residues were removed and on occasion disposed of on the ground. Other residual materials, including some vat sludges and wood products, were occasionally burned. The estimated volume of sludge removed during tank cleaning was 5 gallons per time. Except for peak operation periods, this cleaning was sporadic at best and often times only seasonal. The sludge material was discharged on the ground at the site on the hill behind and northwest of the treatment vat.

Because by the 1980's debris was scattered throughout the site, the debris was collected, placed in a large pile and burned. Residues from the burning still exist, particularly notable as a tar-like substance, probably from partially burned roofing material.

B. SITE DECOMMISSIONING

The vat was cut into small pieces and the pieces hauled away.

Several concrete slabs which still exist on the property are the remnants of buildings or equipment storage facilities which existed at the site during some or all of the pole dipping operation. For example, the pump house slab which was located northwest of the concrete pedestal on the hillside was pushed by bulldozer to a different location south of the vat. The Jammer was located at the midpoint and along the north side of the treatment vat.

The incisor building, which was on a timber frame and was southwest and uphill of the treatment vat, was burned down.

The boiler house was located east of the treatment vat. It was a small metal building with 270 gallon AST for fuel oil. There was no floor in the building.

The frame office building which was located uphill and west/southwest of the treatment vat and incisor building was burned. The concrete slab for the office building remains at the site. There had been a gasoline underground storage tank ("UST") at the north end of the slab. That UST was removed.

There was also a frame debarker building located uphill and west of the treatment vat. Its location is marked by a shallow trench. (The debarker was used for pole timber purchased locally, but not for the poles which were transported from the western sources.)

There was no slab related to the 30,000 gallon AST.

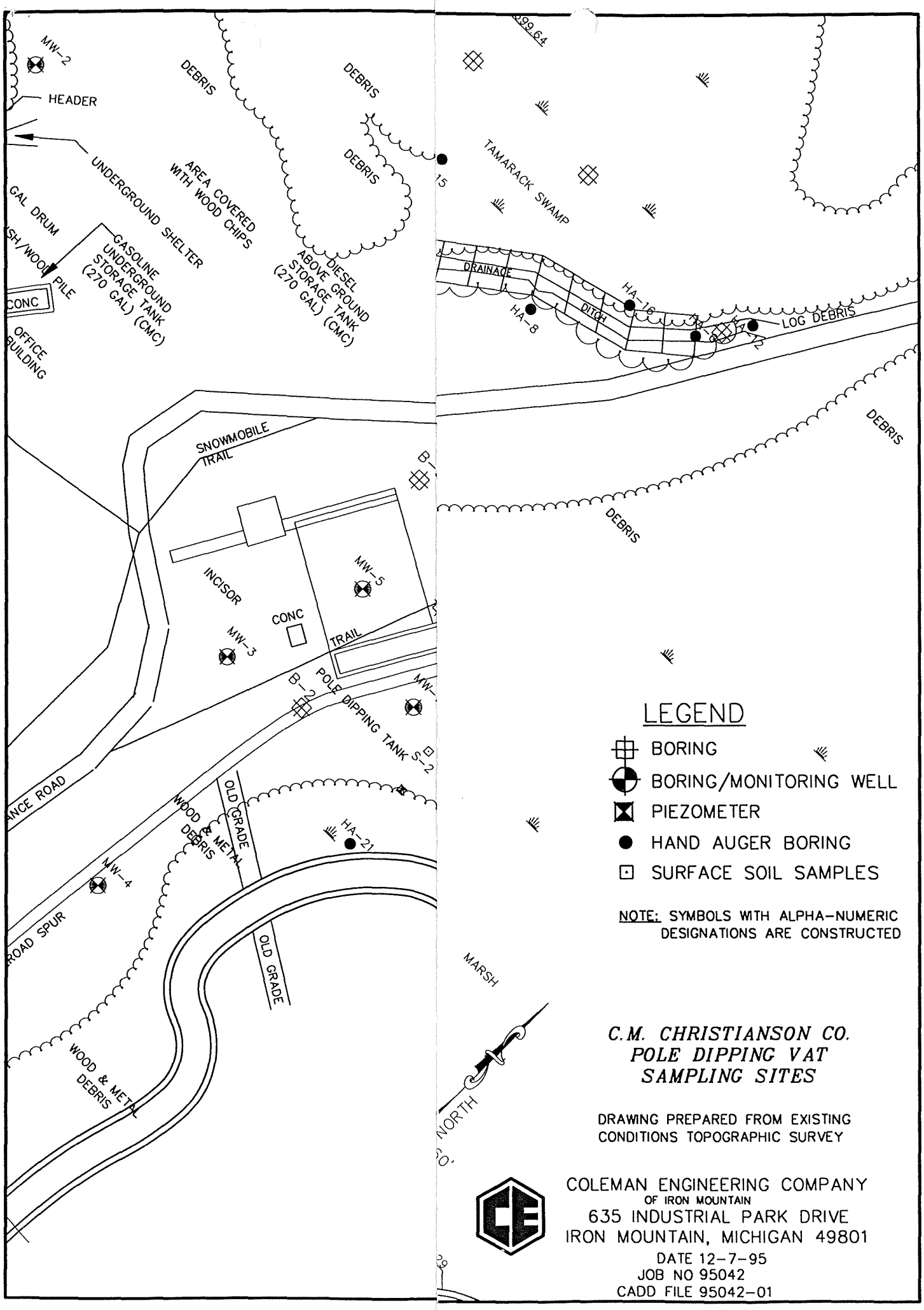
Other structures on the site included a carrylift shed, underground shelter and residential shack.

The carrylift shed was located south of the debarker. There was a 270 gallon AST for diesel fuel located near this building. The AST has been removed and sold.

The underground shelter was located west of the office building slab in the hillside. The structure was used to house a bulldozer.

The frame shack, which was located north of the carrylift shed and debarker, is referred to as a "residential" because it was used by an employee as a squatter from the 1930's until the second world war when he died. The shack was then razed.

The small disposal area northwest of the treatment vat corresponds to what is now a wetland. At the time of the disposal, this area was not a wetland but became such when the U S Fish and Wildlife Service or the Wisconsin DNR repeatedly removed beaver dams north of the site. This area is the probable disposal site of vat sludges.



C.M. CHRISTIANSON CO.
POLE DIPPING VAT
SAMPLING SITES

DRAWING PREPARED FROM EXISTING CONDITIONS TOPOGRAPHIC SURVEY

COLEMAN ENGINEERING COMPANY
OF IRON MOUNTAIN
635 INDUSTRIAL PARK DRIVE
IRON MOUNTAIN, MICHIGAN 49801

DATE 12-7-95
JOB NO 95042
CADD FILE 95042-01

COLEMAN ENGINEERING COMPANY

GROUNDWATER FIELD DATA SHEET

Project C.M. CHRISTIANSEN CEC Number E-95042-A8

Location PHELPS, WI Date 12/14 & 15/95

Samplers R.H.W.

	12/15	12/14	12/19	12/15	12/19	12/19	12/14	12/19	
Well #	1	2	3	4	5	6	7	8	F.B.
Top of PVC Well Elevation (ft. MSL)	1690.32	1714.66	1692.90	1689.66	1696.05	1691.52	1700.825	1703.57	
Depth to Water (ft.)	6.01	29.34	7.34	5.78	10.55	6.40	15.63	16.49 ~~14.49~~	
Depth to Bottom (ft.)	14.99	37.48	19.96	16.70	16.50	15.00	22.57	23.60	
Purge Volume (gal.)	5.6	5.3	8.2	7.1	3.9	5.6	4.5	5.9	
Water Elevation (MSL)	1684.31	1685.32	1685.56	1683.88	1685.50	1685.12	1685.21	1687.08	
Field Color	CLEAR	TAN	LT. TAN	TAN	V. LT. TAN	BROWN	TAN	GRAY	
Field Odor	NONE	NONE	NONE	PET.	NONE	SL. PET.	PET.	NONE	
Field Turbidity	SL.-MOD.	MOD.	MOD.	VERY	MOD.	MOD.	VERY	MOD.	
Field Conductivity Conductivity @ 25°C (µmhos/cm)	306	413	079	587	150	143	201	202	
Field pH (s.u.)	6.7	6.7	6.2	6.5	6.5	6.9	6.3	6.1	
Field Temperature (°C)	5.8°	6.3°	6.1°	4.6°	6.1°	5.4°	5.3°	6.8°	
Dissolved Oxygen	4.5	4.8	4.2		5.3	3.0	2.6	3.1	
Filtered (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y
# of Bottles	5	5	5	5	5	5	5	5	5
# of Bottles to be Filtered	1	1	1	1	1	1	1	1	1
							DUP. @ 4:00 P.		
Time	8:40 A	12:45 P.	2:30 P.	9:25 A	1:45 P.	4:50 P.	4:00 P	11:50 A	2:15 P.
Field Sample #	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	F.B.

Revised 1/12/95

COLEMAN ENGINEERING COMPANY

GROUNDWATER FIELD DATA SHEET

Project C.M. CHRISTIANSEN CEC Number E-95042-A8

Location PHELPS, WI Date 9/14/95

Samplers R.H.W., MA.G, BOB - WHITE WATER

Well #	1	2	3	4	5	6	7	8	
Top of PVC Well Elevation (ft. MSL)	1690.32	1714.66	1692.90	1689.66	1696.05 ~~1702.23~~	1691.52 ~~1697.70~~	1700.825 ~~1707.005~~	1703.57 ~~1697.39~~	
Depth to Water (ft.)	6.50	29.27	7.83	6.21	10.88	6.29	15.55	17.56	
Depth to Bottom (ft.)	14.99	37.48	19.96	16.70	16.50	15.00	22.57	23.60	
Purge Volume (gal.)	5.5	5.4	7.9	6.8 (BAILED 28)	3.7	5.7 (BAILED 31.5)	4.6 (BAILED 12)	3.9	
Water Elevation (MSL)	1683.82	1685.39	1685.07	1683.45	1685.17 ~~1691.35~~	1685.23 ~~1691.41~~	1685.275 ~~1691.455~~	1686.01 ~~1679.83~~	
Field Color	CLEAR	TAN	TAN	TAN	V. LT. TAN	TAN	BROWN	TAN	
Field Odor	PCP	NONE	NONE	PCP	NONE	SL. PCP	PCP	NONE	
Field Turbidity	V. SL.	MOD.	SL.	VERY	SL.	MOD.	MOD.	SL.	
Field Conductivity Conductivity @ 25°C (µmhos/cm)	205	416	074	639	198	177	197	150	
Field pH (s.u.)	6.9	6.9	6.2	6.5	6.8	6.5	6.5	5.9	
Field Temperature (°C)	14.5°	8.8°	13.2°	13.6°	12.8°	14.8°	10.2°	8.8°	
Dissolved Oxygen	0.4	4.2	1.4	—	3.0	.02	2.0	1.4	
Filtered (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	
# of Bottles	?	?	?	?	?	?	?	?	
# of Bottles to be Filtered	2	2	2	2	2	2	2	2	
Time	11:56 A	10:15A	11:00 A	3:33 P.	11:27 A	2:51 P.	2:25 P.	1:08 P.	
Field Sample #	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	

Revised 1/12/95

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

SOIL SAMPLE ANALYTICAL RESULTS
Concentrations in ug/Kg (Dry Weight)

PENTACHLOROPHENOL

Bore Hole/Well	Depth	Concentration (ug/Kg)	EQL (ug/Kg)
B-1001	5-6'	24,000	1,200
B-1002	7.5-9'	13,000	1,300
B-2001	2.5-4'	1,200	530
B-2002	7.5-9'	220	50
B-3001	10-11.5'	68,000	9,900
B-3002	15-16.5'	2,300	480
B-4001	7.5-9'	1,500	480
B-4001 Dup.	7.5-9'	1,300,000	190,000
B-4002	12.5-14'	140,000	8,800
B-4003	17.5-19'	56,000	9,900
MW-5001	0-1.5'	56	39
MW-5002	4.5-6'	2.4	2
MW-6001	5-6.5'	250	190
MW-6002	10-11.5'	780	200
B-7001	7.5-9'	4	2
B-7002	15-16.5'	12	2
B-12/MW-8001A	0-2'	340,000	18,000
B-12/MW-8001B	0-2'	220,000	36,000
B-12/MW-8002	12-14'	49	20
B-12/MW-8003	10-12'	670	210
B-8001	5-6.5'	4	2
B-8002	20-21.5'	4	2
B-9001	2.5-4'	12,000	440
B-9002	15-16.5'	8.7	2
B-10001A	5-6.5'	5,000	2,000
B-10002A	7.5-9'	3,500	2,000
B-11001	3.5-5'	120,000	6,900
B-11002	11.5-13'	ND	2
TB-008	TRIP BLK.	ND	0.10 ug/L
TB-012	TRIP BLK.	ND	0.10 ug/L

ND = Not Detected.
B = Bore Hole Sample.
EQL = Estimated Quantitation Limit.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

HAND AUGER - SOILS
Concentrations in ug/Kg (ppb).

PENTACHLOROPHENOL

Hand Auger	Depth	Concentration	EQL (ug/Kg)
S-1001	0.3-0.6'	750,000	20,000
S-2001	0.5'	79,000	10,000
S-3001	0.5'	240	23
HA-1001	2-2.6'	4,300	1,300
HA-2001	2-2.8'	1,700,000	55,000
HA-3002	3-3.5'	16,000	400
HA-4001	1.5-2'	4,100	220
HA-5001	1.7-2.3'	9,400	1,300
HA-6001A	0.8-1.3'	9,600	1,700
HA-6001B	0.8-1.3'	14,400	1,400
HA-7001	0.1-0.8'	11,000,000	300,000
HA-7002	1.3-2'	44,000,000	1,400,000
HA-8001	2.7'	3,000	360
HA-9002	0.3-0.8'	13,000	3,900
HA-10001	1.3'	890	180
HA-11001	1'	1,200	87
HA-12001	0.5-0.7'	14,000	890
HA-13002	1.25-2.2'	14,000	1,500
HA-14002	2.2-2.7'	8,300	670
HA-15002	3-5'	30,000	240
HA-16001	1.25-2'	16,000	1,300
HA-17001A	0-0.8'	140,000	9,300
HA-17001B	0-0.8'	130,000	9,400
HA-17002	2.4-3.2'	82,000,000	6,000,000
HA-18002	2.1-2.7'	3,300	1,100
HA-19001A	0.2-1'	13,000	1,100
HA-19001B	0.2-1'	18,000	1,200
HA-19002	2.3-3'	1,300,000	62,000
HA-20001	0.8-1.7'	3,300	260
HA-21002	2.25-3'	4,100	350
TB-015 (ug/L)	TRIP BLK.	ND	0.11
TB-017 (ug/L)	TRIP BLK.	4.8	0.2
TB-019(ug/L)	TRIP BLK.	1.8	0.23

ND = Not Detected.
EQL = Estimated Quantitation Limit.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

SOIL SAMPLE ANALYTICAL RESULTS
Polynuclear Aromatic Hydrocarbons
Concentrations in ug/Kg (Dry Weight).

Bore Hole/Well	Depth	Naphthalene	Acenaphthalene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	EQL
B-1001	5-6'	2,400	ND	2,700	3,800	6,300	ND	ND	430	ND	ND	ND	ND	ND	ND	ND	ND	4900
B-1002	7.5-9'	100	ND	1,600	2,200	3,800	ND	ND	260	ND	ND	ND	ND	ND	ND	ND	ND	2,600
B-2001	2.5-4'	46	22	ND	24	290	44	320	340	160	210	110	110	100	42	ND	49	430
B-2002	7.5-9'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	400
B-3001	10-11.5'	1,100	ND	1,000	1,800	2,700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7,900
B-3002	15-16.5'	ND	ND	ND	ND	64	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	380
B-4001	7.5-9'	ND	ND	220	380	1,300	170	250	270	53	96	37	30	ND	ND	ND	ND	390
B-4001 Dup.	7.5-9'	ND	ND	ND	ND	1,900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19,000
B-4002	12.5-14'	ND	ND	4,600	7,400	20,000	ND	2,300	2,500	ND	ND	ND	ND	ND	ND	ND	ND	18,000
B-4003	17.5-19'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
MW-5001	0-1.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	390
MW-5002	4.5-6'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	380
MW-6001	5-6.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	380
MW-6002	10-11.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	400
B-7001	7.5-9'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	360
B-7002	15-16.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	360
B-12/MW-8001A	0-2'	ND	ND	ND	ND	4,200	ND	750	2,400	500	ND	ND	ND	ND	ND	ND	ND	9,200
B-12/MW-8001B	0-2'	ND	ND	ND	ND	ND	ND	ND	1,100	ND	ND	ND	ND	ND	ND	ND	ND	9,000
B-12/MW-8002	12-14'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	390
B-12/MW-8003	10-12'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	420
B-8001	5-6.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	370
B-8002	20-21.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	350
B-9001	2.5-4'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	350
B-9002	15-16.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	390
B-10001A	5-6.5'	ND	ND	ND	150	690	ND	200	230	60	100	58	53	34	ND	ND	ND	390
B-10002A	7.5-9'	ND	ND	59	150	560	ND	100	110	25	39	ND	ND	ND	ND	ND	ND	400
B-11001	3.5-5'	ND	ND	ND	ND	2,000	1,000	4,800	6,100	1,100	3,700	2,400	1,600	ND	ND	ND	ND	14,000
B-11002	11.5-13'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	380
TB-002B (ug/L)	TRIP BLK.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
TB-005 (ug/L)	TRIP BLK.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
TB-008 (ug/L)	TRIP BLK.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	22
TB-012 (ug/L)	TRIP BLK.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24

ND = Not Detected.
NA= Not Analyzed.
B = Bore Hole Sample.
EQL = Estimated Quantitation Limit.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

HAND AUGER - SOILS
Concentrations in ug/Kg (ppb)
Polynuclear Aromatic Hydrocarbons

Hand Auger	Depth	Naphthalene	Acenaphthalene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	EQL	TOTAL PAH
S-1001	0.3-0.6'	ND	2,400	ND	ND	4,800	ND	25,000	34,000	3,200	14,000	4,400	2,600	ND	ND	ND	ND	20,000	90,400
S-2001	0.5'	ND	ND	ND	ND	ND	ND	1,000	2,800	ND	ND	ND	ND	ND	ND	ND	ND	10,000	3,800
S-3001	0.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	28	62	ND	43	ND	ND	ND	470	133
HA-1001	2-2.6'	82	59	ND	ND	180	150	1,700	2,300	660	880	670	680	430	140	ND	ND	1,300	7,931
HA-2001	2-2.8'	10,000	ND	21,000	24,000	42,000	ND	9,000	34,000	4,400	8,600	ND	ND	ND	ND	ND	ND	22,000	153,000
HA-3002	3-3.5'	1,800	ND	300	500	320	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,600	2,920
HA-4001	1.5-2'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,400	ND
HA-5001	1.7-2.3'	ND	ND	ND	ND	ND	300	210	310	ND	ND	220	160	ND	ND	ND	ND	2,800	1,200
HA-6001A	0.8-1.3'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17,000	ND
HA-6001B	0.8-1.3'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,300	ND
HA-7001	0.1-0.8'	ND	ND	280,000	460,000	950,000	ND	ND	75,000	ND	ND	ND	ND	ND	ND	ND	ND	580,000	1,765,000
HA-7002	1.3-2'	ND	ND	28,000	40,000	80,000	8,300	3,000	8,100	ND	2,300	ND	ND	ND	ND	ND	ND	28,000	169,700
HA-8001	2.7'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	360	ND
HA-9002	0.3-0.8'	ND	ND	ND	ND	230	ND	250	840	ND	260	ND	ND	ND	ND	ND	ND	3,900	1,580
HA-10001	1.3'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	350	ND
HA-11001	1'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	350	ND
HA-12001	0.5-0.7'	ND	ND	ND	ND	40	18	21	31	27	28	ND	ND	ND	ND	ND	ND	350	165
HA-13002	1.25-2.2'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,000	ND
HA-14002	2.2-2.7'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,300	ND
HA-15002	3-5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,800	ND
HA-16001	1.25-2'	ND	ND	ND	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,600	150
HA-17001A	0-0.8'	ND	ND	ND	ND	ND	ND	160	3,700	ND	ND	ND	ND	ND	ND	ND	ND	1,800	3,860
HA-17001B	0-0.8'	ND	ND	ND	ND	ND	ND	560	11,000	ND	ND	ND	ND	ND	ND	ND	ND	9,400	11,560
HA-17002	2.4-3.2'	220,000	ND	100,000	160,000	570,000	ND	24,000	110,000	17,000	31,000	ND	ND	ND	ND	ND	ND	110,000	1,232,000
HA-18002	2.1-2.7'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,100	ND
HA-19001A	0.2-1'	ND	ND	ND	ND	180	ND	ND	1,300	ND	320	ND	ND	ND	ND	ND	ND	2,200	1,800
HA-19001B	0.2-1'	ND	ND	ND	ND	280	ND	ND	1,400	ND	510	ND	ND	ND	ND	ND	ND	4,600	2,190
HA-19002	2.3-3'	38,000	ND	ND	ND	70,000	ND	27,000	150,000	18,000	38,000	ND	ND	ND	ND	ND	ND	120,000	341,000
HA-20001	0.8-1.7'	ND	ND	42	ND	49	92	170	200	85	250	200	130	140	100	ND	120	530	1,578
HA-21002	2.25-3'	57	45	ND	ND	110	65	230	260	110	210	220	180	130	ND	ND	ND	690	1,617
TB-014 (ug/L)	TRIP BLK.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40	ND
TB-015 *	TRIP BLK.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-017 (ug/L)	TRIP BLK.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	44	ND
TB-019 (ug/L)	TRIP BLK.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

HA = Hand Auger Sample
S = Surface Sample
ND = Not Detected.
NA = Not Analyzed.
EQL = Estimated Quantitation Limit.
* = Sample lost due to lab accident.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

SOIL SAMPLE ANALYTICAL RESULTS
VOLATILE ORGANIC CHEMICALS (ug/L, ppb)
Concentrations in ug/Kg

Bore Hole/Well	Depth	Methylene Chloride	Benzene	1,2-Dichloroethane	Toluene	Chlorobenzene	Ethylbenzene	1,1,1-Trichloroethane	m/p-Xylene	o-Xylene	Styrene	Isopropylbenzene	n-Propylbenzene	Bromobenzene	1,3,5- Trimethylbenzene	t-Butylbenzene	1,2,4-Trimethylbenzene	s-Butylbenzene	p-Isopropylbenzene	n-Butylbenzene	Naphthalene
B-1001	5-6'	86	ND	ND	ND	ND	ND	ND	ND	35	450	ND	250	ND	860	500	3000	100	81	5500	10000
B-1002	7.5-9'	120	ND	ND	ND	ND	ND	ND	ND	ND	73	ND	84	ND	140	ND	300	ND	ND	430	1000
B-2001	2.5-4'	78	ND	ND	ND	ND	ND	280	ND	ND	190	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-2002	7.5-9'	260	ND	ND	ND	ND	ND	ND	ND	ND	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-3001	10-11.5'	69	ND	ND	ND	ND	ND	ND	ND	ND	240	ND	ND	ND	210	130	510	ND	ND	1100	2E
B-3002	15-16.5'	180	ND	ND	ND	ND	ND	ND	ND	ND	88	ND	ND	ND	ND	77	ND	ND	ND	140	13J
B-4001	7.5-9'	ND	ND	ND	ND	ND	ND	ND	50	ND	210	ND	ND	ND	67	ND	270	ND	ND	310	2300
B-4001 Dup.	7.5-9'	170	ND	ND	ND	ND	64	ND	ND	200	190	ND	ND	ND	ND	500	ND	ND	ND	98	590
B-4002	12.5-14'	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150	ND	540	ND	ND	500	2200
MW-5001	0-1.5'	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-5002	4.5-6'	13.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-12/MW-8001A	0-2'	910	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1200	ND	ND	ND	ND	ND	ND	25000
B-12/MW-8001B	0-2'	570	400	ND	1400	ND	ND	ND	ND	ND	ND	740	590	ND	ND	ND	ND	ND	ND	ND	21000
B-12/MW-8003	10-12'	130	ND	570	1500	140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

		Methylene Chloride	Benzene	Toluene	Ethylbenzene	1,1,1-Trichloroethane	m/p-Xylene	Styrene	Dibromochloromethane	1,2-Dibromomethane
TB-001 (ug/gm)	25 gms.	60	ND	ND	ND	55	ND	ND	ND	ND
TB-004B (ug/gm)	25 gms.	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB-011 (ug/gm)	25 gms.	ND	360	910	90	ND	100	ND	ND	ND
MDL (ug/gm)		50	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

ND = Not Detected.
MW = Monitoring Well Sample
B = Bore Hole Sample.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

SOIL SAMPLE ANALYTICAL RESULTS

Metals	Depth	Arsenic	Barium	Copper	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Zinc
Bore Hole/Well		(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
B-1001	5-6'	3,000	54,000	24,100	40	20	5,600	ND	1,600	ND	29,100
B-1002	7.5-9'	2,300	59,000	16,000	40	10,200	4,700	ND	800	ND	23,100
B-2001	2.5-4'	2,400	75,000	24,700	580	8,800	77,800	ND	1,000	ND	15,400
B-2002	7.5-9'	2,500	7,100	7,000	60	5,700	2,500	ND	500	5	13,200
B-3001	10-11.5'	1,300	NA	9,500	30	4,100	1,200	ND	300	ND	14,100
B-3002	15-16.5'	1,300	11,000	10,100	40	4,300	1,300	ND	30	10	14,700
B-4001	7.5-9'	2,600	38,000	8,800	80	8,600	5,500	ND	1,100	5	26,200
B-4001 Dup.	7.5-9'	1,400	29,000	9,300	40	6,700	2,200	ND	300	ND	18,500
B-4002	12.5-14'	2,700	NA	15,500	50	8,200	2,000	ND	400	ND	15,200
MW-5001	0-1.5'	2,800	38,000	35,500	140	24,400	8,200	ND	1,100	ND	44,500
MW-5002	4.5-6'	2,200	27,000	14,700	30	17,200	3,700	ND	400	ND	20,100
B-12/MW-8001A (RMT)	0-2'	1,100	22,000	14,000	<1100	8,500	1,900	<110	<330	<1100	29,000
B-12/MW-8001A (WWA)	0-2'	1,200	NA	587,600	230	12,300	5,400	ND	380	5,500	28,800
B-12/MW-8001B (WWA)	0-2'	800	NS	364,900	170	10,100	4,700	ND	220	1,500	24,000
B-12/MW-8002	12-14'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-12/MW-8003 (RMT)	10-12'	NA	14,000	NA	NA	NA	NA	NA	NA	NA	NA
TB-002 (ug/L)		1	NA	4	0.6	1	ND	ND	2	ND	20
TB-003 (ug/L)		NA	<50	NA	NA	NA	NA	NA	NA	NA	NA
TB-005 (ug/L)		1	<50	7	0.9	1	2	ND	2	ND	20
MDL (ug/Kg)		1	200	25	0.2	50	3	100	5	0.5	1000

ND = Not Detected.
NA= Not Analyzed.
B = Bore Hole Sample.
MW = Monitoring Well Sample.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

SOIL SAMPLE ANALYTICAL RESULTS

Concentrations as TEF Equivalence adjusted in ng/Kg (Dry Weight).

CHLORINATED DIOXINS AND FURANS

Bore Hole	Depth	TEF adjusted Conc.	TEF adjusted EQL
B-4 (Duplicate)	7.5-9'	561 ng/Kg	0.026 ng/Kg

ng/Kg = ppTrillion

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

SOIL SAMPLE ANALYTICAL RESULTS

CHLORINATED DIOXINS AND FURANS

Bore Hole	Depth	Absolute Conc. (ng/Kg)	Absolute EQL
B-4 (Duplicate)	7.5-9'	(Conc. NOT TEF adjusted.)	(ng/Kg)
2378-TCDF (E)		ND	8.2
Total TCDF		13	-
2378-TCDD		ND	1.4
Total TCDD		22	-
12378-PeCDF (E)		ND	97
23478-PeCDF		38	-
Total PeCDF		640	-
12378-PeCDD		39	-
Total PeCDD		210	-
123478-HxCDF (E)		ND	1500
123678-HXCDF		140	-
234678-HXCDF		240	-
123789-HXCDF		200	-
Total HxCDF		7,400	-
123478-HxCDD		94	-
123678-HxCDD		860	-
123789-HxCDD		180	-
Total HxCDD		3,000	-
1234678-HpCDF		4,300	-
1234789-HpCDF		550	-
Total HpCDF		20,000	-
1234678-HpCDD		18,000	-
Total HpDD		28,000	-
Total OCDF		13,000	-
Total OCDD (S)		110,000	-
Total Dioxins & Furans		208,533	

ND = Not Detected
E = PCDPE Interference
S = Saturated Signal
ng/Kg = ppTrillion

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

SOIL SAMPLE ANALYTICAL RESULTS
Concentrations in ug/Kg (Dry Weight)

CHLORINATED PHENOLS		2,3,4,6-Tetra-chlorophenol	2,4,6-Tri-chlorophenol	2,4-Dichloro-phenol	2-Chlorophenol	
Bore Hole/Well	Depth	Conc. (ug/Kg)	Conc. (ug/Kg)	Conc. (ug/Kg)	Conc. (ug/Kg)	EQL
B-1001	5-6'	NA	NA	NA	NA	
B-1002	7.5-9'	ND (<5200)	ND	ND	ND	2600
B-2001	2.5-4'	NA	NA	NA	NA	
B-2002	7.5-9'	NA	NA	NA	NA	
B-3001	10-11.5'	NA	NA	NA	NA	
B-3002	15-16.5'	NA	NA	NA	NA	
B-4001	7.5-9'	NA	NA	NA	NA	
B-4001 Dup.	7.5-9'	NA	NA	NA	NA	
B-4002	12.5-14'	NA	NA	NA	NA	
B-4003	17.5-19'	NA	NA	NA	NA	
MW-5001	0-1.5'	NA	NA	NA	NA	
MW-5002	4.5-6'	ND (<770)	ND	ND	ND	380
MW-6001	5-6.5'	NA	NA	NA	NA	
MW-6002	10-11.5'	NA	NA	NA	NA	
B-7001	7.5-9'	NA	NA	NA	NA	
B-7002	15-16.5'	NA	NA	NA	NA	
B-12/MW-8001A	0-2'	NA	NA	NA	NA	
B-12/MW-8001B	0-2'	NA	NA	NA	NA	
B-12/MW-8002	12-14'	NA	NA	NA	NA	
B-12/MW-8003	10-12'	NA	NA	NA	NA	
B-8001	5-6.5'	NA	NA	NA	NA	
B-8002	20-21.5'	NA	NA	NA	NA	
B-9001	2.5-4'	NA	NA	NA	NA	
B-9002	15-16.5'	NA	NA	NA	NA	
B-10001A	5-6.5'	NA	NA	NA	NA	
B-10002A	7.5-9'	NA	NA	NA	NA	
B-11001	3.5-5'	NA	NA	NA	NA	
B-11002	11.5-13'	NA	NA	NA	NA	
TB-005	TRIP BLK.	ND (<20)	ND	ND	ND	10

ND = Not Detected.
NA= Not Analyzed.
B = Bore Hole Sample.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

GROUNDWATER SAMPLE ANALYTICAL RESULTS
Concentrations in ug/L (ppb).

PENTACHLOROPHENOL

Groundwater Wells	Concentration (ug/L)
GW-1001	0.18
GW-2001	ND
GW-3001	0.12
GW-4001	ND
GW-5001	0.12
GW-6001	1,300
GW-7001	960
GW-7001 DUP.	1,500
GW-8001	2.5
GW-8001 DUP.	3.3
TB-103	ND
FB-106	ND
MDL (ug/L)	0.05

ND = Not Detected.
GW = Groundwater Sample.
NS = Not Sufficient Sample.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

GROUNDWATER SAMPLE ANALYSIS
Concentration in ug/L (ppb)
Polynuclear Aromatic Hydrocarbons

		Naphthalene	Acenaphthalene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	EQL	Total PAH
Groundwater Wells																			
GW-1001		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND
GW-2001		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND
GW-3001		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	21	ND
GW-4001		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND
GW-5001		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND
GW-6001		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND
GW-7001		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	21	ND
GW-7001 DUP.		ND	ND	ND	ND	31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	31
GW-8001		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND
GW-8001 DUP.		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND
TB-103	Trip Blk.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND
FB-106	Field Blk.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	ND

ND = Not Detected.
GW = Groundwater Sample.
EQL = Estimated Quantitation Limit.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

GROUNDWATER SAMPLE ANALYTICAL RESULTS
VOLATILE ORGANIC CHEMICALS (ug/L, ppb)

		Methylene Chloride	Benzene	1,2-Dichloroethane	Toluene	Chlorobenzene	Ethylbenzene	1,1,1-Trichloroethane	m/p-Xylene	o-Xylene	Styrene	Isopropylbenzene	n-Propylbenzene	Bromobenzene	1,3,5- Trimethylbenzene	t-Butylbenzene	1,2,4-Trimethylbenzene	s-Butylbenzene	p-Isopropylbenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	n-Butylbenzene	1,2-Dichlorobenzene	1,2,4-Trichlorobenzene	Hexachlorobutadiene	Naphthalene	1,2,3-Tichlorobenzene
Groundwater Wells																											
GW-1001A		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	1	ND	ND	1	14	ND
GW-1001B		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	1	ND	ND	ND	13	ND
GW-2001A		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GW-2001B		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GW-3001A		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GW-3001B		ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND
GW-4001A		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GW-4001B		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GW-5001A		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GW-5001B		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND
GW-6001A		ND	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	1	ND	4	ND	ND	ND	ND	3	ND	ND	ND	13	ND
GW-6001B		ND	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	1	ND	3	ND	ND	ND	ND	2	ND	ND	ND	12	ND
GW-7001A		ND	ND	ND	1	ND	ND	ND	ND	2	ND	ND	ND	ND	2	ND	5	ND	ND	ND	ND	4	ND	ND	1	16	2
GW-7001B		ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	2	ND	5	ND	ND	ND	ND	4	ND	ND	ND	16	1
GW-7001C		ND	ND	ND	ND	ND	ND	3	ND	2	ND	ND	ND	ND	1	ND	4	ND	ND	ND	ND	3	ND	ND	ND	8	ND
GW-7001D		ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	1	ND	4	ND	ND	ND	ND	4	ND	ND	ND	13	ND
GW-8001A		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GW-8001B		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GW-8001C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GW-8001D		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB-100	Trip Blk.	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TB-101	Trip Blk.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-104	Field Blk.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FB-105	Field Blk.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MDL (ug/L)		10	0.5	0.5	0.5	1	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	1	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	1	0.5

ND = Not Detected.
GW = Groundwater Sample.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

GROUNDWATER SAMPLE ANALYTICAL RESULTS

Metals		Arsenic	Barium	Copper	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Zinc
Groundwater Wells		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
GW-1001	WELL - 1	3	95	ND	ND	ND	ND	ND	2	ND	23
GW-2001	WELL - 2	ND	ND	ND	0.1	2	2	ND	ND	ND	ND
GW-3001	WELL - 3	ND	ND	1	0.2	ND	1	ND	ND	ND	13
GW-4001	WELL - 4	ND	690	ND	ND	3	ND	ND	ND	ND	7
GW-5001	WELL - 5	ND	ND	4	0.1	ND	2	ND	ND	ND	ND
GW-6001	WELL - 6	ND	ND	3	0.2	ND	ND	ND	ND	ND	ND
GW-7001	WELL - 7	ND	ND	ND	0.1	ND	3	ND	ND	ND	ND
GW-7001 DUP.	WELL - 7	ND	ND	1	0.2	ND	1	ND	ND	ND	1
GW-8001	WELL - 8	2	ND	1	0.1	2	2	ND	ND	ND	4
GW-8001 DUP.	WELL - 8	ND	ND	2	0.1	2	2	ND	ND	ND	17
TB-102	Trip Blank	ND	NA	ND	0.2	ND	1	0.3	ND	ND	ND
TB-104	Trip Blank	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA
FB-102	Field Blank	ND	NA	ND	0.2	ND	ND	ND	ND	ND	ND
FB-103	Field Blank	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA
MDL (ug/L)		1	50	1	0.1	1	1	0.2	2	0.2	5

ND = Not Detected.
NA= Not Analyzed.
GW = Groundwater Sample.

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

GROUNDWATER SAMPLE ANALYTICAL RESULTS

Concentrations as TEF Equivalence adjusted in ng/L.

CHLORINATED DIOXINS AND FURANS

Groundwater Well	TEF adjusted Conc.	TEF adjusted EQL
GW-6001 *		
GW-7001	2.6 ng/L	0.0057 ng/L
GW-7001 DUP.	2.1 ng/L	0.0057ng/L

* = Sample has been extracted and is held in cold storage.
ng/L = ppTrillion

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

GROUNDWATER SAMPLE ANALYTICAL RESULTS

CHLORINATED DIOXINS AND FURANS

Groundwater Well GW-7001	Absolute Conc. (ng/L) (Conc. NOT TEF adjusted.)	Absolute EQL (ng/L)
2378-TCDF (E)	ND	0.2100
Total TCDF (E)	0.2700	-
2378-TCDD	ND	0.0057
Total TCDD	ND	-
12378-PeCDF	0.7100	-
23478-PeCDF	0.7400	-
Total PeCDF (E)	4.2000	-
12378-PeCDD	0.0220	-
Total PeCDD	0.0540	-
123478-HxCDF	3.2000	-
123678-HXCDF	1.1000	-
234678-HXCDF	1.7000	-
123789-HXCDF	2.5000	-
Total HxCDF (E)	32.0000	-
123478-HxCDD	0.0290	-
123678-HxCDD	3.0000	-
123789-HxCDD	0.2100	-
Total HxCDD	6.4000	-
1234678-HpCDF	19.0000	-
1234789-HpCDF	2.1000	-
Total HpCDF (E)	80.0000	-
1234678-HpCDD	59.0000	-
Total HpDD	95.0000	-
Total OCDF	46.0000	-
Total OCDD (S)	190.0000	-
Total Dioxins & Furans	547.4507	

ND = Not Detected
E = PCDPE Interference
S = Saturated Signal
ng/L = ppTrillion

PRELIMINARY DATA

C.M. CHRISTIANSEN Co.
Phelps, Wisconsin

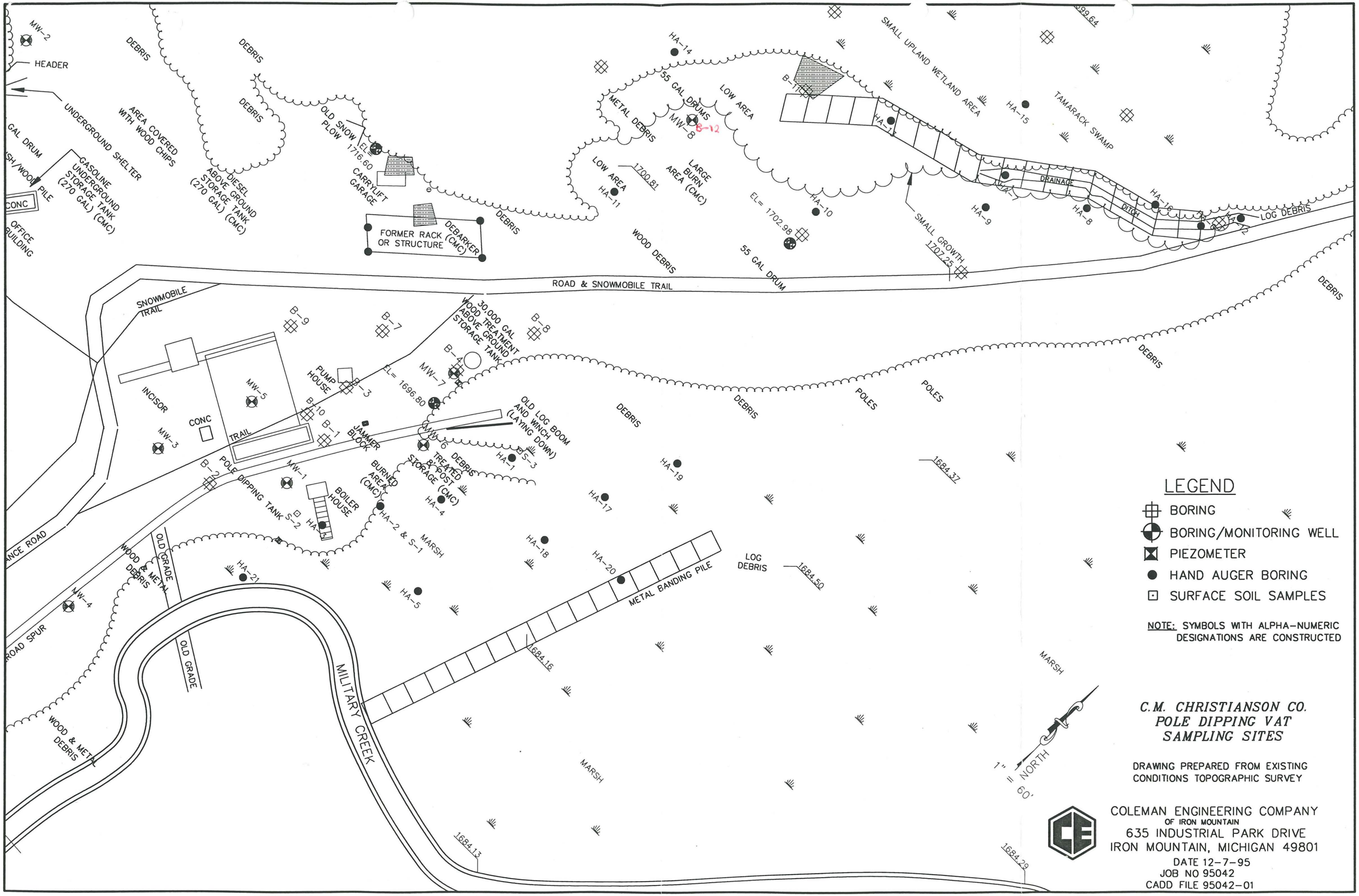
GROUNDWATER SAMPLE ANALYTICAL RESULTS

CHLORINATED DIOXINS AND FURANS

Groundwater Well GW-7001 DUPLICATE	Absolute Conc. (ng/L) (Conc. NOT TEF adjusted.)	Absolute EQL (ng/L)
2378-TCDF (E)	ND	0.1500
Total TCDF (E)	0.3800	-
2378-TCDD	ND	0.0042
Total TCDD	0.0032	-
12378-PeCDF	1.2000	-
23478-PeCDF	0.4100	-
Total PeCDF (E)	3.5000	-
12378-PeCDD	0.0240	-
Total PeCDD	0.1600	-
123478-HxCDF	3.5000	-
123678-HXCDF	0.8100	-
234678-HXCDF	1.4000	-
123789-HXCDF	2.0000	-
Total HxCDF (E)	48.0000	-
123478-HxCDD	0.0410	-
123678-HxCDD	2.4000	-
123789-HxCDD	0.2100	-
Total HxCDD	5.3000	-
1234678-HpCDF	15.0000	-
1234789-HpCDF	1.7000	-
Total HpCDF (E)	64.0000	-
1234678-HpCDD	45.0000	-
Total HpDD	71.0000	-
Total OCDF	37.0000	-
Total OCDD (S)	180.0000	-
Total Dioxins & Furans	483.1924	

ND = Not Detected
E = PCDPE Interference
S = Saturated Signal
ng/L = ppTrillion

PRELIMINARY DATA



LEGEND

- BORING
- BORING/MONITORING WELL
- PIEZOMETER
- HAND AUGER BORING
- SURFACE SOIL SAMPLES

NOTE: SYMBOLS WITH ALPHA-NUMERIC DESIGNATIONS ARE CONSTRUCTED

C.M. CHRISTIANSON CO. POLE DIPPING VAT SAMPLING SITES

DRAWING PREPARED FROM EXISTING CONDITIONS TOPOGRAPHIC SURVEY

COLEMAN ENGINEERING COMPANY
OF IRON MOUNTAIN
635 INDUSTRIAL PARK DRIVE
IRON MOUNTAIN, MICHIGAN 49801

DATE 12-7-95
JOB NO 95042
CADD FILE 95042-01