TETRA TECH

October 20, 2010

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Subject: **Section 128(a) Assessment Report – Revision 01**
PCS Nitrogen, LaPlatte, NE
Contract No.: EES-2006-01
Task Assignment: TA-09-19A
IIS Number: 41270; Program ID No.: BF0010
Tetra Tech Project No.: S1552.0919A

Dear Mr. Felix:

Tetra Tech EM Inc. is submitting revision 01 of the Section 128(a) Assessment report for the PCS Nitrogen site in LaPlatte, Sarpy County, Nebraska based on comments received from the Nebraska Department of Environmental Quality on September 7, 2010.

If you have any questions or comments, please contact me at (816) 412-1788.

Sincerely,

Kathy Homer for

David A. Zimmermann, CHMM
Contract Administrator

Enclosures

cc: Michael Myers, NDEQ Project Manager
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File

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PCS NITROGEN
LAPLATTE, SARPY COUNTY, NEBRASKA
SECTION 128(A) ASSESSMENT

REVISION NO. 01

Prepared for

THE NEBRASKA DEPARTMENT
OF ENVIRONMENTAL QUALITY

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EXECUTIVE SUMMARY

The Nebraska Department of Environmental Quality (NDEQ) requested that Tetra Tech EM Inc., (Tetra Tech) conduct a Section 128(a) Assessment of the PCS Nitrogen site (site) in LaPlatte, Sarpy County, Nebraska. NDEQ requested the Section 128(a) Assessment under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA); and through a cooperative agreement with the U.S. Environmental Protection Agency (EPA). Tetra Tech received NDEQ Task Assignment No. TA-09-19A, Environmental Services Contract No. EES-2006-01, to provide this assistance.

The objective of this Section 128(a) Assessment was to (1) summarize groundwater elevation and analytical information obtained during a file review, (2) determine groundwater flow characteristics and (3) conduct sampling and analysis in order to identify potential impacts to private and public drinking water supplies. The assessment includes an evaluation of the potential of the former PCS Nitrogen site to impact private wells, the Sands Mobile Home Park, and City of Plattsmouth wells.

Based on groundwater elevation data provided by PCS Nitrogen, the Missouri River dominates the horizontal groundwater gradient. As measured in both the deep and shallow wells at the PCS facility, groundwater flows east or east-southeast toward the Missouri River, with a very minor component of flow south to the Platte River. The groundwater flow direction as indicated by the wellhead protection map for the Sands Mobile Home Park is southeast.

The data reviewed suggests that contaminated groundwater (nitrate) is likely migrating east and discharging into the Missouri River at concentrations below the Nebraska Title 117, standard of 10 milligrams per liter (mg/L) nitrate for surface waters that serve as a public drinking water supply and the agricultural use standard of 100 mg/L nitrate.

Based on the data provided and the resultant groundwater flow direction indicated, it is unlikely that the groundwater contamination at the former PCS Nitrogen facility would impact the residents living west of the former PCS Nitrogen facility or the MUD wellfield further west, or City of Plattsmouth wells located south of the Platte River.

The groundwater model indicates nitrates may have traveled offsite at concentrations exceeding a maximum contaminant level (MCL) in an area adjacent to LaPlatte Road to the north, and possibly to the south including a portion of the eastern part of the Gene Eppley Camp. Groundwater samples were collected from the Gene Eppley Camp well and one well to the north of the site along LaPlatte Road and

were below the MCL of 10 mg/L for nitrates. Groundwater samples were not collected at two additional wells located north of the site along LaPlatte Road because access was denied by the landowner.

According to the analytical results, none of the private or public water supply wells sampled exceeded the drinking water MCL of 10 mg/L for nitrates. However, several of the well samples had concentrations of nitrates just under 10 mg/L.

Based on the groundwater flow direction the most likely source for nitrates affecting the residents wells would be to the west or northwest of the wells. Common sources of nitrate contamination include septic systems, lawn and farmland fertilizers, animal wastes, municipal sewage treatment systems, and decaying plant debris.

The analyses for isotopes of groundwater samples collected from the Sands Mobile Home Park wells did not definitively indicate the source of nitrates. The occurrence of trace levels of the drug Carbamazepine suggests some portion the contamination identified may be from a septic system at the mobile home park.

Tetra Tech recommends that NDEQ request groundwater elevation data from PCS when PCS submits its quarterly groundwater monitoring data. The State could use the groundwater elevation and analytical data to complete additional modeling in order to evaluate the movement and potential impact of the groundwater contaminant plume beneath the former PCS Nitrogen facility.

1.0 INTRODUCTION

Tetra Tech EM Inc. (Tetra Tech) received Task Assignment No. TA-09-19A from the Nebraska Department of Environmental Quality (NDEQ) under Environmental Services Contract No. EES-2006-01 to provide assistance to NDEQ staff in Nebraska. Under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the NDEQ, through a cooperative agreement with the U.S. Environmental Protection Agency (EPA), was to conduct a Section 128(a) Assessment for the PCS Nitrogen site (site) in LaPlatte, Sarpy County, Nebraska (see Figure 1 in Appendix A).

The objective of this Section 128(a) Assessment was to (1) summarize groundwater elevation and analytical information obtained during a file review, (2) determine groundwater flow characteristics and (3) conduct sampling and analysis in order to identify potential impacts to private and public drinking water supplies. The assessment includes an evaluation of the potential of the former PCS Nitrogen site to impact private wells, the Sands Mobile Home Park, and City of Plattsmouth wells.

2.0 SITE DESCRIPTION

The following section describes the site, including its geology, hydrogeology, and lithology.

2.1 SITE LOCATION AND DESCRIPTION

The City of La Platte is located in Sarpy County, along the eastern border of Nebraska (see Appendix A, Figure 1), about 20 miles south of Omaha, Nebraska. The PCS site encompasses approximately 955 acres of land east of La Platte, Nebraska. The former nitrogen production facility at the site covers approximately 147 acres of land at the northwest corner of the property (see Appendix A, Figures 1 and 2). Several facility structures either have been or are being demolished because the property is slated for redevelopment. The site is bounded on the north by La Platte Road and agricultural land. To the northeast is a 33.98-acre parcel of land owned by IP Homeowners Inc., and developed with about 24 homes used as recreational properties or residences. To the east is the Missouri River. To the south is the Platte River. To the south-southwest is the Gene Eppley Camp, a campground owned by the Salvation Army. To the southwest is a trailer park known as Sands Mobile Home Park. To the west is a concrete casting plant.

The facility began operations in 1954 as a nitrogen fertilizer facility. According to the records review, the nitrogen fertilizer facility was owned and/or operated by several companies that manufactured the following products: ammonia, anhydrous ammonia, urea, solid urea, nitric acid, ammonium nitrate,

ammonium nitrate with micronutrients (NZN), uran, zinc nitrate, magnesium nitrate, carbon dioxide, and various fertilizer solutions at various times (EPA 1979, 1982; Tetra Tech 1998). The layout of the facility consisted of two ammonia synthesis trains, two nitric acid synthesis trains, a urea plant, and an ammonium nitrate plant and solutions production area (EPA 1998).

The site is depicted on the USGS 7.5-minute topographic map of the Plattsmouth, Nebraska-Iowa, quadrangle (USGS 1994) in the NE ¼, Section 26 and Section 25, Township 13 North, Range 13 East. A portion of the property also lies in the SW ¼, Section 30 and NW ¼, Section 31, Township 13 North, Range 13 East (see Appendix A, Figure 1). The approximate latitude and longitude coordinates of the center of the site near the urea production area are 41.07319° North and 95.91212333° West, respectively. Based on the topographic map, the property ranges from 930 to 965 feet above mean sea level. According to the topographic map, the topographic gradient of the area is generally flat, with a slight gradient to the southeast toward the Platte River (USGS 1994).

2.2 GEOLOGY, HYDROLOGY AND LITHOLOGY

The following sections describe the geology, hydrology, and lithology at the site and in the area of the site.

2.2.1 Regional Geology

Regional geology of eastern Nebraska is characterized by thick layers of unconsolidated sediment overlying Pennsylvanian and Cretaceous-age bedrock. The unconsolidated sediment typically consists of loess (wind-blown silt), glacial till, and fluvial deposits (Thiele Geotech, Inc. [Thiele] 2000b).

The most recently deposited sediment in eastern Nebraska consists of clay- to boulder-sized materials eroded from previously deposited sediment and bedrock, reworked by rivers and streams, and deposited in trenches in older formations. This sediment is generally classified as alluvium or colluvium (Thiele 2000b).

Two loess deposits—Peoria Loess and Loveland Loess—generally underlie the alluvium or colluvium in eastern Nebraska. These wind-deposited sediment layers consist of clay- to silt-sized particles derived from physical erosion of existing glacial and fluvial materials. The younger of the two deposits, the Peoria Loess, is characterized as a light brown, clayey silt that mantles the surface of much of the eastern Nebraska landscape. The older of the two deposits, the Loveland Loess, is characterized as a reddish brown to light brown clayey silt that exhibits a greater density than the overlying Peoria Loess (Thiele 2000b).

Two characteristic forms of glacial till—Kansan Till and Nebraskan Till—generally underlie the loess deposits in eastern Nebraska. The younger of the two till forms, the Nebraskan Till, is a dark gray to black, silty clay containing pebbles of limestone and quartzite. The older of the two till forms, the Kansan Till, consists of a heterogeneous mixture of boulders, cobbles, pebbles, and sand in a mixture of silt and clay. Lenses of fine to course sand up to approximately 40 feet thick are also characteristic of Kansas Till (Thiele 2000b).

Cretaceous and Pennsylvanian bedrock typically underlies these unconsolidated sediment deposits in eastern Nebraska. Cretaceous formations, from youngest to oldest, include the Niobrara Formation, Carlile Shale, Greenhorn Limestone, Graneros Shale, and Dakota Sandstone. These groups consist of shales, limestones, and sandstones with variations in color, thickness, integrity, and other characteristics. Pennsylvanian formations, from youngest to oldest, include the Shawnee Group, Douglas Group, Lansing Group, Kansas City and Pleasanton Groups, and finally the Marmaton Group. These groups consist of shales, siltstones, and limestones with variations in color, thickness, integrity, and other characteristics (Thiele 2000b).

2.2.2 Site Geology

Site-specific geology is characterized by fill materials or topsoil overlying Quarternary-age alluvial deposits, which in turn overlie Pennsylvanian shale and limestone bedrock formations (Thiele 2000b).

On developed portions of the facility, structural fill materials occur at depths up to 10 feet below ground surface (bgs). Fill material is typically lean clay to sand and generally occurs on developed portions of the facility. On undeveloped portions of the facility, topsoils consisting of clays, silts, and fine sands occur at depths up to 15 feet bgs (Thiele 2000b). According to the U.S. Department of Agriculture (USDA) soil survey of Sarpy County, Nebraska, the site is located within the Albaton-Haynie and Gibbon-Eudora-Wabash soil associations. The Gibbon-Eudora-Wabash and Albaton-Haynie associations consist of deep, poorly drained to well-drained, nearly level silty and clayey soils on the bottom of the Platte and Missouri Rivers (USDA 1975). According to the USDA web soil survey, the subject property consists of 12 soil types from eight series. The most predominant soil series are Cass fine sandy loam, Albaton silty clay, and Onawa silty clay (USDA 2007).

Underlying the fill material and top soil are alluvial sands and gravels. The site is situated in the alluvial floodplain just north of the confluence of the Platte and the Missouri Rivers. East of the site are the loess-covered Missouri River bluffs (Maher, Engelmann, and Shuster 2003). The deposition of Quaternary sand and gravel in the vicinity of the facility is complex. The Missouri River system was

likely established by at least two if not three glacial advances during the Ice Age. The Platte River system was overrun by the Kansan glacial system and later re-established itself at this location. Thus, the most permeable sands and gravels are not necessarily at the bottom of the formation. They are often found in the middle or upper part of the sand and gravel deposition (Layne-Western Company, Inc. 1973). An investigation of the unconsolidated deposits above bedrock revealed that the Platte River deposits dominate the top 50 feet of overburden. The Platte River alluvium were observed to range from light brown to dark brown clays and silts to yellowish orange fine and medium sands. Missouri River deposits were more evident from 50 to 100 feet bgs, especially southwest and northeast of the subject property. The Missouri River alluvium encountered during the well installation ranged from dark gray to black clays and fat clays to gray and light gray lean clays and silty sand. Deep deposits were predominantly Platte River deposits, suggesting the presence of a paleochannel of the Platte River in this area (Thiele 2000a).

These unconsolidated sediments range from 35 to 100 or more feet in thickness across the site, due to varying topography of the underlying bedrock (Thiele 2000b). Logs from on-site borings and well installations indicate depth to bedrock generally ranges from approximately 49 to 128 feet bgs (Layne-Western Company, Inc. 1952; Thiele 2000a). Information obtained from the Nebraska Department of Natural Resources (NDNR) Registered Groundwater Wells Data Retrieval website suggests the depth to bedrock ranges from about 43 feet at the Salvation Army Camp (Gene Eppley Camp), southwest of the site, to over 120 feet in wells north of the site (NDNR 2007). Bedrock topography at the facility is likely the result of differential erosion caused by the presence of paleochannels that were entrenched into the surface of bedrock prior to deposition of the unconsolidated materials currently overlying bedrock. These channels generally trend west-northwest to east-southeast (Thiele 2000b). A subsurface channel exists in the eastern part of the PCS well field, where the deepest wells are located (Layne-Western Company, Inc. 1973).

Bedrock beneath the facility has been identified as Pennsylvanian-age limestone and shale of the Lansing, Kansas City, and Pleasanton groups. Deep well borings installed during a Phase II Site Assessment revealed Pennsylvanian-aged limestone of the Lansing or Kansas City Group. The limestone was very hard and gray. A highly weathered shale aquitard was encountered in some of the borings at the bottoms of the aquifer. The shale layer consisted of a dark gray, hard, very fat clay and was interpreted to mantel the limestone bedrock (Thiele 2000a, b).

The Humboldt Fault Zone, part of the Midcontinent Rift Zone, passes through Sarpy County to the west of U.S. Highway 75 and is considered seismically active (Maher, Engelmann, and Shuster 2003).

2.2.3 Regional Hydrogeology

The site is located within the Platte River Valley and Missouri River Lowlands. Water is available in high yields from the Quaternary-aged, river-deposited (alluvial) sand and gravel (University of Nebraska – Lincoln [UNL] 1998). Regional groundwater flow in eastern Nebraska is to the east-southeast, toward the Missouri River (Nebraska Department of Environmental Control 1980). Groundwater flow is not only influenced by the Missouri River but also by the Platte River, Papillon Creek, precipitation levels, and area well extraction rates. Information obtained from the NDNR Registered Groundwater Wells Data Retrieval website revealed that the average depth to groundwater in the area ranged from 4 to 34 feet bgs (NDNR 2007).

2.2.4 Site Hydrogeology

A review of boring logs from across the former PCS Nitrogen facility indicates that the top 15 feet of alluvium consist of clays, silts, and sands. An occasional discontinuous layer of clay approximately zero to 5 feet thick has been encountered between 20 and 35 feet bgs. After the layer of clay, fine to course sand and gravel was noted to bedrock. Bedrock consists of limestones and shales (Thiele 2000b).

Horizontal and vertical groundwater gradients were estimated using site water level measurements from October 2002, September 2005, October 2007, April 2008, April 2009, and October 2009 (see Appendix A, Figures 3a, 3b, 4a, 4b, 5a, 5b, 6a, 6b, 7a, 7b, 8a, and 8b; Appendix B [PCS Nitrogen 2009]). Gradients varied slightly in direction and magnitude based on temporal variations in water level. Changes in gradient result from changes in water levels in the three boundary fluvial systems—the Missouri River, the Platte River, and Papillon Creek—and from changes in precipitation and nearby well extraction rates.

Based on measured groundwater levels (Appendix B), the Missouri River dominates the horizontal groundwater gradient. As measured at the PCS site in both the deep and shallow wells, groundwater flows east or east-southeast toward the Missouri River, with a very minor component of flow south to the Platte River (Appendix A, Figures 3a, 3b, 4a, 4b, 5a, 5b, 6a, 6b, 7a, 7b, 8a, and 8b). The village of LaPlatte is to the west of the PCS site and is served mainly by private wells and small community public wells (such as that serving the Sands Mobile Home Park). The city of Plattsmouth wellfield is to the south across the Platte River. According to the wellhead protection map for the Omaha Municipalities Utilities District (MUD) South Platte wellfield (public water supply wells) located approximately 2 miles west of the former PCS Nitrogen facility, the system extracts its drinking water from either the Platte River or an area directly to the north-northeast (see Appendix C). Based on the measured groundwater

levels reviewed; wells to the west and south across the Platte River would not be hydraulically down gradient of the PCS facility.

According to the potentiometric maps (Appendix A, Figures 3 through 8) gradients in the shallow aquifer range from 8.3 x 10^{-4} feet per foot (ft/ft) to 1.3 x 10^{-3} ft/ft. Gradients in the deep aquifer range from 6.9 x 10^{-4} ft/ft to 1.0 x 10^{-3} ft/ft. The potentiometric contours were generated using ArcGIS. In both the deep and shallow aquifers, a slight groundwater ridge extends east to west through the middle of the property, mirroring a topographic high. However, the magnitude of the eastward gradient, combined with the fact that water level elevation in the wells (aquifer) and the river are similar, suggest that nitrate contaminated groundwater could be discharging into the Missouri River, but at concentrations below the NDEQ surface water standards. (Nebraska Title 117, Chapter 4 indicates surface waters that serve as a public drinking water supply are not to exceed 10 milligrams per liter (mg/L) nitrate. Surface waters not used as a drinking water source must meet the agricultural use standard of 100 mg/L nitrate.) According to the summary of nitrate concentrations in the on-site monitoring wells the highest concentration of nitrates identified in MW-23, MW-24 and MW-25 in the past ten years has been 8.5 mg/L (PCS 2009). These monitoring wells (MW-23, MW-24 and MW-25) are located in the southeast corner of the property and are the indicative of what concentrations of nitrates are discharging to the Missouri River.

Groundwater velocity in the shallow and deep aquifers was estimated using the gradients estimated above and values from facility reports. The effective porosity, which is roughly equivalent to effective porosity in an unconfined aquifer, is reported as 0.2 (Thiele 2000b). Based on the facility's review of literature, the facility uses a hydraulic gradient of 2,120 gallons per day per square foot, or 1.0 x 10^{-3} meters per second. This value is consistent with other reported values of hydraulic conductivity for sand or silty sand (Freeze and Cherry 1979, Domenico and Schwartz 1998). The resulting groundwater seepage velocity ranges from 1.17 to 1.83 feet per day (ft/day) in the shallow aquifer and 0.97 to 1.40 ft/day in the deep aquifer.

Vertical gradients are generally upward, but are downward in some areas. This pattern is consistent with a discontinuous confining layer between the shallow and deep aquifers, as described in the preliminary hydrogeologic investigation of the facility (Thiele 2000b). Upward gradients between the shallow and deep wells in each well nest range from 1.2 x 10^{-4} ft/ft to 9.8 x 10^{-3} ft/ft. Downward gradients are present in the area around well nests MW-7, MW-12, and MW-13; around well nest MW-16; and around well nest MW-23. Boring logs prepared during the installation of monitoring wells (Thiele 2000a, 2007) do not consistently show the presence of a confining layer between the shallow and deep aquifers.

Moreover, the presence of nitrate contamination in deep wells suggests downward migration of contaminated groundwater.

Tetra Tech prepared a 3-D model using C TECH Development Corporation Mining Visualization System to document the nitrate and ammonia concentrations detected in the shallow and deep monitoring wells at the former PCS Nitrogen facility in 2002, 2005, 2007, and 2009 (see Appendix D). The boundaries of the model were based on the facility boundaries and the available data associated with the monitoring wells located on the former PCS Nitrogen facility. The model indicates that the nitrate and ammonia plumes are concentrated underneath the former PCS Nitrogen facility. The model indicates the ammonia plume does not appear to have traveled offsite, except possibly immediately to the north of the facility across LaPlatte Road to a nominal extent. The exact nature of the plume extending north of LaPlatte Road is unknown because there are no sampling points beyond that road. Currently the plume shows the average concentrations identified south of LaPlatte Road on the former PCS Nitrogen facility and the plume has been extrapolating using those averages to the north of LaPlatte Road. Nitrate has exceeded a maximum contaminant level (MCL) in samples from facility monitoring wells adjacent to LaPlatte Road and to the south adjacent to the Gene Eppley Camp. The model indicates nitrates may have traveled offsite at concentrations exceeding an MCL in an area adjacent to LaPlatte Road to the north, and possibly to the south, including a portion of the eastern part of the Gene Eppley Camp (PCS 2009).

In 2002 the nitrate plume was primarily located directly underneath the former PCS Nitrogen plant equipment and in the southeastern portion of the site. Nitrates were only detected in a small location directly underneath the former PCS Nitrogen equipment at a concentration greater than 300 mg/L. In 2005, the nitrate plume expanded primarily eastward toward the river confluence and the detections of nitrates greater than 50 mg/L expanded from underneath the former PCS Nitrogen plant equipment to the southeastern portion of the site. The nitrate plume expanded south of the former PCS Nitrogen plant in 2007. The area of the plume at concentrations greater than 10 mg/L, 50mg/L and 100 mg/L were noticeably larger. In addition, an area directly south of the former PCS Nitrogen equipment showed concentrations of nitrates greater than 100 mg/L which was not observed in the previous years. In addition, nitrates were detected at concentrations greater than 300 mg/L in the vicinity of the former landfill. In 2009 the nitrate plume appears to have moved slightly east of the former PCS Nitrogen facility equipment. The extent of the nitrate plume was significantly smaller than in 2007 and did not extend as far southeast on the facility.

The ammonia plume is primarily localized directly underneath the former PCS Nitrogen equipment and to the east of the equipment. The size of the ammonia plume appears to expand eastward each year. In fact,

in 2007 a small patch of ammonia was detected near the northeastern portion of the site at a concentration greater than 10 mg/L and in 2009 the ammonia plume connected between the main plume area and that small patch identified in 2007. However, the plume decreases in size each year when looking at the higher concentrations of ammonia detected. Therefore, the plume may be expanding but the majority of the ammonia detected is at concentrations below 100 mg/L.

3.0 SAMPLING ACTIVITIES AND ANALYTICAL RESULTS

Prior to conducting sampling, Tetra Tech conducted a private well survey in order to identify properties near the former PCS Nitrogen facility that have private or public water supplies. All possible private well owners were contacted prior to sampling in January 2010 in order to arrange for sampling if they were interested. Private and public water supply wells identified in the area are listed in Appendix E and shown on Figure 9 in Appendix A. Contact information was not available for many possible private well owners. Therefore, during the January 2010 sampling event, Tetra Tech knocked on doors in order to attempt to gain permission from the property owners to collect samples. Some private well owners could not be reached, and some private wells were closed for the winter. Additionally, Tetra Tech received a letter dated December 28, 2009, from Pistillo & Pistillo, P.C., L.L.O, the law firm representing IP Homeowners Inc., the legal owner of the real estate commonly called Iske Place. According to the letter, Tetra Tech was denied access to sample any private wells in Iske Place, which is located northeast of the former PCS Nitrogen facility. A second sampling trip was scheduled for June 2010 to obtain additional samples from private well owners who could not be reached in January 2010 or whose wells are open only during the spring and summer.

During January and June 2010, domestic well groundwater samples were collected primarily from residential homes, but also from the Salvation Army Camp (Gene Eppley Camp), South Sarpy School District, LaPlatte Community Church, commercial/domestic wells (W-M Farms, Coreslab Structures, Omaha Truck & Trailer), and two public water supply wells (Sands Mobile Home) (see Appendix A, Figure 10). All of the wells were sampled for total nitrates. Samples were also collected from the Sands Mobile Home Park public water supply wells for analyses for nitrogen isotopes ($\delta^{15}N$) and oxygen isotopes ($\delta^{18}O$), chloride, and wastewater contaminants.

All of the wells sampled were purged for approximately 5 minutes to allow the well pump to cycle, recharging the well. The domestic wells were sampled from the closest spigot to the wellhead and prior to any water treatment. During the January 2010 sampling event, all the domestic wells were sampled from interior spigots. During the June 2010 sampling event, the majority of the domestic wells were sampled from a spigot on the exterior of the home. Measurements of water quality parameters

(temperature, pH, and conductivity) were obtained at each sample location after stabilization to agreement within 10 percent in three consecutive readings prior to sample collection. The readings were recorded in a logbook (see Appendix F).

Samples were collected and submitted to Midwest Laboratories, Inc., in Omaha, Nebraska, for nitrates analysis using the Water/Wastewater 600 Series. The samples collected from public water supply wells at the Sands Mobile Home Park were submitted to the Nebraska-Lincoln Water Sciences Laboratory in Lincoln, Nebraska, for analyses for nitrogen and oxygen isotopes, chlorides, and wastewater contaminants.

Both a nitrate and an ammonia plume have been identified at the former PCS Nitrogen facility. Because ammonia coverts to nitrate when it is oxidized the ammonia plume is a continuous source adding to the nitrate plume at the former PCS Nitrogen facility. Sources of nitrates can be determined using $\delta^{15}N$ and $\delta^{18}O$ isotopes analyses. Where denitrification occurs, the ratio of $\delta^{15}N/\delta^{18}O$ is typically found at 2:1 (USGS 2001). Denitrification is defined as "a microbially facilitated process of dissimilatory nitrate reduction that may ultimately produce molecular nitrogen (N_2) through a series of intermediate gaseous nitrogen oxide products." In terms of the general nitrogen cycle, denitrification completes the cycle by returning N_2 to the atmosphere. The process is performed primarily by heterotrophic bacteria (Davidson 2006). Table 1 below identifies the typical ranges of relative percent differences of $\delta^{15}N$ in nitrate and $\delta^{18}O$ in nitrate associated with different types of sources of nitrogen (USGS 2001).

Table 2 below provides the following information for each well sampled: property owner, address, nitrate results in mg/L, number of people (residents or full-time workers) using each well sampled, latitude and longitude coordinates, and any available information regarding in-line filtration systems associated with the wells. According to the analytical results, all the nitrate concentrations detected were below the drinking water MCL of 10 mg/L. However, nitrate concentrations detected in several of the wells sampled, including the public water supply wells, were only slightly below the MCL. The MCL is the highest level of a contaminant that is allowed in drinking water. The analytical data and associated chain of custodies are included in Appendix G.

TABLE 1

TYPICAL RANGES OF $\delta^{15}N$ AND $\delta^{18}O$ OF TYPES OF NO_3
PCS NITROGEN
LAPLATTE, NEBRASKA

$\delta^{15}N$	$\delta^{18}O$	Description
0	+23	Fertilizer manufactured from atmospheric gas
+15 ± 5	-5….+15	Animal waste
+5	-5….+15	Soil nitrate
0	+23	Air
Up to +40	Up to +20	NO3 produced by nitrification
	+5….+20	Groundwater

Notes:

Values denote relative percent differences of isotopes in NO_3 compared to the standards.

N Nitrogen
NO_3 Nitrate
O Oxygen

TABLE 2

NEARBY PUBLIC AND PRIVATE WATER SUPPLY WELLS SAMPLED
PCS NITROGEN
LAPLATTE, NEBRASKA

Property Owner / Contact Person	Address	Nitrate Results (mg/L)	No. of Persons Served	GPS Coordinates	Notes
W-M Farms Inc. / Robert Meisenger	208 LaPlatte Road, Bellevue, NE 68123	< 0.2	6 Transients	41° 4′ 30.71″ N / 95° 54′ 34.80″ W	Sampled from outside spigot
The Salvation Army Gene Eppley Camp / Pete Hoskin	915 Allied Road, Bellevue, NE 68123	< 0.2	5 Permanent Residents / Maximum of 500 Transients	41° 3′ 58.78″ N / 95° 55′ 1.91″ W	Camp has three wells; sampled raw water from the blended system
Charles Mink	16717 Clay Street, LaPlatte, NE 68123	1.4	3 Residents	41° 4′ 14.34″ N / 95° 55′ 37.12″ W	Sampled from kitchen sink; no treatment system
S. Sarpy School District #46 / Charles Chevalier	LaPlatte Elementary Building, LaPlatte, Nebraska	8.9	Unknown	41° 4′ 26.73″ N / 95° 55′ 29.93″ W	Collected from the kitchen faucet. Facility is leased to Peru State College
Coreslab Structures / Mario Franciosa or Holly Greiner	802 Allied Road, LaPlatte, NE 68123	< 0.2	Unknown	41° 4′ 17.62″ N / 95° 55′ 11.11″ W	Collected from sink in maintenance building since no treatment
Sands Mobile Home – West Well / Thomas Wilson	16711 Main Street, Bellevue, NE 68123	9.7 – Duplicate Sample 9.8	125 Residents	41° 4′ 11.07″ N / 95° 55′ 29.34″ W	Collected from the well house
Sands Mobile Home – East Well / Thomas Wilson		9.2		41° 4′ 11.04″ N / 95° 55′ 27.57″ W	
Dean Taylor	16514 Main Street, LaPlatte, NE 68123	8.1	3 Residents	41° 4′ 21.86″ N / 95° 55′ 27.72″ W	Collected from kitchen faucet that is not run through the water softener
Dean Taylor	16510 Main Street, LaPlatte, NE 68123	8.9 – MS/MSD Sample 8.2	4 Residents	41° 4′ 22.77″ N / 95° 55′ 27.42″ W	Collected from outdoor spigot
Jeffrey Stones	16602 Main Street, Bellevue, NE 68123	8.2	2 Residents	41° 4′ 20.88″ N / 95° 55′ 27.73″ W	Collected from kitchen faucet; no treatment system
Omaha Truck & Trailer / Gary & Mary Davie	1014 LaPlatte Road, LaPlatte, NE 68123	4.4	10 to 12 Transients	41° 4′ 30.44″ N / 95° 55′ 27.66″ W	Collected from spigot on exterior of the building
LaPlatte Community Church / Pastor Roy Johnson	16412 Main Street, Bellevue, NE 68123	9.4	50 Transients	41° 4′ 26.78″ N / 95° 55′ 27.25″ W	Collected from kitchen faucet; no treatment system
Mary E. Frey	16505 Main Street, Bellevue, NE 68123	7.8	2 Residents	41° 4′ 23.11″ N / 95° 55′ 25.15″ W	Collected from outdoor spigot

TABLE 2 (Continued)

PUBLIC AND PRIVATE WATER SUPPLY WELLS SAMPLED
PCS NITROGEN
LAPLATTE, NEBRASKA

Property Owner / Contact Person	Address	Nitrate Results (mg/L)	No. of Persons Served	GPS Coordinates	Notes
Michael D. West	16521 Clay Street, Bellevue, NE 68123	8.2	1 Resident	41° 4′ 22.18″ N / 95° 55′ 29.91″ W	Collected from outdoor spigot
Penny Morin	16505 Clay Street, Bellevue, NE 68123	7.8	5 Residents	41° 4′ 23.98″ N / 95° 55′ 29.90″ W	Collected from outdoor spigot
Al Burton	16502 Clay Street, Bellevue, NE 68123	9.8 – Duplicate Sample 9.5	1 Resident	41° 4′ 24.96″ N / 95° 55′ 32.40″ W	Collected from kitchen faucet; no treatment system
Al Burton	16415 Main Street, Bellevue, NE 68123	8.4	2 Residents	41° 4′ 26.50″ N / 95° 55′ 25.36″ W	Collected from kitchen faucet; no treatment system
Robert Dahlquist	1040 Allied Road, Bellevue, NE 68123	< 0.2	1-25 Transients	41° 3′ 57.31″ N / 95° 55′ 29.60″ W	Collected from outdoor spigot

Notes

<	Less than method detection limit
GPS	Global Positioning System
mg/L	Milligrams per Liter
MS	Matrix spike
MSD	Matrix spike duplicate
N	North
NE	Nebraska
No.	Number
W	West

The wellhead protection map associated with the Sands Mobile Home Park is included as Appendix H. According to the wellhead protection map, groundwater flows southeast; therefore, the nitrate contamination identified underneath the former PCS Nitrogen facility should not impact the public water supply wells at the Sands Mobile Home Park.

Table 3 shows results of analyses for nitrogen and oxygen isotopes, chloride, and wastewater in samples from the Sands Mobile Home public water supply wells. The sampling was conducted to try to determine the source of nitrates impacting the public water supply wells. Relative percent differences of $\delta^{15}N$ in nitrate identified in the public water supply wells ranged from +8.36 to +5.62, which does not appear to be linked to a source of commercial fertilizer according to Table 1. The documented percentages of $\delta^{18}O$ in nitrate from the Sands Mobile Home public water supply wells ranged from +25.5 to +22.8. According to Table 2 the range of $\delta^{15}N$ and $\delta^{18}O$ in nitrates detected from the public water supply wells falls within an intermediate area and does not clearly define the source of nitrates as a commercial fertilizer, from nitrified manure or septic system ammonia.

One wastewater contaminant was detected in the public water supply well samples from Sands Mobile Home Park. Carbamazepine, an anticonvulsant and mood stabilizing drug, was detected in the east well at concentrations of 0.26 and 0.31 µg/L—slightly above the detection limit of 0.20 µg/L. No definitive source of contamination can be determined based on the analytical results from the January 2010 sampling event. The occurrence of the trace level of the drug Carbamazepine suggests some portion of the contamination identified may be from a septic system at the mobile home park.

TABLE 3

SANDS MOBILE HOME PUBLIC WATER SUPPLY WELL ANALYTICAL DATA
PCS NITROGEN
LAPLATTE, NEBRASKA

Contaminant	SMH-WW-01	SMH-EW-01	SMH-EW-01 dup
15 N Nitrate/Ammonia			
NO_3-N (mg/L)	5.6	7.8	9.0
$\delta^{15}N$-NO_3 (‰)	+5.62	+8.36	+7.79
NH_4-N (mg/L)	< 0.1	< 0.1	< 0.1
IRMS EA 18 O NO3 or PO4			
$\delta^{18}O$-NO_3 (‰)SMOW	+25.5	+22.8	+23.1
IC Anions			
Chloride (mg/L)	66.4	72.0	66.1
Wastewater Contaminants (µg/L)			
Acetaminophen	< 0.20	< 0.20	< 0.20
Amphetamine	< 0.20	< 0.20	< 0.20
Caffeine	< 0.20	< 0.20	< 0.20
Carbamazepine	< 0.20	0.31	0.26
Cotinine	< 0.20	< 0.20	< 0.20
DEET	< 0.20	< 0.20	< 0.20
Diphehydramine	< 0.20	< 0.20	< 0.20
Ibuprofen	< 0.20	< 0.20	< 0.20
Methamphetamine	< 0.20	< 0.20	< 0.20
Naproxen	< 0.20	< 0.20	< 0.20
Paraxanthine	< 0.20	< 0.20	< 0.20
Sulfamethazine	< 0.20	< 0.20	< 0.20
Sulfamethoxazole	< 0.20	< 0.20	< 0.20
Thiabendazole	< 0.20	< 0.20	< 0.20
Triclosan	< 0.20	< 0.20	< 0.20

Notes

δ ‰	$(R_{sample} - R_{standard}) / R_{standard} \times 1000$
<	Less than method detection limit
%	Percent
Dup	Duplicate
EA	Elemental analyzer
EW	East Well
IC	Ion chromatography
IRMS	Isotope ratio mass spectrometer
mg/L	Milligrams per liter
R	Ratio of enrichment relative to atmospheric nitrogen
SMH	Sands Mobile Home
SMOW	Ratio of oxygen isotopes compared to the standard mean ocean water
µg/L	Micrograms per Liter
WW	West well

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on groundwater elevation data provided by PCS Nitrogen, the Missouri River dominates the horizontal groundwater gradient. As measured in both the deep and shallow wells at the PCS facility, groundwater flows east or east-southeast toward the Missouri River, with a very minor component of flow south to the Platte River. The groundwater flow direction as indicated by the wellhead protection map for the Mobile Home Park is southeast.

The data reviewed suggests that contaminated groundwater (nitrate) is likely migrating east and discharging into the Missouri River at concentrations below the Nebraska Title 117, standard of 10 mg/L nitrate for surface waters that serve as a public drinking water supply and the agricultural use standard of 100 mg/L nitrate.

Based on the data provided and the resultant groundwater flow direction indicated, it is unlikely that the groundwater contamination at the former PCS Nitrogen facility would impact the residents living west of the former PCS Nitrogen facility or the MUD wellfield further west, or City of Plattsmouth wells located south of the Platte River.

The groundwater model indicates nitrates may have traveled offsite at concentrations exceeding an MCL in an area adjacent to LaPlatte Road to the north, and possibly to the south including a portion of the eastern part of the Gene Eppley Camp. Groundwater samples were collected from the Gene Eppley Camp well and one well to the north of the site along LaPlatte Road and were below the MCL of 10 mg/L for nitrates. Groundwater samples were not collected at two additional wells located north of the site along LaPlatte Road because access was denied by the landowner.

According to the analytical results, none of the private or public water supply wells sampled exceeded the drinking water MCL of 10 mg/L for nitrates. However, several of the well samples had concentrations of nitrates just under 10 mg/L.

Based on the groundwater flow direction the most likely source for nitrates affecting the residents wells would be to the west or northwest of the wells. Common sources of nitrate contamination include septic systems, lawn and farmland fertilizers, animal wastes, municipal sewage treatment systems, and decaying plant debris.

The analyses for isotopes of groundwater samples collected from the Sands Mobile Home Park wells did not definitively indicate the source of nitrates. The occurrence of trace levels of the drug Carbamazepine suggests some portion the contamination identified may be from a septic system at the mobile home park.

Tetra Tech recommends that NDEQ request groundwater elevation data from PCS, when PCS submits its quarterly groundwater monitoring data. The State could use the groundwater elevation and analytical data to complete additional modeling in order to evaluate the movement and potential impact of the groundwater contaminant plume beneath the former PCS Nitrogen facility.

5.0 REFERENCES

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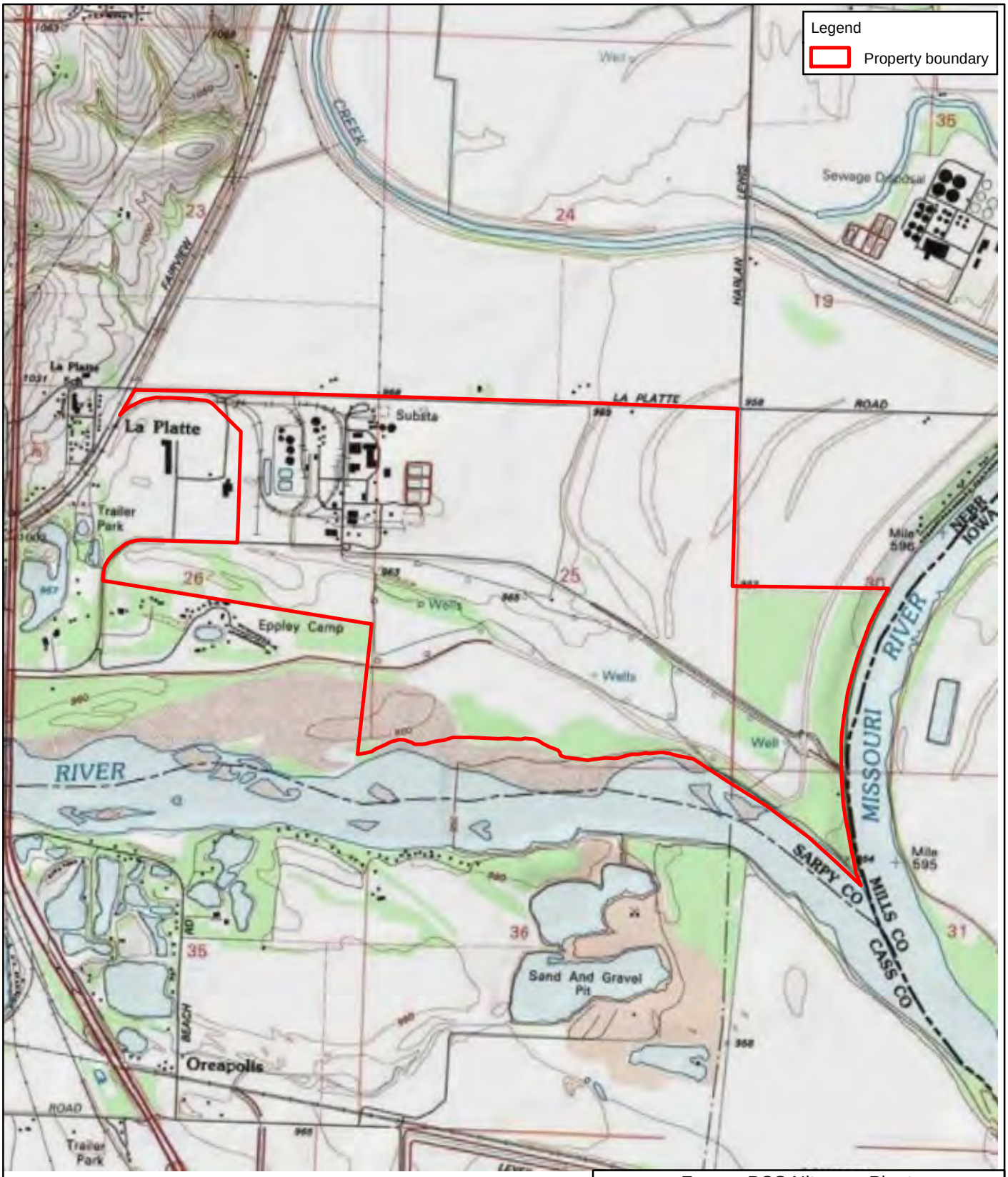
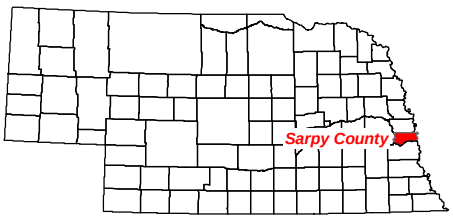
APPENDIX A

FIGURES





N

0 1,000 2,000

Feet

Source: Plattsmouth, Nebraska USGS 7.5 Minute Topo Quad, 1994

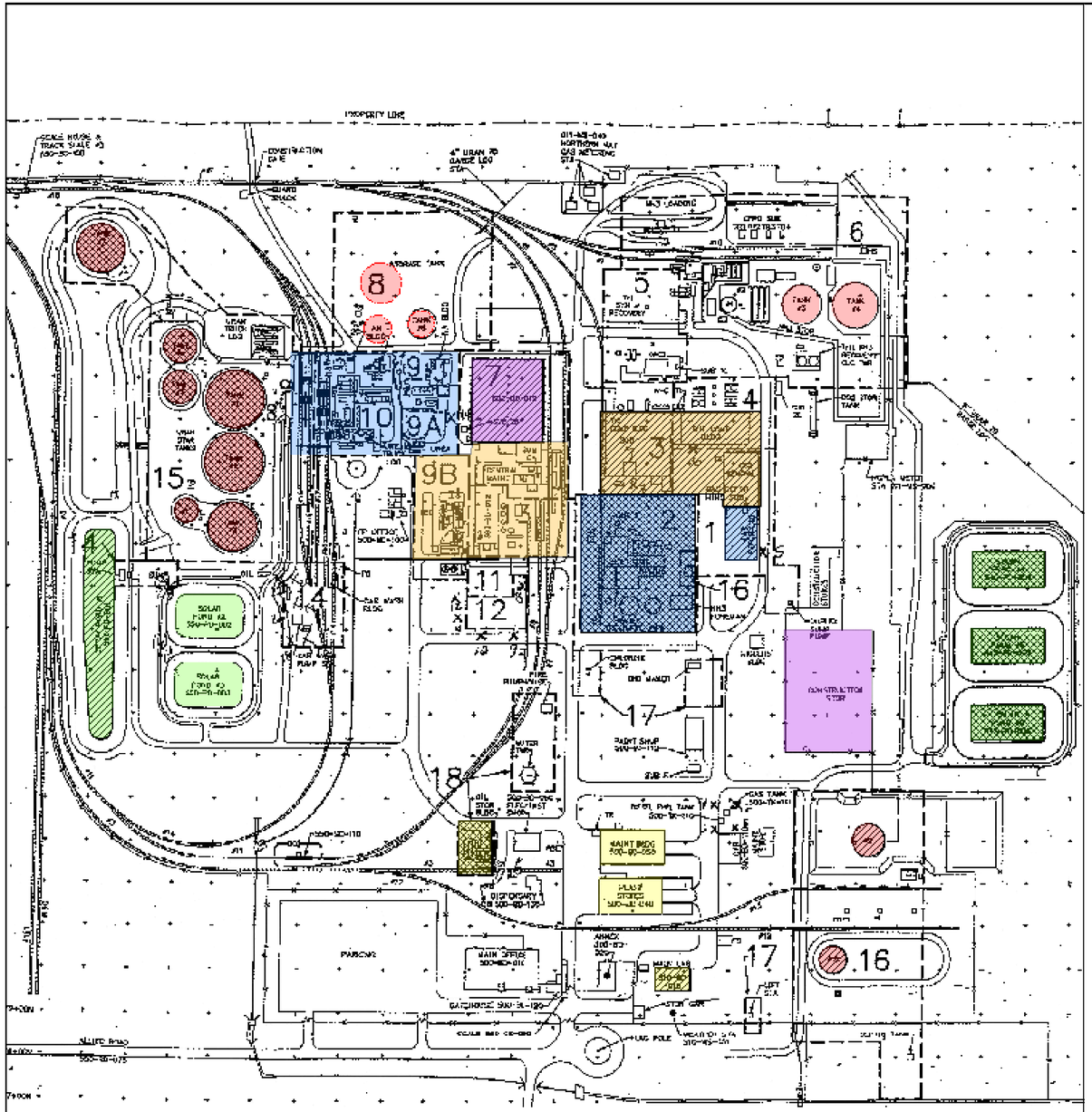
Former PCS Nitrogen Plant
LaPlatte, Nebraska
ISS # 41270

Figure 1
Site Location Map

TETRA TECH EM INC.

Date: 10/23/09 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\Figure1.mxd



Not to Scale

Legend

- Former storage tanks
- Pressurized ammonia tanks
- Fuel oil tanks
- Product storage tanks
- Historical drum storage area
- Pebble storage building
- UREA production area
- Ammonia production area
- Sludge ponds
- Evaporation pond
- Lime ponds
- Nitric acid production area and UREA loading
- Gas reforming area
- Water treatment area
- Maintenance building
- Laboratory
- Oil storage building

Source: Sarpy County NAIP Aerial Imagery, 2006
PCS Nitrogen Production and Service Area Drawing, June 30, 1989

N

0 160 320

Feet

Former PCS Nitrogen Plant
Laplatte, Nebraska
ISS # 41270

Figure 2

Site Layout Map

TETRA TECH EM INC.

Date: 09/17/07 Drawn By: Bill Spiking Project No: S1552.0711A.01

X:\S1552\0711A\04\projects\mxd\Figure2.mxd

Legend

- Monitoring Well: Shallow
- Groundwater Elevation Contour
- 954.38 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 3a

Potentiometric Surface Map
Shallow Wells
October 2002

TETRA TECH EM INC.

Date: 07/21/10 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\GW_Elevation\Figure3a.mxd

Legend

- Monitoring Well: Deep
- Groundwater Elevation Contour
- 954.20 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 3b

Potentiometric Surface Map
Deep Wells
October 2002

TETRA TECH EM INC.

Date: 07/22/10 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\GW_Elevation\Figure3b.mxd

Legend

- Monitoring Well: Shallow
- Groundwater Elevation Contour
- 953.52 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 4a

Potentiometric Surface Map
Shallow Wells
September 2005

TETRA TECH EM INC.

Date: 07/22/10 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\GW_Elevation\Figure4a.mxd

Legend

- Monitoring Well: Deep
- Groundwater Elevation Contour
- 953.37 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 4b

Potentiometric Surface Map
Deep Wells
September 2005

TETRA TECH EM INC.

Date: 07/22/10 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\GW_Elevation\Figure4b.mxd

Legend

- Monitoring Well: Shallow
- Groundwater Elevation Contour
- 958.42 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 5a

Potentiometric Surface Map
Shallow Wells
October 2007

TETRA TECH EM INC.

Date: 07/22/10 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

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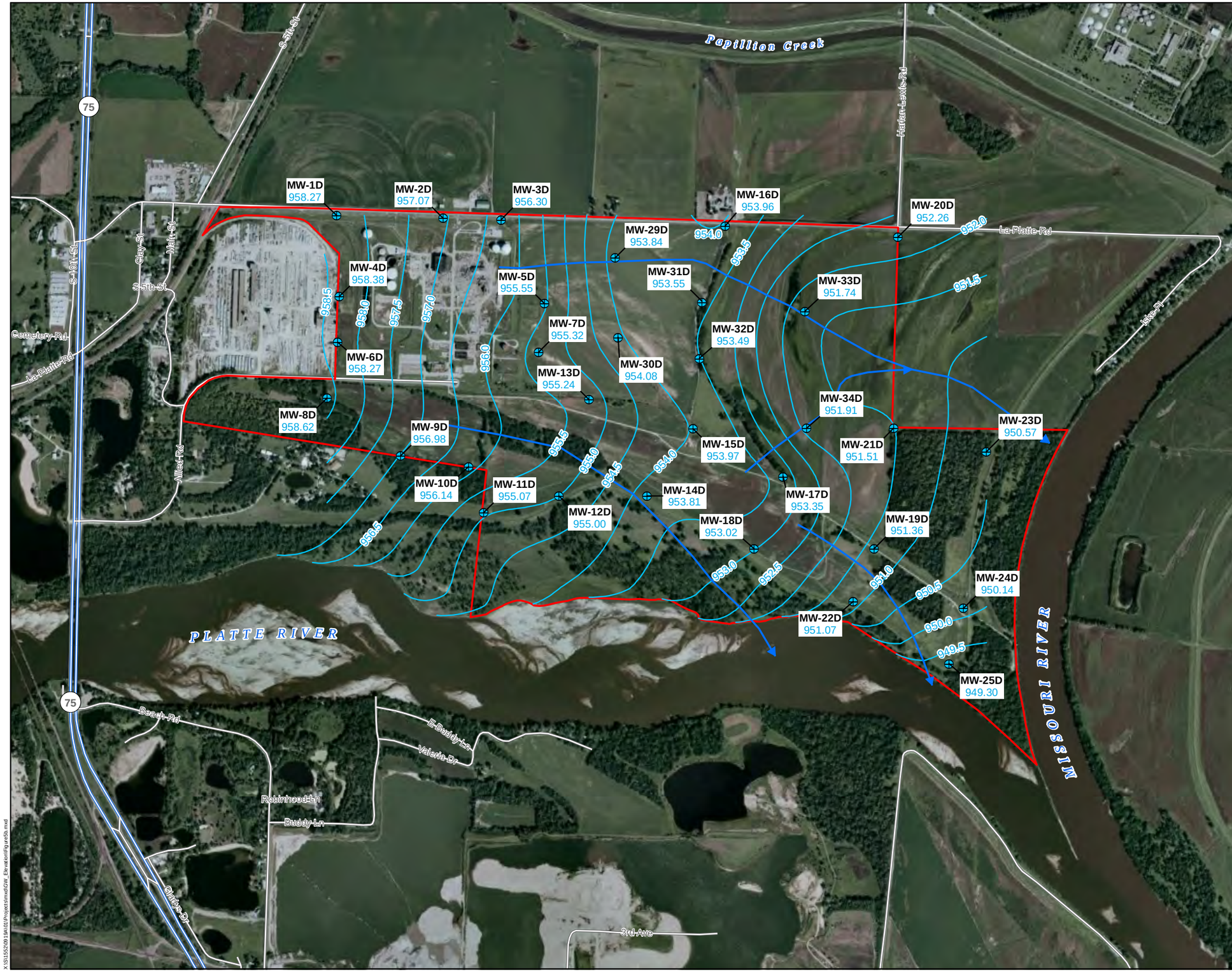

Legend

- Monitoring Well: Deep
- Groundwater Elevation Contour
- 958.27 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 5b

Potentiometric Surface Map
Deep Wells
October 2007

TETRA TECH EM INC.

Date: 07/22/10 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

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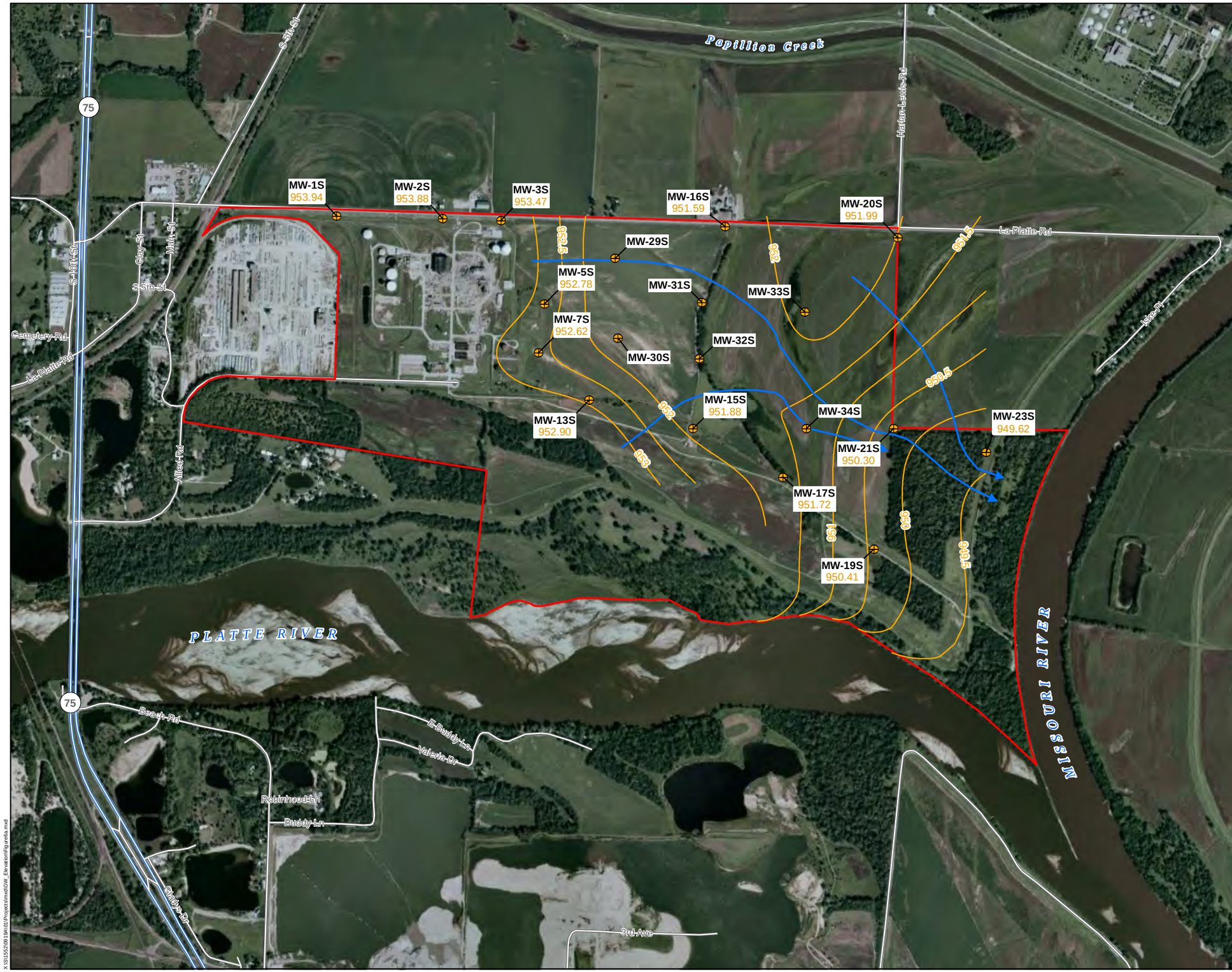

Legend

- Monitoring Well: Shallow
- Groundwater Elevation Contour
- 954.38 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 6a

Potentiometric Surface Map
Shallow Wells
April 2008

TETRA TECH EM INC.

Date: 07/22/10 Drawn By: Gustavo Orozco Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\GW_Elevation\Figure6a.mxd

Legend

- Monitoring Well: Deep
- Groundwater Elevation Contour
- 953.37 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 6b

Potentiometric Surface Map
Deep Wells
April 2008

TETRA TECH EM INC.

Date: 07/23/10 Drawn By: Gustavo Orozco Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\GW_Elevation\Figure6b.mxd

Legend

- Monitoring Well: Shallow
- Groundwater Elevation Contour
- 954.38 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 7a

Potentiometric Surface Map
Shallow Wells
April 2009

TETRA TECH EM INC.

Date: 07/23/10 Drawn By: Gustavo Orozco Project No: S1552.0919A.01

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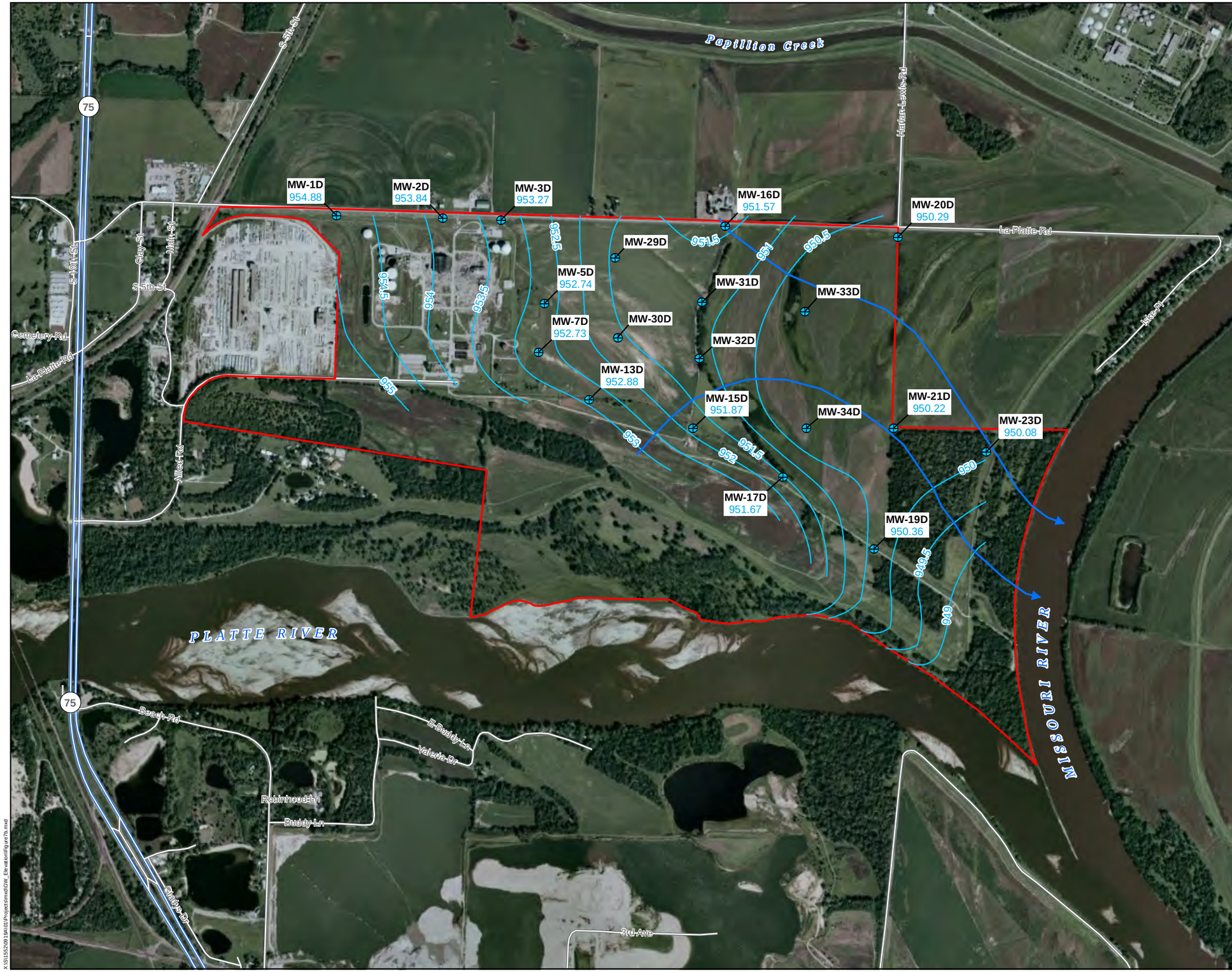

Legend

- Monitoring Well: Deep
- Groundwater Elevation Contour
- 953.37 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 7b

Potentiometric Surface Map
Deep Wells
April 2009

TETRA TECH EM INC.

Date: 07/23/10 Drawn By: Gustavo Orozco Project No: S1552.0919A.01

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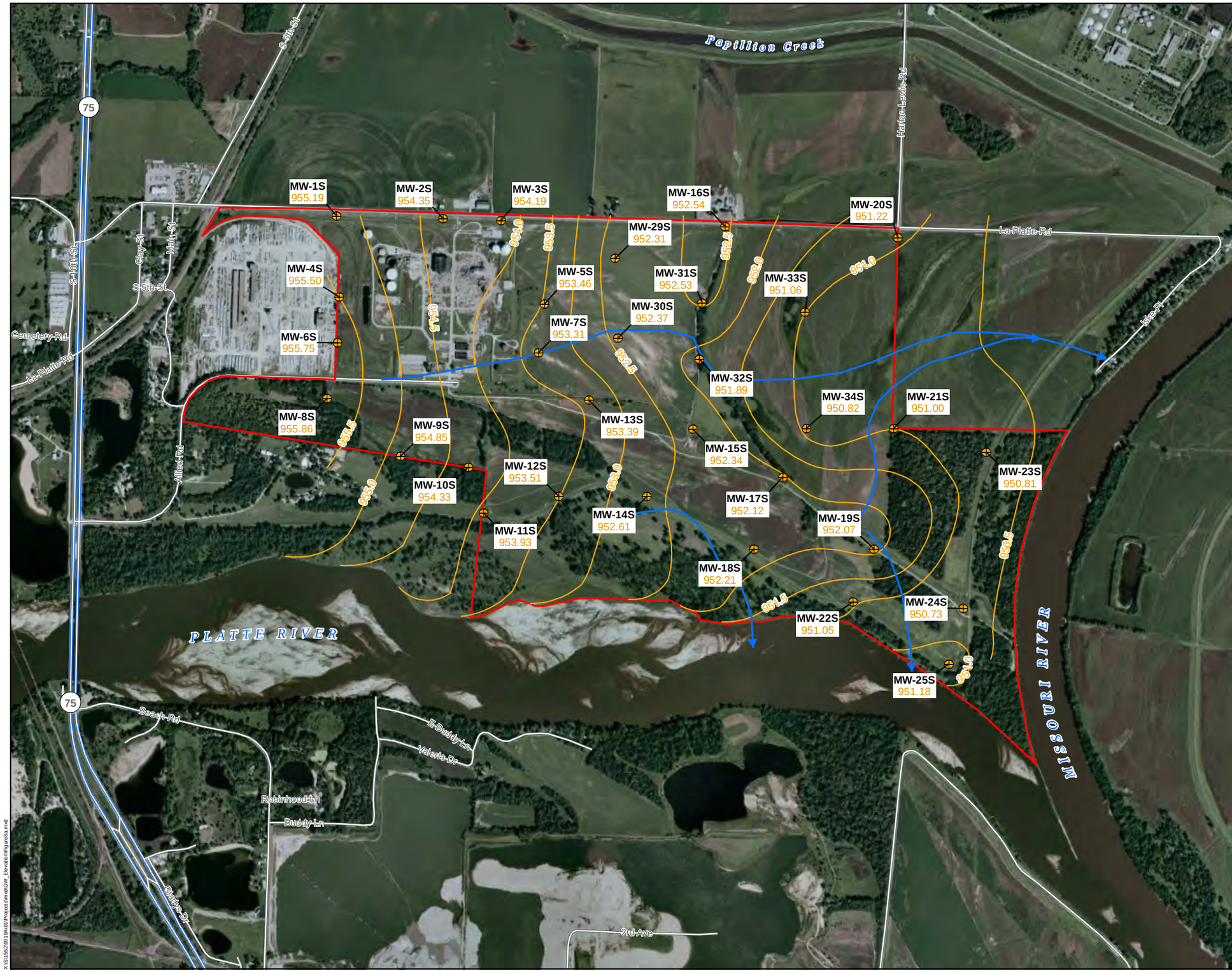


Legend

- Monitoring Well: Shallow
- Groundwater Elevation Contour
- 955.19 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 8a

Potentiometric Surface Map
Shallow Wells
October 2009

TETRA TECH EM INC.

Date: 07/22/10 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\GW_Elevation\Figure8a.mxd

Legend

- Monitoring Well: Deep
- Groundwater Elevation Contour
- 955.10 Groundwater Elevation (feet above mean sea level)
- Groundwater Flow Direction
- State Highway
- Street
- Property Boundary

N

0 600 1,200

Feet

Source: I[3] Imagery Prime World 2D, 2009; HSIP Gold, 2007.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

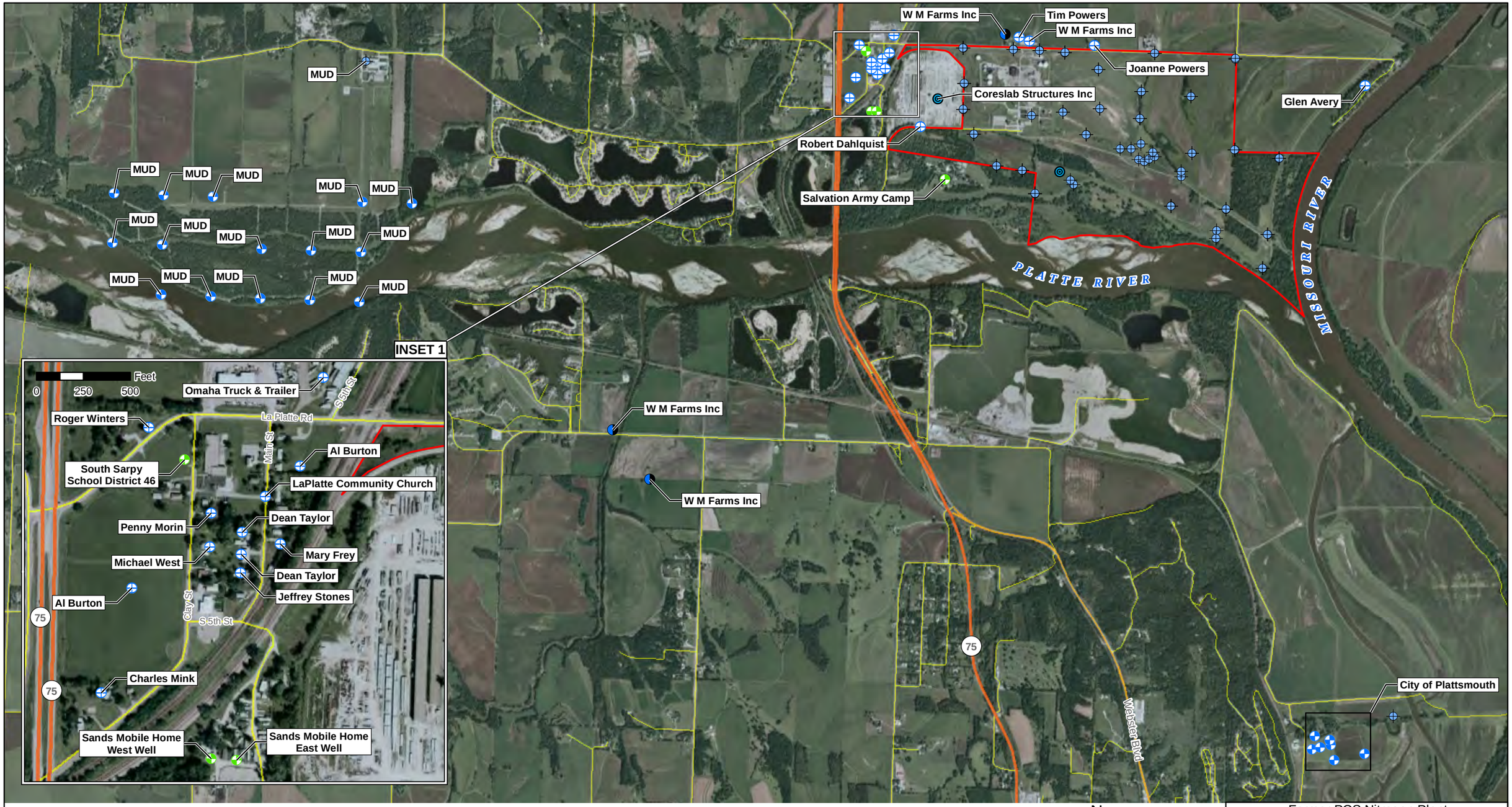
Figure 8b

Potentiometric Surface Map
Deep Wells
October 2009

TETRA TECH EM INC.

Date: 07/22/10 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\GW_Elevation\Figure8b.mxd



Legend

Public and Private Water Supply Wells

- Commercial/Industrial Well
- Domestic Well
- Irrigation Well
- Monitoring Well
- Public Water Supply Well (with Spacing Protection)
- Public Water Supply Well (without Spacing Protection)

- State Highway
- Major Road
- Street
- Property Boundary
- MUD Metropolitan Utilities District

Note: All unlabeled wells located within the Property Boundary belong to PCS Nitrogen Fertilizer LP.

N

0 1,250 2,500

Feet

Source: HSIP Gold Dataset, 2007; I^3 Imagery Prime World 2D, 2010; Nebraska Registered Goundwater Wells, 2010.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 9
Public and Private Water Supply Wells

TETRA TECH EM INC.

Date: 09/09/10 Drawn By: Nick Wiederholt Project No: S1552.0919A.01

X:\S1552\0919\A01\Projects\mxd\Figure9_090910.mxd

Legend

Groundwater Sample Locations

- Commercial/Industrial Well
- Domestic Well
- Public Water Supply Well (without Spacing Protection)
- State Highway
- Major Road
- Street
- Property Boundary

N

0 500 1,000

Feet

Source: HSIP Gold Dataset, 2007; I[3] Imagery Prime World 2D, 2010; Nebraska Registered Goundwater Wells, 2010.

Former PCS Nitrogen Plant
LaPlatte, Nebraska
IIS # 41270

Figure 10
Sample Location Map

TETRA TECH EM INC.

Date: 07/21/10 Drawn By: Ingrid Tobar Project No: S1552.0919A.01

X:\S1552\0919A\01\Projects\mxd\Figure10.mxd

APPENDIX B

MONITORING WELL GROUNDWATER ELEVATION DATA

PCS Nitrogen Plant, LaPlatte, Nebraska

Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
1S	Jul-00		562			ND	9.6	**1D**		889			ND	2.9
	Sep-00		773			ND	7.7			1010			ND	2.2
	Nov-01	16.85	507	6.5	17.1	ND	18.8		16.85	891	6.7	15.1	0.5	ND
	Oct-02	17.22	523	6.5	17.6	ND	12.0		17.29	888	6.7	15.6	0.2	ND
	Jan-03	17.73	603		14.0	ND	11.3		17.73	953		12.0	0.1	ND
	Apr-03	18.86	733	6.6	13.1	ND	8.6		18.86	817	6.9	13.4	ND	ND
	Jul-03	17.75	553	6.6	13.9	ND	11.2		17.79	825	6.8	14.1	ND	ND
	Oct-03	19.06	530	6.5	14.0	ND	18.6		19.02	857	6.6	12.9	0.2	ND
	Feb-04	19.00	620	6.2	12.8	ND	48.0		18.95	852	6.8	13.0	ND	ND
	Apr-04	18.28	657	7.3	11.8	ND	22.4		18.30	828	7.2	12.9	0.1	ND
	Aug-04	16.78	689	6.5	13.8	ND	14.1		16.78	950	6.8	13.6	ND	ND
	Oct-04	17.91	572	6.6	14.9	ND	13.4		17.93	959	6.9	13.4	ND	ND
	Jan-05	18.71	493	6.9	13.4	ND	18.1		18.71	869	6.8	12.8	ND	ND
	Apr-05	18.80	598	6.2	12.1	ND	32.2		18.76	934	6.8	13.3	ND	ND
	Jul-05	16.82	695	7.1	13.6	ND	22.6		16.88	972	7.1	13.5	0.1	ND
	Sep-05	18.08	524	6.9	14.7	ND	15.2		18.12	932	6.8	13.1	0.2	ND
	Jan-06	18.98	454	6.0	14.2	ND	10.3		18.93	1027	6.1	13.1	0.2	ND
	Apr-06	19.52	398	7.0	12.3	ND	17.6		19.50	949	7.2	13.1	ND	ND
	Jul-06	19.45	418	7.0	13.9	ND	13.5		19.42	961	7.0	13.1	ND	ND
	Oct-06	18.44	488	7.2	15.9	ND	8.9		18.42	866	7.4	13.6	ND	ND
	Jan-07	18.97	643	6.8	14.5	ND	8.3		18.98	1014	7.2	13.0	ND	ND
	Apr-07	18.07	584	7.0	11.6	ND	9.1		18.01	932	7.2	12.8	ND	ND
	Aug-07	14.67	316	7.0	16.5	ND	4.2		14.67	1048	7.2	13.6	0.4	ND
	Oct-07	13.18	358	6.7	15.9	ND	2.6		13.22	1053	7.1	13.2	0.5	ND
	Feb-08	16.25	318	6.6	12.4	ND	4.9		16.28	1013	7.1	13.0	0.4	ND
	Apr-08	17.66	374	6.2	12.0	ND	6.5		17.67	1032	7.2	13.3	0.3	ND
	Jul-08	10.66	334	6.6	16.8	ND	1.1		10.69	1037	6.9	14.8	0.5	ND
	Oct-08	13.93	390	6.7	17.1	ND	0.7		14.01	1096	7.0	13.6	0.6	ND
	Jan-09	14.85	418	7.1	14.0	ND	1.5		14.91	1106	7.1	13.3	0.6	ND
	Apr-09	16.60	3.12	6.9	12.0	ND	3.0		16.61	10.75	7.1	13.4	0.5	ND
	Jul-09	16.15	349	6.6	13.9	ND	3.4		16.16	1165	7.0	13.9	0.5	ND
	Oct-09	16.41	395	6.4	14.4	0.1	3.5		16.39	1195	7.0	13.3	0.6	ND

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
2S	Jul-00		546			ND	44.2	**2D**		4050			133.0	268
	Sep-00		635			ND	46.0			480			164.0	338
	Nov-01	15.55	393	7.3	16.8	0.8	31.8		15.13	3560	7.5	15.5	295.0	297
	Oct-02	16.17	640	6.4	17.1	ND	59.0		16.18	5120	8.1	15.0	662.0	521
	Jan-03	16.41	715		14.0	ND	69.0		16.44	5600		13.0	617.0	525
	Apr-03	17.54	578	7.1	13.3	ND	59.0		17.69	4460	8.4	13.9	435.0	408
	Jul-03	16.55	528	6.8	14.1	ND	52.3		16.54	4772	8.4	15.1	664.0	401
	Oct-03	17.63	541	6.8	14.8	ND	52.4		17.60	4600	8.5	13.6	657.0	410
	Feb-04	17.51	570	6.9	13.3	ND	57.9		17.52	5590	8.2	13.9	541.0	506
	Apr-04	17.03	619	7.1	11.7	ND	22.6		17.04	2986	8.4	13.5	563.0	325
	Aug-04	15.43	577	7.5	13.8	ND	52.4		15.48	6668	8.2	15.1	465.0	407
	Oct-04	16.70	452	7.1	15.0	ND	36.4		16.70	6084	8.1	14.5	514.0	600
	Jan-05	17.35	490	6.9	13.2	ND	48.0		17.39	4702	8.0	13.0	461.0	424
	Apr-05	17.50	456	7.0	13.1	ND	45.9		17.47	4160	8.3	13.2	481.0	504
	Jul-05	15.61	468	7.1	13.3	ND	37.0		15.60	4680	7.8	14.8	350.0	363
	Sep-05	16.88	337	7.4	14.7	ND	23.7		16.90	5380	8.1	14.0	558.0	443
	Jan-06	17.49	318	6.8	14.1	ND	17.8		17.49	5584	7.9	14.0	547.0	481
	Apr-06	18.12	247	6.8	12.4	ND	12.5		18.11	5508	7.6	13.9	664.0	453
	Jul-06	18.05	205	7.1	14.1	ND	8.1		18.04	5510	7.9	14.3	529.0	504
	Oct-06	17.11	205	6.5	14.9	ND	11.2		17.16	4240	8.2	13.8	487.0	379
	Jan-07	17.63	284	6.9	13.5	ND	13.7		17.68	5772	7.7	12.6	493.0	459
	Apr-07	16.34	273	6.7	12.3	ND	14.4		16.34	5326	8.1	14.3	441.0	368
	Aug-07	13.57	275	6.8	17.1	ND	14.0		13.65	5486	7.7	15.2	352.0	408
	Oct-07	12.19	322	6.6	16.5	ND	12.0		12.22	5296	8.3	14.3	462.0	373
	Feb-08	15.23	276	6.6	12.7	ND	10.0		15.30	4802	8.0	13.1	390.0	339
	Apr-08	15.47	286	6.8	12.1	ND	11.0		15.48	5132	8.0	13.6	395.0	426
	Jul-08	9.44	308	6.7	14.4	ND	10.1		9.51	5970	7.5	14.4	385.0	412
	Oct-08	13.10	337	6.7	15.8	ND	7.0		13.18	4520	7.5	14.4	335.0	292
	Jan-09	13.94	329	7.4	12.9	0.2	6.9		14.02	4236	7.7	12.5	342.0	217
	Apr-09	15.44	269	7.0	11.5	ND	7.7		15.45	4854	7.5	13.5	274.0	287
	Jul-09	14.90	253	6.9	12.7	ND	5.7		14.86	4088	7.8	14.1	163.0	289
	Oct-09	15.00	279	6.9	14.6	ND	6.1		15.02	3742	7.9	13.8	350.0	369

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
3S	Jul-00		704			ND	11.8	**3D**		897			0.4	2.7
	Sep-00		467			1.0	6.7			1020			0.6	3.6
	Nov-01	15.00	738	6.7	17.7	ND	64.0		15.55	1096	6.9	14.9	2.4	48.7
	Oct-02	15.65	483	6.5	18.1	0.3	13.3		16.22	1920	6.5	16.5	6.0	153
	Jan-03	16.05	612		14.0	ND	36.0		16.65	2160		13.0	5.8	186
	Apr-03	16.99	447	7.1	11.7	0.2	67.0		17.55	1806	7.0	14.3	4.8	235
	Jul-03	15.74	525	7.1	14.3	ND	26.5		16.33	2180	6.8	14.2	85.4	359
	Oct-03	16.90	873	7.1	15.7	ND	88.9		17.42	3099	6.8	13.2	120.0	415
	Feb-04	17.09	678	7.4	12.7	ND	58.2		17.61	2734	7.0	13.0	102.0	426
	Apr-04	16.43	615	7.6	11.5	0.2	24.6		17.10	2253	7.1	12.9	150.0	336
	Aug-04	14.88	545	7.3	14.0	ND	23.2		15.55	6016	7.0	13.9	210.0	402
	Oct-04	15.91	904	7.0	15.9	ND	85.7		16.61	5466	7.1	13.4	251.0	417
	Jan-05	16.97	500	7.0	13.2	ND	28.7		17.61	3338	6.8	12.8	160.0	473
	Apr-05	16.98	445	7.2	12.1	ND	17.6		17.55	39.84	7.1	13.4	189.0	496
	Jul-05	14.73	470	7.0	13.7	ND	16.4		15.48	4920	6.9	13.6	235.0	407
	Sep-05	16.02	612	7.3	16.0	0.2	55.0		16.81	3802	6.6	13.4	193.0	356
	Jan-06	17.03	516	7.0	14.7	0.1	20.4		17.56	4204	7.0	13.4	148.0	375
	Apr-06	17.46	507	6.8	12.2	ND	27.2		17.96	4132	7.1	13.2	232.0	410
	Jul-06	17.26	437	6.6	14.4	ND	20.6		17.91	3948	7.1	14.7	206.0	376
	Oct-06	16.58	350	6.4	15.9	ND	18.2		17.30	3480	7.1	13.3	275.0	375
	Jan-07	17.24	493	6.7	13.1	0.1	24.9		17.86	4404	7.1	13.0	213.0	376
	Apr-07	15.81	465	6.6	13.5	ND	21.1		16.30	4940	7.1	13.6	250.0	411
	Aug-07	13.39	452	6.9	18.5	ND	18.3		14.12	4306	7.1	14.3	138.0	416
	Oct-07	12.15	584	6.7	17.1	0.6	23.7		12.75	4398	7.0	13.7	175.0	396
	Feb-08	14.66	481	6.5	12.6	2.5	18.7		15.80	3201	7.0	13.2	178.0	397
	Apr-08	15.18	432	6.8	11.8	1.4	12.1		15.78	4526	7.2	13.5	172.0	391
	Jul-08	8.92	489	6.8	16.4	0.1	5.3		9.90	2601	6.8	14.1	128.0	388
	Oct-08	12.85	442	6.6	16.5	1.0	3.5		13.81	3941	6.8	13.8	123.0	341
	Jan-09	13.47	448	6.7	13.6	1.0	4.2		14.61	3832	7.0	13.6	129.0	318
	Apr-09	15.11	431	7.0	11.2	1.2	5.2		15.78	3576	6.8	12.8	112.0	319
	Jul-09	14.40	460	6.8	13.7	1.1	4.5		14.88	3685	7.0	14.2	116.0	352
	Oct-09	14.46	450	6.7	14.9	1.9	5.4		15.18	3703	7.1	13.7	110.0	327

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
4S	Jul-00		855			ND	1.1	**4D**		1100			0.3	2.6
	Nov-01	14.95	1244	6.4	24.1	ND	2.6		15.20	963	6.8	18.5	0.7	ND
	Oct-02	15.20	1420	6.4	21.8	ND	0.4		15.44	979	6.9	19.1	0.1	ND
	Nov-03	16.94	1147	6.2	17.5	ND	8.1		17.20	748	6.8	15.9	0.3	ND
	Oct-04	16.24	1416	7.1	17.0	ND	5.2		16.00	1026	7.1	15.1	0.8	ND
	Sep-05	16.17	1299	7.1	17.7	ND	5.4		16.32	991	7.1	15.4	0.3	ND
	Oct-06	16.41	1425	6.8	16.8	ND	4.9		16.66	1252	7.5	14.4	0.3	ND
	Oct-07	11.84	1327	6.7	17.6	ND	4.9		12.10	1251	7.2	14.5	0.8	ND
	Oct-08	12.61	1086	6.7	15.5	ND	7.7		12.86	1197	7.1	15.0	0.4	ND
	Oct-09	14.75	1592	6.3	15.3	ND	11.4		15.05	1324	7.1	14.2	0.4	ND
5S	Jul-00		804			ND	6.5	**5D**		3450			44.8	40.4
	Nov-01	14.90	853	7.1	17.1	1.0	20.4		15.40	3460	7.3	16.6	338.0	135
	Oct-02	15.64	747	6.9	18.2	ND	18.1		15.14	4500	7.7	17.2	547.0	386
	Jan-03	16.07	815		15.0	ND	21.5		16.61	4930		15.0	485.0	329
	Apr-03	16.68	695	7.2	14.1	ND	23.0		17.19	3596	8.0	15.9	417.0	285
	Jul-03	15.48	720	6.8	16.8	ND	20.7		16.01	4750	7.6	16.8	526.0	346
	Oct-03	16.59	696	7.3	15.4	ND	20.1		17.10	4670	8.0	14.5	515.0	403
	Feb-04	16.94	584	7.5	12.3	ND	28.2		17.45	3573	8.0	14.7	517.0	470
	Apr-04	16.19	743	6.5	12.6	ND	14.3		16.71	3132	7.7	15.1	548.0	367
	Aug-04	14.85	555	7.2	15.3	ND	15.3		15.28	7226	7.7	15.8	488.0	389
	Oct-04	15.81	690	7.3	15.2	ND	14.8		16.36	5204	7.9	15.1	406.0	321
	Jan-05	16.99	622	7.4	14.1	ND	17.3		17.50	3995	7.7	15.1	423.0	389
	Apr-05	16.72	638	7.5	14.1	ND	17.7		17.24	4446	8.0	15.5	473.0	453
	Jul-05	14.61	685	7.1	14.4	ND	15.2		15.20	5100	7.5	15.6	487.0	391
	Sep-05	16.08	568	7.2	15.6	0.3	15.0		16.66	4120	7.7	15.3	388.0	322
	Jan-06	17.85	668	7.2	15.3	0.4	16.1		17.34	5122	7.0	15.5	443.0	345
	Apr-06	16.89	627	7.0	14.7	0.5	14.8		17.40	5340	7.8	15.6	490.0	428
	Jul-06	16.96	636	7.1	15.3	0.4	14.5		17.53	5296	7.7	15.6	510.0	434
	Oct-06	16.49	502	6.8	15.6	0.4	13.0		17.04	4284	7.6	15.2	415.0	417
	Jan-07	17.12	646	7.2	14.8	0.7	13.6		17.66	5328	7.8	14.8	419.0	397
	Apr-07	15.34	377	7.0	12.6	ND	11.3		15.85	6008	7.6	15.3	455.0	427
	Aug-07	13.79	472	7.1	17.1	0.7	12.0		14.36	4224	7.9	16.2	261.0	262
	Oct-07	12.41	476	6.8	17.1	0.8	7.9		12.94	3694	8.0	15.5	334.0	274
	Feb-08	15.45	549	6.7	13.8	1.6	13.8		15.97	3413	8.0	14.6	297.0	226
	Apr-08	15.27	563	7.3	13.4	1.2	11.2		15.76	3622	8.3	15.4	241.0	249
	Jul-08	9.59	317	6.9	15.4	0.5	6.2		12.85	3514	6.8	15.6	322.0	215
	Oct-08	13.71	583	6.6	16.6	2.7	9.1		14.25	3716	8.1	15.7	269.0	218
	Jan-09	14.45	553	7.1	13.8	3.6	8.5		14.98	3618	8.5	15.2	280.0	210
	Apr-09	15.25	509	7.2	13.4	2.2	8.0		15.75	3488	8.1	15.3	220.0	217
	Jul-09	14.21	516	6.8	14.1	2.1	7.4		14.72	3694	6.8	15.5	357.0	241
	Oct-09	14.59	540	7.2	14.6	2.6	7.8		15.11	3594	8.4	15.2	343.0	198

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
6S	Jul-00		644			0.1	1.6	**6D**		716			0.4	0.8
	Nov-01	15.50	1824	6.9	15.6	1.1	0.9		15.38	696	7.1	14.4	0.5	ND
	Oct-02	13.71	971	7.0	16.2	0.8	0.3		13.77	958	7.1	15.0	0.2	ND
	Nov-03	15.33	1070	7.3	14.0	1.8	0.4		15.20	623	7.2	14.0	0.2	ND
	Oct-04	14.51	729	7.7	13.3	0.1	ND		14.53	1176	7.4	14.6	0.8	0.6
	Sep-05	14.66	988	7.3	15.3	0.9	0.4		14.70	791	7.1	13.3	0.2	ND
	Oct-06	14.89	712	7.6	15.6	0.4	0.2		15.09	770	7.6	13.6	ND	ND
	Oct-07	10.53	1238	7.2	16.6	1.8	0.8		10.87	850	7.5	13.7	0.5	0.3
	Oct-08	11.51	12.54	7.4	15.5	3.5	ND		11.65	1184	7.3	13.9	0.6	ND
	Oct-09	13.41	1312	7.6	13.7	1.6	ND		13.45	1059	7.2	13.1	0.4	ND
7S	Jul-00		514			ND	28.2	**7D**		781			225.0	120
	Nov-01	17.50	418	6.2	18.8	3.0	4.8		17.45	4770	8.5	18.2	624.0	282
	Oct-02	18.33	420	6.2	18.8	0.9	17.5		18.28	4180	8.7	18.7	571.0	247
	Jan-03	18.71	440		15.0	1.9	10.7		18.61	3600		16.0	473.0	158
	Apr-03	19.19	395	7.3	13.2	3.8	13.0		19.04	3366	8.6	17.9	505.0	187
	Jul-03	18.12	443	7.1	14.8	2.5	14.5		18.02	3725	8.1	17.2	571.0	202
	Oct-03	19.15	424	6.6	16.3	3.2	18.8		19.02	2684	8.8	16.2	424.0	142
	Feb-04	19.51	458	7.0	13.3	3.5	12.9		19.28	2470	8.9	15.3	410.0	151
	Apr-04	18.81	566	6.8	12.6	3.2	11.7		18.62	2233	8.8	15.8	467.0	131
	Aug-04	17.68	475	6.4	15.5	2.5	17.0		17.54	3078	8.8	16.5	395.0	147
	Oct-04	19.55	443	7.2	16.3	6.5	18.9		18.37	2630	9.0	16.1	329.0	92
	Jan-05	19.67	416	6.7	14.4	43.9	22.8		19.43	2080	8.5	15.5	285.0	83
	Apr-05	19.25	459	5.7	13.3	2.2	20.6		19.15	2149	8.9	16.1	279.0	77
	Jul-05	17.31	480	6.6	14.3	1.5	18.9		17.27	2586	8.4	16.1	323.0	93
	Sep-05	18.80	423	6.6	16.3	1.9	24.4		18.72	1879	8.7	16.0	249.0	60
	Jan-06	19.34	431	7.0	16.1	2.1	18.4		19.24	2028	7.0	15.9	259.0	51
	Apr-06	19.29	393	7.0	14.3	1.7	15.9		19.12	2038	8.3	14.8	284.0	67
	Jul-06	19.58	417	6.8	15.5	1.5	16.8		19.49	2699	8.9	16.3	372.0	46
	Oct-06	19.10	333	6.4	17.1	1.3	12.4		19.03	2337	8.4	15.7	378.0	14.2
	Jan-07	19.71	418	6.3	14.5	1.7	12.4		19.58	3276	8.3	15.2	355.0	8
	Apr-07	17.85	470	6.4	13.0	0.9	14.3		17.51	3259	7.5	15.7	375.0	1.8
	Aug-07	16.72	345	6.6	17.3	1.0	15.9		16.60	2282	8.1	16.1	234.0	11.6
	Oct-07	15.15	404	6.4	17.2	0.5	15.5		15.26	2155	8.3	15.8	175.0	10.4
	Feb-08	18.47	245	6.4	13.6	1.4	16.5		18.26	1594	8.6	15.1	183.0	10.7
	Apr-08	18.06	251	6.4	13.0	1.3	17.7		17.86	1562	8.9	15.6	171.0	11.3
	Jul-08	12.96	437	7.1	17.2	ND	9.1		12.85	1414	8.6	15.7	173.0	7.8
	Oct-08	16.95	173	6.4	16.0	0.6	10.3		16.75	1458	8.0	15.6	144.0	13.3
	Jan-09	17.58	169	6.5	14.3	0.8	8.4		17.35	14.71	8.7	15.3	164.0	14
	Apr-09	17.91	174	6.3	12.4	1.0	10.1		17.85	1298	8.7	15.3	126.0	7.3
	Jul-09	16.82	191	6.8	13.2	1.2	9.3		16.71	1395	7.1	15.5	165.0	8.5
	Oct-09	17.37	191	6.4	15.0	1.6	9.9		17.30	1381	8.9	15.0	153.0	7.3

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
8S	Jul-00		721			0.4	ND	**8D**		492			0.2	0.9
	Nov-01	10.62	477	6.9	16.5	1.2	ND		10.76	468	7.0	14.9	0.2	ND
	Oct-02	10.90	692	6.7	16.9	0.7	ND		11.06	513	7.2	14.9	0.2	ND
	Nov-03	12.27	460	7.3	14.7	0.7	ND		12.37	389	7.4	13.4	0.2	ND
	Oct-04	11.76	505	7.1	14.5	0.6	ND		11.88	484	7.4	13.8	ND	ND
	Sep-05	11.96	364	7.3	15.3	0.7	ND		12.10	463	7.2	13.5	0.2	ND
	Oct-06	12.05	556	7.2	14.7	0.6	ND		12.17	422	7.6	13.1	0.1	ND
	Oct-07	8.00	637	7.2	15.7	0.9	1.9		8.15	511	7.5	13.6	0.3	ND
	Oct-08	9.40	981	7.2	16.6	0.5	13.2		9.56	504	7.4	14.0	0.5	ND
	Oct-09	10.80	880	7.1	13.9	0.8	ND		10.95	527	7.5	13.2	0.4	ND
9S	Jul-00		631			ND	0.4	**9D**		631			0.2	0.8
	Nov-01	9.08	588	6.9	17.2	ND	6.5		9.04	559	7.1	15.4	0.4	ND
	Oct-02	7.30	659	6.9	18.0	ND	2.9		7.36	638	7.2	15.3	0.1	ND
	Nov-03	10.59	505	7.2	14.9	ND	2.1		10.60	476	7.3	13.8	0.2	ND
	Oct-04	10.03	644	6.5	14.7	ND	1.4		10.25	585	6.9	13.3	ND	ND
	Sep-05	10.34	665	7.2	16.4	ND	0.6		10.55	559	7.2	13.9	0.2	ND
	Oct-06	10.31	592	7.2	14.9	ND	2.2		10.49	491	7.3	13.5	0.2	ND
	Oct-07	6.81	594	7.0	17.3	ND	2.4		7.11	632	7.5	14.1	0.3	ND
	Oct-08	8.48	766	7.0	17.8	ND	0.9		8.38	735	7.4	14.3	0.5	ND
	Oct-09	9.19	1016	7.3	14.3	ND	ND		9.42	770	7.3	13.8	0.4	ND
10S	Jul-00		955			ND	1.1	**10D**		827			ND	1.1
	Nov-01	9.71	637	6.7	15.3	ND	0.4		9.81	783	7.1	14.5	0.2	ND
	Oct-02	10.49	673	6.7	15.7	ND	ND		10.58	846	7.1	14.3	ND	0.2
	Nov-03	11.08	487	7.1	13.7	ND	ND		11.16	601	7.3	12.7	ND	ND
	Oct-04	10.68	572	7.0	13.3	ND	ND		10.85	781	7.3	12.4	ND	ND
	Sep-05	11.07	519	7.0	14.2	ND	0.4		11.26	769	7.1	12.9	ND	ND
	Oct-06	11.05	504	7.3	13.9	ND	ND		11.26	695	7.7	12.6	ND	ND
	Oct-07	7.82	774	7.0	15.3	ND	29.7		8.03	720	7.4	13.0	0.3	ND
	Oct-08	9.51	727	7.0	15.6	0.1	12.8		9.75	660	7.4	13.7	0.3	ND
	Oct-09	9.82	612	7.6	12.9	ND	3.7		9.95	612	7.6	12.6	0.3	ND
11S	Jul-00		771			ND	8.4	**11D**		562			ND	0.2
	Nov-01	13.21	6.6	16.4		ND	3.9		13.30	570	7.3	14.3	ND	ND
	Oct-02	14.39	776	6.4	16.9	ND	3.9		14.60	613	7.1	15.7	ND	ND
	Nov-03	14.42	571	6.9	14.6	ND	2.2		14.42	473	7.4	13.1	ND	ND
	Oct-04	14.30	758	7.0	14.2	ND	1.6		14.44	596	7.1	12.6	ND	ND
	Sep-05	14.72	706	7.2	15.4	ND	3.2		14.98	575	7.2	13.3	ND	0.2
	Oct-06	14.67	603	7.0	15.5	ND	1.8		14.91	499	7.8	13.2	ND	ND
	Oct-07	12.07	875	6.6	15.8	ND	23.2		12.50	602	7.4	14.0	ND	ND
	Oct-08	13.51	826	6.8	15.5	ND	4.2		13.79	603	7.6	16.5	ND	ND
	Oct-09	13.51	842	6.8	13.8	ND	6.6		13.60	592	8.0	12.6	ND	ND

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
12S	Jul-00		682			ND	3.2	**12D**		618			0.1	ND
	Nov-01	12.04	751	6.5	16.4	ND	4.5		11.80	644	7.1	14.3	ND	ND
	Oct-02	13.18	702	6.5	16.8	ND	4.5		12.95	620	7.1	15.1	ND	ND
	Nov-03	13.11	540	6.9	15.2	ND	3.4		13.26	487	7.4	12.3	ND	ND
	Oct-04	13.05	688	7.1	13.8	ND	1.9		12.82	623	7.1	12.3	ND	ND
	Sep-05	13.51	699	7.2	14.8	ND	5.6		13.34	603	7.2	12.6	ND	ND
	Oct-06	13.57	586	7.2	14.3	ND	2.5		13.33	522	7.9	12.6	ND	ND
	Oct-07	10.47	716	6.8	15.7	ND	5.9		10.55	616	7.5	13.7	0.2	ND
	Oct-08	12.35	807	6.8	14.6	ND	13.1		12.12	632	7.4	13.2	0.2	ND
	Oct-09	12.29	738	7.1	13.7	ND	11.7		12.06	616	8.0	12.3	0.3	ND
13S	Jul-00		812			0.9	12.7	**13D**		1000			8.4	7.7
	Nov-01	13.21	691	6.3	19.8	0.5	9.2		13.30	907	6.7	17.2	3.5	ND
	Oct-02	13.92	639	7.1	20.4	ND	24.5		13.84	916	7.0	18.9	2.6	ND
	Jan-03	14.52	633		16.0	ND	24.0		14.42	968		16.0	1.8	ND
	Apr-03	14.76	560	7.0	14.5	0.2	31.0		14.78	805	7.5	17.0	1.3	2.8
	Jul-03	13.88	588	7.0	16.3	ND	36.0		13.81	901	7.1	16.5	1.5	7.4
	Oct-03	14.75	584	7.1	17.5	ND	29.5		14.61	907	7.1	16.0	1.6	11.2
	Feb-04	14.95	537	7.8	13.5	ND	36.5		14.86	896	7.5	14.7	3.0	24.8
	Apr-04	14.41	644	7.0	13.1	ND	31.8		14.35	935	7.2	15.4	4.0	24.0
	Aug-04	13.51	598	7.1	16.5	3.1	40.2		13.45	1134	7.2	16.0	3.9	31.3
	Oct-04	14.21	603	7.2	16.5	ND	37.9		14.15	1157	7.1	15.3	6.3	37.4
	Jan-05	15.26	531	6.6	14.1	0.2	32.6		15.18	1125	6.7	14.8	8.6	41.5
	Apr-05	14.97	572	6.0	13.7	ND	40.4		14.87	1233	6.7	15.3	9.3	43.9
	Jul-05	13.17	558	7.0	15.0	ND	43.0		13.13	1270	7.2	15.3	10.6	48.0
	Sep-05	14.66	537	7.1	16.5	ND	31.0		14.60	1228	7.2	15.0	14.0	48.0
	Jan-06	15.11	556	6.6	14.7	ND	35.8		15.05	1343	7.0	14.5	15.9	44.6
	Apr-06	14.76	504	6.7	13.4	ND	38.0		14.68	1261	6.9	14.8	15.3	45.4
	Jul-06	15.32	484	6.7	15.2	ND	35.1		15.36	1277	6.9	14.9	15.8	44.2
	Oct-06	14.81	445	7.0	16.4	ND	37.1		14.76	1101	7.4	14.6	16.9	43.1
	Jan-07	15.33	523	6.7	13.2	ND	36.4		15.45	1296	7.1	13.6	15.1	41.1
	Apr-07	13.26	500	7.1	12.2	ND	37.0		13.16	1158	7.2	14.3	20.0	35.0
	Aug-07	12.67	532	7.0	17.0	ND	34.8		12.61	1256	7.0	15.1	14.5	35.5
	Oct-07	11.32	571	6.9	16.7	ND	30.1		11.28	1244	7.1	14.6	18.8	28.0
	Feb-08	14.29	506	6.7	13.0	ND	24.7		14.23	1217	7.1	13.4	15.5	28.3
	Apr-08	13.71	473	7.5	12.8	ND	27.0		13.62	1098	7.8	14.5	22.0	22.7
	Jul-08	9.37	483	6.9	16.8	ND	18.6		9.35	1075	6.9	16.8	15.1	15.8
	Oct-08	13.06	552	6.9	16.6	ND	5.0		13.00	1130	6.9	14.8	18.3	13.8
	Jan-09	13.56	534	7.1	14.8	ND	3.5		13.49	1074	7.1	14.7	14.2	10.7
	Apr-09	13.25	508	6.3	12.5	ND	7.0		13.64	1052	6.8	14.6	13.8	8.2
	Jul-09	12.50	505	6.7	13.8	ND	6.6		12.41	1039	6.9	15.1	14.9	6.3
	Oct-09	13.22	508	6.7	15.7	ND	4.5		13.18	996	7.2	14.7	12.3	23.1

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
14S	Jul-00		755			8.4	3.6	**14D**		623			ND	1.4
	Nov-01	12.05	685	6.5	17.2	ND	0.8		12.08	673	7.2	14.2	ND	ND
	Oct-02	13.14	710	6.4	16.5	ND	2.3		13.18	641	7.1	13.9	ND	ND
	Nov-03	13.28	553	6.9	13.5	ND	2.0		13.32	493	7.4	11.5	ND	ND
	Oct-04	12.86	386	7.3	13.8	ND	3.1		13.00	338	7.1	11.7	ND	ND
	Sep-05	13.36	710	7.2	14.2	ND	3.6		13.49	613	7.2	12.2	ND	ND
	Oct-06	13.55	592	7.1	15.1	7.9	1.7		13.69	531	7.9	12.1	ND	ND
	Oct-07	10.69	797	6.7	16.4	ND	5.4		10.86	6.34	7.3	13.0	ND	ND
	Oct-08	12.26	883	6.8	15.1	ND	9.2		12.39	634	7.5	12.3	1.1	ND
	Oct-09	11.98	920	6.7	13.7	ND	8.3		12.12	628	7.9	11.9	ND	ND
15S	Jul-00		841			ND	16.3	**15D**		1040			0.5	2.2
	Nov-01	15.03	657	6.8	18.9	ND	14.1		15.13	753	7.0	16.3	0.8	ND
	Oct-02	15.54	672	7.0	18.7	ND	25.0		15.65	706	7.0	16.5	0.7	ND
	Jan-03	16.43	615		15.0	ND	18.9		16.65	714		14.0	0.5	ND
	Apr-03	16.35	542	7.2	14.5	ND	23.0		16.47	616	7.3	14.6	0.5	ND
	Jul-03	15.56	663	7.0	15.1	ND	48.7		15.68	652	7.0	15.2	0.4	ND
	Oct-03	16.38	608	6.5	15.2	ND	25.1		16.51	676	6.6	14.1	0.5	ND
	Feb-04	16.50	472	6.7	13.5	ND	27.9		16.57	525	6.9	13.7	0.9	ND
	Apr-04	16.17	666	7.1	13.0	ND	26.6		16.28	718	7.2	13.9	0.7	ND
	Aug-04	15.28	773	7.3	15.5	ND	64.2		15.41	670	7.3	14.5	0.4	0.3
	Oct-04	15.85	597	7.7	15.0	ND	28.0		15.95	658	7.4	13.9	0.2	ND
	Jan-05	17.04	551	6.9	13.8	ND	26.9		17.11	617	7.0	13.4	0.3	ND
	Apr-05	16.58	582	7.5	12.9	ND	31.9		16.68	654	7.3	13.4	0.1	ND
	Jul-05	14.97	752	7.2	15.0	ND	65.0		15.02	642	7.3	14.2	0.4	ND
	Sep-05	16.35	554	7.1	15.0	ND	30.0		16.45	597	7.1	14.2	0.3	ND
	Jan-06	16.84	585	6.6	13.9	ND	27.1		16.93	686	6.9	13.2	0.8	ND
	Apr-06	16.14	557	7.0	13.7	ND	28.9		16.24	646	7.0	13.6	1.2	ND
	Jul-06	17.01	550	7.0	14.5	ND	26.2		17.12	601	7.1	14.1	0.3	ND
	Oct-06	16.66	499	7.0	15.2	ND	24.3		16.78	532	7.6	13.5	0.3	ND
	Jan-07	17.25	606	6.8	12.5	ND	26.2		17.35	632	7.3	12.7	0.7	ND
	Apr-07	14.45	572	7.1	12.4	ND	17.9		14.51	609	7.3	13.0	0.6	ND
	Aug-07	14.52	1062	6.5	16.5	ND	101.0		14.62	624	7.0	14.3	0.6	ND
	Oct-07	13.22	867	7.1	15.8	ND	65.3		13.37	630	7.5	14.1	0.6	ND
	Feb-08	16.25	560	7.0	13.1	ND	27.8		16.36	721	7.4	12.8	0.6	ND
	Apr-08	15.31	562	7.3	13.5	ND	24.7		15.42	748	7.5	13.4	0.5	ND
	Jul-08	11.87	577	7.1	14.0	ND	23.2		12.02	706	7.4	13.1	0.7	ND
	Oct-08	15.06	647	7.0	15.2	0.4	14.3		15.22	719	7.2	13.4	1.3	ND
	Jan-09	15.59	593	6.8	13.3	ND	25.3		15.71	708	7.3	13.1	1.7	ND
	Apr-09	15.36	530	6.4	11.8	ND	25.7		15.47	682	7.0	13.0	3.4	ND
	Jul-09	13.95	509	6.7	12.8	ND	22.9		14.02	698	7.3	13.8	4.0	ND
	Oct-09	14.85	491	6.8	14.4	ND	22.3		14.95	677	7.4	13.2	6.5	ND

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
16S	Jul-00		819			ND	5.2	**16D**		1060			0.3	1.6
	Nov-01	16.65	682	7.1	15.9	ND	16.3		16.50	976	8.8	14.3	0.6	ND
	Oct-02	16.90	641	7.0	16.3	ND	21.6		16.74	1040	6.8	14.8	0.2	ND
	Jan-03	18.25	695		13.0	ND	24.0		18.10	1114		12.0	0.2	ND
	Apr-03	18.08	639	6.2	12.9	ND	20.0		17.91	995	6.8	13.0	0.2	ND
	Jul-03	16.72	623	7.1	13.8	ND	25.3		16.60	949	7.1	13.8	0.2	ND
	Oct-03	17.90	642	7.2	14.1	ND	23.9		17.73	945	7.2	12.5	0.3	ND
	Feb-04	18.51	617	7.5	12.0	ND	24.6		18.35	868	7.3	12.2	ND	ND
	Apr-04	17.84	723	7.0	12.2	ND	18.7		17.68	936	7.1	12.5	0.3	ND
	Aug-04	16.32	673	7.2	13.3	ND	24.8		16.18	1007	7.2	13.3	0.1	0.2
	Oct-04	17.23	691	7.5	14.0	ND	22.6		17.07	1029	7.2	12.9	ND	ND
	Jan-05	19.02	631	6.9	13.0	ND	28.3		18.85	934	6.9	13.0	0.2	ND
	Apr-05	18.43	635	7.4	13.4	ND	20.9		18.28	947	7.3	12.9	ND	ND
	Jul-05	16.02	650	7.4	13.6	ND	21.8		15.82	971	7.2	13.3	0.1	ND
	Sep-05	17.58	637	7.3	13.9	ND	26.0		17.42	940	7.2	12.6	0.3	ND
	Jan-06	18.84	721	6.2	13.8	ND	27.9		18.68	1041	6.4	12.7	0.4	ND
	Apr-06	18.25	645	7.1	13.1	ND	20.5		18.18	942	6.9	12.9	ND	ND
	Jul-06	18.31	627	7.0	13.4	ND	29.5		18.28	931	7.0	13.4	0.2	ND
	Oct-06	18.49	555	7.3	14.2	ND	23.8		18.43	822	7.4	12.7	ND	ND
	Jan-07	19.09	642	6.8	13.7	ND	23.3		18.93	976	7.1	12.1	0.3	ND
	Apr-07	16.49	581	6.9	12.1	ND	16.0		16.32	679	7.1	12.4	ND	ND
	Aug-07	15.75	631	7.2	14.8	ND	26.4		15.61	954	7.0	13.4	0.6	ND
	Oct-07	14.45	678	6.9	14.2	ND	28.7		14.30	990	7.2	12.6	0.6	ND
	Feb-08	17.73	633	6.7	12.7	ND	24.4		17.58	976	6.9	12.3	0.6	ND
	Apr-08	16.82	625	7.2	13.2	ND	20.4		16.88	980	7.3	12.9	0.7	ND
	Jul-08	11.77	622	7.1	13.7	ND	17.1		11.65	933	7.2	13.4	0.6	ND
	Oct-08	15.95	644	6.8	14.5	0.2	26.0		15.08	983	7.0	12.9	0.9	ND
	Jan-09	16.84	633	7.3	13.2	0.1	30.0		16.69	966	7.1	12.6	0.9	0.2
	Apr-09	16.85	603	7.1	13.8	ND	24.5		16.69	909	7.1	12.9	0.6	ND
	Jul-09	15.22	605	7.2	13.6	ND	19.4		15.10	940	7.2	13.0	0.5	ND
	Oct-09	15.87	617	7.5	13.2	ND	25.1		15.74	930	7.3	12.5	0.7	ND

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
17S	Jul-00		902			0.3	7.2	**17D**		786			0.2	1.6
	Nov-01	13.04	701	6.9	16.9	ND	11.9		12.75	646	7.1	14.8	0.3	ND
	Oct-02	13.60	701	6.4	18.9	ND	27.3		13.88	615	7.0	18.4	0.2	ND
	Jan-03	14.41	757		13.0	ND	40.0		14.71	624		12.0	0.1	ND
	Apr-03	13.91	595	7.3	13.0	ND	24.0		14.18	567	7.0	13.9	0.2	ND
	Jul-03	13.28	630	7.0	13.1	ND	24.2		13.60	623	7.0	14.0	ND	ND
	Oct-03	13.96	668	7.1	14.0	ND	27.9		14.26	620	7.4	13.1	0.2	ND
	Feb-04	14.07	522	7.1	12.5	ND	20.8		14.31	480	7.3	12.5	0.1	ND
	Apr-04	13.95	457	7.1	12.5	ND	16.6		14.26	676	7.3	13.1	0.2	ND
	Aug-04	13.14	662	7.1	14.0	ND	13.4		13.45	638	7.1	14.1	0.1	0.2
	Oct-04	13.55	680	7.5	13.8	ND	18.2		13.83	639	7.5	13.0	ND	ND
	Jan-05	14.85	643	7.0	13.2	ND	24.6		15.15	597	7.1	12.6	0.1	ND
	Apr-05	14.16	703	7.3	12.3	ND	24.0		14.42	628	7.4	12.6	ND	ND
	Jul-05	12.82	680	7.3	13.3	ND	18.6		13.14	634	7.3	13.5	ND	ND
	Sep-05	14.01	682	7.1	13.9	ND	25.0		14.27	606	7.1	13.0	0.2	0.3
	Jan-06	14.61	703	7.0	14.0	ND	18.7		14.91	659	7.0	12.5	0.1	ND
	Apr-06	13.50	647	7.0	13.7	ND	15.0		13.78	604	7.0	13.1	ND	ND
	Jul-06	14.71	658	7.1	14.1	ND	24.0		15.01	602	7.1	13.5	0.2	ND
	Oct-06	14.63	626	7.2	15.1	ND	29.0		14.93	537	7.7	13.0	ND	ND
	Jan-07	15.08	751	6.8	13.8	ND	30.2		15.37	636	7.4	12.5	ND	ND
	Apr-07	11.21	619	7.0	12.6	ND	6.5		11.37	576	7.4	12.7	ND	ND
	Aug-07	12.51	749	7.3	14.2	ND	33.2		12.83	635	7.6	13.0	0.1	ND
	Oct-07	11.21	749	7.1	15.2	ND	27.1		11.54	635	7.5	13.6	0.1	ND
	Feb-08	14.20	647	7.1	13.7	ND	22.3		14.51	640	7.5	12.6	0.1	ND
	Apr-08	12.85	663	7.3	13.6	ND	25.4		13.13	651	7.7	13.3	ND	ND
	Jul-08	10.49	646	7.2	14.4	ND	19.8		10.86	626	7.4	13.3	0.3	ND
	Oct-08	13.05	735	6.9	14 .3	0.2	18.0		13.31	641	7.4	13.1	1.1	ND
	Jan-09	13.81	627	6.6	13.9	0.4	11.8		13.92	648	7.3	12.8	ND	ND
	Apr-09	12.95	608	6.5	12.4	ND	8.2		13.22	629	7.2	13.0	0.1	ND
	Jul-09	11.42	649	6.8	12.6	ND	8.5		11.63	638	7.4	13.2	0.1	ND
	Oct-09	12.45	625	7.4	13.4	ND	9.4		12.70	624	7.8	12.8	0.2	ND
18S	Jul-00		798			ND	3.4	**18D**		736			ND	1.2
	Nov-01	12.11	767	6.5	17.3	ND	2.9		12.27	714	7.1	13.2	ND	0.2
	Oct-02	13.19	660	6.4	17.3	ND	1.7		13.31	679	7.1	13.6	ND	ND
	Nov-03	13.16	543	6.9	14.3	ND	1.8		13.21	519	7.4	11.5	ND	ND
	Oct-04	12.96	734	7.1	14.4	ND	1.8		13.11	677	7.1	11.8	ND	ND
	Sep-05	13.38	715	7.2	15.1	ND	2.0		13.50	643	7.2	12.0	ND	ND
	Oct-06	13.90	593	7.1	15.4	ND	0.6		14.05	544	7.8	12.2	ND	ND
	Oct-07	11.18	755	6.7	16.3	ND	2.8		11.36	663	7.3	12.5	ND	ND
	Oct-08	12.51	827	6.8	15.1	ND	4.2		12.57	658	7.4	12.2	ND	ND
	Oct-09	12.02	844	7.0	14.2	ND	5.0		12.10	655	7.9	11.8	ND	ND

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
19S	Jul-00		892			ND	4.6	**19D**		722			ND	1.9
	Nov-01	16.67	759	6.6	15.4	ND	12.8		17.10	631	7.0	15.3	0.3	ND
	Oct-02	17.39	718	6.6	15.6	ND	4.9		17.72	611	7.1	15.5	0.1	ND
	Jan-03	18.83	790	6.9	14.0	ND	8.1		19.38	645	7.2	13.0	0.1	ND
	Apr-03	17.48	677	7.1	1.3	ND	6.6		17.84	596	7.5	13.2	0.1	ND
	Jul-03	17.13	709	7.0	13.0	ND	7.2		17.46	609	7.0	13.4	ND	ND
	Oct-03	17.68	720	7.0	13.4	ND	7.8		18.10	623	7.3	12.9	0.1	0.2
	Feb-04	17.83	544	6.6	12.7	ND	3.2		18.23	484	7.1	12.5	ND	ND
	Apr-04	18.01	755	7.0	12.7	ND	7.1		18.35	694	7.4	12.7	0.1	ND
	Aug-04	17.15	709	7.1	13.5	ND	5.1		17.49	636	7.1	13.6	ND	0.3
	Oct-04	17.42	699	7.5	14.1	ND	6.1		17.92	629	7.3	13.1	ND	ND
	Jan-05	19.03	690	6.3	13.1	ND	9.9		19.57	604	6.8	12.5	ND	ND
	Apr-05	17.90	690	7.5	13.1	ND	10.1		18.23	621	7.3	12.6	ND	ND
	Jul-05	16.93	723	7.0	12.9	ND	7.3		17.34	742	7.3	13.0	ND	ND
	Sep-05	17.64	673	7.1	14.1	ND	5.9		17.98	607	7.2	13.1	ND	ND
	Jan-06	18.71	747	6.6	13.8	ND	13.5		19.21	660	6.7	12.4	0.1	ND
	Apr-06	16.92	691	7.0	13.9	ND	10.4		17.30	606	7.3	13.0	ND	ND
	Jul-06	16.47	709	7.1	13.2	ND	11.2		18.82	600	7.1	13.2	ND	ND
	Oct-06	19.11	638	6.9	13.4	ND	10.4		19.68	533	7.7	12.6	ND	ND
	Jan-07	19.25	744	6.8	12.9	ND	8.4		19.72	623	7.5	12.0	ND	ND
	Apr-07	13.65	639	6.9	12.9	ND	4.0		14.02	560	7.6	12.5	ND	ND
	Aug-07	16.64	784	7.0	14.2	ND	17.1		17.03	610	7.7	13.2	ND	ND
	Oct-07	15.51	825	7.0	13.7	ND	15.2		15.95	626	7.6	12.9	0.2	ND
	Feb-08	18.45	799	6.7	13.1	ND	11.9		18.96	619	7.5	12.1	0.1	ND
	Apr-08	16.61	780	7.1	13.6	ND	9.6		17.02	6.23	7.8	12.9	0.2	ND
	Jul-08	15.33	739	6.8	14.5	ND	10.8		15.64	607	6.7	13.0	ND	ND
	Oct-08	17.06	628	6. 9	13.4	0.1	5.1		17.46	633	7.4	12.8	0.3	ND
	Jan-09	17.97	560	6.7	14.2	0.1	2.8		18.43	634	7.2	11.7	0.2	ND
	Apr-09	16.56	733	6.5	13.5	ND	4.6		16.95	607	7.4	12.7	ND	ND
	Jul-09	14.86	731	6.8	13.0	ND	4.3		15.12	619	7.4	13.2	ND	ND
	Oct-09	14.95	734	6.7	13.5	ND	3.9		16.25	603	7.6	12.4	0.1	ND

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
20S	Jul-00		1090			ND	1.1	**20D**		1010			0.3	3.6
	Nov-01	9.33	1046	6.9	15.7	2.2	ND		9.20	842	7.0	14.1	0.5	0.3
	Oct-02	8.51	1051	6.7	17.2	3.1	ND		8.88	902	6.6	14.4	ND	ND
	Jan-03	10.79	1087	7.0	13.0	1.0	0.2		11.79	959	7.0	12.0	0.2	ND
	Apr-03	10.18	958	7.1	12.9	0.7	ND		10.10	818	7.1	12.9	0.2	ND
	Jul-03	8.76	893	7.1	13.5	1.8	ND		8.79	820	7.1	13.5	ND	ND
	Oct-03	9.97	970	7.1	13.7	4.8	ND		10.00	828	7.1	12.8	0.2	ND
	Feb-04	10.55	853	7.5	10.8	1.0	3.3		11.02	765	7.2	12.0	ND	ND
	Apr-04	9.82	884	7.0	10.7	0.5	7.2		10.12	883	7.0	12.3	0.2	ND
	Aug-04	8.70	885	7.1	13.8	0.1	4.4		8.81	852	7.1	13.1	ND	0.2
	Oct-04	9.60	1004	7.2	14.1	1.0	ND		9.63	886	7.2	12.6	ND	ND
	Jan-05	11.88	822	6.8	12.5	ND	2.9		12.11	805	6.8	12.2	ND	ND
	Apr-05	10.75	917	7.0	11.8	ND	1.7		10.67	850	7.0	12.5	ND	ND
	Jul-05	8.38	986	6.6	12.7	ND	10.6		8.74	879	6.6	12.6	0.2	ND
	Sep-05	10.14	897	7.1	14.2	ND	1.5		9.85	823	7.0	12.9	0.2	ND
	Jan-06	11.75	1013	6.7	13.3	ND	1.2		11.79	885	6.6	12.2	0.2	ND
	Apr-06	10.21	957	7.0	12.4	2.3	ND		9.81	853	7.0	12.6	ND	ND
	Jul-06	10.26	1068	7.0	14.0	ND	17.9		10.27	785	7.0	13.2	ND	ND
	Oct-06	10.94	860	7.2	15.4	3.2	0.6		11.88	719	7.4	13.0	0.2	ND
	Jan-07	11.58	976	6.9	12.7	0.8	2.1		12.05	855	7.1	12.1	ND	ND
	Apr-07	8.46	886	6.9	11.8	1.8	0.9		8.74	799	7.1	12.7	ND	ND
	Aug-07	8.07	912	7.1	16.1	0.3	4.9		8.54	857	7.2	13.3	0.4	ND
	Oct-07	5.99	924	7.0	16.4	0.1	7.1		7.18	863	7.2	13.7	0.4	ND
	Feb-08	10.68	961	6.7	12.0	0.1	6.2		11.18	882	7.0	12.1	0.3	ND
	Apr-08	7.28	760	7.5	10.6	0.5	1.2		8.92	813	7.6	12.5	0.5	ND
	Jul-08	4.31	797	7.1	13.4	ND	0.4		5.61	853	7.1	13.5	0.4	ND
	Oct-08	9.08	933	7.0	14.6	0.3	ND		9.13	895	7.1	12.9	1.0	ND
	Jan-09	9.98	882	7.1	12.5	0.2	1.5		10.45	891	7.1	12.2	0.7	ND
	Apr-09	9.25	975	7.0	12.9	3.6	ND		9.15	850	7.0	12.8	0.4	ND
	Jul-09	6.52	942	7.1	12.3	3.0	1.2		6.68	871	7.2	12.9	0.4	ND
	Oct-09	8.05	1018	6.7	13.2	5.0	ND		7.99	869	6.9	12.4	0.5	ND

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
21S	Jul-00		1070			ND	3.4	**21D**		824			0.2	ND
	Nov-01	8.95	1019	6.6	16.3	ND	11.8		8.81	834	7.1	14.8	ND	ND
	Oct-02	8.58	1130	6.5	14.4	0.1	11.6		8.61	923	6.9	14.7	ND	ND
	Jan-03	11.29	1092	6.9	13.0	0.4	7.9		11.37	965	7.2	13.0	ND	ND
	Apr-03	9.40	880	7.0	11.8	ND	2.5		9.41	874	7.2	13.0	ND	ND
	Jul-03	8.83	906	7.0	13.2	ND	7.1		8.88	857	7.0	13.3	ND	0.3
	Oct-03	9.72	927	7.1	13.9	ND	2.3		9.73	880	7.4	13.0	ND	ND
	Feb-04	no	sample	too	muddy	in	the	one	half	mile	deep	corn	field	path
	Apr-04	9.83	1005	6.5	10.6	0.2	13.1		9.82	928	6.8	12.5	0.1	ND
	Aug-04	8.87	1071	7.1	14.0	ND	11.0		8.91	916	7.2	13.7	ND	0.3
	Oct-04	9.61	1009	7.0	14.5	ND	5.4		9.66	913	7.3	12.9	ND	ND
	Jan-05	11.64	992	6.6	13.4	ND	4.0		11.63	842	6.9	12.8	ND	ND
	Apr-05	10.08	1010	6.9	12.1	0.1	N		10.06	879	7.0	13.4	ND	ND
	Jul-05	8.73	1119	6.5	13.8	ND	22.1		8.89	887	7.1	13.2	0.1	ND
	Sep-05	9.53	1036	6.8	15.8	ND	7.5		9.54	851	7.0	13.1	0.3	ND
	Jan-06	11.15	592	6.6	13.4	ND	11.4		11.24	460	6.7	12.7	0.1	ND
	Apr-06	8.83	693	5.3	11.9	ND	1.1		8.96	786	7.0	13.1	ND	ND
	Jul-06	10.31	944	7.1	13.9	3.8	N		10.40	818	7.1	13.0	0.2	ND
	Oct-06	11.65	926	7.0	15.6	ND	6.5		11.57	688	7.5	13.0	ND	ND
	Jan-07	11.67	1160	6.7	12.3	ND	21.4		11.69	73	7.3	12.0	ND	ND
	Apr-07	8.44	930	6.7	11.4	ND	28.8		8.51	707	7.3	13.0	ND	ND
	Aug-07	8.73	925	6.9	17.4	ND	26.7		8.76	802	7.3	13.0	0.3	ND
	Oct-07	7.16	808	6.8	16.7	ND	9.8		7.33	794	7.3	13.0	0.3	ND
	Feb-08	10.78	858	6.8	11.2	0.1	4.2		10.80	725	7.2	12.4	0.2	ND
	Apr-08	8.49	798	6.7	9.2	0.1	4.7		8.52	693	7.3	12.4	0.5	ND
	Aug-08	8.06	757	6.9	20.8	ND	1.2		8.08	731	7.4	14.5	0.3	ND
	Oct-08	9.06	1055	6.8	17.6	0.3	1.4		9.07	765	7.3	13.3	0.4	ND
	Jan-09	10.16	957	6.9	13.4	0.3	0.7		10.19	743	7.3	12.5	0.4	ND
	Apr-09	8.56	958	6.9	11.2	0.2	2.0		8.62	718	7.2	13.0	0.2	ND
	Jul-09	6.45	1056	6.9	13.1	0.2	0.2		6.44	728	7.3	13.3	0.2	ND
	Oct-09	7.79	1051	7.1	14.6	0.3	0.2		7.72	724	7.6	12.7	0.3	ND
22S	Jul-00		931			ND	ND	**22D**		785			ND	1.6
	Nov-01	14.29	860	6.4	17.1	0.5	ND		14.37	709	7.2	12.7	ND	ND
	Oct-02	15.16	757	6.5	17.5	0.4	ND		15.21	654	7.3	13.9	ND	ND
	Nov-03	14.98	562	6.8	14.2	0.2	ND		15.01	519	7.1	12.3	ND	ND
	Oct-04	15.05	725	7.2	15.2	ND	ND		15.15	651	7.2	13.0	ND	ND
	Sep-05	15.33	665	6.9	16.7	0.3	ND		15.36	637	7.3	13.4	ND	ND
	Oct-06	16.51	601	6.8	17.2	ND	ND		16.59	548	7.9	13.7	ND	ND
	Oct-07	13.63	7.39	6.5	16.9	0.1	0.2		13.76	654	7.4	14.2	ND	ND
	Oct-08	14.46	950	6.6	15.9	0.2	2.1		14.32	663	7.4	12.9	0.2	ND
	Oct-09	13.76	935	6.9	14.6	ND	2.6		13.74	649	7.7	12.5	0.1	ND

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Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
23S	Jul-00		1290			2.7	0.3	**23D**		794			ND	1.1
	Nov-01	9.92	1307	6.7	14.2	2.3	ND		9.61	783	7.0	14.4	ND	ND
	Oct-02	10.03	1092	6.7	14.5	1.5	ND		9.73	714	6.9	15.1	0.1	ND
	Jan-03	12.75	1177	7.3	13.0	1.3	ND		13.13	766	7.6	13.0	0.2	ND
	Apr-03	10.11	1020	7.0	13.0	1.3	ND		9.92	695	7.1	13.2	ND	ND
	Jul-03	9.88	1023	7.0	12.8	1.2	ND		9.62	725	7.0	13.3	ND	ND
	Oct-03	10.41	1009	7.0	12.6	1.5	0.7		10.17	737	7.2	13.0	0.1	ND
	Feb-04	10.85	698	7.0	11.8	1.4	ND		10.65	544	7.3	12.7	ND	ND
	Apr-04	10.69	975	7.0	11.8	2.2	ND		10.51	752	7.3	12.9	ND	ND
	Aug-04	9.78	975	7.1	13.4	1.2	0.3		9.52	723	7.2	13.3	0.1	0.3
	Oct-04	11.02	945	7.4	12.7	1.2	ND		10.65	712	7.3	13.0	ND	ND
	Jan-05	12.85	914	6.6	12.0	1.3	ND		12.52	684	7.0	12.6	ND	ND
	Apr-05	10.23	904	7.1	12.2	ND	ND		10.08	705	7.3	12.8	1.0	ND
	Jul-05	9.94	949	7.0	12.9	1.0	ND		9.68	722	7.2	13.1	ND	ND
	Sep-05	9.85	913	6.5	13.2	1.4	ND		9.58	713	6.7	13.2	0.2	ND
	Jan-06	12.35	947	6.9	12.6	1.6	ND		12.02	749	7.0	12.6	0.1	ND
	Apr-06	9.44	877	7.0	12.9	1.2	ND		9.25	693	7.0	13.2	ND	ND
	Jul-06	10.93	879	7.1	12.5	1.4	ND		10.68	720	7.1	13.2	ND	ND
	Oct-06	13.35	763	7.1	13.2	1.1	ND		13.00	614	7.5	13.1	ND	ND
	Jan-07	12.75	910	6.8	12.3	1.1	ND		12.49	725	7.2	12.4	ND	ND
	Apr-07	4.89	1201	7.0	12.1	1.1	ND		4.85	765	7.4	13.1	ND	ND
	Aug-07	9.61	887	7.1	14.0	2.4	ND		9.25	716	7.4	13.5	0.2	ND
	Oct-07	8.95	1007	7.0	13.5	2.7	ND		8.58	784	7.4	13.0	0.3	ND
	Feb-08	12.15	1101	6.6	12.4	2.7	ND		11.82	729	7.3	12.6	0.2	ND
	Apr-08	9.44	1172	7.6	11.8	3.4	ND		9.18	731	8.2	13.1	0.2	ND
	Jul-08	8.22	1263	6.8	12.4	4.0	ND		7.99	813	7.3	14.5	0.2	ND
	Oct-08	9.99	947	7.0	12.7	3.1	ND		9.63	784	7.4	13.2	0.4	ND
	Jan-09	11.63	1073	6.6	12.2	3.7	ND		11.30	800	7.2	12.4	0.4	ND
	Apr-09	9.34	1321	6.7	11.8	3.7	ND		9.07	769	7.2	13.1	0.2	ND
	Jul-09	6.98	1019	6.9	12.2	3.3	ND		6.71	838	7.2	13.1	0.2	ND
	Oct-09	8.25	998	7.3	11.9	2.8	ND		7.95	818	7.2	12.8	0.3	ND
24S	Jul-00		937			ND	0.4	**24D**		935			ND	1.5
	Nov-01	17.64	814	6.5	17.6	ND	1.3		17.90	842	6.8	15.1	ND	ND
	Oct-02	18.00	814	6.4	17.7	ND	1.6		17.80	736	6.9	15.0	ND	ND
	Nov-03	18.22	561	6.4	14.7	ND	2.2		18.21	573	6.9	12.7	ND	ND
	Oct-04	18.51	737	7.3	14.9	ND	1.8		18.74	705	7.3	13.2	ND	ND
	Sep-05	18.13	744	6.6	15.7	ND	4.6		18.03	693	7.0	13.5	ND	ND
	Oct-06	20.81	688	6.6	15.8	ND	2.4		20.91	586	7.5	13.5	ND	ND
	Oct-07	16.71	868	6.7	16.3	ND	8.5		16.86	702	7.5	14.1	0.1	ND
	Oct-08	17.90	829	6.6	15.7	ND	6.7		17.75	728	7.2	13.8	0.2	ND
	Oct-09	16.29	613	7.0	14.7	ND	0.6		16.31	701	7.6	13.3	0.2	ND

PCS Nitrogen Plant, LaPlatte, Nebraska

Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
25S	Jul-00		1030			ND	ND	**25D**		786			ND	2.5
	Nov-01	16.00	983	6.4	16.6	ND	ND		16.15	729	7.1	13.8	ND	ND
	Oct-02	16.54	770	6.4	17.6	0.1	ND		16.62	682	7.1	14.3	ND	ND
	Nov-03	16.49	611	6.7	15.2	ND	ND		16.62	539	7.2	12.3	ND	ND
	Oct-04	16.94	742	7.2	15.5	ND	ND		16.70	675	7.3	12.5	ND	ND
	Sep-05	16.51	690	6.9	15.4	0.1	ND		16.64	657	7.2	12.3	0.1	ND
	Oct-06	18.76	647	7.1	15.3	0.1	ND		19.02	574	7.7	12.1	ND	ND
	Oct-07	15.10	799	6.9	14.9	0.4	ND		16.36	678	7.6	12.0	0.1	ND
	Oct-08	15.85	799	6.7	14.8	0.7	ND		15.91	686	7.3	11.9	0.2	ND
	Oct-09	14.40	846	7.0	13.4	0.7	ND		14.89	660	7.5	11.5	0.2	ND
29S	Jun-07	11.97	547	7.0	14.6	ND	23.9	**29D**	11.99	857	7.3	14.0	0.5	ND
	Aug-07	14.36	678	7.1	16.8	ND	42.5		14.36	732	7.3	13.6	0.5	ND
	Oct-07	13.20	683	7.0	15.0	ND	31.8		13.10	698	7.3	12.9	0.5	N
	Feb-08	16.07	671	6.8	12.3	ND	40.1		16.06	838	7.3	12.6	0.3	16.3
	Apr-08	15.62	685	6.9	12.4	ND	45.5		15.55	892	7.6	13.0	0.2	25.6
	Jul-08	9.92	566	7.2	15.2	ND	18.8		10.10	834	7.6	13.8	ND	26.9
	Oct-08	14.29	631	6.9	16.3	ND	24.0		14.31	1076	7.7	13.3	0.3	35.6
	Jan-09	15.11	613	7.3	13.0	0.4	26.1		15.14	1261	7.6	12.9	0.1	62.1
	Apr-09	15.58	581	6.9	11.8	ND	23.4		15.52	12.17	7.4	13.0	ND	139.0
	Jul-09	14.22	590	7.1	12.3	ND	71.3		14.18	1287	7.7	13.3	ND	19.9
	Oct-09	14.71	633	6.7	14.0	ND	26.2		14.68	1269	7.8	12.8	ND	63.0
30S	Jan-00	12.84	497	6.4	14.7	ND	33.9	**30D**	12.90	937	7.8	14.3	51.4	5.0
	Aug-07	15.11	435	6.5	18.6	0.2	38.1		15.12	1206	8.0	14.6	75.1	12.9
	Oct-07	13.62	436	6.9	16.0	0.1	34.1		13.69	1303	8.0	13.9	95.2	14.6
	Feb-08	16.77	357	6.8	13.5	ND	27.6		16.80	1288	8.2	13.6	110.0	13.9
	Apr-08	16.26	353	6.9	13.3	ND	26.4		16.16	1334	7.9	14.1	108.0	19.4
	Jul-08	11.11	261	6.8	15.2	ND	19.1		11.31	1240	8.1	14.3	102.0	16.9
	Oct-08	15.28	291	6.7	16.1	0.1	18.1		15.30	1407	8.1	14.4	120.0	26.2
	Jan-09	15.96	311	7.1	14.3	0.4	21.2		15.99	1379	8.3	14.0	127.0	28.9
	Apr-09	16.21	251	6.9	13.7	ND	19.0		16.17	792	8.0	14.4	104.0	11.4
	Jul-09	14.91	288	7.2	13.5	ND	19.9		14.62	1322	8.2	14.5	112.0	26.2
	Oct-09	15.54	312	6.9	14.9	0.1	19.3		15.51	1374	8.7	14.0	118.0	27.7
31S	Jun-07	11.38	654	7.3	15.1	ND	40.7	**31D**	10.80	932	7.2	14.4	0.6	ND
	Aug-07	13.75	606	7.2	16.3	ND	46.8		13.20	930	7.2	13.3	0.7	ND
	Oct-07	12.32	625	7.2	15.5	ND	35.8		11.80	945	7.2	12.9	0.7	ND
	Feb-08	15.06	644	6.9	13.0	ND	46.7		15.31	875	7.2	12.5	0.6	ND
	Apr-08	14.68	617	7.5	12.0	ND	42.9		14.16	827	7.8	12.8	0.5	ND
	Jul-08	9.92	661	7.2	15.4	ND	45.9		9.35	895	7.1	13.3	0.6	ND
	Oct-08	13.98	658	7.0	15.7	0.1	31.0		13.38	896	7.2	13.1	0.7	ND
	Jan-09	14.75	611	7.1	13.5	0.5	34.0		14.18	868	7.1	12.5	1.5	0.2
	Apr-09	14.79	575	6.9	11.4	ND	38.0		14.21	8.41	7.0	13.0	0.6	ND
	Jul-09	13.26	557	7.2	12.5	ND	26.8		12.71	874	7.1	13.1	0.5	ND
	Oct-09	13.41	570	7.2	13.9	ND	34.0		13.98	863	7.3	12.7	0.7	ND

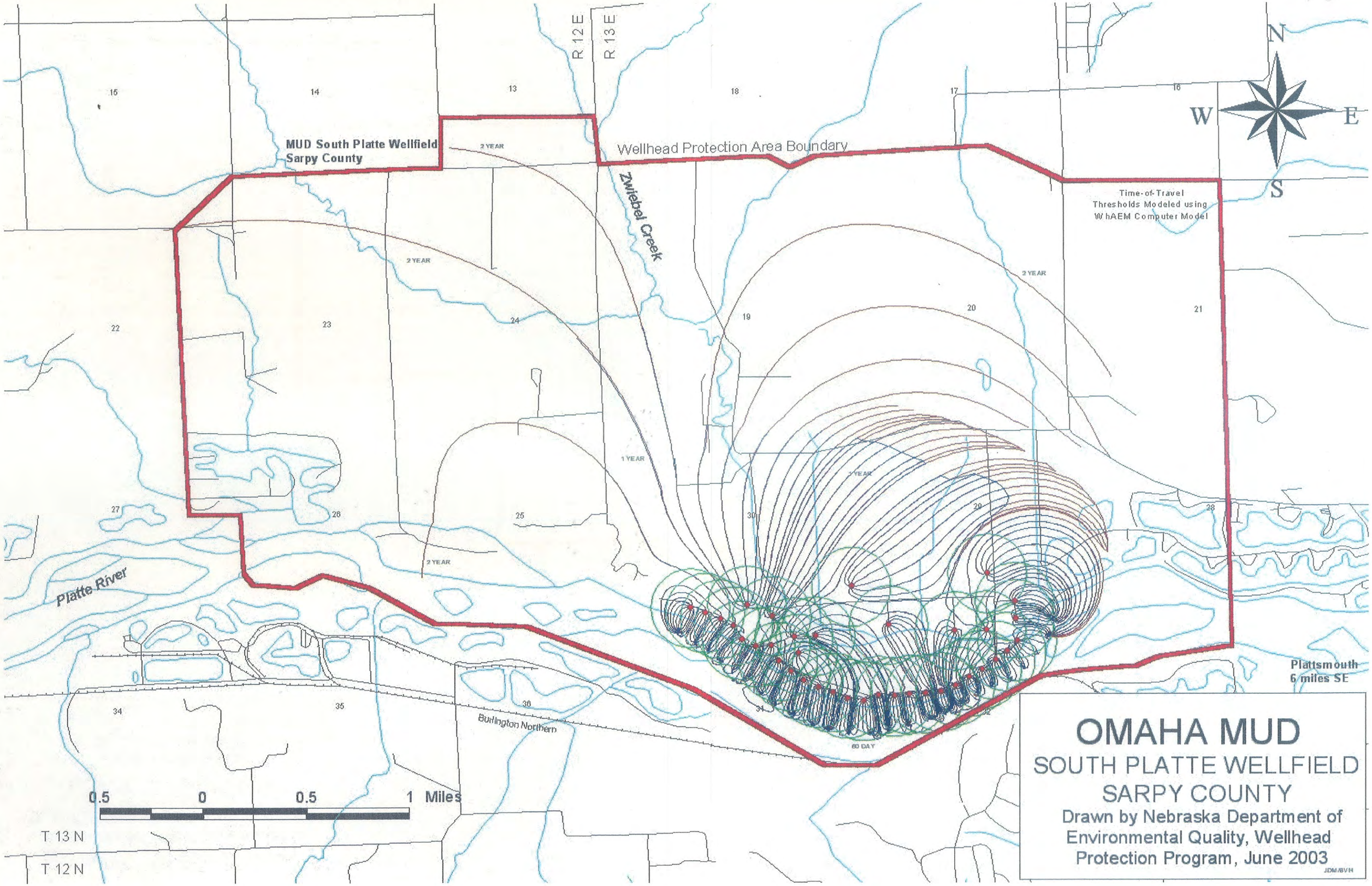
PCS Nitrogen Plant, LaPlatte, Nebraska

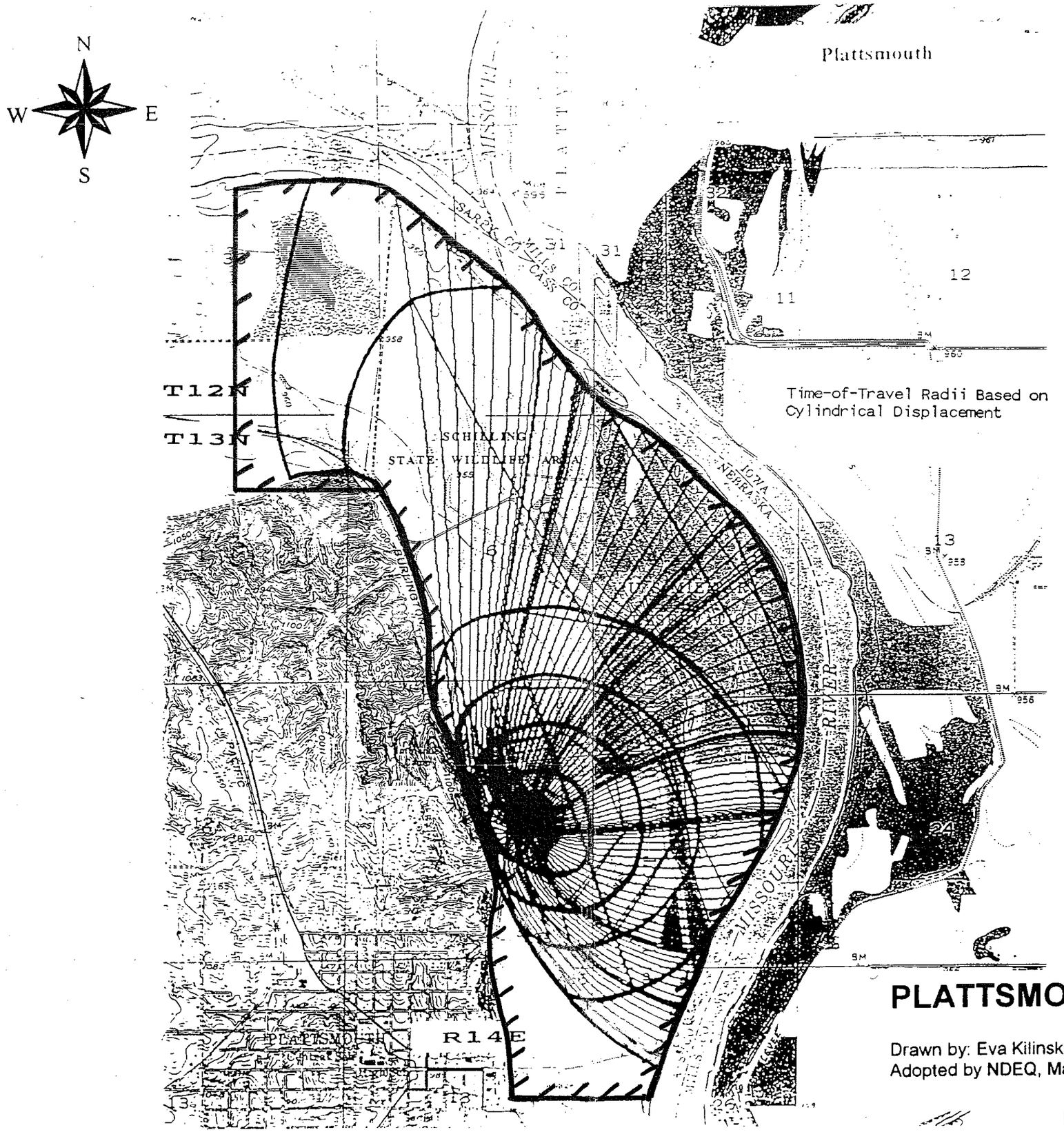
Ground Water Monitoring Wells

Shallow wells MW-	Date	Depth to water	Cond	pH	Temp	NH4-N	NO3-N	Deep Wells MW-	Water level	Cond	pH	Temp	NH4-N	NO3-N
		below top of casing in feet	(umhos/cm)		(deg C)	(mg/L)	(mg/L)		Feet top of casingl	(umhos/cm)		(deg C)	(mg/L)	(mg/L)
32S	Jun-07	11.32	542	6.7	14.2	ND	40.0	**32D**	11.37	779	7.3	14.6	0.4	ND
	Aug-07	13.62	577	6.7	16.3	ND	53.5		13.60	760	7.2	13.2	0.4	ND
	Oct-07	12.14	598	6.9	15.5	ND	38.8		12.18	768	7.3	13.0	0.5	ND
	Feb-08	15.40	542	7.0	12.7	ND	48.0		15.40	746	7.3	12.8	0.5	ND
	Apr-08	14.42	449	7.4	11.9	ND	40.7		14.32	705	8.0	13.0	0.5	ND
	Jul-08	10.14	451	7.1	13.9	ND	34.9		10.21	714	7.2	13.7	1.0	ND
	Oct-08	13.95	464	6.8	16.2	0.1	33.7		13.93	795	7.2	13.6	1.3	ND
	Jan-09	14.64	448	7.3	13.7	2.4	33.4		14.66	853	7.2	13.0	3.9	0.2
	Apr-09	14.59	360	7.0	12.2	ND	25.0		14.55	833	7.2	13.5	5.8	ND
	Jul-09	13.14	335	6.9	12.6	ND	20.1		13.03	857	7.3	13.7	7.8	ND
	Oct-09	13.89	314	7.5	14.8	ND	17.8		13.83	864	7.3	13.1	7.2	ND
33S	Jan-00	5.72	990	7.0	14.3	ND	0.3	**33D**	5.47	923	7.3	15.7	1.9	ND
	Jan-00	8.06	970	6.9	16.5	ND	ND		7.96	889	7.2	13.0	2.6	ND
	Oct-07	7.12	1000	6.9	15.2	0.3	0.2		7.02	926	6.9	12.4	2.9	ND
	Feb-08	10.20	939	6.8	12.0	ND	ND		10.08	892	7.0	12.2	2.7	ND
	Apr-08	8.51	872	6.6	11.2	ND	ND		8.46	861	6.9	12.2	3.1	ND
	Aug-08	6.87	914	7.1	14.7	ND	ND		6.78	903	7.2	12.9	2.7	ND
	Oct-08	8.45	993	6.9	15.1	0.1	ND		8.48	919	7.2	13.2	3.0	ND
	Jan-09	9.45	1076	6.9	12.4	ND	ND		9.33	912	7.1	12.4	2.0	ND
	Apr-09	8.86	962	6.9	11.9	ND	ND		8.72	880	7.0	13.0	1.9	ND
	Jul-09	field	too	much	standing	water			field	too	much	standing	water	
	Oct-09	8.00	964	6.8	14.1	ND	ND		7.92	881	7.2	12.6	2.1	ND
34S	Jun-07	6.37	1404	6.7	13.6	ND	1.7	**34D**	6.15	797	7.3	14.3	0.3	ND
	Aug-07	8.55	1328	6.8	15.6	ND	3.4		8.35	761	7.3	13.2	0.4	ND
	Oct-07	7.10	1328	6.6	16.1	ND	5.1		6.92	767	7.3	13.2	0.4	ND
	Feb-08	10.45	1252	6.8	11.9	ND	0.6		10.25	750	7.3	12.5	0.4	ND
	Apr-08	8.70	1166	6.9	12.1	ND	2.3		8.56	729	7.3	13.2	0.4	ND
	Aug-08	7.81	1254	6.7	14.4	ND	ND		7.61	732	7.2	13.8	0.4	ND
	Oct-08	9.01	1255	6.6	15.2	0.1	ND		8.83	763	7.2	13.4	0.6	ND
	Jan-09	9.85	1241	6.8	13.1	ND	ND		9.68	750	7.2	12.8	0.4	ND
	Apr-09	9.04	1134	6.8	12.9	ND	ND		8.81	730	7.1	13.4	0.4	ND
	Jul-09	field	too	munch	standing	water			field	too	munch	standing	water	
	Oct-09	8.36	1151	6.8	14.2	ND	ND		8.17	771	7.0	13.0	0.5	ND

APPENDIX C

OMAHA MUD SOUTH PLATTE WELLFIELD AND CITY OF PLATTSMOUTH WELLHEAD PROTECTION MAPS


MUD South Platte Wellfield
Sarpy County
Wellhead Protection Area Boundary
R 12 E
R 13 E
Zwiebel Creek
Platte River
Burlington Northern
Time-of-Travel
Thresholds Modeled using
WhAEM Computer Model
2 YEAR
1 YEAR
60 DAY
N
W
E
S
Plattsmouth
6 miles SE
0.5
0
0.5
1 Miles
T 13 N
T 12 N
OMAHA MUD
SOUTH PLATTE WELLFIELD
SARPY COUNTY
Drawn by Nebraska Department of
Environmental Quality, Wellhead
Protection Program, June 2003
JDM/BVH



PLATTSMOUTH

Cass County

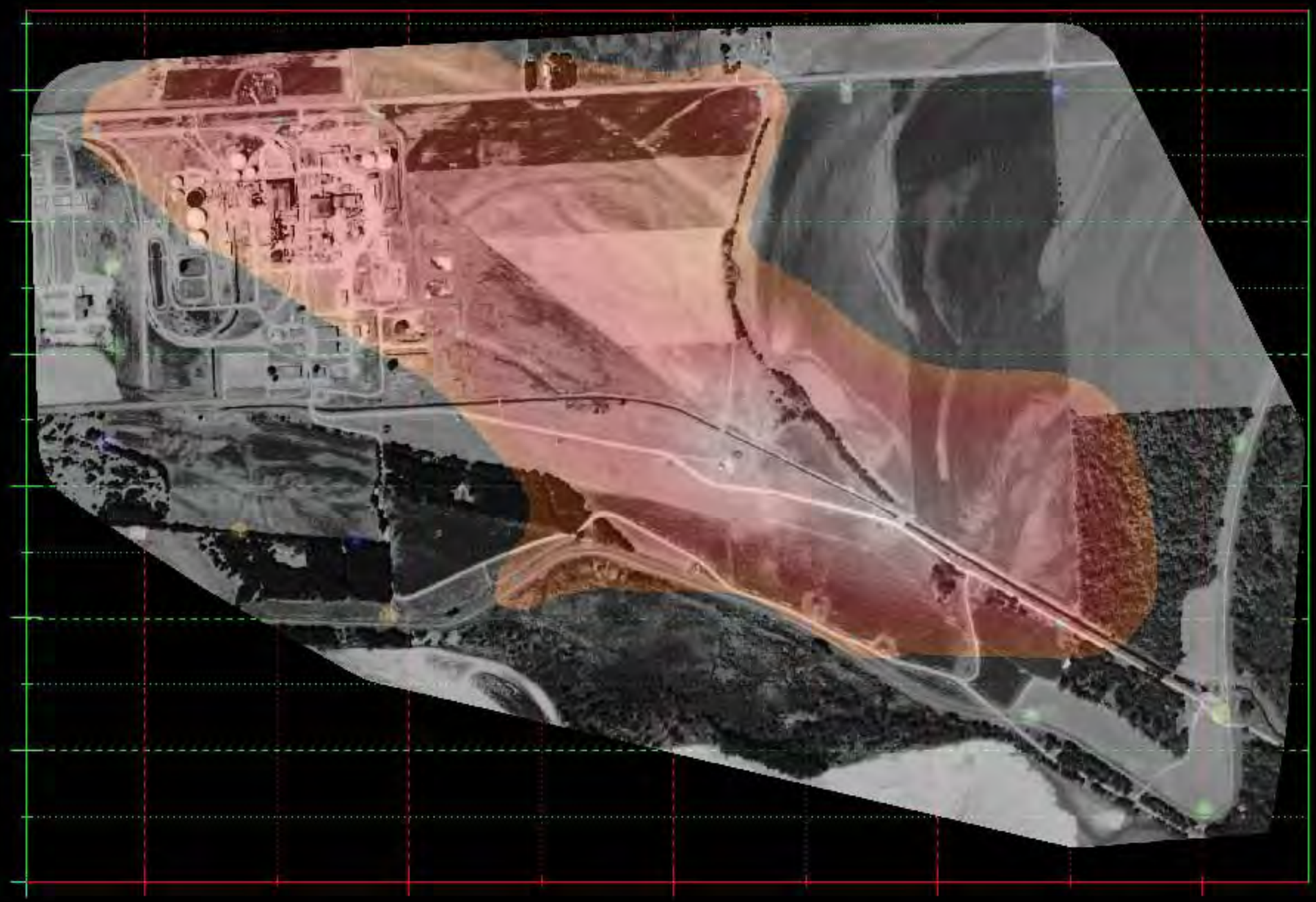
Drawn by: Eva Kilinska under contact to LPSNRD, July 1996
Adopted by NDEQ, March 1997

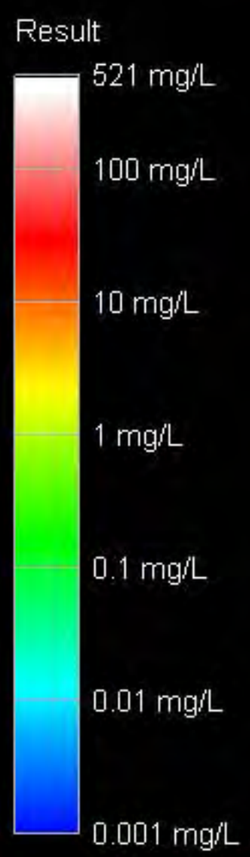
APPENDIX D

3-D MODEL

Former PCS Nitrogen Plant Site

October, 2002 Sampling Event





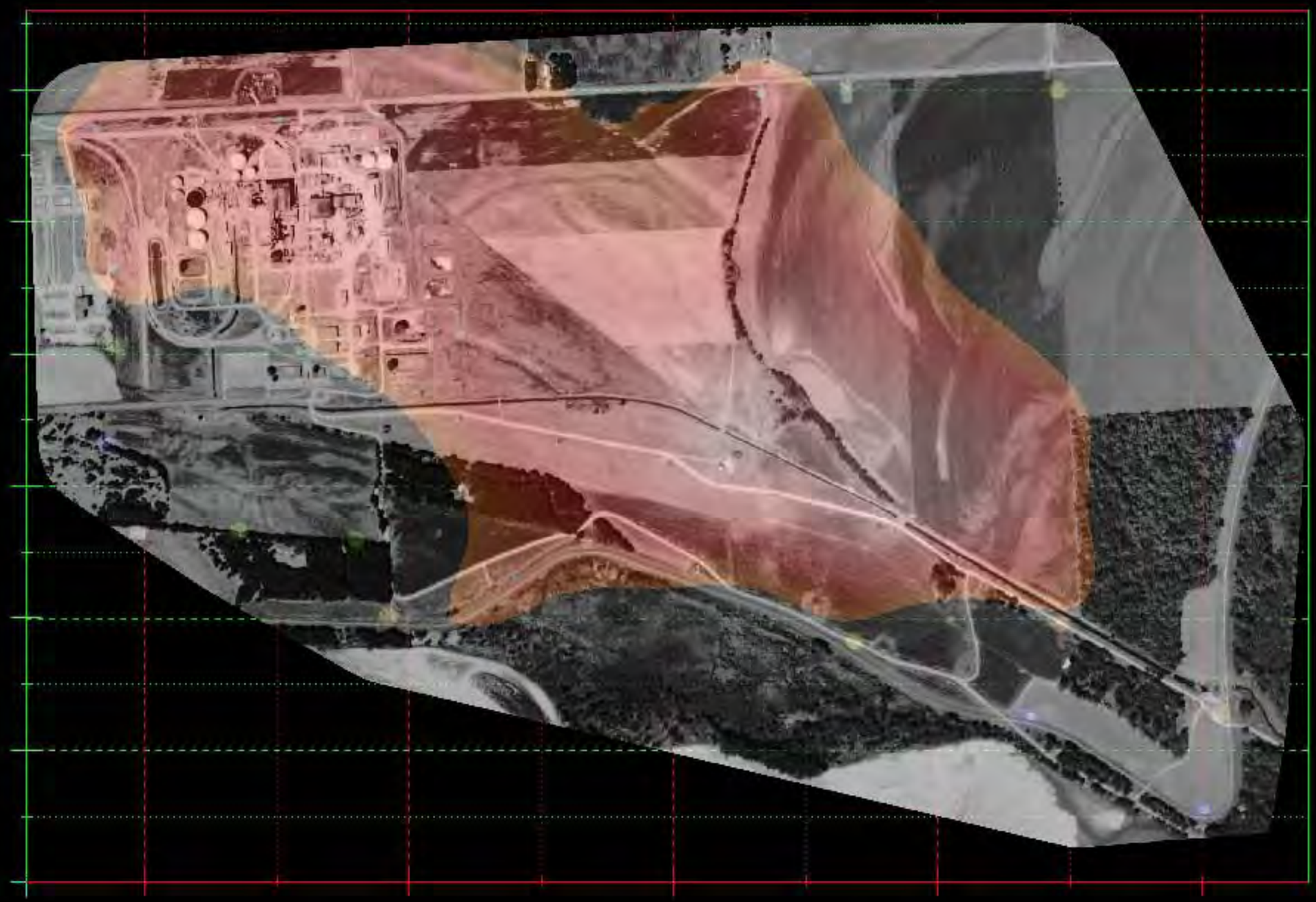
Nitrate Results >10 mg/L

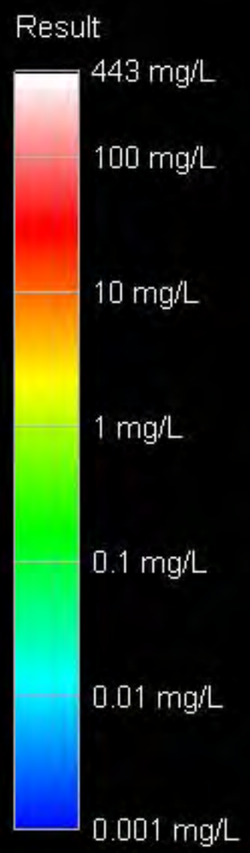
TETRA TECH EM, INC.

Source: Historical Information Gatherers Inc. (HIG) Aerial Imagery, 1988

Former PCS Nitrogen Plant Site

September, 2005 Sampling Event





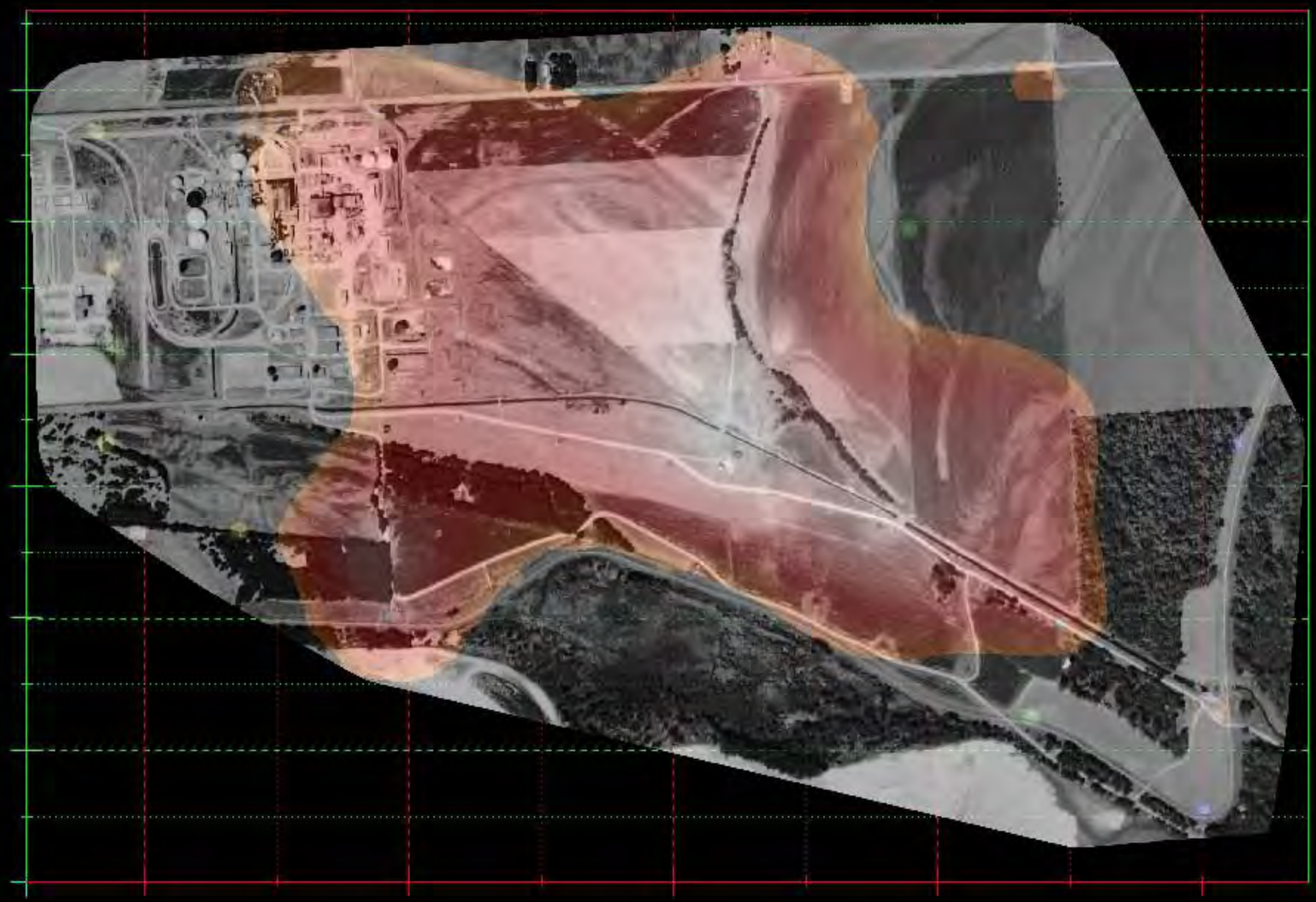
Nitrate Results >10 mg/L

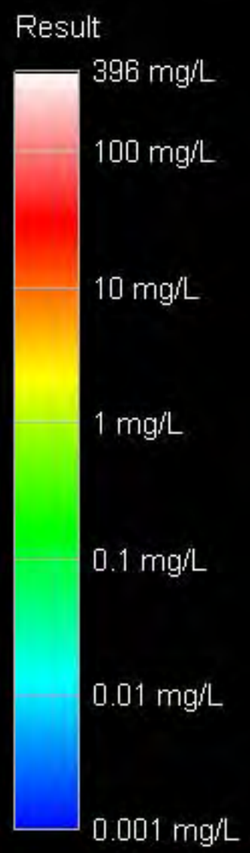
TETRA TECH EM, INC.

Source: Historical Information Gatherers Inc. (HIG) Aerial Imagery, 1988

Former PCS Nitrogen Plant Site

October, 2007 Sampling Event





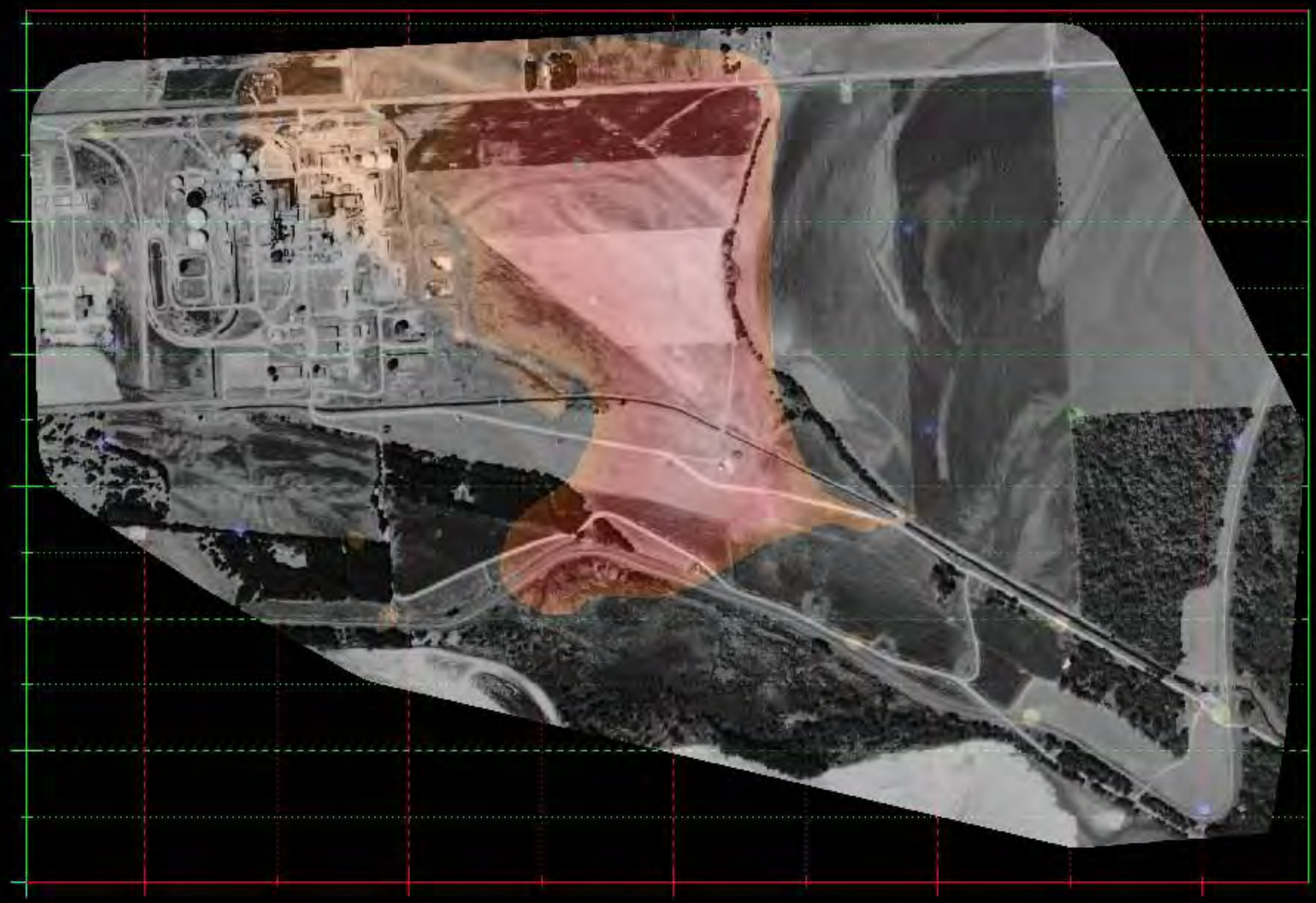
Nitrate Results >10 mg/L

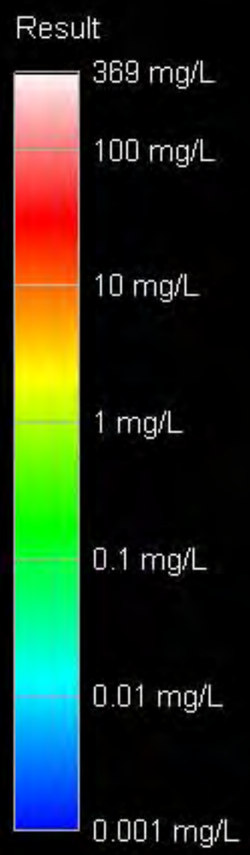
TETRA TECH EM, INC.

Source: Historical Information Gatherers Inc. (HIG) Aerial Imagery, 1988

Former PCS Nitrogen Plant Site

October, 2009 Sampling Event





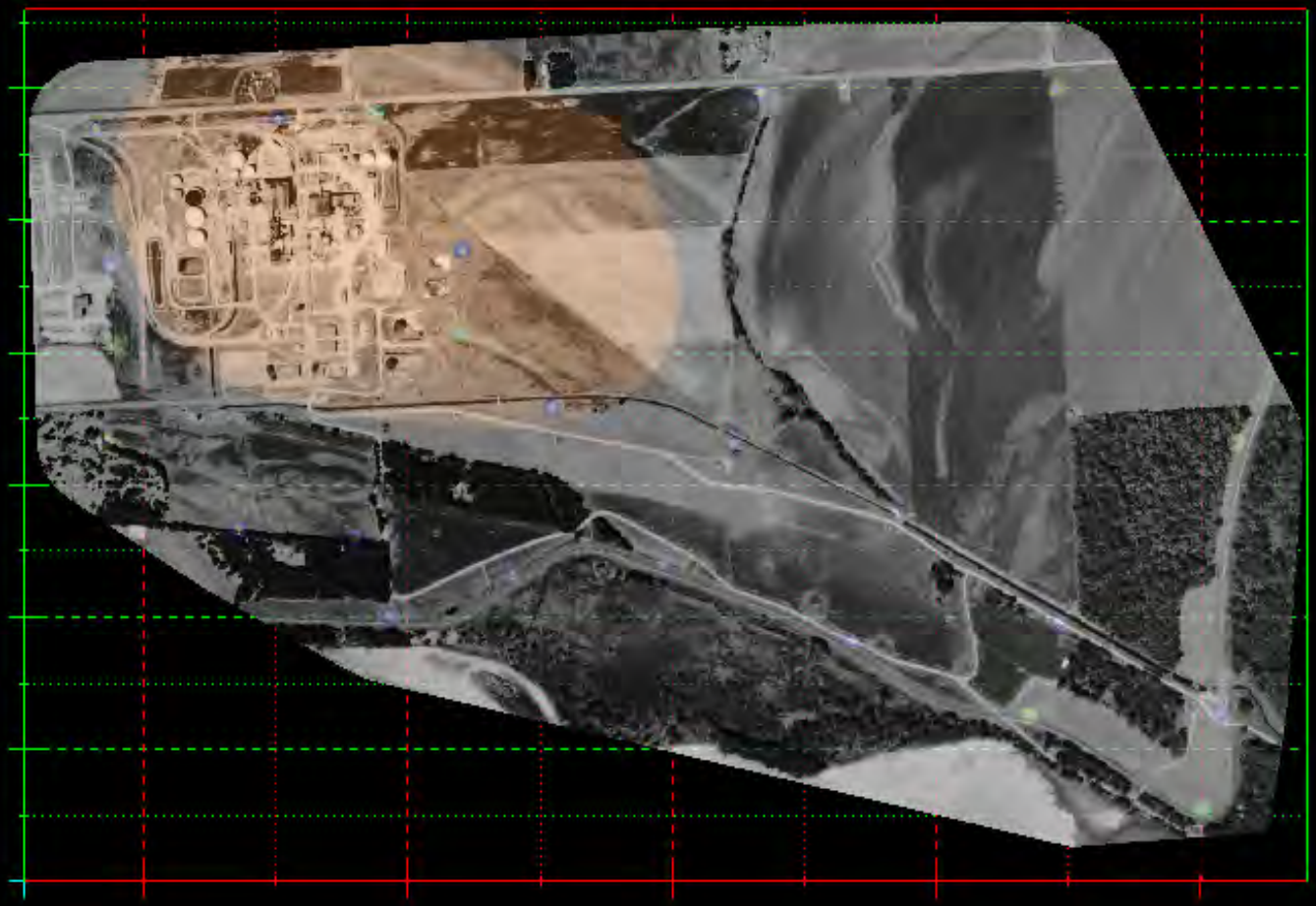
Nitrate Results >10 mg/L

TETRA TECH EM, INC.

Source: Historical Information Gatherers Inc. (HIG) Aerial Imagery, 1988

Former PCS Nitrogen Plant Site

October, 2002 Sampling Event



Result
662 mg/L
100 mg/L
10 mg/L
1 mg/L
0.1 mg/L
0.01 mg/L
0.001 mg/L

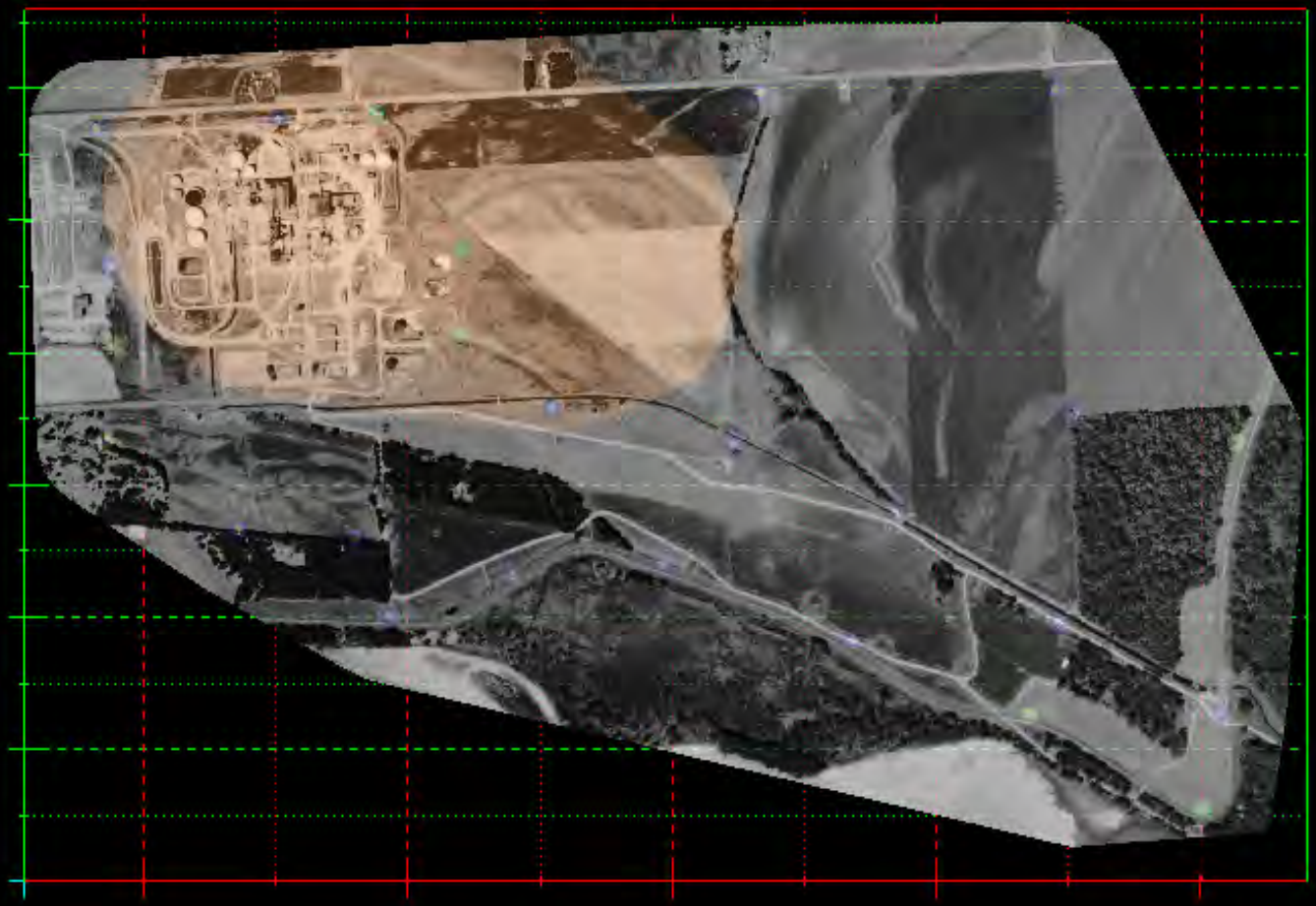
Ammonia Results > 10 mg/L

TETRA TECH EM, INC.

urce: Historical Information Gatherers Inc. (HIG) Aerial Imagery, 1988

Former PCS Nitrogen Plant Site

September, 2005 Sampling Event



Result
558 mg/L
100 mg/L
10 mg/L
1 mg/L
0.1 mg/L
0.01 mg/L
0.001 mg/L

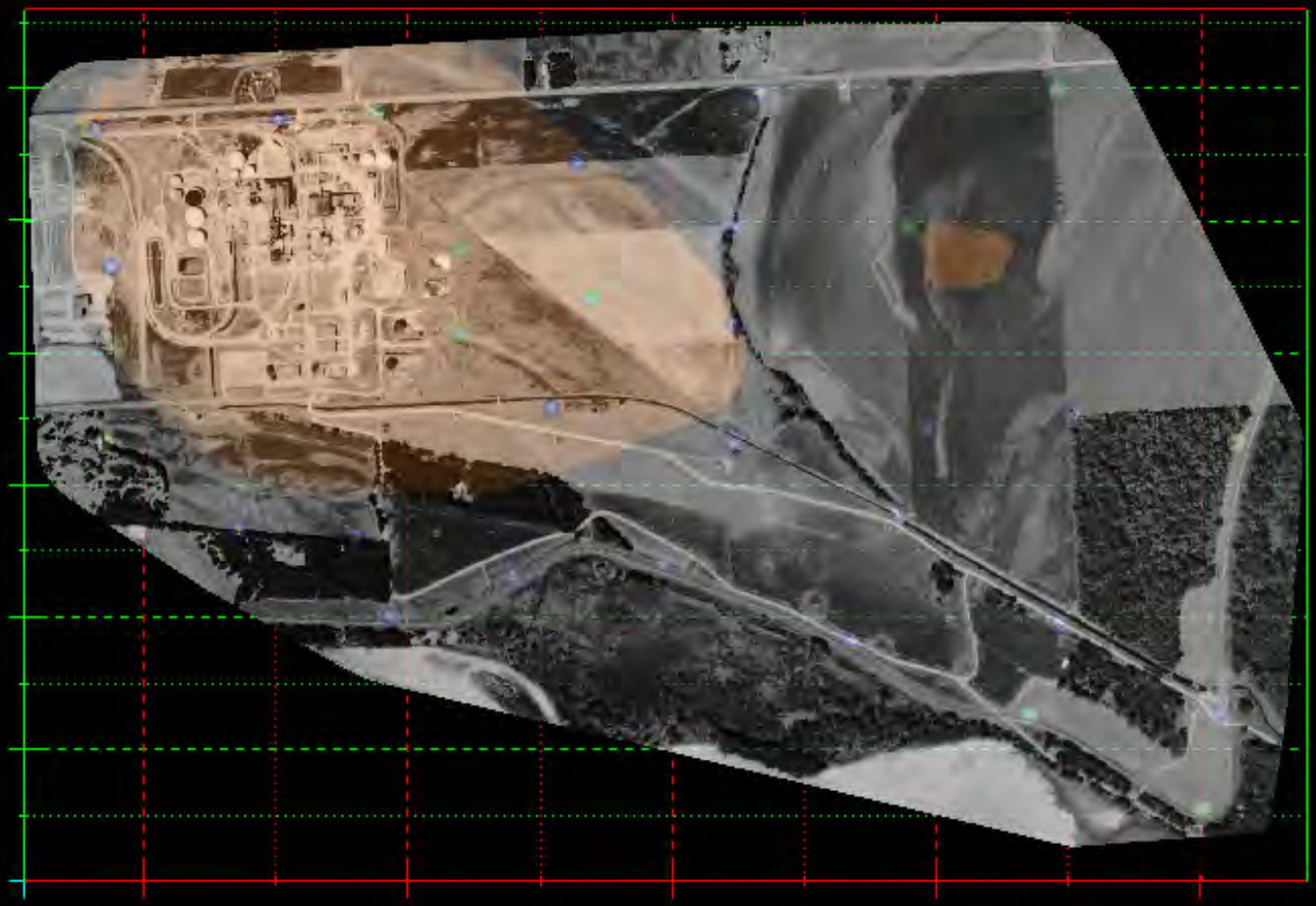
Ammonia Results >10 mg/L

urce: Historical Information Gatherers Inc. (HIG) Aerial Imagery, 1988

TETRA TECH EM, INC.

Former PCS Nitrogen Plant Site

October, 2007 Sampling Event



Result
462 mg/L
100 mg/L
10 mg/L
1 mg/L
0.1 mg/L
0.01 mg/L
0.001 mg/L

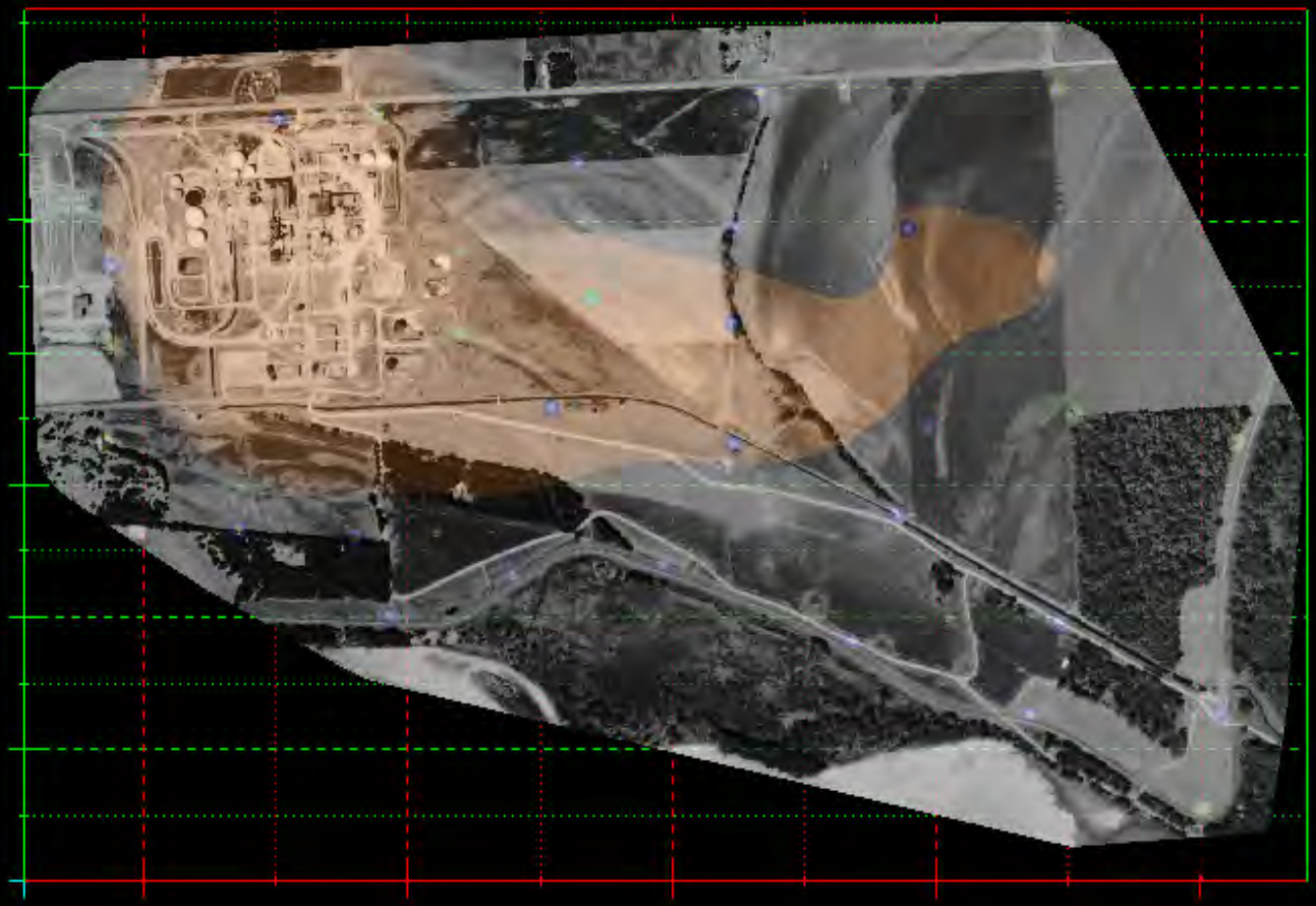
Ammonia Results > 10 mg/L

TETRA TECH EM, INC.

urce: Historical Information Gatherers Inc. (HIG) Aerial Imagery, 1988

Former PCS Nitrogen Plant Site

October, 2009 Sampling Event



Result
350 mg/L
100 mg/L
10 mg/L
1 mg/L
0.1 mg/L
0.01 mg/L
0.001 mg/L

Ammonia Results > 10 mg/L

TETRA TECH EM, INC.

urce: Historical Information Gatherers Inc. (HIG) Aerial Imagery, 1988

APPENDIX E

REGISTERED AND NON-REGISTERED DOMESTIC AND PUBLIC WATER SUPPLY WELLS

Public and Private Wells in Close Proximity to Former PCS Nitrogen Facility

DB	WellID	OtherWelll	Regnum	Status	UseID	Nrdname	Nrddwr no	Co name	Co no	Twnp	Range	Rangelet	Sec	Subsec	Footage	Areapermit	Acres	Gpm	Pcoldiam	Pdepth	Totaldepth	Stwaterlev	Pwaterlev	Wedrilic	Owner no	Compname	Citystzip	Address1	Address2	Fildate	Month	Day	Year	Lastchgdat	LatDD	LongDD
NRGW	1144		A-005743	A	C	Papio-Missouri River	10	Sarpy	77	13	13	E	25	CB			0	2000	0	0	0	0	0	0	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		11/21/1953	10	5	1953	18991230	41.065765	-95.906485
NRGW	87558		G-078896	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AD	1810S 130W		0	0	0	0	25	16	0	39246	40902	Arcadian Corporation	Bellevue, NE 68005	Box 7354		9/8/1993	3	11	1993	18991230	41.069823	-95.909382
NRGW	92346		G-082691	A	D	Papio-Missouri River	10	Sarpy	77	13	14	E	30	AB	600S 1800W		0	15	1	25	42	18	18	39032	37211	Glen Avery	Omaha, NE 68123	16603 Iske Place		10/4/1994	11	16	1993	18991230	41.072830	-95.877316
NRGW	98895		G-087121	A	D	Papio-Missouri River	10	Sarpy	77	13	13	E	26	BC	1518S 264E		0	10	1	40	50	26	26	39252	45357	Charles Mink	Omaha, NE 68123	16716 Clay		2/22/1996	1	25	1996	18991230	41.070650	-95.926978
NRGW	104532		G-091208	A	I	Papio-Missouri River	10	Sarpy	77	13	13	E	23	DD	330N 875W		78	600	6	40	60	16	23	39070	45066	W M Farms Inc	Plattsmouth, NE 68048	14217 Penny Drive	Robert Meisinger	4/22/1997	3	7	1997	18991230	41.075698	-95.912166
NRGW	108406		G-092990	A	C	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AC	1446S 2630W		0	400	4	42	53	10	30	39252	71772	Coreslab Structures Inc	La Platte, NE 68123	802 Allied Road		10/14/1997	9	5	1997	18991230	41.070836	-95.918464
NRGW	119029		G-101458	A	D	Papio-Missouri River	10	Sarpy	77	13	13	E	26	DB	1700N 2393W		0	150	3	34	43	4	21	39252	53580	Salvation Army Camp	Omaha, NE 68131	3612 Cuming Street		7/30/1999	8	26	1998	18991230	41.064970	-95.917514
NRGW	120457		G-102327	A	D	Papio-Missouri River	10	Sarpy	77	13	13	E	26	BB	99S 462E		0	5	1	33	45	25	30	39252	54171	Roger Winters	La Platte, NE 68123	1201 La Platte Road		10/18/1999	8	6	1999	18991230	41.074542	-95.926230
NRGW	127055		G-106641A	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AC	2470S 2480W		0	0	0	0	15	12	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		8/7/2000	5	15	2000	18991230	41.068027	-95.898761
NRGW	127056		G-106641B	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DB	2385N 2530W		0	0	0	0	15	13	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		8/7/2000	5	15	2000	18991230	41.066887	-95.898923
NRGW	127057		G-106641C	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DB	2335N 2380W		0	0	0	0	15	10	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		8/7/2000	5	15	2000	18991230	41.066751	-95.898377
NRGW	127058		G-106641D	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DB	2410N 2250W		0	0	0	0	15	9	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		8/7/2000	5	15	2000	18991230	41.066957	-95.897908
NRGW	127059		G-106641E	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DB	2480N 2103W		0	0	0	0	15	7	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		8/7/2000	5	15	2000	18991230	41.067150	-95.897378
NRGW	127060		G-106641F	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DB	2595N 2155W		0	0	0	0	15	9	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		8/7/2000	5	15	2000	18991230	41.067465	-95.897570
NRGW	127649		G-107476A	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AB	70S 1980W		0	0	0	0	64	17	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	31	2000	18991230	41.074607	-95.916162
NRGW	127650		G-107476B	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AA	70S 640W		0	0	0	0	79	16	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	1	2000	18991230	41.074600	-95.911301
NRGW	127651		G-107476C	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BB	70S 50E		0	0	0	0	84	16	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	1	2000	18991230	41.074596	-95.908799
NRGW	127652		G-107476D	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AB	1015S 1940W		0	0	0	0	63	15	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	2	2000	18991230	41.072014	-95.915979
NRGW	127653		G-107476E	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BB	110S 720E		0	0	0	0	85	15	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	27	2000	18991230	41.074490	-95.906368
NRGW	127654		G-107476F	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AC	1710S 1950W		0	0	0	0	6	13	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	6	2000	18991230	41.070108	-95.915987
NRGW	127655		G-107476G	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BC	1690S 710E		0	0	0	0	84	17	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	26	2000	18991230	41.070156	-95.906341
NRGW	127656		G-107476H	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AC	2360S 1650W		0	0	0	0	66	10	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	25	2000	18991230	41.068323	-95.914873
NRGW	127657		G-107476I	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	DA	2100N 1025W		0	0	0	0	55	9	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	6	2000	18991230	41.066081	-95.912571
NRGW	127658		G-107476J	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	DA	2000N 340W		0	0	0	0	62	10	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	4	2000	18991230	41.065813	-95.910084
NRGW	127659		G-107476K	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	CB	1390N 10E		0	0	0	0	105	13	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	30	2000	18991230	41.064143	-95.908791
NRGW	127660		G-107476L	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	CB	1670N 1030E		0	0	0	0	93	12	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	5	2000	18991230	41.064917	-95.905105
NRGW	127661		G-107476M	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BD	2270S 1340E		0	0	0	0	85	13	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	4	2000	18991230	41.068568	-95.904034
NRGW	127663		G-107476O	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BD	2610S 2250E		0	0	0	0	90	15	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	2	2000	18991230	41.067640	-95.900722
NRGW	127664		G-107476P	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AB	50S 2160W		0	0	0	0	96	16	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	28	2000	18991230	41.074668	-95.897681
NRGW	127666		G-107476Q	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DB	1970N 1380W		0	0	0	0	90	12	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	16	2000	18991230	41.065755	-95.894740
NRGW	127667		G-107476R	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DC	1170N 1630W		0	0	0	0	106	0	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	17	2000	18991230	41.063559	-95.895620
NRGW	127668		G-107476S	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DD	1130N 170W		0	0	0	0	124	16	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	14	2000	18991230	41.063456	-95.890327
NRGW	127669		G-107476T	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AA	130S 20W		0	0	0	0	113	6	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	27	2000	18991230	41.074459	-95.889914
NRGW	127670		G-107476U	A	Q	Papio-Missouri River	10	Sarpy	77	13	14	E	30	BC	2550S 30E		0	0	0	0	94	7	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	30	2000	18991230	41.067818	-95.889654
NRGW	127671		G-107476V	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DD	560N 410W		0	0	0	0	117	13	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	27	2000	18991230	41.061891	-95.891178
NRGW	127672		G-107476W	A	Q	Papio-Missouri River	10	Sarpy	77	13	14	E	30	CB	2570N 1210E		0	0	0	0	118	8	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	30	2000	18991230	41.067279	-95.885375
NRGW	127673		G-107476X	A	Q	Papio-Missouri River	10	Sarpy	77	13	14	E	30	CC	540N 960E		0	0	0	0	119	16	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	15	2000	18991230	41.061737	-95.886215
NRGW	127674		G-107476Y	A	Q	Papio-Missouri River	10	Sarpy	77	13	14	E	31	BB	370S 890E		0	0	0	0	129	14	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	29	2000	18991230	41.059260	-95.886592
NRGW	127675		G-107476Z	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AB	70S 1990W		0	0	0	0	20	17	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	27	2000	18991230	41.074607	-95.916198
NRGW	127676		G-107476AA	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AA	70S 650W		0	0	0	0	22	16	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	27	2000	18991230	41.074600	-95.911338
NRGW	127677		G-107476AB	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BB	70S 40E		0	0	0	0	25	15	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	31	2000	18991230	41.074596	-95.908835
NRGW	127678		G-107476AC	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AB	1005S 1940W		0	0	0	0	25	15	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	31	2000	18991230	41.072042	-95.915979
NRGW	127679		G-107476AD	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BB	100S 720E		0	0	0	0	25	15	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	26	2000	18991230	41.074518	-95.906368
NRGW	127680		G-107476AE	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AC	1700S 1950W		0	0	0	0	25	13	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	31	2000	18991230	41.070135	-95.915987
NRGW	127681		G-107476AF	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BC	1690S 700E		0	0	0	0	20	17	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	27	2000	18991230	41.070156	-95.906377
NRGW	127682		G-107476AG	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	AC	2350S 1650W		0	0	0	0	20	10	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	31	2000	18991230	41.068351	-95.914873
NRGW	127683		G-107476AH	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	DA	2100N 1035W		0	0	0	0	20	9	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	31	2000	18991230	41.066081	-95.912607
NRGW	127684		G-107476AI	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	26	DA	2000N 350W		0	0	0	0	20	10	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	31	2000	18991230	41.065813	-95.910120
NRGW	127685		G-107476AJ	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	CB	1400N 10E		0	0	0	0	20	13	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	27	2000	18991230	41.064171	-95.908791
NRGW	127686		G-107476AK	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	CB	1780N 940E		0	0	0	0	20	12	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	1	2000	18991230	41.065218	-95.905436
NRGW	127687		G-107476AL	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BD	2270S 1330E		0	0	0	0	20	13	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	1	2000	18991230	41.068568	-95.904071
NRGW	127689		G-107476AN	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BD	2610S 2540E		0	0	0	0	24	14	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	26	2000	18991230	41.067642	-95.899671
NRGW	127690		G-107476AO	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AB	50S 2170W		0	0	0	0	25	16	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	1	2000	18991230	41.074668	-95.897717
NRGW	127691		G-107476AP	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DA	2110N 1390W		0	0	0	0	25	12	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	26	2000	18991230	41.066139	-95.894781
NRGW	127692		G-107476AQ	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DC	1170N 1640W		0	0	0	0	20	12	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	1	2000	18991230	41.063559	-95.895656
NRGW	127693		G-107476AR	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DD	1140N 170W		0	0	0	0	25	16	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	6	2000	18991230	41.063484	-95.890327
NRGW	127694		G-107476AS	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AA	120S 20W		0	0	0	0	20	6	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	6	2000	18991230	41.074487	-95.889915
NRGW	127695		G-107476AT	A	Q	Papio-Missouri River	10	Sarpy	77	13	14	E	30	BC	2550S 20E		0	0	0	0	20	7	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	6	2000	18991230	41.067819	-95.889690
NRGW	127696		G-107476AU	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DD	360N 420W		0	0	0	0	20	13	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	1	2000	18991230	41.061343	-95.891208
NRGW	127697		G-107476AV	A	Q	Papio-Missouri River	10	Sarpy	77	13	14	E	30	CB	2580N 1210E		0	0	0	0	25	8	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	6	2000	18991230	41.067307	-95.885375
NRGW	127698		G-107476AW	A	Q	Papio-Missouri River	10	Sarpy	77	13	14	E	30	CC	540N 950E		0	0	0	0	19	16	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	5	26	2000	18991230	41.061738	-95.886251
NRGW	127699		G-107476AX	A	Q	Papio-Missouri River	10	Sarpy	77	13	14	E	31	BB	370S 880E		0	0	0	0	20	14	0	89024	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/20/2000	6	1	2000	18991230	41.059261	-95.886628
NRGW	131642		G-109827	A	D	Papio-Missouri River	10	Sarpy	77	13	13	E	23	DD	165N 231W		0	10	1	40	56	14	19	39252	45066	W M Farms Inc	Plattsmouth, NE 68048	14217 Penny Drive	Robert Meisinger	5/3/2001	4	17	2001	18991230	41.075242	-95.909826
NRGW	136500		G-113099	A	D	Papio-Missouri River	10	Sarpy	77	13	13	E	23	DD	259N 509W		0	10	1	45	65	12	15	39333	59680	Tim Powers	La Platte, NE 68123	304 E LaPlatte Road		11/28/2001	9	28	2001	18991230	41.075500	-95.910833
NRGW	153256		G-124630	A	I	Lower Platte South	20	Cass	13	13	13	E	33	DD	89N 374W	LPS-03146	80	500	6	60	75	9	16	3907004	45066	W M Farms Inc	Plattsmouth, NE 68048	14217 Penny Drive	Robert Meisinger	11/26/2003	9	15	2003	18991230	41.045865	-95.948718
NRGW	153257		G-124462	A	I	Lower Platte South	20	Cass	13	12	13	E	3	BB	1171S 1302E	LPS-030144	45	600	6	50	54	10	40	3907004	45066	W M Farms Inc	Plattsmouth, NE 68048	14217 Penny Drive	Robert Meisinger	11/14/2003	10	23	2003	18991230	41.042358	-95.945002
NRGW	182216		G-143390	A	D	Papio-Missouri River	10	Sarpy	77	13	13	E	24	CD	105N 1506E		0	10	1	40	80	17	20	39252	83431	Joanne Powers	Bellevue, NE 68123	450 E LaPlatte Rd		1/22/2007	10	4	2006	18991230	41.075083	-95.903528
NRGW	187739		G-146448A	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BD	1572S 1680E		0	0	0	0	23	13	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	5	2	2007	18991230	41.070483	-95.902833
NRGW	187740		G-146448B	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BA	528S 1627E		0	0	0	0	22	12	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	4	30	2007	18991230	41.073350	-95.903067
NRGW	187741		G-146448C	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BA	522S 1627E		0	0	0	0	88	12	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	4	20	2007	18991230	41.073367	-95.903067
NRGW	187742		G-146448D	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	BD	1565S 1680E		0	0	0	0	88	13	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	5	2	2007	18991230	41.070500	-95.902833
NRGW	187743		G-146448E	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AB	1076S 2493W		0	0	0	0	22	12	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	5	1	2007	18991230	41.071850	-95.898850
NRGW	187744		G-146448F	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AB	1070S 2493W		0	0	0	0	118	11	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	4	30	2007	18991230	41.071867	-95.898850
NRGW	187745		G-146448G	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AC	1798S 2523W		0	0	0	0	21	12	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	4	30	2007	18991230	41.069867	-95.898933
NRGW	187746		G-146448H	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AC	1795S 2523W		0	0	0	0	87	12	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	4	27	2007	18991230	41.069883	-95.898933
NRGW	187747		G-146448I	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AA	1165S 1178W		0	0	0	0	17	6	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	4	30	2007	18991230	41.071617	-95.894083
NRGW	187748		G-146448J	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	AA	1158S 1178W		0	0	0	0	80	6	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	4	26	2007	18991230	41.071633	-95.894083
NRGW	187749		G-146448K	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DA	2598N 1115W		0	0	0	0	17	6	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	4	30	2007	18991230	41.067483	-95.893800
NRGW	187750		G-146448L	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	25	DA	2605N 1115W		0	0	0	0	81	7	0	89019	432	P C S Nitrogen Fertilizer LP	La Platte, NE 68123	202 Allied Road		10/4/2007	4	23	2007	18991230	41.067500	-95.893800
NRGW	192152		G-149180	A	Q	Papio-Missouri River	10	Sarpy	77	13	13	E	29	AB	900S 2020W		0	0	0	0	48	41	0	19030	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street	VP Water Operations	5/22/2008	2	12	2008	18991230	41.072159	-95.973732
NRMW	49999	2996	A-010538B	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	30	CD			0	1100	10	0	53	7	32	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.061880	-95.997570
NRMW	50002	3002	A-010538E	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	30	CD			0	1100	10	0	53	7	29	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.061880	-95.997570
NRMW	50003	3003	A-010538EE	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	32	AB			0	1100	10	0	49	6	31	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058220	-95.973590
NRMW	50004	3004	A-010538F	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	31	BA			0	1100	10	0	52	5	26	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058270	-95.997530
NRMW	50005	3005	A-010538FF	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	29	DC			0	700	10	0	60	7	23	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.061890	-95.973600
NRMW	50006	3006	A-010538G	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	31	BA			0	2200	12	0	67	12	34	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058270	-95.997530
NRMW	50007	3007	A-010538GG	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	29	DD			0	700	10	0	45	8	25	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.061890	-95.968820
NRMW	50008	3008	A-010538H	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	31	BA			0	1100	10	0	62	7	29	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058270	-95.997530
NRMW	50009	3009	A-010538HH	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	32	AB			0	700	10	0	48	6	29	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058220	-95.973590
NRMW	50010	3010	A-010538I	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	31	AB			0	1100	10	0	63	7	29	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058250	-95.992750
NRMW	50011	3011	A-010538II	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	29	DC			0	700	10	0	58	8	34	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.061890	-95.973600
NRMW	50012	3012	A-010538J	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	31	AB			0	1400	10	0	63	7	32	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058250	-95.992750
NRMW	50013	3013	A-010538JJ	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	30	DD			0	700	10	0	49	9	28	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.061890	-95.988000

Public and Private Wells in Close Proximity to Former PCS Nitrogen Facility

DB	WellID	OtherWelll	Regnum	Status	UseID	Nrdname	Nrddwr no	Co name	Co no	Twnp	Range	Rangelet	Sec	Subsec	Footage	Areapermit	Acres	Gpm	Pcoldiam	Pdepth	Totaldepth	Stwaterlev	Pwaterlev	Wedrilic	Owner no	Compname	Citystzip	Address1	Address2	Fildate	Month	Day	Year	Lastchgdat	LatDD	LongDD
NRMW	50014	3014	A-010538K	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	30	DC			0	700	10	0	47	7	28	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970617	41.061880	-95.992780
NRMW	50015	3015	A-010538KK	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	32	BA			0	700	10	0	50	6	25	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058220	-95.978370
NRMW	50016	3016	A-010538L	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	31	AB			0	1100	10	0	53	7	31	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058250	-95.992750
NRMW	50017	3017	A-010538LL	A	P	Papio-Missouri River	10	Sarpy	77	13	13	E	32	BB			0	700	10	0	45	6	22	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058220	-95.983150
NRMW	54295	135655	G-112590	A	U	Papio-Missouri River	10	Sarpy	77	13	13	E	26	BB	265S 660E		0	28	4	20	43	0	0	4	59426	South Sarpy School District 46	Springfield, NE 68059	14801 South 108th Street		10/18/2001	0	0	0	20011210	41.074090	-95.925520
NRMW	105393	2994	A-010538A	A	P	Lower Platte South	20	Cass	13	13	13	E	31	AB			0	2000	10	0	55	10	25	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		2/13/1985	0	0	0	19970512	41.058250	-95.992750
NRMW	105394	2995	A-010538AA	A	P	Lower Platte South	20	Cass	13	13	13	E	32	AC			0	1800	12	0	50	5	27	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.054600	-95.973550
NRMW	105395	2997	A-010538BB	A	P	Lower Platte South	20	Cass	13	13	13	E	32	AB			0	1800	12	0	54	5	26	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058220	-95.973590
NRMW	105396	2999	A-010538CC	A	P	Lower Platte South	20	Cass	13	13	13	E	32	AB			0	2200	12	0	56	5	28	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058220	-95.973590
NRMW	105397	3001	A-010538DD	A	P	Lower Platte South	20	Cass	13	13	13	E	32	AB			0	2200	12	0	55	6	23	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058220	-95.973590
NRMW	105398	3018	A-010538M	A	P	Lower Platte South	20	Cass	13	13	13	E	31	AB			0	1400	10	0	62	6	29	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058250	-95.992750
NRMW	105399	3019	A-010538N	A	P	Lower Platte South	20	Cass	13	13	13	E	31	AB			0	1100	10	0	57	7	28	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.058250	-95.992750
NRMW	105400	3020	A-010538O	A	P	Lower Platte South	20	Cass	13	13	13	E	31	AC			0	700	10	0	55	5	24	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.054630	-95.992690
NRMW	105401	3021	A-010538P	A	P	Lower Platte South	20	Cass	13	13	13	E	31	AC			0	700	10	0	52	8	24	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.054630	-95.992690
NRMW	105402	3022	A-010538Q	A	P	Lower Platte South	20	Cass	13	13	13	E	31	AD			0	700	10	0	52	10	25	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.054610	-95.987900
NRMW	105403	3023	A-010538R	A	P	Lower Platte South	20	Cass	13	13	13	E	31	AD			0	700	10	0	51	8	28	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.054610	-95.987900
NRMW	105404	3024	A-010538S	A	P	Lower Platte South	20	Cass	13	13	13	E	31	AD			0	700	10	0	50	8	26	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970512	41.054610	-95.987900
NRMW	105405	3025	A-010538T	A	P	Lower Platte South	20	Cass	13	13	13	E	32	BC			0	700	10	0	52	7	23	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970730	41.054600	-95.983120
NRMW	105406	3026	A-010538U	A	P	Lower Platte South	20	Cass	13	13	13	E	32	BC			0	1400	10	0	52	6	26	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970730	41.054600	-95.983120
NRMW	105407	3027	A-010538V	A	P	Lower Platte South	20	Cass	13	13	13	E	32	BC			0	1400	10	0	54	5	27	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970730	41.054600	-95.983120
NRMW	105408	3028	A-010538W	A	P	Lower Platte South	20	Cass	13	13	13	E	32	BD			0	1400	10	0	54	5	29	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970730	41.054600	-95.978330
NRMW	105409	3029	A-010538X	A	P	Lower Platte South	20	Cass	13	13	13	E	32	BD			0	1400	10	0	53	6	19	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970730	41.054600	-95.978330
NRMW	105410	3030	A-010538Y	A	P	Lower Platte South	20	Cass	13	13	13	E	32	BD			0	1800	12	0	58	7	26	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970730	41.054600	-95.978330
NRMW	105411	3031	A-010538Z	A	P	Lower Platte South	20	Cass	13	13	13	E	32	BD			0	1400	10	0	52	6	24	0	21833	Metropolitan Utilities District	Omaha, NE 68102	1723 Harney Street		11/27/1985	0	0	0	19970730	41.054600	-95.978330
	1001			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Sands Mobile Home-West Well	Bellevue, NE 68122	16711 Main Street	Thomas Wilson		0	0	0		41.069741	-95.924818
	1002			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Sands Mobile Home-East Well	Bellevue, NE 68123	16711 Main Street	Thomas Wilson		0	0	0		41.069732	-95.924325
	1003			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Dean Taylor	LaPlatte, NE 68123	16514 Main Street			0	0	0		41.072738	-95.924368
	1004			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Dean Taylor	LaPlatte, NE 68123	16510 Main Street			0	0	0		41.073055	-95.924367
	1005			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Jeffrey Stones	Bellevue, NE 68123	16602 Main Street			0	0	0		41.072466	-95.924369
	1006			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Omaha Truck & Trailer	LaPlatte, NE 68123	1014 LaPlatte Road			0	0	0		41.075356	-95.922899
	1007			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	LaPlatte Community Church	Bellevue, NE 68123	16412 Main Street			0	0	0		41.073596	-95.923940
	1008			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Mary Frey	Bellevue, NE 68123	16505 Main Street			0	0	0		41.072908	-95.923622
	1009			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Michael West	Bellevue, NE 68123	16521 Clay Street			0	0	0		41.072829	-95.924974
	1010			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Penny Morin	Bellevue, NE 68123	16505 Clay Street			0	0	0		41.073327	-95.924972
	1011			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Al Burton	Bellevue, NE 68123	16502 Clay Street			0	0	0		41.072196	-95.926455
	1012			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Al Burton	Bellevue, NE 68123	16415 Main Street			0	0	0		41.074050	-95.923292
	1013			A	D		0		0	0	0		0				0	0	0	0	0	0	0	0	0	Robert Dahlquist	Bellevue, NE 68123	1040 Allied Road			0	0	0		41.068748	-95.920064

APPENDIX F

LOGBOOK

INCH

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

Name PCS Nitrogen - Section 128(a) Assessment

Address

Phone

Project

Clear Vinyl Protective Slipcovers (Item No. 30) are available for this style of notebook. Helps protect your notebook from wear & tear. Contact your dealer or the J. L. Darling Corporation.

CONTENTS

PAGE	REFERENCE	DATE

01-04-10

8:00 Loaded vehicle & left the office for LaPlatte, NE

1100 Arrived at WM Farms
208 LaPlatte Road
pH 6.32 pH 6.92 pH 6.99
temp 11.2°C temp 11.0 temp 10.9
cond 1.22 cond 1.18 cond 1.16

1113 sampled & took photos

11:35 Arrived at Sands Mobile Home Park - no answer at door, called no answer

11:50 Arrived at Gene Eppley Camp to collect sample - contacted site rep
915 Allied Road

1209 pH 7.50 pH 7.35 pH 7.27
temp 9.8 temp 11.6 temp 11.8
cond 1.89 cond 1.81 cond 1.77
collected sample
max 500 people capacity
5 permanent residents
nitrate - below MCL - est. 1/yr
2Q 2008 last results - ND
blended system - 3 wells
sampled raw water

01-04-10

1230 broke for lunch

1315 Headed back to sample more wells
Contacted Sharon Winters at 12101 LaPlatte Rd to arrange access. She said she wasn't interested & hung up. She has a home daycare.

1340 Arrived at Mink's residence
16717 Clay St.

1403 pH 7.37 pH 7.29 pH 7.27
temp 11.0 temp 11.7° temp 11.9°
cond .637 cond .62 cond .60
collected sample from kitchen sink - no treatment
serves 3 people - related to winters
residence to NE of Mink's
denied ~~address~~ access
16720 Clay St - abandoned

1425 Arrived at S. Sarpy School District, bldg is leased Peru State College Annex; contacted site rep.

1456 Access to school bldg
pH 7.7 pH 7.37 pH 7.27
temp 13.1°C temp 13.3 temp 12.2°
cond .62 cond .62 cond .61
collected sample from kitchen

01-04-10

1519 Arrived at Coreslab Structures
receptionist contacted Mitch.

1545 started readings — serves? access agreement?

pH 7.13	pH 7.02	pH 7.01
temp 12°C	temp 11.7°C	temp 12.2°C
cond .85	cond .85	cond .85

1600 Arrived at Sands Mobile Home Park
well - lot 33
well - front of trailer
both intakes in well house

1630 west well

pH 7.50	pH 7.30	pH 7.24
temp 12.5°	temp 12.7°	temp 12.6°
cond .75	cond .74	cond .74

1635 east well

pH 7.61	pH 7.38	pH 7.27
temp 11.8°C	temp 12.4°C	temp 12.6°C
cond .74	cond .74	cond .74

serves 125 people

1-4-10

Attempted access:
304 E LaPlatte Rd - return Tues.
450 E LaPlatte Rd - no answer
718 E LaPlatte Rd - wants no sampling (Rahn)
708 E LaPlatte Rd - denied
16403 Main St. - says on rural H_2O
16415 Main St - rents from Al Burton
16412 Main St - LaPlatte Comm Church
16411 Main St - no answer
16417 Main St
Taxidermy Shop (River City taxidermy) 291-3018
164?? Main St
16505 Main St - return Tues
16510 - rents from 16514
16514 Main St

1730 16514 Main St kitchen - non water softener faucet serves 3 people

temp 14.9°C	temp 14.4°C	temp 14.3°C
pH 7.43	pH 7.39	pH 7.33
cond .67	cond .66	cond .67

1735 16510 Main St outdoor spigot serves 4 people

pH 7.5	pH 7.3	pH 7.2
temp 12.3	temp 12.6	temp 12.6
cond .65	cond .65	cond .65

1-4-10

1750 16602 Main St serves 2 people

pH 7.5	pH 7.3	pH 7.2
temp 12.9°C	temp 13.3°C	temp 13.7°C
cond .72	cond .72	cond .72

16521 Clay St - no answer
16509 Clay St - abandoned
16505 Clay St - no answer
16503 Clay St - no answer
16502 Clay St - no access to door

Omaha Truck Trailer
1800 Finished survey & headed to Omaha to unpack car
2000 Finished labeling & COC's end of day

SLC
1-4-10

1-5-10

0715 Loaded vehicles & left for Lincoln
0845 Dropped samples off at UNL Water Sciences Lab.
Headed back to LaPlatte
1000 Stopped at Powers residence & other house asked to return to. NO answer.
Took photos
1030 Left site back for KC
1200 Stopped for lunch.
1300 Resumed travel.
1400 Returned to office.
Unpacked vehicle

SLC
1-5-10

6-3-2010

0830 Packed up vehicle & left Kansas City

1115 Arrived in Bellevue & drove around potential sample locations

1130 Lunch

1230 Headed to Omaha Truck & Trailer

1250 Calibrated Horiba U10 & purged well from outdoor spigot

pH 6.33 pH 6.55 pH 6.56
temp 20.3°C temp 19.0°C temp 18.9°C
cond 0.718 cond 0.655 cond 0.637
photo #1 pH 6.51
temp 18.9°C
collected sample cond 0.634

1305 Arrived at LaPlatte Community Church

purged kitchen sink

pH 6.64 pH 6.64 pH 6.62
temp 20.8°C temp 20.6°C temp 20.5°C
cond 0.694 cond 0.697 cond 0.696
collected sample
photo #2

1340 Attempted find outdoor spigot at 16505 Main Street

No one answered, spigot outside

purged water

pH 7.01 pH 6.97 pH 6.95
temp 16.9°C temp 16.8°C temp 16.9°C
cond 0.738 cond 0.732 cond 0.731
collected sample
photo #3

1350 Arrived at 16521 Clay Street to collect sample from outdoor spigot.

Started purge water

pH 6.96 pH 6.98 pH 6.97
temp 17.8°C temp 17.7°C temp 15.6°C
cond 0.697 cond 0.692 cond 0.695
collected sample
photo #4

1400 Stopped by 16509 Clay Street

dumpster in driveway

No one answered

1420 1040 Allied Road
Contacted Robert Danlquist while at the church & said he didn't need to meet us onsite. started purging

pH 7.59	pH 7.55	pH 7.51
temp 19.4°C	temp 16.4°C	temp 15.8°
cond 1.17	cond 1.18	cond 1.18

collected sample
photo #5

pH 7.46
temp 15.8°
cond 1.18

1600 16505 Clay Street
shares a well w/ next door house 16501 Clay st.
Started purging outdoor spigot

pH 7.04	pH 7.07	pH 7.06
temp 17.2°C	temp 16.9°C	temp 16.5°C
cond 0.951	cond 0.969	cond 0.972

collected sample
photo #6

16509 Clay Street is empty according to neighbor

1620 Tried 16411 Main Street
car in driveway but no one answered.
Came out of the house but said not interested.

1749 16502 Clay Street
purged water from kitchen sink

pH 6.97	pH 6.95	pH 6.93
temp 16.9°C	temp 16.9°C	temp 16.8°
cond 0.741	cond. 0.740	cond 0.740

collected sample & duplicate sample
photo # 7
serves 1 person

1811 16415 Main St.
Al Burton owns property
purged kitchen sink
Serves 2 people

pH 6.97	pH 6.98	pH 6.94
temp 16.2°C	temp 16.8°C	temp 16.3°
cond 0.692	cond 0.695	cond 0.696

Collected sample
photo #8

1815 Stopped at 450 E. LaPlatte Rd to ask Powers for access.
Denied access to both Power's wells.
Started drive back.

Per diem
Emily Halcstick
lunch $11.83
dinner $6.15

Stephanie Uuebbering
lunch $11.83
dinner $5.39

APPENDIX G

ANALYTICAL DATA AND CHAIN OF CUSTODIES

Water Sciences Laboratory - Analytical Report

202 Water Sciences Laboratory University of Nebraska Lincoln, NE 68583-0844 ph.402-472-7539 fax.402-472-9599

Results Reported To:
Stephanie Luebbering
Tetra Tech EM Inc
415 Oak Street
Kansas City, MO 64106
816-412-1768

Project: **TETRA TECH**
Sampled By: Stephanie Luebbering
Received: 5-Jan-10
Received By: Sathaporn Onanong
Batch: **W10003**

IC - ANIONS
Ion Chromatography - Major Anions EPA 300.0

**** *Results of Analysis* **** IC - ANIONS

Lab ID	Sample ID	Collection Date	Analysis Date	Chloride (mg/L)
10 - 1	SMH-WW-01	01/04/2010	01/11/2010	66.4
10 - 3	SMH-EW-01	01/04/2010	01/11/2010	72.0
10 - 4	SMH-EW-01 DUB	01/04/2010	01/11/2010	66.1
10 - 5	FIELD BLANK	01/04/2010	01/11/2010	0.10
			Reporting Limit:	0.10

Results Approved: 3/22/2010 Daniel D. Snow, Laboratory Manager

Water Sciences Laboratory - Analytical Report

202 Water Sciences Laboratory University of Nebraska Lincoln, NE 68583-0844 ph.402-472-7539 fax.402-472-9599

Results Reported To:
Stephanie Luebbering
Tetra Tech EM Inc
415 Oak Street
Kansas City, MO 64106
816-412-1768

Project:TETRA TECH

Sampled By:Stephanie Luebbering
Received:01/05/2010
Received By:Sathaporn Onanong
Batch:**W10002**

IRMS EA 18O NO3 OR PO4
18O in nitrate or phosphate - High Temp EA IRMS

**** *Results of Analysis**** IRMS EA 18O NO3 OR PO4

Lab ID	Sample ID	Collection Date	Analysis Date	δ18O-NO3 (‰)SMOW
10 - 1	SMH-WW-01	01/04/2010	03/22/2010	+25.5
10 - 3	SMH-EW-01	01/04/2010	03/22/2010	+22.8
10 - 4	SMH-EW-01 DUI	01/04/2010	03/22/2010	+23.1
10 - 5	FIELD BLANK	01/04/2010	03/22/2010	NM

Results Approved: 4/19/2010 Daniel D. Snow, Laboratory Manager "NM" Insufficent

Water Sciences Laboratory - Analytical Report

202 Water Sciences Laboratory University of Nebraska Lincoln, NE 68583-0844 ph.402-472-7539 fax.402-472-9599

Results Reported To:
Stephanie Luebbering
Tetra Tech EM Inc
415 Oak Street
Kansas City, MO 64106
816-412-1768

Project: **TETRA TECH**
Tetra tech EM Inc
Sampled By: Stephanie Luebbering
Received: 5-Jan-10
Received By: Sathaporn Onanong
Batch: **W10001**

15N NITRATE/AMMONIA
Nitrogen Isotopes Dual Inlet - Nitrate & Ammonia

**** *Results of Analysis*** **** 15N NITRATE/AMMONIA

Lab ID	Sample ID	Collection Date	Analysis Date	NO3-N (mg/L)	δ15N-NO3 (‰)	NH4-N (mg/L)	δ15N-NH4 (‰)
10 - 1	SMH-WW-01	01/04/2010	03/16/2010	5.6	+5.62	<0.1	NM
10 - 3	SMH-EW-01	01/04/2010	03/16/2010	7.8	+8.36	<0.1	NM
10 - 4	SMH-EW-01 DUB	01/04/2010	03/16/2010	9.0	+7.79	<0.1	NM
10 - 5	FIELD BLANK	01/04/2010	03/16/2010	NM	NM	<0.1	NM
			Reporting Limit:	0.1		0.1	

$$\delta(‰) = \frac{R_{sample} - R_{standard}}{R_{standard}} x1000$$

Results Approved: 3/22/2010 Daniel D. Snow, Laboratory Manager "NM" - Not Measured

Water Sciences Laboratory - Analytical Report

202 Water Sciences Laboratory University of Nebraska Lincoln, NE 68583-0844 ph.402-472-7539 fax.402-472-9599

Results Reported To:
Stephanie Luebbering
Tetra Tech EM Inc
415 Oak Street
Kansas City, MO 64106
816-412-1768

Project: TETRA TECH

Sampled By: Stephanie Luebbering
Received: 5-Jan-10
Received By: Sathaporn Onanong
Batch: **W10004**

LCQ - WASTEWATER
Pharmaceuticals in wastewater by HPLC/MS/MS

Lab ID: **10 - 1**
Sample ID: **SMH-WW-01**

Collection Date: **4-Jan-10**
Analysis Date: **15-Feb-10**

**** *Results of Analysis* ****

Analyte	ug/L	Reporting Limit
Acetaminophen	< 0.20	0.20
Amphetamine	< 0.20	0.20
Caffeine	< 0.20	0.20
Carbamazepine	< 0.20	0.20
Cotinine	< 0.20	0.20
DEET	< 0.20	0.20
Diphenhydramine	< 0.20	0.20
Ibuprofen	< 0.20	0.20
Methamphetamine	< 0.20	0.20
Naproxen	< 0.20	0.20
Paraxanthine	< 0.20	0.20
Sulfamethazine	< 0.20	0.20
Sulfamethoxazole	< 0.20	0.20
Thiabendazole	< 0.20	0.20
Triclosan	< 0.20	0.20

Results Approved: 4/19/2010 Daniel D. Snow, Laboratory Manager

Water Sciences Laboratory - Analytical Report

202 Water Sciences Laboratory University of Nebraska Lincoln, NE 68583-0844 ph.402-472-7539 fax.402-472-9599

Results Reported To:
Stephanie Luebbering
Tetra Tech EM Inc
415 Oak Street
Kansas City, MO 64106
816-412-1768

Project: TETRA TECH

Sampled By: Stephanie Luebbering
Received: 5-Jan-10
Received By: Sathaporn Onanong
Batch: **W10004**

LCQ - WASTEWATER
Pharmaceuticals in wastewater by HPLC/MS/MS

Lab ID: **10 - 3**
Sample ID: **SMH-EW-01**

Collection Date: **4-Jan-10**
Analysis Date: **15-Feb-10**

**** *Results of Analysis* ****

Analyte	ug/L	Reporting Limit
Acetaminophen	< 0.20	0.20
Amphetamine	< 0.20	0.20
Caffeine	< 0.20	0.20
Carbamazepine	0.31	0.20
Cotinine	< 0.20	0.20
DEET	< 0.20	0.20
Diphenhydramine	< 0.20	0.20
Ibuprofen	< 0.20	0.20
Methamphetamine	< 0.20	0.20
Naproxen	< 0.20	0.20
Paraxanthine	< 0.20	0.20
Sulfamethazine	< 0.20	0.20
Sulfamethoxazole	< 0.20	0.20
Thiabendazole	< 0.20	0.20
Triclosan	< 0.20	0.20

Results Approved: 4/19/2010 Daniel D. Snow, Laboratory Manager

Water Sciences Laboratory - Analytical Report

202 Water Sciences Laboratory University of Nebraska Lincoln, NE 68583-0844 ph.402-472-7539 fax.402-472-9599

Results Reported To:
Stephanie Luebbering
Tetra Tech EM Inc
415 Oak Street
Kansas City, MO 64106
816-412-1768

Project: TETRA TECH

Sampled By: Stephanie Luebbering
Received: 5-Jan-10
Received By: Sathaporn Onanong
Batch: **W10004**

LCQ - WASTEWATER
Pharmaceuticals in wastewater by HPLC/MS/MS

Lab ID: **10 - 4**
Sample ID: **SMH-EW-01 DUB**

Collection Date: **4-Jan-10**
Analysis Date: **15-Feb-10**

**** *Results of Analysis* ****

Analyte	ug/L	Reporting Limit
Acetaminophen	< 0.20	0.20
Amphetamine	< 0.20	0.20
Caffeine	< 0.20	0.20
Carbamazepine	0.26	0.20
Cotinine	< 0.20	0.20
DEET	< 0.20	0.20
Diphenhydramine	< 0.20	0.20
Ibuprofen	< 0.20	0.20
Methamphetamine	< 0.20	0.20
Naproxen	< 0.20	0.20
Paraxanthine	< 0.20	0.20
Sulfamethazine	< 0.20	0.20
Sulfamethoxazole	< 0.20	0.20
Thiabendazole	< 0.20	0.20
Triclosan	< 0.20	0.20

Results Approved: 4/19/2010 Daniel D. Snow, Laboratory Manager

Water Sciences Laboratory - Analytical Report

202 Water Sciences Laboratory University of Nebraska Lincoln, NE 68583-0844 ph.402-472-7539 fax.402-472-9599

Results Reported To:
Stephanie Luebbering
Tetra Tech EM Inc
415 Oak Street
Kansas City, MO 64106
816-412-1768

Project: TETRA TECH

Sampled By: Stephanie Luebbering
Received: 5-Jan-10
Received By: Sathaporn Onanong
Batch: **W10004**

LCQ - WASTEWATER
Pharmaceuticals in wastewater by HPLC/MS/MS

Lab ID: **10 - 5**
Sample ID: **FIELD BLANK**

Collection Date: **4-Jan-10**
Analysis Date: **15-Feb-10**

**** *Results of Analysis* ****

Analyte	ug/L	Reporting Limit
Acetaminophen	< 0.20	0.20
Amphetamine	< 0.20	0.20
Caffeine	< 0.20	0.20
Carbamazepine	< 0.20	0.20
Cotinine	< 0.20	0.20
DEET	4.5	0.20
Diphenhydramine	< 0.20	0.20
Ibuprofen	< 0.20	0.20
Methamphetamine	< 0.20	0.20
Naproxen	< 0.20	0.20
Paraxanthine	< 0.20	0.20
Sulfamethazine	< 0.20	0.20
Sulfamethoxazole	< 0.20	0.20
Thiabendazole	< 0.20	0.20
Triclosan	< 0.20	0.20

Results Approved: 4/19/2010 Daniel D. Snow, Laboratory Manager

University of Nebraska
Water Sciences Laboratory
Sample Submittal Form

IANR

WSL Batch Number(s) W10001-W10004

Date Jan-4-2010 **Sample Type:** ☒ Water ☐ Wastewater ☐ Sediments

Contact Name Stephanie Luebbering **Number of Samples** 4

Company Tetra Tech EM Inc

Address 415 Oak Street

City Kansas City **State** MO **Zip** 64106

Email Address stephanie.luebbering@Hemi.com

Telephone 816-412-1768

Project Code

Tests Desired

Nitrogen istopes &
Oxygen isotopes &
Chloride &
Wastewater Contamination Screen

To be billed? (Y/N) **Acct.** **Billing Address** same as above

	Sample Field ID#	Collection Date/Time	Sampled By	Preservative?	WSL#
1	SMH-WW-01	1-4-10 / 1630	S. Luebbering	NA	10-1
2	SMH-EW-01	1-4-10 / 1635	S. Luebbering	NA	10-3
3	SMH-EW-01-Dup	1-4-10 / 1635	S Luebbering	NA	10-4
4	Field blank	1-4-10 / 2000	S. Luebbering	NA	10-5
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

For MS/MSD

Comments

Date Completed

Water Sciences Laboratory
103 Natural Resources Hall
University of Nebraska-Lincoln
Lincoln, NE 68583-0844
402-472-7539

Ref. Lab #: 321515
Report Number
10-013-2191

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REPORT OF ANALYSIS

For: (21606) TETRA TECH EM INC
(816)412-1776

Mail to: TETRA TECH EM INC
EMILY FISHER
415 OAK STREET
KANSAS CITY MO 64106-1120

Date Reported: 01/13/10
Date Received: 01/08/10
Date Sampled: 01/04/10

PCS PROJECT

Lab number: 1667791

Analysis	Level Found	Units	Detection Limit	Method	Analyst-Date	Verified-Date
Sample ID: 208 LAPLATTE RD						
Nitrate/Nitrite Nitrogen	n.d.	mg/L	0.2	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: 915 ALLIED RD						
Nitrate/Nitrite Nitrogen	n.d.	mg/L	0.2	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: 16717 CLAY ST						
Nitrate/Nitrite Nitrogen	1.4	mg/L	0.2	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: SARPY SCHOOL DISTRICT						
Nitrate/Nitrite Nitrogen	8.9	mg/L	0.2	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: CORESLAB STRUCTURES						
Nitrate/Nitrite Nitrogen	n.d.	mg/L	0.2	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: SANDS MOBILE WEST WELL HOME						
Nitrate/Nitrite Nitrogen	9.7	mg/L	0.4	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: SANDS MOBLE WEST WELL-DUP HOME						
Nitrate/Nitrite Nitrogen	9.8	mg/L	0.4	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: SANDS MOBILE EAST WELL HOME						
Nitrate/Nitrite Nitrogen	9.2	mg/L	0.4	EPA 353.2	jjd-01/08	cmw-01/13

The result(s) issued on this report only reflect the analysis of the sample(s) submitted. For applicable test parameters, Midwest Laboratories is in compliance with NELAC requirements.
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REPORT OF ANALYSIS

Account: 21606 TETRA TECH EM INC Report Number: 10-013-2191

Analysis	Level Found	Units	Detection Limit	Method	Analyst-Date	Verified-Date
Sample ID: 16514 MAIN STREET						
Nitrate/Nitrite Nitrogen	8.1	mg/L	0.4	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: 16510 MAIN STREET						
Nitrate/Nitrite Nitrogen	8.9	mg/L	0.4	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: 16602 MAIN STREET						
Nitrate/Nitrite Nitrogen	8.2	mg/L	1.0	EPA 353.2	jjd-01/08	cmw-01/13
Sample ID: 16510 MAIN STREET						
Nitrate/Nitrite Nitrogen	8.2	mg/L	1.0	EPA 353.2	gjj-01/12	cmw-01/13
Sample ID: FIELD BLANK						
Nitrate/Nitrite Nitrogen	n.d.	mg/L	0.2	EPA 353.2	gjj-01/12	cmw-01/13

Notes:
n.d. - Not Detected.

For questions contact

John Menghini
Agronomist
jp@midwestlabs.com (402)829-9889

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PAGE NUMBER: 1/2

ACCOUNT NO: 21606
TETRA TECH EM INC
EMILY FISHER
415 OAK STREET
KANSAS CITY, MO 64106-1120

SAMPLE DESCRIPTION
PCS PROJECT

PO NUMBER:

COPY TO:

Automatic Order Submittal Form

PLACED BY: ferris on Dec 15, 2009

	SAMPLE ID	DATE/TIME SAMPLED	MX	TESTS REQUESTED		# CONT	COMMENTS
1	208 LaPlatte Rd	1-4-10 11:13	WA	NO3	1667791	1	
2	915 Allied Rd	1-4-10 12:09	WA	NO3	1667792	1	
3	16717 Clay St	1-4-10 14:03	WA	NO3	1667793	1	
4	Sarpy School District	1-4-10 1500	WA	NO3	1667794		
5	Coreslab Structures	1-4-10 15:45	WA	NO3	1667795		
6	Sands Mobile West Well Home	1-4-10 1630	WA	NO3	1667796		
7	Sands Mobile West well-Dup Home	1-4-10 1630	WA	NO3	1667797	1	Duplicate
8	Sands Mobile East well Home	1-4-10 1635	WA	NO3	1667798	1	
9	16514 Main Street	1-4-10 1730	WA	NO3	1667799	1	
10	16510 Main Street	1-4-10 1735	WA	NO3	1667800	1	

13

1667791 - 1667803

Sampled by: (Signature)	Temp on Arrival	Cooler arrived Intact?	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Stephanie Sheeley	1.6	OK	Stephanie Sheeley	1-7-10 00	
Relinquished by: (Signature)	**Date/Time**	**Received by: (Signature)**	**Relinquished by: (Signature)**	**Date/Time**	**Received in Lab by: (Signature)**

CHAIN OF CUSTODY

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PAGE NUMBER:
2

ACCOUNT NO: 21606
TETRA TECH EM INC
EMILY FISHER
415 OAK STREET
KANSAS CITY, MO 64106-1120

SAMPLE DESCRIPTION
PCS PROJECT

PO NUMBER:

COPY TO:

Automatic Order Submittal Form

PLACED BY: ferris on Dec 15, 2009

	SAMPLE ID	DATE/TIME SAMPLED	MX	TESTS REQUESTED	# CONT	COMMENTS
11	16602 Main Street	1-4-10 1750	WA	NO3 1667801	1	
12	16~~6~~510 Main Street	1-4-10 1735	WA	NO3 1667802	1	MS/MSD
13	Field blank	1-4-10	WA	NO3 1667803	1	
14			WA	NO3	1	
15			WA	NO3	1	
16			WA	NO3		
17			WA	NO3		
18			WA	NO3	1	
19			WA	NO3	1	
20			WA	NO3	1	

13 1667791 - 1667803
add

Sampled by: (Signature)	Temp on Arrival	Cooler arrived Intact?	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Stephanie Sheely	1.6	ok	Stephanie Sheely	1-7-10 1:00	
Relinquished by: (Signature)	**Date/Time**	**Received by: (Signature)**	**Relinquished by: (Signature)**	**Date/Time**	**Received in Lab by: (Signature)**

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Ref. Lab #: 321515
Report Number
10-161-2276

Midwest Laboratories Inc.®
13611 "B" Street • Omaha, Nebraska 68144-3693 • (402) 334-7770 • FAX (402 334-9121
www.midwestlabs.com

REPORT OF ANALYSIS

Mail to: TETRA TECH EM INC
EMILY FISHER
415 OAK STREET
KANSAS CITY MO 64106-1120

For: (21606) TETRA TECH EM INC
(816)412-1776

PO/Proj. #: PCS PROJECT
PCS PROJECT

Date Reported: 06/11/10
Date Received: 06/05/10
Date Sampled: 06/03/10

Lab number: 1720635

Analysis	Level Found	Units	Detection Limit	Method	Analyst-Date	Verified-Date
Sample ID: 1014 LAPLATTE RD						
Nitrate/Nitrite Nitrogen	4.4	mg/L	0.4	EPA 353.2	gjj-06/07	jjd-06/10
Sample ID: 16412 MAIN STREET						
Nitrate/Nitrite Nitrogen	9.4	mg/L	0.4	EPA 353.2	gjj-06/07	jjd-06/10
Sample ID: 16505 MAIN STREET						
Nitrate/Nitrite Nitrogen	7.8	mg/L	0.4	EPA 353.2	gjj-06/07	jjd-06/10
Sample ID: 16521 CLAY STREET						
Nitrate/Nitrite Nitrogen	8.2	mg/L	0.4	EPA 353.2	gjj-06/07	jjd-06/10
Sample ID: 1040 ALLIED ROAD						
Nitrate/Nitrite Nitrogen	n.d.	mg/L	0.2	EPA 353.2	gjj-06/07	jjd-06/10
Sample ID: 16505 CLAY STREET						
Nitrate/Nitrite Nitrogen	7.8	mg/L	0.2	EPA 353.2	gjj-06/08	jjd-06/10
Sample ID: 16502 CLAY STREET						
Nitrate/Nitrite Nitrogen	9.8	mg/L	1.0	EPA 353.2	gjj-06/08	jjd-06/10
Sample ID: 16502 CLAY STREET-DUP						
Nitrate/Nitrite Nitrogen	9.5	mg/L	1.0	EPA 353.2	gjj-06/08	jjd-06/10

The result(s) issued on this report only reflect the analysis of the sample(s) submitted. For applicable test parameters, Midwest Laboratories is in compliance with NELAC requirements.
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www.midwestlabs.com

REPORT OF ANALYSIS

Account: 21606 TETRA TECH EM INC Report Number: 10-161-2276

Analysis	Level Found	Units	Detection Limit	Method	Analyst-Date	Verified-Date
Sample ID: 16415 MAIN STREET						
Nitrate/Nitrite Nitrogen	8.4	mg/L	1.0	EPA 353.2	gjj-06/08	jjd-06/10
Sample ID: FIELD/TRIP BLANK						
Nitrate/Nitrite Nitrogen	0.3	mg/L	0.2	EPA 353.2	gjj-06/08	jjd-06/10

Notes:
n.d. - Not Detected.

For questions contact

John Menghini
Agronomist
jp@midwestlabs.com (402)829-9889

The result(s) issued on this report only reflect the analysis of the sample(s) submitted. For applicable test parameters, Midwest Laboratories is in compliance with NELAC requirements.
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ORDER NUMBER:
321515

Midwest Laboratories, Inc.

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www.midwestlabs.com

PAGE NUMBER:
3

ACCOUNT NO: 21606
TETRA TECH EM INC
EMILY FISHER
415 OAK STREET
KANSAS CITY, MO 64106-1120

SAMPLE DESCRIPTION
PCS PROJECT

PO NUMBER:

COPY TO:

Automatic Order Submittal Form

PLACED BY: ferris on Dec 15, 2009

	SAMPLE ID	DATE/TIME SAMPLED	MX	TESTS REQUESTED	# CONT	COMMENTS
21	1014 LaPlatte Rd	6-3-2010 12:50	WA	NO3	1	
22	16412 Main Street	6-3-2010 13:05	WA	NO3	1	
23	16505 Main Street	6-3-2010 13:40	WA	NO3	1	
24	16521 Clay Street	6-3-2010 13:50	WA	NO3	1	
25	1040 Allied Road	6-3-2010 14:20	WA	NO3	1	
26	16505 Clay Street	6-3-2010 16:00	WA	NO3	1	
27	16502 Clay Street	6-3-2010 17:49	WA	NO3	1	
28	16502 Clay Street-Dupl.	6-3-2010 17:49	WA	NO3	1	Duplicate sample
29	16415 Main Street	6-3-2010 18:11	WA	NO3	1	
30	Field/ Trip blank	6-3-2010	WA	NO3	1	

Sampled by: (Signature) Stephanie Shelley	Temp on Arrival	Cooler arrived Intact?	Relinquished by: (Signature) Stephanie Shelley	Date/Time 6-4-2010 13:00	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received in Lab by: (Signature)

CHAIN OF CUSTODY

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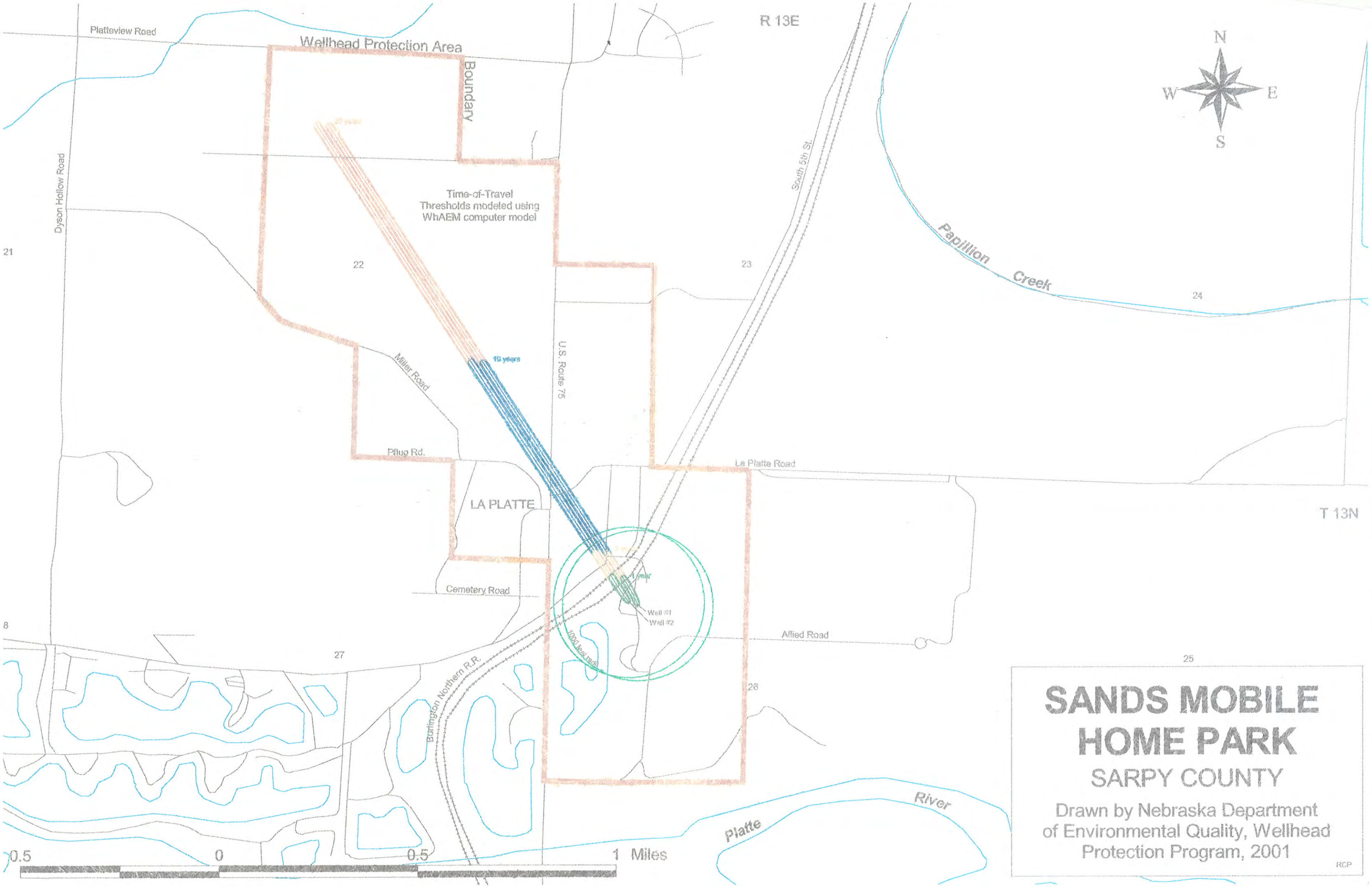
APPENDIX H

SANDS MOBILE HOME PARK WELLHEAD PROTECTION AREA MAP



SANDS MOBILE HOME PARK

SARPY COUNTY

Drawn by Nebraska Department of Environmental Quality, Wellhead Protection Program, 2001

RCP