

# CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: December 7, 2015

TO: Wisconsin Licensed Well Drillers

FROM: Liesa Lehmann, Private Water Supply Section Chief  
Bureau of Drinking Water and Groundwater



SUBJECT: **SPECIAL WELL CASING PIPE DEPTH AREA**

Manitowoc City / Former Newton Town Gravel Pit and surrounding area:  
Including parts of Sections 1 and 2, Town of Newton and parts of Sections 35 and 36,  
City of Manitowoc, Manitowoc County

A "Special Well Casing Pipe Depth Area" is hereby established for the area including and surrounding the City of Manitowoc Newton Gravel Pit described in detail below. Within this area new wells shall be constructed, or existing wells reconstructed, to more stringent standards. In addition, a water sample shall be collected from each newly constructed or reconstructed well and the sample shall be analyzed at a certified laboratory for Volatile Organic Compounds, as indicated below.

**EFFECTIVE DATE:** This "Special Well Casing Pipe Depth Area" is effective December 15, 2015.

## **LOCATION**

This "Special Well Casing Pipe Depth Area" includes an area approximately 2 square miles in extent and includes parts of four land survey sections, and is shown on the attached map. The area is located southwest of the City of Manitowoc, adjacent to and surrounding the Manitowoc City / Former Town of Newton Gravel Pit located at 3130 Hecker Road in the Town of Newton. The area contains portions within the Town of Newton and the City of Manitowoc and includes the following:

### **Town of Newton - T18N-R23E**

#### **Section 1**

- N 1/2
- SW 1/4

#### **Section 2**

- E 1/2
- S 1/2 of NW 1/4
- E 1/2 of SW
- NW 1/4 of the SW 1/4

### **City of Manitowoc - T19N-R23E**

#### **Section 35**

- SE 1/4 of the SE 1/4

#### **Section 36**

- SW 1/4 of the SW 1/4
- SE 1/4 of the SW 1/4
- SE 1/4 of the SE 1/4
- SW 1/4 of the SE 1/4

## **JUSTIFICATION**

This "Special Well Casing Pipe Depth Area" is established to reduce the risk of wells constructed or reconstructed within this area to produce water contaminated with chemical compounds. This area is established under the authority provided by section NR 812.12(3), Wis. Admin. Code, and is based on the following information:

1. Vinyl chloride and cis-1,2-Dichloroethylene (DCE) and other Volatile Organic Compounds have been found in water samples from private supply wells and from monitoring wells in the area near the Manitowoc City / Former Newton Town Gravel Pit.
2. NR 140, Wis. Adm. Code establishes the following drinking water standards:
  - Vinyl chloride: Enforcement Standard = 0.2 ug/L, Preventative Action Limit = 0.02 ug/L
  - DCE: Enforcement Standard = 70.0 ug/L, Preventative Action Limit = 7.0 ug/L
  - 1,2-Dichloroethane: Enforcement Standard = 5.0 ug/L, Preventative Action Limit = 0.5 ug/L

3. Of approximately 100 wells sampled, 15 have exceeded the Enforcement Standard for Vinyl Chloride, 3 wells exceeded a PAL for DCE and/or DCA, and 14 had detects of other chlorinated solvents. The highest concentration of vinyl chloride found in a private well was 102 ug/L.
4. Chlorinated solvent contamination has been detected both in gravel wells and in bedrock wells up to 200 feet deep.
5. The plume of contaminants has migrated in both the surficial aquifer and bedrock to the east northeast over a mile from the site.
6. The establishment of this "Special Well Casing Pipe Depth Area" is based on contamination of the groundwater in this area, primarily by vinyl chloride and cis-1,2-Dichloroethylene (DCE). Both of these chemicals are Volatile Organic Compounds (VOCs). These compounds have been found in the groundwater of both the unconsolidated surficial aquifer and the limestone bedrock aquifer in this area.

#### **NEW WELL CONSTRUCTION & GROUTING REQUIREMENT SPECIFICATIONS**

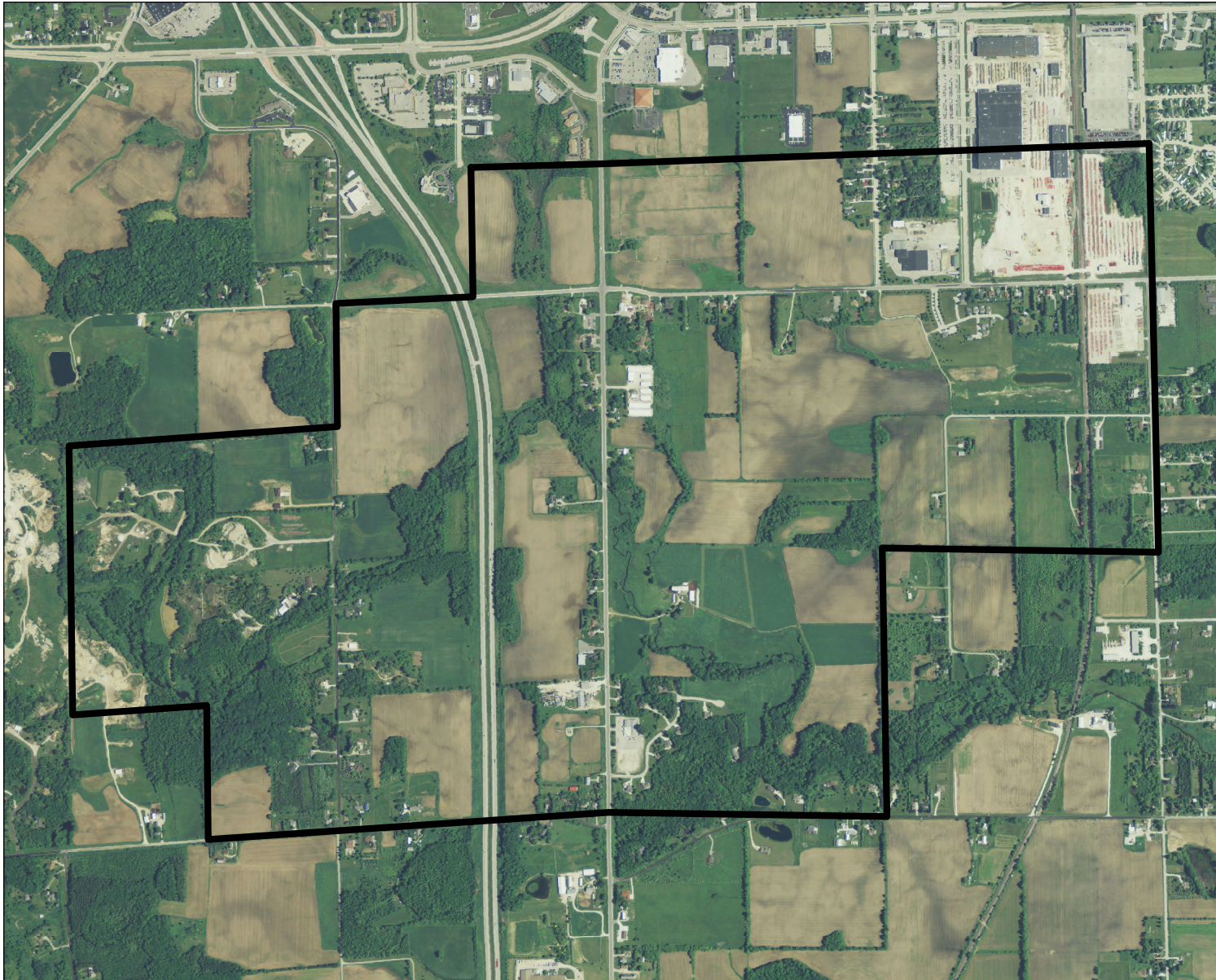
Any new well construction, or existing well reconstruction, within this area on or after the effective date shall be constructed with the following specifications:

1. The well shall be cased and cement-grouted to a minimum depth of **275 feet**, and set to a firm seat in competent bedrock.
2. For these 6-inch diameter wells, the upper-enlarged drillhole (UED) shall have a minimum diameter of 10 inches.
3. The UED may be constructed using rotary-air, rotary mud-circulation or cable-tool methods. If rotary mud-circulation methods are used the diameter of the UED may be reduced to 8 ¾ inches, but the mud pit shall have a volume large enough to provide for efficient removal of drill cuttings. This volume is typically three times the total volume of the hole to be drilled. In addition, a centrifuge sand separator shall be installed with the mud circulation system to remove sand-sized drill cuttings.
4. If rotary mud-circulation methods are used, the water used to mix the drilling mud slurry shall have a pH between 7 and 8.5. If the pH is below 7 it shall be slowly treated with soda ash to achieve a pH within the acceptable range.
5. For cement grouting the annular space a grout shall be ordered from a commercial concrete company, be ordered free of aggregate and shall have a slurry density of at least 15.2 lbs./gallon, but preferably a density of 15.6 lbs./gallon. The grout density shall be measured with a mud balance at the grout pump hopper before being pumped. The grout shall be adequately screened to remove any unexpected aggregate before it enters the grout pump hopper.
6. The cement grout shall be pumped into the annular space using either the "Bradenhead" or "Grout Shoe" method and the grouting operation shall be done in a manner according to the requirements of s. NR 812.20, Wis. Adm. Code.
7. At completion of the grouting procedure, the grout shall flow out the top of the annular space with the same density as the grout being pumped from the hopper and shall have a density of at least 15.2 lbs./gal. The grout density shall have a density of at least 15.2 lbs./gal. The grout density shall be measured with a mud balance.
8. The cement grout shall be allowed to set for at least 24 hours before construction of the lower bedrock drillhole is commenced. Any new water supply well constructed or an existing water supply well reconstruction shall be sampled within 30 days of completion and tested for volatile organic compounds (VOCs) using EPA Method 502.2 or 524.2 with all results forwarded to the DNR. The cost of sampling is a responsibility of the well owner unless other parties volunteer or are ordered by DNR to sample.

Newton Gravel Pit, Manitowoc County  
Special Well Casing Depth Area

Portions of Sec. 1 and Sec. 2, T18N R23E and Portions of Sec. 35 and Sec. 36, T19N R23E

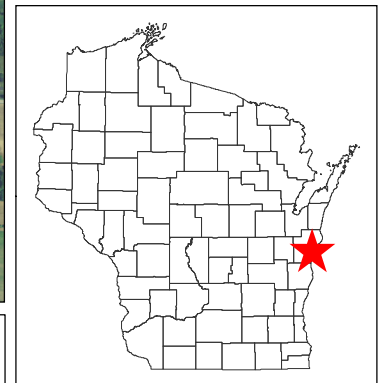
February 5, 2015



 Special Area  
Boundary

Refer to the attached  
document:

Well Construction  
Specifications,  
Replacement Wells,  
Newton Gravel Pit  
Special Well  
Casing Depth Area



The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. Users of these maps should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness or legality of the information depicted on this map.

State of Wisconsin  
DEPARTMENT OF NATURAL RESOURCES  
101 S. Webster Street  
Box 7921  
Madison WI 53707-7921

Scott Walker, Governor  
Cathy Stepp, Secretary  
Telephone 608-266-2621  
Toll Free 1-888-936-7463  
TTY Access via relay - 711



December 7, 2015

Parcel ID: 1400200100300

ANGELBECK BRADLEY E & CHERIK  
2231 CHADWICK WAY  
MUNDELEIN IL 60060

Subject: Special Well Casing Pipe Depth Area, Town of Newton and  
City of Manitowoc, Manitowoc County

The Department of Natural Resources (department) is establishing a Special Well Casing Pipe Depth Area, in response to groundwater contamination in the Town of Newton, Manitowoc County. This letter is sent to you because you are listed as a landowner within this area.

Special Well Casing Pipe Depth Areas are identified geographic areas where wells are required to have specific casing depths and/or be constructed in a specific manner. Special Well Casing Pipe Depth Areas are authorized by NR 812.12(3), Wis. Adm. Code, and are intended to provide additional protection from a known contaminant or in areas where the geology is highly susceptible to groundwater contamination, when new wells are constructed.

The new Special Well Casing Pipe Depth Area for the parts of the Town of Newton and City of Manitowoc is shown on the attached map. Well sampling is occurring around the City of Manitowoc Newton Gravel Pit. Groundwater contamination is being monitored and remediation efforts are under way. So far, six wells have been replaced, nine wells will be connected to the municipal water system and four wells are expected to be replaced and/or permanently filled and sealed.

To protect future wells and well owners, and to minimize the risk of further migration of the contamination, special well construction requirements will apply to any new or reconstructed wells that will be constructed within the area boundary as shown on the attached map. This will require that new or reconstructed wells be constructed with deeper well casing pipe, and constructed with stricter protocols, than the minimum requirements in state well code. Attached is a summary of the justification and construction specifications, which will be sent to all area well drillers. Please note that establishing this Special Well Casing Pipe Depth Area does not require you to replace the well you are using now. It applies to any new or reconstructed wells constructed within the area.

If you have any question about the Special Well Casing Pipe Depth Area, contact Liz Heinen, DNR Private Water Specialist, at (920) 993-7056.

Sincerely,

Liesa Lehmann  
Private Water Supply Section Chief  
Bureau of Drinking Water and Groundwater  
(608) 267-7649

cc: Liz Heinen, DNR-Appleton

## Newton Gravel Pit

ParcelID#	Owner Name	Street Address	City, State	Zip
01400100300200	ALTERGOTT EMILY % ALEX AUGUSTINE	3515 ORCHARD LANE	MANITOWOC WI	54220-0000
01400200100300	ANGELBECK BRADLEY E & CHERIK	2231 CHADWICK WAY	MUNDELEIN IL	60060-0000
01400201300300	ANHALT CHAD J	3224 CTH CR	MANITOWOC WI	54220-0000
05280110101000	ATS SPECIALIZED INC	725 OPORTUNITY DR	SAINT CLOUD MN	56301
01400100100601	ATS SPECIALIZED INC	PO BOX 1377	ST CLOUD MN	56302-1864
01400101200300	AUKAMP RICHARD J & SUSAN J	3802 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
05283640302000	BACKHAUS ERIC J	2407 S 35TH ST	MANITOWOC WI	54220
05283630405000	BAUMANN HENRY S	2440 S 35TH ST	MANITOWOC WI	54220
01400101200200	BENTS GARY E & ANN M	3518 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
05280120203000	BEY SHERYL L	4025 VIEBAHN ST	MANITOWOC WI	54220
01400100300300	BIRINGER BRENDA	3027 ORCHARD LANE	MANITOWOC WI	54220-0000
05280110103000	BLANCHARD DEREK E	2913 VIEBAHN ST	MANITOWOC WI	54220
01400201200200	BREUNIG RICHARD V & CYNTHIA M	3504 COUNTY ROAD CR	MANITOWOC WI	54220-0000
05280110105000	CANTU MANUEL & SUSAN	2907 VIEBAHN ST	MANITOWOC WI	54220
01400201600101	COMCAST CORPORATION	ONE COMCAST CENTER	PHILADELPHIA PA	19103-0000
01400200400100	CR VENTURE LLC	3504 CTH CR	MANITOWOC WI	54220-0000
01400100600400	EBERHARDT JAMES H & CAROL A	2911 CTH CR	MANITOWOC WI	54220-0000
01400100700100	EBERHARDT RONALD A & CORINNA M	3023 CTH CR	MANITOWOC WI	54220-0000
01400100400600	FISHER THOMAS W	1725 VIEBAHN STREET	MANITOWOC WI	54220-0000
05283540101000	FOREST CREEK LLC	100 MARITIME DR STE	MANITOWOC WI	54220
01400102000000	FOX VALLEY & WESTERN	ONE O'HARE CENTRE	ROSEMONT IL	60017-0000
01400101100400	GADZINSKI STEVEN R	3611 CTH CR	MANITOWOC WI	54220-0000
01400101101900	GENTILE REVOC TRUST MATTHEW K & NOELLE N	4010 THUNDER RIDGE ROAD	MANITOWOC WI	54220-0000
01400201500500	GRUMANN ET AL CAROL	4752 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
01400201600400	GRUNEWALD JANET	4212 SILVER CREEK RD	MANITOWOC WI	54220-0000
01400201300400	GUETSCHOW GLEN R	3312 CO CR	MANITOWOC WI	54220-0000
01400101100300	GUY & RICK PROPERTIES LLC	3627 CTH CR	MANITOWOC WI	54220-0000
05283630401100	HALL JOSEPH	2414 S 35TH ST	MANITOWOC WI	54220
01400101100700	HANSON JONATHAN M & TIFFANY L	3902 SILVER CREEK RD	MANITOWOC WI	54220-0000
01400101100200	HARDOW MICHAEL J % JOHN & DIANNE MONKA	3523 CTH CR	MANITOWOC WI	54220-0000
01400101100500	HARDOW MICHAEL J	3533 CTH CR	MANITOWOC WI	54220-0000
01400100600600	HAUPT ET UX JEROME E	2717 CTH CR	MANITOWOC WI	54220-0000
01400100600300	HENNEMAN JR TIMOTHY J	3815 VIEBAHN STREET	MANITOWOC WI	54220-0000
01400200100302	HER NYAJTOUA	838 S 37TH ST	MILWAUKEE, WI	53215
01400200100500	HINTZ LUANN LUEBKE	2916 S CTH CR	MANITOWOC WI	54220-0000
01400201300500	HYDE SCOTT A	3322 CTH CR	MANITOWOC WI	54220-0000
05283640301000	IGNERA ROBERT	2405 S 35TH ST	MANITOWOC WI	54220
05283630403000	JACQUART JAMES F	850 LAWTON TER	MANITOWOC WI	54220
01400201500300	KADERABEK JASON J & MELLISA K	3625 HECKER ROAD	MANITOWOC WI	54220-0000
01400100601000	KAKATSCH JR LAWRENCE & DEBRA	3825 VIEBAHN STREET	MANITOWOC WI	54220-0000
01400101200100	KAUTH CHARLES & LINDA L	3780 SILVER CREEK RD	MANITOWOC WI	54220-0000
05283640306000	KEMPFERT ET AL LAURA	2501 S 35TH ST	MANITOWOC WI	54220
01400100400300	KENNEDY PATRICK T & TAMMY J	3021 S 26TH ST	MANITOWOC WI	54220-0000
01400201300200	KNIER MARY S % ROBERT FLAIM	3618 CTH CR	MANITOWOC WI	54220-0000
05280110104000	KOPIDLANSKY JAY P	2911 VIEBAHN ST	MANITOWOC WI	54220
05283630402000	KRAEMER ANTHONY & POLLY	2422 S 35TH ST	MANITOWOC WI	54220
01400201200500	LALLENSACK ALLAN E	4904 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
01400100800100	LCR DEVELOPMENT LLC	2435 W PROSPECT AVE	APPLETON WI	54915-3716
01400200800100	LEIKER CHARLES W & SANDRA L	3114 HECKER RD	MANITOWOC WI	54220-0000
05280110203000	LINDHOLM DAVID A	3109 VIEBAHN ST	MANITOWOC WI	54220
01400101101100	LINSMEIER HOWARD & SHAWN	4027 THUNDER RIDGE ROAD	MANITOWOC WI	54220-8873
01400100601200	LOK-SAFE LLC	PO BOX 28133	GREEN BAY WI	54324-0000
01400201400300	LONZO-SKARDA DANA M	3150 S STONEGATE CIRCLE	NEW BERLIN WI	53151-0000
01400101101000	MAES JEREMY A & JESSICA B	4101 THUNDER RIDGE ROAD	MANITOWOC WI	54220-0000
01400201500100	MALONEY THOMAS & LORI	4620 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
01400200900100	MANCHESKI JR ET UX JOSEPH	3320 HECKER ROAD	MANITOWOC WI	54220-0000
01400200300200	MANCHESKI JR JOSEPH	3302 HECKER ROAD	MANITOWOC WI	54220-0000
05283540102300	MANITOWOC CINEMA LLC	100 MARITIME DR SUITE 3C	MANITOWOC WI	54220
05280110205000	MANITOWOC CITY OF	900 QUAY ST	MANITOWOC WI	54220
05283630301000	MANITOWOC CO INC	PO BOX 66	MANITOWOC WI	54221
01400200300100	MANITOWOC COUNTY (COUNTY HOSPITAL)	1010 S 8TH ST	MANITOWOC WI	54220-0000
05283640103000	MANITOWOC CRANES LLC	2401 S 30TH ST	MANITOWOC WI	54221
05283640102000	MANITOWOC FSG OPERATIONS INC	2110 S 26TH ST	MANITOWOC WI	54221
01400100601100	MAURER BRIAN L	3817 VIEBAHN STREET	MANITOWOC WI	54220-0000
01400101101800	MCFARLANE MATTHEW	4002 THUNDER RIDGE RD	MANITOWOC WI	54220-0000
05283630407000	MENDEZ JUAN JR & MADELENE	2502 S 35TH ST	MANITOWOC WI	54220
01400101100900	MESSMAN KURT M & MARTINA	4111 THUNDER RIDGE ROAD	MANITOWOC WI	54220-0000
01400101200400	MILLEN MICHAEL G & SHERRY L	3812 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
01400201400400	MILLER EDWARD G & LINDA M	3327 HECKER ROAD	MANITOWOC WI	54220-0000
01400200800300	MONKA STEVE & JEAN	3018 HECKER ROAD	MANITOWOC WI	54220-0000
01400100400400	MOORE ROBERT L & ANITA	3008 S 26TH STREET	MANITOWOC WI	54220-0000
01400201600501	NELSON ET UX JEFFREY P	3626 CTH CR	MANITOWOC WI	54220-0000
01400201300700	NELSON JEFFREY P	3422 CO CR	MANITOWOC WI	54220-0000
05283640305000	NELSON MICHAEL	2427 S 35 ST	MANITOWOC WI	54220
01400100100800	NOVY STEVEN L & DEBORAH J	2918 S 26TH STREET	MANITOWOC WI	54220-0000
01400201500200	ORP REAL ESTATE HOLDINGS	1746 EXECUTIVE DRIVE	OCONOMOWOC WI	53066-0000
01400100500400	PHILLIP KENNETH J	3701 VIEBAHN STREET	MANITOWOC WI	54220
05283640303000	PLACE WILLIAM J	2413 S 35TH ST	MANITOWOC WI	54220
01400201600600	POPP RONALD C & JOANNE L	4220 SILVER CREEK ROAD	MANITOWOC WI	54220-0000

01400201300100	PRIORITY IAC INC	3504 CTH CR	MANITOWOC WI	54220-0000
01400201600100	PROWLS KRISTEN M	3904 CTH CR	MANITOWOC WI	54220-0000
01400201600500	RADEY AL	3626 CO CR	MANITOWOC WI	54220-0000
01400100600200	RADZINSKE RICHARD C & RHONDA A	935 S 19TH STREET	MANITOWOC WI	54220-0000
01400200300300	RAETHER ET LIX ALLAN L	3121 HECKER ROAD	MANITOWOC WI	54220-0000
01400100300100	RATAJCZAK WILLIAM % BRENDA BIRRRINGER	3027 ORCHARD LANE	MANITOWOC WI	54220-0000
01400200100301	RATHSACK PAUL J	4722 W WHITETAIL	MANITOWOC WI	54220-8305
01400201000000	ROBERTS ANTHONY E & CATHERINE	5202 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
01400201400200	ROGERS MICHAEL D	3308 GASS LAKE RD	MANITOWOC WI	54220-0000
01400101101400	ROGERS STEVEN L & JENNIFER M	786 GARLAND RD	WATERVILLE MA	04901-0000
01400201500400	ROHR RANDY S	3627 HECKER ROAD	MANITOWOC WI	54220-0000
01400201300600	ROPP LOUISE E	3412 CTH CR	MANITOWOC WI	54220-0000
05283640304000	RYAN PATRICK C	2423 S 35TH ST	MANITOWOC WI	54220
05280120202000	SALTA RICK L	PO BOX 294	MANITOWOC WI	54221
01400100900000	SCHNUELLE FARMS LLC	S107 W36608 ANNICE LANE	EAGLE WI	53119-0000
01400101101500	SCHNUELLE JAMES M	3403 CTH CR	MANITOWOC WI	54220-0000
01400201500101	SCHRANK GARY E & DENISE	4752 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
01400201600300	SCHRANK JASON J % GARY & DENISE SCHRANK	4752 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
05280110203300	SCHWEDE JEFFREY D & BETTY L	3115 VIEBAHN ST	MANITOWOC WI	54220
05280120201000	SEHAFER BROADCASTING CORPORATION	3730 MANGIN ST	MANITOWOC WI	54220
05280110102000	SEIDLER JAMES & BARBARA	3011 VIEBAHN ST	MANITOWOC WI	54220
01400200400200	SHOOP JOHN C	3120 CO CR	MANITOWOC WI	54220-0000
05280110107000	SOBEL CHARLOTTE	2903 VIEBAHN ST	MANITOWOC WI	54220
01400200100400	THOMPSON GLORIA J	2904 CTH CR	MANITOWOC WI	54220-0000
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05280120105000	TREMBLEY JEROME	3617 VIEBAHN ST	MANITOWOC WI	54220
01400101101300	TULACH JEFFREY G & CATHI L	3921 BLACKHAWK COURT	MANITOWOC WI	54220-8869
05283630406000	UNDERWOOD-BONK KELLY M	406 EAGLE HEIGHTS #A	MADISON WI	53705
01400201600200	URBANEC ROBERT T	4314 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
05280110202000	VAN SHANNON M	3021 VIEBAHN ST	MANITOWOC WI	54220
01400100600500	VANNE RYAN L	2917 CTH CR	MANITOWOC WI	54220-0000
01400201600700	VOCKE THOMAS P & SUSAN M	4236 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
01400200100100	VOGEL ANTHONY L	4318 GOODWIN ROAD	MANITOWOC WI	54220-0000
01400201400100	VOGEL DENNIS R & KAREN A	3515 HECKER ROAD	MANITOWOC WI	54220-0000
01400200100200	VOGEL THOMAS J	2706 CTH CR	MANITOWOC WI	54220-0000
05283630401000	WAZNY CHERYL L	2406 S 35TH ST	MANITOWOC WI	54220
01400101101200	WEIER PATRICK & DEANNE	4005 THUNDER RIDGE ROAD	MANITOWOC WI	54220-0000
05280110108000	WISCONSIN CENTRAL LTD	1 ADMINISTRATION RD FLOOR 1	CONCORD ON	L4K
05280110201000	WOOLSEY CRYSTAL R	3015 VIEBAHN ST	MANITOWOC WI	54220
01400201200400	YINDRA LUANN M	3518 HECKER ROAD	MANITOWOC WI	54220-0000
01400201200100	ZIARNIK RANDALL J	4808 SILVER CREEK ROAD	MANITOWOC WI	54220-0000
01400101100100	ZIMMER PAUL J & ROSE E	4127 THUNDER RIDGE ROAD	MANITOWOC WI	54220-0000