FINAL
INTERIM REMEDIAL ACTION
COMPLETION REPORT

OPERABLE UNIT No. 2 (GROUNDWATER)

Former Nebraska Ordnance Plant
Mead, Nebraska

United States Army Corps of Engineers
Kansas City District

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LIST OF ACRONYMS AND ABREVIATIONS

AMA	Atlas Missile Area
AOP	Advanced Oxidation Process
ARDC	Agricultural Research and Development Center
BLRA	Baseline Risk Assessment
CE	Containment Evaluation
CENWK	Northwestern Division, Kansas City District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminants of Concern
DoD	Department of Defense
EPA	U.S. Environmental Protection Agency
EW	extraction well
FEW	focused extraction well
FS	Feasibility Study
GAC	granular activated carbon
GCW	groundwater circulation well
GMP	Groundwater Monitoring Program
gpm	gallon per minute
GTP	groundwater treatment plant
HA	Health Advisory
IRACR	Interim Remedial Action Completion Report
LL	Load Line
LPNNRD	Lower Platte North Natural Resources District
MCL	Maximum Contaminant Level
M.U.D.	Metropolitan Utilities District
NDEQ	Nebraska Department of Environmental Quality
NOP	Nebraska Ordnance Plant
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OU	Operable Unit
PIP	Public Involvement Plan
RA	Remedial Action
RAB	Restoration Advisory Board
RAO	remedial action objectives
RDGM	Regional Design Groundwater Model
RI	Remedial Investigation
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
ROD	Record of Decision
TCE	trichloroethene
TOC	total organic carbon
TNT	2,4,6 – trinitrotoluene
TSS	total suspended solids
UNL	University of Nebraska - Lincoln
URS	URS Group, Inc.
URSGWCFS	URS Greiner Woodward-Clyde Federal Services

LIST OF ACRONYMS AND ABREVIATIONS (continued)

USACE	United States Army Corps of Engineers
VOC	volatile organic compound
WSW	water supply well

1.0 OVERVIEW

This document presents the Interim Remedial Action Completion Report (IRACR) for Groundwater Operable Unit (OU) 2 at the former Nebraska Ordnance Plant (NOP) near Mead, Nebraska (the Site). Figure 1-1 shows the location of the Site. The IRACR demonstrates that the remedy for OU2 (Groundwater) has been constructed and is in place and operating successfully in accordance with established remedial action objectives (RAOs) and the OU2 Record of Decision (ROD).

The United States Army Corps of Engineers (USACE) – Northwestern Division, Kansas City District (CENWK) (Corps) has completed OU2 Remedial Action (RA) construction and continues RA operational activities at the Site. Background information collected and reviewed for the IRACR includes, but is not limited to, Remedial Investigation (RI) reports, Feasibility Study (FS) reports, the ROD, the various project work plans, design reports for various components of the Site, construction completion reports, periodic monitoring reports, and other Site-related documents. This IRACR was prepared in general accordance with the *Department of Defense and Environmental Protection Agency Joint Guidance Recommended Streamlined Site Closeout and NPL Deletion Process, for DoD Facilities* (U.S. Environmental Protection Agency [EPA], 2005), *Closeout Procedures for National Priorities List Sites*, OSWER Directive 9320.2-09A-P (EPA, 2000), and *A Guide to Preparing and Reviewing Remedial Action Report of Costs and Performance*, Engineering Pamphlet 1110-1-19, (USACE, 2001).

In April 1997, the Corps, with the concurrence of the EPA and the Nebraska Department of Environmental Quality (NDEQ), signed a *Record of Decision, Operable Unit No. 2, Former Nebraska Ordnance Plant, Mead, Nebraska* (Woodward-Clyde, 1996a). This IRACR addresses the OU2 ROD which focuses on groundwater and soils below 4 feet.

This IRACR details the RAOs; describes the OU2 RAs; demonstrates the interim completion of the groundwater RAs; demonstrates completion of soil RAs; presents ongoing RA activities; and describes community relations efforts.

1.1 Site Description, History, and Remedial Investigation

The Site is located in Saunders County in eastern Nebraska located south and east of the Village of Mead, Nebraska. Mead is approximately 35 miles northeast of Lincoln and 15 miles west of the outskirts of Omaha (Figure 1-1). Figure 1-2 presents a map of the Site and depicts the current extent of groundwater contamination for OU2. Figure 1-3 shows the contaminant plume configuration presented in the OU2 ROD (Woodward-Clyde, 1996a). Other portions of this section summarize the results of the RI for OU2, and the Baseline Risk Assessment (BLRA) performed using the RI data.

1.1.1 Site Description

The Site is comprised of approximately 17,250 acres in size. Currently a little over half of that acreage (8,650 acres) is owned by the University of Nebraska - Lincoln (UNL), which operates an Agricultural Research and Development Center (ARDC) at the Site. Other portions of the Site are owned by Department of Defense (DoD) for use by the Nebraska National Guard and

Army Reserves. Private ownership accounts for the remaining portions of the Site. The privately-owned land is utilized for pastures and crops, as well as light industry located near the northern end of the site. Adjacent land-use is primarily agricultural.

The Site is nearly flat, but has a few gentle slopes. Surface water drainage in the eastern portion of the Site is generally to the south-southeast, toward Johnson Creek, Clear Creek, and the Lower Plate North Natural Resource District (LPNNRD) Johnson Creek Reservoir. In the western portion of the site, surface water drains to the southwest toward Silver Creek.

The groundwater is located in the naturally occurring sand and gravel deposits below the ground surface, as well as in a sandstone formation located 30 feet or more below the ground surface at the Site. The general trend of groundwater flow in the area is south-southeast, toward the Platte River Valley. Groundwater at the site is used for agricultural and domestic uses. Currently, 78 residential/water supply wells on or near the Site are scheduled for sampling on a quarterly, semi-annual, or annual basis to monitor groundwater quality. A full description of the geology and hydrology of the Site is provided in the *2009 Groundwater Monitoring Program Annual Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska* (ECC, 2010a) and the *2008 Groundwater Model Update OU No.2 (Groundwater), for Former Nebraska Ordnance Plant, Mead Nebraska* (URS, 2009a).

Groundwater within the Platte River valley west of Omaha has been developed by the Metropolitan Utilities District (M.U.D.) to provide additional drinking-water supplies for residents of Omaha and the surrounding area. The Platte West Well Field, located approximately two miles northeast of the Site, consists of 42 production wells that pump water from the Platte River alluvial aquifer. Annual reports are available to the general public at the M.U.D. website at www.mudomaha.com/plattewest.

1.1.2 Site Background and History

The following Site background and historical information is taken from the *Five Year Review Report for Former Nebraska Ordnance Plant, Operable Unit No. 2 (Groundwater) Mead, Nebraska* (URS 2009b).

The Site was a load, assemble, and pack facility which produced bombs, boosters, and shells. The Site included four bomb load lines, (Load Line [LL]1, LL2, LL3 and LL4) the first of which began operation in October 1942, a bomb booster assembly plant, an ammonium nitrate plant, two explosives burning areas, a proving range, a landfill, a wastewater treatment plant, analytical laboratories, and storage and administration facilities. Most of the raw materials used to manufacture the weapons were produced at other locations and shipped to the facility for assembly. The production facilities were active during both World War II and the Korean Conflict.

The Nebraska Defense Corporation operated the Site for the Army from 1942 until 1945 and produced munitions which were loaded with trinitrotoluene (TNT), amatol (TNT and ammonium nitrate), tritonal (TNT and aluminum), and Composition B (hexahydro-1,3,5-trinitro-1,3,5-triazine [RDX] and TNT). Tetryl boosters were assembled for bombs in the Bomb Booster

Assembly Area. In 1945, ordnance production operations were terminated, and the facilities were placed on inactive status.

In 1950, the plant was temporarily reactivated and produced an assortment of weapons for use in the Korean Conflict. The Site was placed on standby status in 1956 and declared excess to Army needs in 1959.

After the Site was declared excess in 1959, it was transferred to the General Services Administration for disposition. Approximately 1,000 acres were retained by the Army for National Guard and Army Reserve training, 12 acres were retained by the Army for use as a Nike Missile Maintenance Area, 2,000 acres were transferred to the U.S. Air Force to build the Offutt Air Force Base Atlas Missile Site, and 40 acres were transferred to the Department of Commerce. From 1959 to 1960, the Offutt Air Force Base Atlas Missile Area (AMA) Site S-1 launch area was built on 1,185 acres north of LL4

The U.S. Air Force also occupied 34 acres of the northern portion of LL1 for use as the Air Force Ballistic Missile Division Technical Area. Both missile facilities were decommissioned in 1964, and the AMA and Nike Area were transferred to the Nebraska National Guard. In 1962, approximately 9,600 acres of the Site were purchased by the UNL for use as an agricultural research farm which is now the ARDC, and an additional 600 acres were obtained in 1964. The remaining 5,250 acres were eventually purchased by private individuals and corporations.

Currently, most of the Site is owned by UNL, which operates the ARDC on the premises. Crop, swine, dairy, and cattle research take place on site. Other portions are owned by the Nebraska National Guard, United States Air Force, and Army Reserves. Adjacent land use is primarily agricultural, except for the Village of Mead which is located north of the Site. Significant site events and/or milestones in the operational history are presented in Table 1-1 (1942-1964).

1.1.3 General Site Investigations

The Site was listed on the National Priorities List (NPL) under Section 105 of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) on August 30, 1990. In September 1991, the Corps, EPA, and NDEQ entered into a Federal Facilities Agreement (FFA) (formerly known as Interagency Agreement) under Section 120 of CERCLA to investigate and control environmental contamination at the Site. Table 1-2 (1983-1992) lists research and investigations leading up to the Federal Facilities Agreement in 1992; and the RI/FS and subsequent Engineering Evaluation/Cost Analysis and associated Action Memorandum for OU2 (Groundwater) at the Site. In September 2005, the United States, on behalf of the Corps and the EPA entered into an agreement with the University of Nebraska-Lincoln to provide site access and institutional controls at the Site (Case No. 8:03CV00038).

1.1.4 Operable Unit No. 2 Remedial Activities

The Corps conducted the OU2 Groundwater RI in 1992. The 1992 OU2 Groundwater RI and RI Addendum identified four groundwater contamination plumes with a separate source location identified for each plume. Two of the plumes consisted of explosives-contaminated groundwater (primarily RDX) and two of the plumes consisted of primarily trichloroethene (TCE)

contaminated groundwater. The plumes overlapped in two areas where both TCE and RDX were in the groundwater in the same location.

As part of the OU2 RI/FS, *Remedial Investigation Report, Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant, Mead, Nebraska* (Woodward-Clyde, 1993) a BLRA was prepared to evaluate potential human health risks., *Baseline Risk Assessment, Operable Unit No.2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska,* (Woodward-Clyde, 1994). Details of the BLRA are summarized in the *Five Year Review Report* (URS, 2009b). Table 1-3 presents the Chemicals of Potential Concern identified in the BLRA in Site-Wide groundwater.

A FS was completed as a result of the BLRA followed by the *Proposed Plan Operable Unit No.2 (Groundwater), Former Nebraska Ordnance Plant, Mead Nebraska* (Woodward-Clyde, 1995a) and the ROD in October 1996 *Record of Decision, Operable Unit No. 2 Former Nebraska Ordnance Plant, Mead, Nebraska* (Woodward-Clyde, 1996a).

1.1.5 Operable Unit No. 2 Removal Actions

Subsequent to the OU2 RI several removal actions were completed to address potential risk from contaminants of concern (COC) contamination in existing drinking water on the Site. Four of those removal actions consisted of installing point-of-entry or point-of-use granular activated carbon adsorption treatment systems in private residences or UNL ARDC facilities. The fifth action consisted of supplying bottled water to a private residence.

A removal action in 1995 included the installation of two extraction wells (EW), EW-1 and EW-8 and seven miles of pipeline to address the TCE groundwater plumes at the east and west end of the Site. The effluent from these extraction wells is transported via pipeline to the Main Groundwater Treatment Plant (GTP) and treated with granular activated carbon (GAC).

2.0 REMEDIAL ACTION OBJECTIVES AND RECORD OF DECISION COMPONENTS

The selected Remedial Action for OU2 to address groundwater contamination generally consists of a two media approach. Soil removal for explosives contaminated soil below four feet was undertaken as a method to reduce continuing source to groundwater in select areas. Groundwater contamination is addressed primarily by hydraulic containment of contaminant plumes with a series of groundwater extraction wells. Finally, focused extraction of groundwater in areas of higher concentration is included as a means to reduce restoration time of the aquifer. Groundwater monitoring and alternate water supply to impacted residents is also included to address RAOs.

2.1 Remedial Action Objectives

The RAOs as presented in the OU2 Final ROD (Woodward-Clyde, 1996a) state the following:

Remedial action objectives were developed to address the contaminated groundwater and explosives-contaminated soil which could act as a source of explosives contamination of groundwater while considering the long-term goals of protecting human health and the environment and meeting applicable or relevant and appropriate requirements of Federal and State laws and regulations. The overall OU2 RAOs are:

- Minimize the potential for ingestion of contaminated groundwater, or reduce concentrations to acceptable health-based levels
- Minimize the potential for dermal exposure to contaminated groundwater, or reduce concentrations to acceptable health-based levels
- Minimize the potential for inhalation of chemicals released during the use of contaminated groundwater, or reduce concentrations to acceptable health-based levels.

2.2 Final Target Groundwater Cleanup Goals

Final Target Groundwater Cleanup Goals for OU2 as listed in Table 2-1.

2.3 Record of Decision Selected Remedy and Components

The major components of the selected RA for OU2 include:

- Hydraulically contain contaminated groundwater exceeding the Final Target Groundwater Cleanup Goals;
- Focused extraction of groundwater in areas with relatively high concentrations of TCE and explosives;
- Treat all extracted groundwater using GAC adsorption, Advanced Oxidation Process (AOP), and air stripping, any of which may be applied individually or in combination;
- Dispose of the treated groundwater by beneficially reusing it or through surface discharge;

- Provide a potable water supply to local groundwater users whose water supply contains RDX exceeding the Health Advisory (HA) and/or TCE exceeding the Maximum Contaminant Level (MCL);
- Monitor the groundwater elevations and water quality; and
- Excavate and treat explosives-contaminated soil which could act as a source of explosives contamination of groundwater and which does not meet the OU1 excavation criteria.

3.0 REMEDIAL ACTION FOR OPERABLE UNIT 2

3.1 Overview/Summary of Remedial Actions

The following demonstrates Remedial Action activities pursuant to the OU2 ROD and RAOs. Listed in Table 3-1 are significant remedial actions and site investigations.

The major components of the selected RA for OU2 are discussed below in corresponding Sections:

- Hydraulically contain contaminated groundwater exceeding the Final Target Groundwater Cleanup Goals - 3.2;
- Focused extraction of groundwater in areas with relatively high concentrations of TCE and explosives - 3.3;
- Treat all extracted groundwater using GAC adsorption, AOP, and air stripping, any of which may be applied individually or in combination - 3.4;
- Dispose of the treated groundwater by beneficially reusing it or through surface discharge - 3.5;
- Provide a potable water supply to local groundwater users whose water supply contains RDX exceeding the HA and/or TCE exceeding the MCL - 3.6;
- Monitor the groundwater elevations and water quality - 3.7; and
- Excavate and treat explosives-contaminated soil which could act as a source of explosives contamination of groundwater and which does not meet the OU1 excavation criteria - 3.8.

3.2 Hydraulic Containment of Groundwater Exceeding Final Target Cleanup Goals

3.2.1 Extraction Well System

Extraction wells that were initially installed in 1995 for the remedial action effort included EW-1 and EW-8. These two wells were intended to intercept the TCE groundwater plumes associated with the AMA Site and LL1, respectively. Additional extraction wells were installed in 2001 and included EW-2, EW-3, EW-4, EW-5, EW-6, EW-7, EW-9, EW-10, and EW-11. These wells were intended to intercept and contain the contaminated groundwater plumes based upon the plume configuration presented in the OU2 ROD as shown on Figure 1-3.

Subsequent field investigations and groundwater model information have led to refinements on the original design for the hydraulic containment requirement for the OU2 ROD. Refinements in the groundwater model since 1992, have subdivided and defined the extent of groundwater plumes at the Site, where seven individual or distinct RDX plumes and four distinct TCE plumes are present *2008 Groundwater Model Update* (URS, 2009a). Figure 1-2 shows the current delineation of the contaminant plumes.

As part of the refinements in the overall hydraulic containment system, the hydraulic containment extraction well system has changed over time. The hydraulic containment system now contains additional extraction wells (EW-12 and EW-13) which were installed to contain

the leading edge of the LL1 plume in 2006. At LL3, another extraction well (EW-16) was installed in 2009 to address the refinements in both the overall extraction system and the movement of groundwater plumes. Focused extraction wells were also added to the overall system and will be discussed in Section 3.3.1.

In addition, several extraction wells that no longer contribute to containment and/or may have impacted the direction of flow of groundwater were eliminated from the system. Four wells are no longer in operation, EW-2, EW-5, EW-8 and EW-10. For further details, see the *Restoration Time-Frame Modeling Technical Memorandum Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska* (URS, 2009c); *Draft Final Groundwater Modeling Report, Operable Unit No. 2 (Groundwater), for Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2007); and the *2008 Containment Evaluation, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2009d).

3.2.2 Extraction Well Operations, Maintenance, and Monitoring

Activities involving extraction well operation, maintenance, monitoring, well rehabilitation, and analytical results are described in subsequent sections and are reported in the Annual Summary Operations and Maintenance Report (ECC 2003, ECC 2004a, ECC 2005a, ECC 2006a, ECC 2007a, ECC 2008a; ECC 2009a, and ECC 2010b).

Flow data from the extraction wells are recorded daily. The run time efficiencies and average flow rates from the extraction wells are listed in Table 3-2.

Groundwater samples are collected from the extraction wells every 3 months (quarterly) and analyzed for volatile organic compounds (VOCs), explosive compounds, metals (iron and manganese) and total suspended solids (TSS).

3.2.3 Extraction Well Rehabilitation

Well maintenance has been ongoing at the Site since 2003. The basis for scheduling maintenance/rehabilitation has been tracking well performance, specifically the capacity of the well and flows. Table 3-3 provides a listing of all documents associated with various maintenance activities for the extraction well system.

3.2.4 Compliance Well Sampling

Hydraulic containment per the OU2 ROD is demonstrated using the chemical data from the calendar year the evaluation is being performed. ROD compliance is demonstrated if COCs are not detected above the Final Target Groundwater Cleanup Goals in the compliance monitoring wells. Compliance monitoring wells have been identified in the Containment Evaluation Work Plan and are included on Figure 3-3 within the *Containment Evaluation Work Plan for Former Nebraska Ordnance Plant, Operable Unit No. 2 (Groundwater), Mead, Nebraska* (URS, 2009e). Groundwater sampling to date indicates that the hydraulic groundwater containment system is operating successfully.

3.2.5 Groundwater Modeling Program

The Groundwater Modeling Program for the Site is used as one of many tools to assess the hydraulic containment system. A series of groundwater models were initially developed for the Site starting in 1998. These models were referred to as the *Regional Design Groundwater Model* (RDGM) I through RDGM III and were created for the design of a hydraulic containment system for groundwater contaminated with TCE and RDX. Model updates and refinements were performed as new geologic, hydrogeologic and analytical data became available during subsequent phases of investigation. For further information, see the *Draft Remedial Design Groundwater Model IV Technical Memorandum, Operable Unit No. 2 (Groundwater), for Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2004); *2005 Groundwater Model Update, Operable Unit No. 2 (Groundwater), for Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2005a); *2006 Draft Final Groundwater Modeling Report, Operable Unit No. 2 (Groundwater), for Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2007); and the *2008 Final Groundwater Model Update,* (URS, 2009a) .

All modeling efforts to date demonstrate that the hydraulic containment system is operating successfully.

3.3 Focused Extraction of Groundwater in Areas of Relatively High Concentrations of TCE and RDX

3.3.1 Focused Extraction Wells

Currently, three extraction wells function as focused extraction wells. Each focused extraction well operates in a distinct area of the groundwater contamination with the intended goal of reducing overall mass of contaminants and thus reducing groundwater restoration time.

The most effective focused extraction well (FEW), FEW-11, part of the original design for containment wells, was converted to a focused extraction well in 2008. Located in the high concentration area of TCE at LL1, pretreatment occurs at the AOP GTP using hydrogen peroxide and ozone before final treatment at the Main GTP. To date, FEW-11 has removed 13,711 pounds of TCE.

FEW-15 also addresses the high concentration area of TCE located at the AMA. Installed in 2009, groundwater is treated at the LL4 GTP. For further information, see the *EW-15/Load Line 4 Treatment Plant Remedial Design, Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2008a) and the *Focused Extraction Well 15 and Load Line 4 Groundwater Treatment Plant Remedial Action Construction Completion Report Former Nebraska Ordnance Plant Mead, Nebraska* (ECC 2011).

FEW-14 lies within a relatively high RDX concentration area at LL3. FEW-14 discharges directly to the Main GTP. For further information, see the *Focused Extraction Well-14 and Extraction Well-16 Construction Complete Report, Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska* (ECC, 2009b).

3.3.2 Groundwater Circulation Wells

The groundwater circulation well (GCW) systems were originally installed between February and December 2000 as part of a Groundwater Circulation Well Pilot Study - *Groundwater Circulation Well Pilot Study Technical Memorandum, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2001). The primary purpose of the Pilot Study was to evaluate the technical feasibility of using groundwater circulation wells to remediate groundwater containing relatively high concentrations of TCE and RDX. GCW-1 and GCW-2 began operating in 2000. In 2001 both groundwater circulation well systems were placed under the operation and maintenance program.

GCW-2 was deactivated on June 6, 2008 based on recommendations presented in the *Request for Permanent Shutdown of GCW-2 (RDX) Well, Memorandum from G. Subramaniam, ECC, to S. Mehta, USACE – Kansas City District.* July 16, 2008 (ECC, 2008a) and the *Groundwater Circulation Well Evaluation Technical Memorandum, Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2008b).

3.4 Treat all Extracted Groundwater Using GAC/AOP/Air Stripping Technology

The following sections describe the four GTPs installed at the Site. Figure 3-1 shows the locations of the four GTPs and the associated piping to the extraction wells and focused extraction wells as well as discharge points. Treatment of extracted groundwater at the following treatment facilities meets all OU2 ROD requirements. The groundwater treatment facilities are operating successfully and in compliance with the OU2 ROD.

3.4.1 Main Groundwater Treatment Plant

Construction of the original Main GTP was completed in October 1998. The Main GTP consisted of two liquid-phase carbon vessels to treat groundwater contaminated with RDX and TCE from the two initially installed extraction wells EW-1 and EW-8. The design flow through the Main GTP was 600 gallons per minute (gpm). Design capacities for the two wells and the plant are listed in Table 3-2. The construction of the original treatment system (treatment plant, pipelines, extraction wells and observation wells) is described in the *Vol I of III. (Design Analysis-Final Design Analysis Groundwater Containment, Operable Unit No. 2, (Groundwater).* (Woodward-Clyde, 1996b).

The Main GTP was expanded to meet the ROD remedial action design with operations beginning in 2002. Further discussion of the Main GTP is located within the *Draft Final Design Analysis, Attachment 1 – Remedial Design Groundwater Model, (100%) Remedial Design, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (URSGWCFS, 1999) and the *Draft Remedial Design Report Phase I Groundwater Treatment Former Nebraska Ordnance Plant Mead, Nebraska* (ECC, 2002*).*

Activities conducted at the Main GTP including operation and maintenance, contaminant removal, and carbon change-out. Analytical results are described in subsequent sections and are reported in several Annual Summary Operations and Maintenance Reports (ECC, 2003; ECC, 2004; ECC, 2005; ECC, 2006a; ECC, 2007; ECC, 2008a; ECC, 2009a; and ECC, 2010b).

The expanded Main GTP had a run time efficiency of 97% from the beginning of 2006 to September 2010. The average flow through the expanded plant from February 2002 to September 2010 was 1,848 gpm.

The Main GTP has processed approximately 9,425,271,000 gallons from plant startup in 2002 to the end of September 2010. The amounts of TCE and RDX recovered from startup in 2002 through September 2010 were 361 pounds and 178 pounds, respectively.

3.4.2 Load Line 1 Groundwater Treatment Plant

The design for the LL1 GTP and the pipelines between the two extraction wells (EW-12 and EW-13) and the LL1 GTP was prepared based on criteria developed in the *LL1 Remedial Design, Operable Unit No. 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2005b). Design capacities of the two wells and the plant are listed in Table 3-2. EW-13 has not been placed on line because it has not yet been deemed necessary for containment of the LL1 plume. The construction of the treatment system (treatment plant, pipelines, extraction wells, monitoring wells, and observation wells) is described in the *Draft-Final Load Line 1, Containment System Construction Completion Report Former Nebraska Ordnance Plant Mead, Nebraska* (ECC, 2006b). The LL1 GTP went online in January 2006 and consists of a 5-tray air stripper to treat the TCE contaminated groundwater.

Activities conducted at the LL1 GTP including operation and maintenance, contaminant removal, and vapor phase carbon change-out. Analytical results are described in subsequent sections and are reported in the Annual Summary Operations and Maintenance Reports (ECC, 2007; ECC, 2008b; ECC, 2009a: and ECC, 2010b).

The LL1 GTP had a run time efficiency of 96% from 2006 to the end of September 2010. The average flow through the LL1 plant from plant startup in January 2006 to the end of September 2010 was 299 gpm.

The LL1 GTP processed approximately 738,741,000 gallons from plant startup in January 2006 to the end of September 2010. The amount of TCE recovered from startup to the end of September 2010 was 116 pounds.

3.4.3 Load Line 4 Groundwater Treatment Plant

The construction of the LL4 GTP to treat TCE-contaminated groundwater extracted by FEW-15 (Phase II of the FEW-15 and LL4 remedial design (URS, 2008a and Arrowhead 2009) was completed in July 2010 as part of a focused extraction RA at the Site. Further discussion of the LL4 GTP construction is discussed within the *EW-15/Load Line 4 Treatment Plant Remedial Design Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska* (URS, 2009f) and the *LL4 Remedial Design 100% Revision A* (Arrowhead 2009).

Design capacities of FEW-15 and the plant are listed in Table 3-2. The construction of the treatment system (FEW-15, associated monitoring wells and observation wells, pipelines, and the LL4 treatment plant) is described in the *Focused Extraction Well 15 and Load Line 4 Groundwater Treatment Plant Remedial Action Construction Completion Report* (ECC 2011). Contaminated water removed from the AMA is treated at the LL4 GTP. The LL4 GTP consists of a 6-tray air stripper to treat TCE contaminated groundwater and was constructed adjacent to

the AOP treatment plant. Effluent from the LL4 GTP is either piped to the Main GTP for further treatment or discharged directly to Wahoo Creek depending on TCE and RDX effluent concentrations.

The LL4 GTP had a run time efficiency of 62% from August 2010 to the end of September 2010. The average flow through the LL4 plant from plant startup in August 2010 to the end of September 2010 was 461 gpm.

The LL4 GTP processed approximately 80,310,000 gallons from the plant functional and startup testing in April 2010 to the end of September 2010. The amount of TCE recovered from startup to the end of September 2010 was 633 pounds.

3.4.4 Advanced Oxidation Treatment Plant

As described above, FEW-11 had been installed in a high TCE concentration area which required a more robust treatment alternative than GAC filtration at the Main GTP. The design criteria for the AOP GTP and the pipelines connecting the AOP plant to the Main GTP influent pipeline are presented in the *Draft Final EW-11 AOP Pre-Treatment Draft Remedial Design, Operable Unit No 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2006) and modified by *100 Percent Design EW-11 AOP Pre-Treatment Remedial Design, Operable Unit No 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead* (Arrowhead, 2007). Design capacities of FEW-11 and the plant are listed in Table 3-2. The construction of the AOP treatment system is described in the *Draft Final Advanced Oxidation Process Treatment System Construction Complete Report for Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2008c). Activities conducted at the AOP GTP including operation and maintenance, contaminant removal, and analytical results are described in subsequent sections and are reported in the Annual Operations and Maintenance Report (ECC, 2009a and ECC, 2010b).

The AOP GTP had a run time efficiency of 87% from March 2008 to September 2010. The average flow through the AOP plant from plant startup in March 2008 to September 2010 was 433 gpm.

The AOP GTP processed approximately 614,545,000 gallons from plant startup in March 2008 to the end of September 2010. The amount of TCE removed from startup to the end of September 2010 was 13,711 pounds.

3.5 Disposal of Treated Groundwater through Surface Water Discharge or Beneficial Reuse

3.5.1 Discharge Locations

Two effluent water outfalls are available for discharge of treated groundwater. Treated groundwater discharges into Wahoo Creek at an average monthly flow rate of approximately 1,700 gpm and the outfall located on Clear Creek discharges at an average monthly flow rate of approximately 600 gpm. See Figure 3-1 for discharge locations.

3.5.2 NPDES Compliance

As a CERCLA site, a National Pollutant Discharge Elimination System (NPDES) permit is not currently required for the former NOP. The facility was assigned a NPDES discharge number (NE 0132284), but a formal permit was not issued. Although, both discharge points at Wahoo Creek and Clear Creek were not issued a formal permit, the NDEQ required that discharges into Wahoo and Clear Creek meet the substantive requirements set forth in Part I of the General NPDES permit application.

Plant influent and effluent samples are collected at the Main, LL1, and LL4 GTP monthly. Plant influent samples are analyzed for VOCs, explosive compounds, TSS, and total organic carbon (TOC). Plant effluent samples are analyzed for VOCs, explosive compounds, and nitrate. Plant effluent is also field tested for pH.

3.5.3 Beneficial Reuse Agreement with LPNNRD

As the groundwater is a resource of the State of Nebraska, the Lower Platte Natural Resource District pursuant to an agreement with the Corps, operates the Beneficial Reuse of Groundwater at the Site. LPNNRD has approved beneficial reuse of groundwater for two local residences and UNL. Provisions are also established to allow for reuse of treated groundwater for firefighting purposes.

3.6 Provide Potable Water Supply

In accordance with the requirements of the OU2 ROD and as part of compliance with the RAOs, a potable water supply is provided to local groundwater users whose potable water supply exceeds the COC Final Target Groundwater Cleanup Goals specified in Table 2-1 for RDX or TCE. Domestic water supply wells (WSW)-52A, WSW-52C, WSW-53, and WSW-54 are equipped with GAC units and bottled water is provided to the residence associated with WSW-50B, WSW-52A, and WSW-52C. All of these domestic water supply wells are sampled semi-annually.

Procedures are in place to ensure that residents located in the vicinity of the Site with private water supply wells do not consume groundwater with contaminants exceeding OU2 ROD Final Target Groundwater Cleanup Goals.

TCE and RDX analyses for water supply well sampling events are provided in the annual reports listed in Table 3-4.

Seventy-eight (78) water supply wells are monitored at or within close proximity to the Site (Figure 3-2). These wells are located within the groundwater contaminant plume boundary and also within 1 mile of the known extent of the plume (exceeding Final Target Groundwater Cleanup Goals) along the east and south boundaries. These wells and their sampling frequencies are listed in Table 3-5. No university water supply locations are equipped with Corps-supplied GAC units.

In an effort to determine whether any new residences or water users are present that may be impacted by groundwater contamination, the following activities are also performed throughout the year:

- Survey of the State of Nebraska Well Registry Database for any new potable wells in the vicinity of the Site;
- A review of the Building Permit Applications submitted to the Saunders County Building Department; and
- Visual inspections of the local area to determine if any new potable water wells have been installed.

Additionally, a reconnaissance of the area is performed during routine monitoring well and water supply well sampling events. The reconnaissance is conducted site wide and is intended to identify new construction sites or activities that may indicate the installation of new potable water wells, especially within the known groundwater contaminant plumes or within one mile downgradient or sidegradient of the groundwater contaminant plume boundaries

The current Alternate Water Supply efforts in addition to the groundwater monitoring program demonstrate compliance with the OU2 ROD requirements and satisfy the RAOs.

3.7 Monitor Groundwater Elevations and Quality

3.7.1 Monitoring Well Groundwater Elevations

Monitoring well groundwater elevations are measured at the site at different frequencies and needs as follows:

- Operations and Maintenance related groundwater level measurements are collected quarterly (and more frequent during initial extraction well startups) to help document capture and/or drawdown related to the extraction well network.
- Site wide groundwater (and surface water) level measurements are collected triennially in conjunction with regional measurements from other agencies to develop a contoured representation of the potentiometric surface across the site. Data is also used to periodically calibrate and/or validate the groundwater flow model and identify abnormalities in water levels across the site.
- Location and time specific groundwater level measurements (hand measurements and level loggers) are collected as needed for periodic aquifer pumping tests.
- Continuous groundwater level measurements (eastern perimeter wells) are obtained using level loggers in conjunction with other agencies to document changes in levels and flow directions along the eastern edge of the site.
- Continuous surface water level measurements (Wahoo and Johnson Creeks) are obtained to estimate stream flow which can restrict treatment plant effluent discharge at times. Surface water data is also used in the groundwater flow model.

3.7.2 Monitoring Well Groundwater Quality

To date, the groundwater monitoring well network includes 382 groundwater monitoring wells (*2010 Groundwater Monitoring Program Plan* [ECC, 2010c]). Beyond the well network mentioned above, 20 additional monitoring wells belonging to others (UNL, M.U.D, and private wells) have been sampled as part of the Groundwater Monitoring Program (GMP). The well construction details table is included in Table 3-6 and Figure 3-3 shows the locations of the monitoring wells.

3.7.3 Monitoring Well Program

GMP consists of collecting water level data and groundwater samples from selected groundwater monitoring wells and water supply wells; collecting surface water samples from three area creeks (Silver Creek, Clear Creek, and Johnson Creek); reporting these results on a quarterly basis; and summarizing the results in an annual report.

The GMP for OU2 at the Site has been constructed, continues to be implemented, and is operating successfully.

Figure 1-2 shows the locations of the groundwater monitoring wells, water supply wells, and surface water sampling locations.

3.7.4 Construction and Abandonment

Construction and installation details, history, and rationale for the placement of monitoring wells extraction wells and observation wells during previous investigations as well as information detailing operation and sampling are presented in the following reports:

- *Remedial Investigation Report* (Woodward-Clyde, 1993),
- *Draft Additional Field Investigation Report* (Woodward Clyde, 1993b),
- *Draft Load Line 1 Containment System Construction Completion Report* (ECC, 2006b),
- *Observation Well and Monitoring Well Installation Work Plan Addendum Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2006c),
- *2008 Groundwater Investigation Technical Memorandum, Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2009g),
- *Site Wide Work Plan* (ECC, 2009c), which includes the Field Sampling Plan; and the
- *Focused Extraction Well 14 and Extraction Well 16 Construction Completion Report Operable Unit No.2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2009b).

Current monitoring well, observation well, extraction well and direct push installation and abandonment procedures can be found in the *Site Wide Work Plan* (ECC, 2009c). Also, previous wells installed as part of the monitoring program were installed or abandoned according to the appropriate plans in effect at the time of installation or abandonment.

3.8 Excavate and Treat Explosive Contaminated Soil

The excavation and thermal treatment of explosives contaminated soil was completed for OU2 during the OU1 RA with a removal of approximately 13,607 cubic yards of contaminated soil, *Final Remedial Action Report for the Former Nebraska Ordnance Plant, OU1 in Mead, Nebraska* (OHM, 1998) thus, reducing the potential for a continued source of explosives contamination migrating to groundwater. No further action for explosives-contaminated soil is required for OU2 as stated in the *Five Year Review* (URS, 2009b).

4.0 COMMUNITY RELATIONS

The Corps was commissioned to do a confirmation study in 1987 to determine possible hazardous contamination at the Site. A public meeting was held in Mead, Nebraska in July 1989 to discuss the progress of the ongoing study at the site and to give the community a chance to voice their concerns and offer comments. In June 1990, another public meeting was held in Mead, Nebraska to offer an update of the Site Investigation. The first Community Relations Plan for the Site was approved by EPA and NDEQ in May 1992. This document listed contacts and interested parties throughout government and the local community and identified issues of concern. A second *Community Relations Plan* (Woodward-Clyde, 1997) was issued in 1997. The second Community Relations Plan was updated as a Public Involvement Plan (PIP) in 2008, *Public Involvement Plan, Former Nebraska Ordnance Plant, Mead, Nebraska* (URS, 2008c).

In 1993, a Technical Review Committee was established to review and comment on all official plans and documents, and advise the appropriate agencies before a final decision was made by the Corps. The Technical Review Committee became the Restoration Advisory Board (RAB) in 1997 to improve public participation by involving community members in the restoration decision making process. The first RAB meeting was held in January 1997 and the last formal RAB meeting was held in October 2007. Since the last RAB meeting in October 2007, open house events have been held quarterly on the third Wednesday of January, April, July, and October 2008, 2009, 2010; and during January 2011 in various locations in Ashland and Yutan Nebraska to provide local landowners and other interested parties with up-to-date information regarding Site activities as well as providing a forum to ask questions and provide one on one discussions. These open house events are expected to continue in the future.

In 2009, a Situational Assessment was conducted where an independent and impartial assessment of the communication issues related to the site was conducted in which 43 site stakeholders and five past project managers or other Corps personnel who had worked on the site between 2003 and 2009 were interviewed as part of the assessment *Situational Assessment Report, Nebraska Ordnance Plant, Mead, Nebraska* (CDM, 2009). The 2008 PIP was updated to reflect current site conditions and to incorporate information presented in the Situational Assessment Report. This was submitted as the *Final Public Involvement Plan, Former Nebraska Ordnance Plant, Mead, Nebraska* (ECC, 2010d).

The procedures presented in the updated 2010 PIP will be used by the Corps to facilitate important communication links between the Corps, and all stakeholders, including local municipalities, the news media, local citizens, and property owners and their tenants, both nearby and adjacent to the Site location.

5.0 CERTIFICATION STATEMENT

The OU2 Remedial Action, as set forth in the *Record of Decision (*Woodward-Clyde, 1996a), is Operational and Functional. The RAOs stated in the ROD are also being achieved at the Site.

The major components of the OU2 ROD include:

- Hydraulically contain contaminated groundwater exceeding the Final Target Groundwater Cleanup Goals;
- Focused extraction of groundwater in areas of relatively high concentrations of TCE and explosives;
- Treat all extracted groundwater using GAC, AOP and/or air stripping;
- Dispose of treated groundwater through surface water discharge or beneficial reuse;
- Provide potable water supply to local groundwater users whose water supply contains RDX or TCE exceeding Lifetime Health Advisory or MCL;
- Monitor the groundwater elevations and water quality; and
- Excavate and treat explosives contaminated soil which could act as a source of explosives contamination of groundwater.

The RAOs developed for the Site include minimization of the potential for ingestion, dermal, or inhalation exposure of contaminated groundwater, and to reduce concentrations to acceptable health based levels.

RA components are in place and functioning effectively and successfully as designed by the installation of nine extraction wells which provide containment of groundwater exceeding Final Target Groundwater Cleanup Goals. Three focused extraction wells are currently operating in areas of relatively high concentrations of TCE or RDX at the Site. Extracted groundwater is treated either through GAC, AOP, or air stripping technologies with both surface water discharge and beneficial reuse of the groundwater following treatment. Groundwater elevations and water quality are routinely monitored as set forth in the *Site-Wide Work Plan* (ECC, 2009c).

The potential for exposure to contaminated groundwater above Lifetime Health Advisory levels or MCLs continues to be addressed by provision of Alternate Water Supply to five residences whose potable water supply has been impacted. In addition, the GMP includes routine sampling of residential homes within the path or within a certain radius of the known groundwater plume to minimize the potential for exposure to contaminated groundwater from the Site. The reduction of concentrations of contamination in groundwater continues through the extraction well system including focused extraction.

The excavation and thermal treatment of explosives contaminated soil was completed for OU2 during the OU1 RA with a removal of approximately 13,607 cubic yards of contaminated soil (OHM, 1998) thus, reducing the potential for a continued source of explosives contamination migrating to groundwater.

The Site OU2 RA is operating successfully and functionally as designed. Operation and Maintenance activities are expected to continue at the Site until Final Target Groundwater Cleanup Goals and RAOs are achieved. Further activities at the Site will be documented in Five Year Reviews or the *Site-Wide Work Plan* (ECC, 2009c) as operation and maintenance activities continue.

Approved by: Date:

19 JULY '11

ANTHONY J. HOFMANN
Colonel, EN
Commanding

6.0 REFERENCES

Arrowhead, 2007. 100 Percent Design EW-11 AOP Pre-Treatment Draft Remedial Design, Operable Unit No 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead. April.

Arrowhead, 2009. Operable Unit 2 – Groundwater Treatment, Load Line 4 Remedial Design, Former Nebraska Ordnance Plant, Mead, Nebraska. August (100% design revision A – Issued for Construction Drawings)

CDM Federal Program (CDM), 2009. Situational Assessment Report, Nebraska Ordnance Plant, Mead, Nebraska. August.

ECC, 2002. Draft Remedial Design Report Phase I Groundwater Treatment Former Nebraska Ordnance Plant Mead, Nebraska.

ECC, 2003. Annual Summary Operations and Maintenance Report Year 2002 - Phase 1 Groundwater Treatment (Operable Unit 2) Former Nebraska Ordnance Plant, Mead, Nebraska. January

ECC, 2004. Annual Summary Operations and Maintenance Report Year 2003 - Phase 1 Groundwater Treatment (Operable Unit 2) Former Nebraska Ordnance Plant, Mead, Nebraska. January

ECC, 2005. Draft Annual Summary Operations and Maintenance Report Year 2004 Phase 1 Groundwater Treatment (OU2) Former Nebraska Ordnance Plant Mead, Nebraska. February.

ECC, 2006a. Draft Annual Summary Operations and Maintenance Report Year 2005 Phase 1 Groundwater Treatment (OU2) Former Nebraska Ordnance Plant Mead, Nebraska. February.

ECC, 2006b. Draft-Final Load Line 1 Containment System Construction Completion Report Former Nebraska Ordnance Plant Mead, Nebraska. December

ECC, 2006c. Observation Well and Monitoring Well Installation Work Plan Addendum Former Nebraska Ordnance Plant Mead, Nebraska.

ECC, 2007. Final Annual Summary of Operations, Maintenance and Monitoring Report Main and Load Line 1 Groundwater Treatment Plants Year 2006 Phase 1 Groundwater Treatment Operable Unit No. 2 Former Nebraska Ordnance Plant Mead, Nebraska. March.

ECC, 2008a. Request for Permanent Shutdown of GCW-02 (RDX) Well. Memorandum from G. Subramaniam, ECC, to S. Mehta, USACE – Kansas City District. July 16, 2008.

ECC, 2008b. Draft Final Annual Summary of Operations, Maintenance and Monitoring Report Main and Load Line 1 Groundwater Treatment Plants Year 2007 Phase 1 Groundwater Treatment Operable Unit No. 2 Former Nebraska Ordnance Plant Mead, Nebraska. November.

ECC, 2008c. Draft Final Advanced Oxidation Process Treatment System Construction Complete Report Former Nebraska Ordnance Plant Mead, Nebraska. November.

ECC, 2009a. Final Annual Summary of Operations, Maintenance and Monitoring Report Main Groundwater Treatment Plant, Load Line 1 Groundwater Treatment Plant, and Advanced Oxidation Process Groundwater Treatment Plant Year 2008 Phase 1 Groundwater Treatment Operable Unit No. 2 Former Nebraska Ordnance Plant Mead, Nebraska. August.

ECC, 2009b. Focused Extraction Well 14 and Extraction Well 16 Construction Complete Report, Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska. August

ECC, 2009c. Site-Wide Work Plan, Support Services, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant Mead, Nebraska. August

ECC, 2010a. Final 2009 Groundwater Monitoring Program Annual Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska. June

ECC, 2010b. Final Annual Operations, Maintenance, And Monitoring Summary Report Main Groundwater Treatment Plant, Load Line 1 Groundwater Treatment Plant, and Advanced Oxidation Process Groundwater Treatment Plant Year 2009 Groundwater Treatment Operable Unit No. 2 Former Nebraska Ordnance Plant Mead, Nebraska. April

ECC, 2010c. 2010 Groundwater Monitoring Program Plan Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska. January

ECC, 2010d. Final Public Involvement Plan Former Nebraska Ordnance Plant Mead, Nebraska. June.

ECC, 2011. Final Focused Extraction Well 15 and Load Line 4 Groundwater Treatment Plant Remedial Action Construction Completion Report Former Nebraska Ordnance Plant Mead, Nebraska. January.

United States Environmental Protection Agency (EPA), 2000. Closeout Procedures for National Priorities List Sites, OSWER Directive 9320.2-09A-P

EPA, 2005. Department of Defense and Environmental Protection Agency Joint Guidance Recommended Streamlined Site Closeout and NPL Deletion Process, for DoD Facilities

OHM Remediation Services Corp., 1998. Final Remedial Action Report for the Former Nebraska Ordnance Plant, OU1 in Mead, Nebraska. September.

SEC Donohue, 1992. Supplemental Remedial Investigation. Draft Final Report. Supplemental RIJFS Former Nebraska Ordnance Plant Operable Unit 1, Mead, Nebraska. Draft Final. Prepared for the U.S. Army Corps of Engineers, Kansas City District.

United States Army Corp of Engineers (USACE), Kansas City District, 1989. Final Confirmation Study. Former Nebraska Ordnance Plant, Mead, Nebraska. April.

URS Greiner Woodward-Clyde Federal Services (URSGWCFS), 1999. Draft Final Design Analysis, Attachment 1 – Remedial Design Groundwater Model, (100%) Remedial Design, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska. Prepared for the U.S. Army Corps of Engineers, Kansas City District. March.

URS, 2001. Groundwater Circulation Well Pilot Study Technical Memorandum, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska. Draft Final. Contract No. DACW41-96-D-8014. Prepared for the U.S. Army Corps of Engineers, Kansas City District. April.

URS, 2004. Draft Remedial Design Groundwater Model IV Technical Memorandum, Operable Unit No. 2 (Groundwater), for Former Nebraska Ordnance Plant, Mead, Nebraska. Prepared for U. S. Army Corps of Engineers, Kansas City District. February. 2007.

URS, 2005a. 2005 Groundwater Model Update, Operable Unit No. 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska.

URS, 2005b. LL1 Remedial Design, Operable Unit No. 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska. Prepared for Department of the Army, U.S. Army Engineer District, Kansas City District, Corps of Engineers, Kansas City, Missouri. March.

URS, 2006. EW-11 AOP Pre-Treatment Draft Remedial Design, Operable Unit No 2 (Groundwater) for Former Nebraska Ordnance Plant, Mead, Nebraska prepared for the USACE-KCD under Contract DACW41-03-D-0001, Task Order No. 0002. June.

URS, 2007. 2006 Draft Final Groundwater Modeling Report, Operable Unit No. 2 (Groundwater), for Former Nebraska Ordnance Plant, Mead, Nebraska. Prepared for the U.S. Army Corps of Engineers, Kansas City District. May.

URS, 2008a. EW-15/Load Line 4 Treatment Plant Remedial Design Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska. August.

URS, 2008b. Groundwater Circulation Well Evaluation Technical Memorandum Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska. September.

URS, 2008c. Public Involvement Plan for the Former Nebraska Ordnance Plant, Mead, Nebraska. June.

URS, 2009a. 2008 Final Groundwater Model Update, Operable Unit No. 2 (Groundwater), for Former Nebraska Ordnance Plant, Mead, Nebraska. Prepared for the U.S. Army Corps of Engineers, Kansas City District. October.

URS, 2009b. Five Year Review Report for Former Nebraska Ordnance Plant, Operable Unit No. 2 (Groundwater) Mead, Nebraska. May

URS, 2009c. Restoration Time-Frame Modeling Technical Memorandum Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant, Mead, Nebraska. March.

URS, 2009d. 2008 Containment Evaluation, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska. December.

URS, 2009e. Containment Evaluation Work Plan for Former Nebraska Ordnance Plant, Operable Unit No. 2 (Groundwater) Mead, Nebraska.

URS, 2009f. Draft Final EW-15/Load Line 4 Treatment Plant Remedial Design, Operable Unit No. 2, For Former Nebraska Ordnance Plant, Mead, Nebraska. January.

URS, 2009g. 2008 Groundwater Investigation Technical Memorandum, Operable Unit No. 2 (Groundwater), for Former Nebraska Ordnance Plant, Mead, Nebraska. August

USACE, 2001. A guide to Preparing and Reviewing Remedial Action Report of Costs and Performance, Engineering Pamphlet 1110-1-1

Woodward-Clyde, 1993. Remedial Investigation Report, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska. Draft. Prepared for the U.S. Army Corps of Engineers, Kansas City District. June.

Woodward-Clyde, 1994. Baseline Risk Assessment, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska. Final. Prepared for the U. S. Army Corps of Engineers, Kansas City District. September.

Woodward-Clyde, 1995a. Proposed Plan, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska. Prepared for the U.S. Army Corps of Engineers, Kansas City District. October.

Woodward-Clyde, 1995b. Feasibility Study Report, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska. Prepared for the U.S. Army Corps of Engineers, Kansas City District. May.

Woodward-Clyde, 1995c. Engineering Evaluation/Cost Analysis, Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska. Prepared for the U.S. Army Corps of Engineers, Kansas City District. March.

Woodward-Clyde, 1996a. Record of Decision, Operable Unit 2, Former Nebraska Ordnance Plant Site, Mead, Nebraska. Draft Final. Prepared for the U.S. Army Corps of Engineers, Kansas City District. October.

Woodward-Clyde, 1996b. Vol I of III. (Design Analysis-Final Design Analysis Groundwater Containment Removal Action Operable Unit No. 2, (Groundwater). January.

Woodward-Clyde, 1997. Site-Wide Community Relations Plan Operable Unit No. 2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska. January.

TABLES

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Table 1-1
Operation History
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant, Mead Nebraska

Event	Date
Industrial operations are initiated at NOP	October 1942
Bomb production in support of World War II mission	1942-1945
Ammonium Nitrate Plant operations begin	Early 1943
World War II operations terminated, NOP placed on inactive status	1945
Explosive storage without production	1946-1949
NOP reactivated for Korean Conflict	1952
NOP placed on standby status	1956
NOP declared excess, transferred to the General Services Administration (GSA) 12 Acres retained by the Army for Nike Missile Maintenance Area; 2,000 Acres transferred to US Air Force for Offutt AFB Atlas Missile Site	1959
U.S. Air Force Constructs Atlas Missile Launch Facility (Atlas Missile Area) at NOP	1959-1960
University of Nebraska Purchases Initial 9,600 acres of NOP for Use as the ARDC; purchases 600 additional acres in 1964	1962, 1964
Nike and Atlas Missile Areas Abandoned and Missile Areas Transferred to Nebraska National Guard; US Air Force Occupies 34 acres as AFBMD north of Load Line 1	1964

Notes:
NOP – Nebraska Ordnance Plant
U.S. – United States
ARDC – Agricultural Research and Development Center
AFBMD – Air Force Ballistic Missile Division

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Table 1-2
Site Investigations and Regulatory History
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant, Mead Nebraska

Event	Date
Archive Records Search, USATHAMA (now AEC)	1983
Polychlorinated Biphenyl (PCB) Investigation, University of Nebraska	1984-1985
PCB Investigation, EPA	1988
Initial environmental investigation of soil, sediment, surface water, and groundwater by USACE (Confirmation Study)	1989
NOP added to NPL	30 August 1990
Additional soil gas, soil, and UXO investigations by USACE	1990-1991
Preliminary Health Assessment by ATSDR	1991
Supplemental Soil RI by USACE	1991
Interagency Agreement signed (now Federal Facilities Agreement)	17 January 1992
Base Line Risk Assessment	1994
OU2 Groundwater RI	1992
Quarterly Groundwater Sampling Initiated	August 1992
OU2 RI and Additional Field Investigation Reports	1993
OU2 EE/CA and Action Memorandum	March 1995
OU2 Feasibility Study	May 1995
OU 2 Conceptual Groundwater Model	May 1996
OU2 Groundwater Treatability Study	May 1996
OU2 Record of Decision	October 1996- Signed April 1997

Table 1-2
Site Investigations and Regulatory History
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant, Mead Nebraska

Event	Date
Discharge number submitted to the former NOP by NDEQ	October 1998
Post ROD Supplemental Investigations	
Supplemental OU2 Groundwater Investigation (URS)	October 2003
Additional Groundwater Investigation Report (URS)	October 2004
Geoprobe Investigation Report Load Line 1 Remedial Action (ECC)	May 2005
Consent decree, Case No. 8:03CV00038 was signed and entered in the U.S. District Court for the District of Nebraska	September 2005
Data Summary for MW-85 and Johnson and Clear Creek Groundwater Investigation Report (URS)	2006
Data Summary for Groundwater Investigation South of EW-13 and EW-13Report (URS)	2006
Data Summary Report for Groundwater Investigation Fall 2005/Spring 2006 (URS)	2006

Notes:

AEC Atomic Energy Commission
USATHAMA Army Toxic and Hazardous Materials Agency
PCB - Polychlorinated Biphenyl
NPL – National Priority List
NOP – Nebraska Ordnance Plant
EPA – Environmental Protection Agency
URS – URS Group, Inc.
OU2 – Operable Unit No. 2
EW – extraction well
ATSDR - Agency for Toxic Substances and Disease Registry
RI – remedial investigation
USACE – United States Army Corps of Engineers

Table 1-3
Chemicals of Potential Concern in Groundwater
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant, Mead Nebraska

Parameter Group	Parameter
volatile organic compound (VOCs)	1,1,1-Trichlorethane
	1,2-Dichoroethene
	1,2-Dichloropropane
	Acetone
	Chloroform
	Methylene Chloride
	Tetrachloroethene
	Trichloroethene (TCE)
semi-volatile organic compounds (SVOCs)	Diethyl Phthalate
	Di-N-Butyl- Phthalate
	N-Nitrosodiphenylamine
	Phenol
Explosives	1,3,5-Trinitrobenzene (TNB)
	2,4,6-Trinitrotoluene (TNT)
	2,4-Dinitrotoluene (2,4-DNT)
	Hexahydro-1,3,5-Trinitro-1,3,5-Triazine (RDX)
	Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine (HMX)
Metals	Aluminum
	Lead
	Nickel
	Vanadium

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Table 2-1
Final Groundwater Target Cleanup Goals
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant, Mead Nebraska

Contaminant of Concern	Total Concentration (µg/L)	Basis for Value
Methylene chloride	5	MCL
1,2-dichloropropane	5	MCL
TCE	5	MCL
TNB	0.778	Non-cancer effect (HI)
TNT	2	Health Advisory
2,4-DNT	1.24	10^{-5} Carcinogenic risk
RDX	2	Health Advisory

Notes:
TCE – Trichloroethene
TNB – Trinitrobenzene
TNT – 2,4,6-Thrinitroltoluene
RDX – hexahydro-1,3,5-trinitro-1,3,5-triazine
2,4-DNT – 2,4-Dinitrotoluene
MCL - Maximum Contaminant Level
µg/L – micrograms per liter

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Table 3-1
Remedial Actions and Continued Site Investigations
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant, Mead Nebraska

EVENT	DATE
OU2 Proposed Plan released	October 1995
Soil Vapor Extraction Pilot Study Technical Memorandum	October 1995
Conceptual Groundwater Model Technical Memorandum	May 1996
Groundwater Treatability Study Technical Memorandum	May 1996
OU2 Record of Decision released	October 1996
Initiation of the Restoration Advisory Board	October 1996
Advanced Oxidation Process Optimization Study Work Plan	January 1997
OU2 Record of Decision signed	April 1997
Plasma ARC Pilot Study Work Plan,	April 1997
Construction of Containment Removal Action (Initial 600 gpm Main Groundwater Treatment Plant)	October 1997
OHM Containment Removal Action Report	October 1998
Draft Final Remedial Design Phase I approved	May 1999
Construction of expanded (3,000 gpm) Main Groundwater Treatment Plant initiated	April 2000
Groundwater Circulation Well pilot systems installed	April 2000
Groundwater Circulation Pilot studies completed	March 2001
Phase II Remedial Design Report (GCWs)	August 2001
Contamination in Extraction Well-11 determined	August 2001
Expansion of Main (3,000 gpm) Groundwater Treatment Plant operational	February 2002
EW-11 shut down	February 2002

Table 3-1
Remedial Actions and Continued Site Investigations
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant, Mead Nebraska

EVENT	DATE
EW-11 Phase I Field Investigation initiated (URS)	April 2002
Main Groundwater Treatment Plant dedication	May 2002
URS Supplemental and Additional Groundwater Investigations	2002-2003
EW-11 Phase II Field Investigation initiated (URS)	February 2003
URS Data Summary for MW-85 and Johnson and Clear Creak Groundwater Investigation	2004
ECC Geoprobe Investigation results for Load Line 1	2005
Load Line 1 Remedial Design completed	July 2005
Load Line 1 Groundwater Treatment Plant operational	January 2006
URS Data Summary for Groundwater Investigation South of EW-12 and EW-13	2006
URS Data Summary Report, Groundwater Investigations Fall 2005 and Spring 2006	2007
AOP Remedial Design Completed	July 2007
AOP Groundwater Pre-Treatment Plant Operational to Address EW-11 contamination	March 2008
Load Line 4 Remedial Design completed to address FEW-15 Contamination	January 2009
EW-14 converted to FEW-14 and EW-16 brought on line for Load Line 3 containment	June 2009
Load Line 4 Groundwater Treatment Plant Constructed and Tested	July 2010
Main Groundwater Treatment Plant Expansion	February 2011

Table 3-2
Remedial Action Components Summary
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant Operable Unit No. 2 (Groundwater) Mead, Nebraska

Remedial Action Component	Completion Date	Start-up Date	Design Flow (gpm)	Average Flow (gpm)	Average Flow Period	Uptime	Uptime Period	Removed from Service
Original Main GTP	October 1998	October 1998	600	NA	NA	NA	NA	
Expanded Main GTP	February 2002	February 2002	3,000	2,050	2004 - 2009	98%	2006-2009	
LL1 GTP	January 2006	January 2006	600	298	2006 - 2009	94%	2006-2009	
AOP GTP	March 2008	March 2008	600	485	2008 - 2009	90%	2008-2009	
LL4 GTP	Aprl 2010	August 2010	500	461	8/2010-10/2010	62%	8/2010-10/2010	
EW-1	July 1995	October 1998	200	175	2006-2009	90%	2006-2009	
EW-2	June 2001	February 2002	150	144	2006-2009	94%	2006-2009	February 2009
EW-3	June 2001	February 2002	200	242	2006-2009	96%	2006-2009	
EW-4	June 2001	February 2002	150	93	2006-2009	94%	2006-2009	
EW-5	June 2001	February 2002	175	179	2006-2009	96%	2006-2009	February 2009
EW-6	July 2001	February 2002	275	224	2006-2009	94%	2006-2009	
EW-7	July 2001	February 2002	300	289	2006-2009	95%	2006-2009	
EW-8	July 1995	October 1998	250	290	2006-2007	98%	2006-2007	September 2007
EW-9	July 2001	February 2002	275	141	2006-2009	94%	2006-2009	
EW-10	July 2001	February 2002	400	346	2006-2009	94%	2006-2009	February 2010
FEW-11	June 2001	March 2008	550	491	2008-2009	89%	2008-2009	
EW-12	October 2005	January 2006	330	299	2006-2009	95%	2006-2009	
EW-13	October 2005	Not Operational	NA	NA	NA	NA	NA	
FEW-14	April 2009	June 2009	190	182	2009	96%	2009	
FEW-15	March 2009	August 2010	500	461	8/2010-10/2010	62	8/2010-10/2010	
EW-16	May 2009	June 2009	100	100	2009	96%	2009	
GCW-1	February 2000	February 2000	50	20	2003-2009	100%	2001-2008	
GCW-2	February 2000	February 2000	23	7.5	2003-2008	88%	2001-2008	July 2008

EW = extraction well
FEW = focused extraction well
GCW = groundwater circulation well
gpm = gallons per minute
GTP = groundwater treatment plant
NA = not available, not applicable

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Table 3-3
Extraction Well Rehabilitation Documents
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant, Mead Nebraska

Document Title	Month/Year	Company
Draft Well Maintenance Rehabilitation and Performance Optimization Report, Operable Unit #2 (Groundwater), Former Nebraska Ordnance Plant, Mead, Nebraska	March 2004	ECC
Draft Phase II Well Maintenance, Rehabilitation, and Performance Optimization Report Operable Unit No. 2 – Groundwater, Former Nebraska Ordnance Plant, Mead, Nebraska	July 2005	ECC
Mead NOP Phase I 2006 Extraction Well Maintenance Work Results and Recommendations for Phase 2. Letter Report from D. Dander to S. Mehta, USACE – Kansas City District	July 21, 2006	ECC
Mead NOP Spring 2007 Extraction Well Phase II Maintenance and Rehabilitation. Letter Report from D. Dander to S. Mehta, USACE – Kansas City District.	July 31, 2007	ECC

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Table 3-4
Former Nebraska Ordnance Plant Annual Documents
Interim Remedial Action Completion Report
Former Nebraska Ordnance Plant, Mead Nebraska

Document Title	Month/Year	Company
Final - Alternative Water Supply Support Annual Activity Summary Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska.	August 1998	Woodward-Clyde Consultants
Draft - Alternative Water Supply Support Annual Activity Summary 1998-1999 Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant, Mead, Nebraska.	July 1999	Woodward-Clyde Consultants
Draft Containment Evaluation October 1998 through April 1999 Former Nebraska Ordnance Plant Mead, Nebraska	June 1999	URS
Containment Evaluation Summary Technical Memorandum Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska.	September 1999	URS
Initial Containment Evaluation Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska	February 1999	URS
1999-2000 Groundwater Monitoring Program Annual Report Operable Unit No. 2, Former Nebraska Ordnance Plant Mead, Nebraska	September 2000	URS
Alternative Water Supply Support Annual Activity Summary For Operable Unit No. 2 (Groundwater Former Nebraska Ordnance Plant, Mead, Nebraska	July 2001	URS
Draft - Annual Summary Operations and Maintenance Report Year 2002 - Phase 1 Groundwater Treatment (Operable Unit 2) Former Nebraska Ordnance Plant, Mead, Nebraska.	January 2003	ECC
Draft Final 2002 Groundwater Monitoring Program Annual Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska.	October 2003	ECC
Draft - Annual Summary Operations and Maintenance Report Year 2003 - Phase 1 Groundwater Treatment (Operable Unit 2) Former Nebraska Ordnance Plant, Mead, Nebraska.	January 2004	ECC
Draft Final 2003 Groundwater Monitoring Program Annual Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska.	May 2005	ECC
Draft Final One-Year Containment Evaluation Operable Unit No 2 (Groundwater) for Former Nebraska Ordnance Plant Mead, Nebraska	March 2004	URS
Draft - Annual Summary Operations and Maintenance Report Year 2004 - Phase 1 Groundwater Treatment (Operable Unit 2) Former Nebraska Ordnance Plant, Mead, Nebraska.	February 2005	ECC
Draft Final 2004 Groundwater Monitoring Program Annual Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska.	December 2005	ECC

Table 3-4 (continued)

Document Title	Month/Year	Company
Draft Final 2005 Groundwater Monitoring Program Annual Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska	September 2006	ECC
Draft Final 2006 Annual Remedy Performance Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant, Mead, Nebraska	December 2007	URS
Draft Final 2007 Annual Remedy Performance Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant, Mead, Nebraska.	November 2008	URS
Final 2008 Containment Evaluation Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska	December 2009	URS
Final 2008 Alternative Water Supply Support Annual Activity Summary Phase I Groundwater Treatment Operable Unit No. 2 Former Nebraska Ordnance Plant Mead, Nebraska.	August 2009	ECC
Final 2008 Groundwater Monitoring Program Annual Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska	August 2009	ECC
Final Annual Operations, Maintenance, And Monitoring Summary Report Main Groundwater Treatment Plant, Load Line 1 Groundwater Treatment Plant, and Advanced Oxidation Process Groundwater Treatment Plant Year 2008 Phase I Groundwater Treatment Operable Unit No. 2 Former Nebraska Ordnance Plant Mead, Nebraska.	August 2009	ECC
Final 2009 Alternate Water Supply Support Annual Activity Summary Groundwater Treatment Operable Unit No. 2 Former Nebraska Ordnance Plant Mead, Nebraska.	March 2010	ECC
Final Annual Operations, Maintenance, And Monitoring Summary Report Main Groundwater Treatment Plant, Load Line 1 Groundwater Treatment Plant, and Advanced Oxidation Process Groundwater Treatment Plant Year 2009 Groundwater Treatment Operable Unit No. 2 Former Nebraska Ordnance Plant Mead, Nebraska	April 2010	ECC
Final 2009 Groundwater Monitoring Program Annual Report Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska	June 2010	ECC
Final 2009 Containment Evaluation Operable Unit No. 2 (Groundwater) Former Nebraska Ordnance Plant Mead, Nebraska	May 2010	ECC

Table 3-5
Water Supply Wells and Analysis Summary
Interim Remedial Action Completion Report
Former Nebraska Ordance Plant, Mead, Nebraska

	Analyses Proposed by Year									
Well / CU	**2000-2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**as of Sept. 30, 2010**
CU-4	TSS,E,V									
CU-11	TSS,E,V									
CU-12	TSS,E,V									
CU-13	TSS,E,V									
CU-23	TSS,E,V									
27	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
29	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
29A	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
32	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
34	E	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
36	E	VOCs	E	E	E	E,V	E,V	E,V	E,V	E,V
50A	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
50B	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
51	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
51A	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
52A-B							TSS, E, V	TSS, E, V	TSS, E, V	E,V
52A	TSS,E,V	E,V		E,V	E,V		E,V	E,V	E,V	E,V
52B	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
52C-B							TSS, E, V	TSS, E, V	TSS, E, V	E,V
52C		E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
53-B							TSS, E, V	TSS, E, V	TSS, E, V	E,V
53	TSS,E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
54-B							TSS, E, V	TSS, E, V	TSS, E, V	E,V
54	TSS,E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
55	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
56	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
57	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
58	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
59				E,V	E,V	E,V	E,V	E,V	E,V	E,V
60				E,V	E,V	E,V	E,V	E,V	E,V	E,V
61				E,V	E,V	E,V	E,V	E,V	E,V	E,V
62				E,V	E,V	E,V	E,V	E,V	E,V	E,V
63				E,V	E,V	E,V	E,V	E,V	E,V	E,V
64				E,V	E,V	E,V	E,V	E,V	E,V	E,V
65				E,V	E,V	E,V	E,V	E,V	E,V	E,V
66				E,V	E,V	E,V	E,V	E,V	E,V	E,V
67				E,V	E,V	E,V	E,V	E,V	E,V	E,V
68				E,V	E,V	E,V	E,V	E,V	E,V	E,V
73				E,V	E,V	E,V	E,V	E,V	E,V	E,V
74				E,V	E,V	E,V	E,V	E,V	E,V	E,V
75				E,V	E,V	E,V	E,V	E,V	E,V	E,V
76				E,V	E,V	E,V	E,V	NS	E,V	E,V
77				E,V	E,V	E,V	E,V	E,V	E,V	E,V

Table 3-5
Water Supply Wells and Analysis Summary
Interim Remedial Action Completion Report
Former Nebraska Ordance Plant, Mead, Nebraska

Well / CU	2000-2001	2002	2003	2004	2005	2006	2007	2008	2009	as of Sept. 30, 2010
79				E,V	E,V	E,V	E,V	E,V	E,V	E,V
80				E,V	E,V	E,V	E,V	E,V	E,V	E,V
81				E,V	E,V	E,V	E,V	E,V	E,V	E,V
82				E,V	E,V	E,V	E,V	E,V	E,V	E,V
84				E,V	E,V	E,V	E,V			
86				E,V	E,V	E,V	E,V	E,V	E,V	E,V
87				E,V	E,V	E,V	E,V	E,V	E,V	E,V
89				E,V	E,V	E,V	E,V	E,V	E,V	E,V
90				E,V	E,V	E,V	E,V	E,V	E,V	E,V
91				E,V	E,V	E,V	E,V	E,V	E,V	E,V
92				E,V	E,V	E,V	E,V	E,V	E,V	E,V
93				E,V	E,V	E,V	E,V	E,V	E,V	E,V
94				E,V	E,V	E,V	E,V	E,V	E,V	E,V
95				E,V	E,V	E,V	E,V	E,V	E,V	E,V
96				E,V	E,V	E,V	E,V	E,V	E,V	E,V
97				E,V	E,V	E,V	E,V	E,V	E,V	E,V
99				E,V	E,V	E,V	E,V	E,V	E,V	E,V
100				E,V	E,V	E,V	E,V	E,V	E,V	E,V
101				E,V	E,V	E,V	E,V	E,V	E,V	E,V
102				E,V	E,V	E,V	E,V	E,V	E,V	E,V
103				E,V	E,V	E,V	E,V	E,V	E,V	E,V
104				E,V	E,V	E,V	E,V	E,V	E,V	E,V
105					E,V	E,V	E,V	E,V	E,V	E,V
106					E,V	E,V	E,V	E,V	E,V	E,V
107					E,V	E,V	E,V	E,V	E,V	E,V
108					E,V	E,V	E,V	E,V	E,V	E,V
109					E,V	E,V	E,V	E,V	E,V	E,V
110					E,V	E,V	E,V	E,V	E,V	E,V
111					E,V	E,V	E,V	E,V	E,V	E,V
112						E,V	E,V	E,V	E,V	E,V
113								E,V	E,V	E,V
114									E,V	E,V
115										E,V
116										E,V
117										E,V
118										E,V
119										E,V
120										E,V
121										E,V
122										E,V
UNFL-8A	E,V									E,V
UNFL-9A	E,V	E,V	E,V	E,V			E, V	E,V	E,V	E,V
UNFL-10A	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V	E,V
UNFL-11A	E,V					E,V				

Table 3-5
Water Supply Wells and Analysis Summary
Interim Remedial Action Completion Report
Former Nebraska Ordance Plant, Mead, Nebraska

Well / CU	2000-2001	2002	2003	2004	2005	2006	2007	2008	2009	as of Sept. 30, 2010
UNFL-12	E,V	E,V				E,V	E, V		E,V	E,V
UNFL-IR-16A								E,V	E,V	
UNFL-23					E,V				E,V	E,V
UNFL-27	E,V	E,V	E,V	E,V	E,V		E, V		E,V	E,V
ARTESIAN			E,V	E,V	E,V					
G-054654								E,V		
G-053630										
ASH-002					E					
LIN-032-5B					E					
LIN-056-9					E					
NEWMWS					E					
OLDMWS					E					

Notes:

E = Explosive Compounds
V = Volatile Organic Compounds
TSS = Total Suspended Solids

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Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
MW-01A (Abandoned)	G-154545BQ	2618459.72	511743.03	1176.88	1174.40	2.48	0.01	3.00	8.00	111.50	1062.90	NA	73.10	79.00	1095.40	109.00	1065.40	114.00	1060.40	109.00	1065.40	SH
MW-01B (Abandoned)	G-154545BR	2618469.56	511743.23	1176.73	1174.21	2.51	0.01	3.00	8.00	79.50	1094.71	NA	34.60	39.00	1135.21	79.00	1095.21	81.00	1093.21	NP	NP	NP
MW-02A	G-154545BP	2606800.10	506250.32	1174.77	1172.62	2.14	0.01	3.00	8.00	99.20	1073.42	NA	61.00	67.70	1104.92	96.90	1075.72	101.70	1070.92	99.50	1073.12	SS
MW-02B	G-154545BO	2606808.90	506255.48	1175.18	1172.73	2.45	0.01	3.00	8.00	64.00	1108.73	NA	29.70	34.30	1138.43	63.50	1109.23	67.00	1105.73	NP	NP	NP
MW-03A	G-154545BN	2607532.26	506223.42	1179.56	1177.65	1.90	0.01	3.00	8.00	148.50	1029.15	NA	91.70	97.00	1080.65	145.80	1031.85	171.50	1006.15	146.00	1031.65	SH
MW-03B	G-154545BM	2607542.05	506225.42	1179.83	1177.60	2.23	0.01	3.00	8.00	98.90	1078.70	NA	35.00	39.90	1137.70	98.40	1079.20	99.50	1078.10	NP	NP	NP
MW-04A	G-154545BL	2612041.94	506256.77	1168.73	1166.51	2.22	0.01	3.00	8.00	105.80	1060.71	NA	69.20	74.20	1092.31	103.50	1063.01	109.00	1057.51	103.50	1063.01	SH
MW-04B	G-154545BK	2612051.44	506259.36	1168.85	1166.43	2.42	0.01	3.00	8.00	71.70	1094.73	NA	26.00	32.10	1134.33	71.20	1095.23	75.00	1091.43	NP	NP	NP
MW-05A	G-154545FG	2613044.09	507097.63	1168.12	1166.10	2.02	0.01	3.00	8.00	103.00	1063.10	NA	56.00	61.80	1104.30	100.80	1065.30	107.20	1058.90	100.80	1065.30	SH
MW-05B	G-154545FH	2613053.87	507097.47	1168.18	1165.88	2.29	0.01	3.00	8.00	59.80	1106.08	NA	21.00	30.00	1135.88	59.30	1106.58	65.00	1100.88	NP	NP	NP
MW-06A (Abandoned)	G-154545BS	2617375.69	506522.12	1165.46	1163.40	2.06	0.01	3.00	8.00	102.20	1061.20	NA	55.80	61.00	1102.40	100.00	1063.40	105.00	1058.40	100.00	1063.40	SH
MW-06B (Abandoned)	G-154545BT	2617384.61	506525.48	1165.61	1163.55	2.06	0.01	3.00	8.00	64.50	1099.05	NA	21.00	34.80	1128.75	64.00	1099.55	68.00	1095.55	NP	NP	NP
MW-07A	G-154545BJ	2618267.10	507274.83	1164.85	1162.69	2.17	0.01	3.00	8.00	102.00	1060.69	NA	60.00	70.20	1092.49	99.50	1063.19	104.00	1058.69	99.50	1063.19	SH
MW-07B	G-154545BI	2618276.53	507276.12	1164.64	1162.34	2.30	0.01	3.00	8.00	74.20	1088.14	NA	29.20	34.70	1127.64	73.70	1088.64	78.00	1084.34	NP	NP	NP
MW-08A	G-154545BH	2622863.97	506814.76	1165.92	1163.62	2.30	0.01	3.00	8.00	125.50	1038.12	NA	75.00	84.00	1079.62	123.00	1040.62	131.00	1032.62	123.00	1040.62	SS
MW-08B	G-154545BG	2622872.08	506820.56	1165.92	1163.60	2.32	0.01	3.00	8.00	81.50	1082.10	NA	33.00	42.10	1121.50	81.00	1082.60	83.60	1080.00	NP	NP	NP
MW-09A	G-154545BF	2623570.81	507435.84	1171.46	1168.78	2.68	0.01	3.00	8.00	130.50	1038.28	NA	82.20	89.00	1079.78	128.00	1040.78	134.00	1034.78	127.70	1041.08	SS
MW-09B	G-154545BE	2623580.33	507436.09	1171.60	1169.00	2.60	0.01	3.00	8.00	85.80	1083.20	NA	41.00	46.30	1122.70	85.30	1083.70	89.00	1080.00	NP	NP	NP
MW-09D	G-154545BD	2623593.10	507436.00	1171.28	1169.31	1.97	0.02	2.00	5.50	136.79	1032.52	10/20	127.50	131.00	1038.31	136.00	1033.31	139.00	1030.31	121.60	1047.71	SS
MW-10A	G-154545BB	2607883.83	496858.27	1150.35	1147.91	2.44	0.01	3.00	8.00	102.70	1045.21	NA	56.40	61.40	1086.51	100.40	1047.51	103.00	1044.91	100.00	1047.91	SS
MW-10B	G-154545BA	2607893.74	496858.92	1150.31	1147.74	2.58	0.01	3.00	8.00	62.70	1085.04	NA	28.00	33.00	1114.74	62.20	1085.54	65.00	1082.74	NP	NP	NP
MW-11	G-154545AZ	2626486.32	509499.80	1153.22	1150.76	2.45	0.01	3.00	8.00	50.20	1100.56	NA	14.70	18.80	1131.96	48.00	1102.76	50.50	1100.26	48.00	1102.76	SS
MW-12 (Abandoned)	abandoned	2606856.25	509013.88	1178.55	1176.27	2.28	0.01	3.00	8.00	37.80	1138.47	NA	22.70	27.60	1148.67	37.30	1138.97	42.00	1134.27	NP	NP	NP
MW-13 (Abandoned)	abandoned	2612231.38	509178.55	1175.20	1172.84	2.36	0.01	3.00	8.00	39.70	1133.14	NA	24.50	29.50	1143.34	39.20	1133.64	42.00	1130.84	NP	NP	NP
MW-14 (Abandoned)	abandoned	2617504.71	509391.07	1178.94	1176.80	2.14	0.01	3.00	8.00	48.80	1128.00	NA	32.00	38.60	1138.20	48.30	1128.50	50.00	1126.80	NP	NP	NP
MW-15 (Abandoned)	abandoned	2622745.33	509482.90	1170.06	1167.71	2.35	0.01	3.00	8.00	47.20	1120.51	NA	32.20	37.00	1130.71	46.70	1121.01	50.00	1117.71	NP	NP	NP
MW-16B	G-154545Q	2604911.66	514026.38	1188.68	1186.48	2.20			8.00	NA	NA	NA	NA	NA	1186.48	NA	NA	NA	NA	106.80	1079.68	SH
MW-16C	G-154545AY	2604917.63	514034.74	1189.40	1186.74	2.66	0.01	3.00	8.00	41.90	1144.84	NA	28.70	31.50	1155.24	41.50	1145.24	45.00	1141.74	NP	NP	NP
MW-17A (Abandoned)	G-154545AX	2603293.03	499100.33	1128.60	1126.40	2.20	0.01	2.00	8.00	78.30	1048.10	NA	68.50	72.10	1054.30	77.10	1049.30	78.30	1048.10	57.00	1069.40	SH
MW-17B	G-154545AW	2603293.03	499101.48	1128.50	1126.20	2.30	0.01	3.00	8.00	56.20	1070.00	NA	48.00	50.40	1075.80	55.80	1070.40	59.00	1067.20	56.80	1069.40	SH
MW-17C (Abandoned)	G-154545AV	2603293.48	499090.31	1128.40	1126.20	2.20	0.01	3.00	8.00	17.60	1108.60	16/100	4.70	7.20	1119.00	17.20	1109.00	22.00	1104.20	NP	NP	NP
MW-18A	G-154545FI	2629150.33	506832.34	1145.43	1142.80	2.64	0.01	2.00	8.00	125.00	1017.80	NA	120.00	122.00	1020.80	125.00	1017.80	140.60	1002.20	100.80	1042.00	SS/SH
MW-18B	G-154545FJ	2629156.57	506827.46	1145.57	1142.96	2.61				NA	NA	NA	NA	NA	1142.96	NA	NA	NA	NA	NP	NP	NP
MW-18C	G-154545AU	2629148.53	506821.93	1146.05	1143.38	2.67	0.01	3.00	8.00	47.10	1096.28	16/100	34.30	36.70	1106.68	46.70	1096.68	51.00	1092.38	NP	NP	NP
MW-19A (Abandoned)	G-154545AT	2618421.42	517577.13	1158.65	1156.25	2.40	0.01	2.00	8.00	128.00	1028.25	NA	123.10	125.00	1031.25	128.00	1028.25	138.00	1018.25	115.00	1041.25	SS/SH
MW-19B	G-154545AS	2618429.63	517576.97	1158.59	1156.27	2.32	0.01	3.00	8.00	103.40	1052.87	16/100	98.00	98.00	1058.27	103.00	1053.27	105.00	1051.27	104.20	1052.07	SH
MW-19C (Abandoned)	G-154545AR	2618426.14	517568.83	1159.26	1156.64	2.62	0.01	3.00	8.00	20.70	1135.94	NA	8.40	10.20	1146.44	20.25	1136.39	27.00	1129.64	NP	NP	NP
MW-20A	G-154545AQ	2616622.54	493189.94	1160.42	1157.97	2.45	0.01	2.00	8.00	150.40	1007.57	NA	141.80	145.00	1012.97	150.40	1007.57	153.30	1004.67	138.50	1019.47	SS
MW-20B	G-154545AP	2616633.43	493191.47	1160.29	1157.72	2.57	0.01	3.00	8.00	134.00	1023.72	NA	125.60	128.60	1029.12	133.60	1024.12	138.00	1019.72	111.60	1046.12	SS/SH
MW-20C	G-154545AO	2616611.43	493187.61	1160.29	1157.84	2.45				60.70	1097.14	NA	45.80	50.30	1107.54	60.30	1097.54	62.00	1095.84	NP	NP	NP
MW-21A	G-154545AN	2607121.37	503524.81	1165.63	1163.72	1.91	0.02	2.00	6.00	126.81	1036.91	10\20	113.00	116.00	1047.72	126.00	1037.72	128.50	1035.22	NP	NP	NP
MW-21B	G-154545AM	2607111.29	503524.05	1165.59	1163.67	1.92	0.01	2.00	5.63	76.53	1087.14	20\40	63.00	66.00	1097.67	76.00	1087.67	79.00	1084.67	NP	NP	NP
MW-21D	sent	2607131.41	503525.83	1165.57	1163.67	1.90	0.02	2.00	10.00	138.69	1024.98	10\20	130.20	133.00	1030.67	138.00	1025.67	139.00	1024.67	127.30	1036.37	SH/SS
MW-22A (Abandoned)	G-154545AL	2606598.39	510402.07	1176.78	1174.93	1.85	0.02	2.00	8.00	99.07	1075.86	4\8	85.00	87.80	1087.13	97.80	1077.13	106.00	1068.93	99.50	1075.43	SH
MW-22B	G-154545AK	2606604.48	510403.43	1176.67	1174.81	1.86	0.01	2.00	6.00	68.65	1106.16	20\40	55.00	58.00	1116.81	68.00	1106.81	70.00	1104.81	NP	NP	NP
MW-23A (Abandoned)	G-154545AJ	2606402.57	509376.37	1173.56	1171.88	1.68	0.02	2.00	5.63	100.00	1071.88	10\20	84.00	88.50	1083.38	98.50	1073.38	105.00	1066.88	99.30	1072.58	SH
MW-23B (Abandoned)	G-154545AI	2606393.06	509383.87	1173.93	1172.05	1.88	0.01	2.00	6.00	78.00	1094.05	10\20	63.50	67.50	1104.55	77.50	1094.55	79.00	1093.05	NP	NP	NP
MW-24A	G-154545AH	2608476.90	501919.83	1163.41	1161.37	2.04	0.02	2.00	8.00	121.50	1039.87	4\8	109.40	111.50	1049.87	121.50	1039.87	140.80	1020.57	125.00	1036.37	SH
MW-24B	G-154545AG	2608477.73	501909.01	1163.46	1161.27	2.19	0.01	2.00	6.00	66.50	1094.77	20\40	53.00	56.00	1105.27	66.00	1095.27	67.50	1093.77	NP	NP	NP
MW-25A	G-154545AF	2608308.41	504875.16	1175.25	1173.23	2.02	0.02	2.00	6.00	156.06	1017.17	10\20	143.00	145.00	1028.23	155.00	1018.23	156.60	1016.63	NP	NP	NP

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
MW-25B	G-154545AE	2608308.27	504885.58	1174.71	1172.93	1.78	0.01	2.00	6.00	84.82	1088.11	10\20	70.00	74.00	1098.93	84.00	1088.93	85.00	1087.93	NP	NP	NP
MW-25D	G-154545AD	2608308.83	504864.77	1175.46	1173.54	1.92	0.02	2.00	6.00	168.84	1004.70	10\20	161.00	163.20	1010.34	168.20	1005.34	170.00	1003.54	156.80	1016.74	SS
MW-26A (Abandoned)	G-154545AC	2609860.44	508825.09	1174.15	1172.44	1.71	0.02	2.00	6.00	103.59	1068.85	10\20	89.80	92.50	1079.94	102.50	1069.94	120.00	1052.44	103.80	1068.64	SS/SH
MW-26B (Abandoned)	G-154545AB	2609849.90	508824.87	1174.16	1172.42	1.74	0.01	2.00	5.63	76.64	1095.78	10\20	63.00	66.00	1106.42	76.00	1096.42	77.50	1094.92	NP	NP	NP
MW-27A (Abandoned)	G-154545AA	2611434.64	508103.04	1176.05	1174.14	1.91	0.02	2.00	4.25	107.00	1067.14	4\8	94.00	96.00	1078.14	106.00	1068.14	121.90	1052.24	106.80	1067.34	SH
MW-27B	G-154545Z	2611427.01	508110.55	1176.06	1174.12	1.94	0.01	2.00	8.00	72.00	1102.12	10\20	58.00	61.50	1112.62	71.50	1102.62	73.00	1101.12	NP	NP	NP
MW-28A	G-154545Y	2612951.02	502242.71	1172.22	1170.29	1.93	0.02	2.00	8.00	138.10	1032.19	10\20	124.80	127.60	1042.69	137.60	1032.69	138.60	1031.69	138.00	1032.29	SS
MW-28B	G-154545X	2612936.01	502242.26	1172.52	1170.43	2.09	0.01	2.00	6.00	78.03	1092.40	10\20	63.50	67.50	1102.93	77.50	1092.93	79.00	1091.43	NP	NP	NP
MW-28D	G-154545W	2612969.60	502242.92	1171.99	1169.84	2.15	0.02	2.00	5.75	149.50	1020.34	10\20	142.00	144.00	1025.84	149.00	1020.84	149.50	1020.34	138.00	1031.84	SS
MW-29A	G-154545V	2614469.84	498383.11	1160.06	1158.50	1.56	0.02	2.00	10.00	134.10	1024.40	4\8	120.00	122.60	1035.90	132.60	1025.90	143.00	1015.50	137.10	1021.40	SH
MW-29B	G-154545FK	2614460.98	498382.37	1161.03	1158.75	2.28	0.01	2.00	8.00	75.00	1083.75	10\20	61.00	64.50	1094.25	74.50	1084.25	76.00	1082.75	NP	NP	NP
MW-30A (Abandoned)	G-154545U	2616288.05	507064.55	1168.55	1166.61	1.94	0.02	2.00	8.00	99.50	1067.11	10\20	91.00	94.00	1072.61	99.00	1067.61	110.00	1056.61	101.50	1065.11	SH/SS
MW-30B (Abandoned)	G-154545FL	2616281.84	507065.86	1168.38	1166.45	1.93	0.01	2.00	8.00	71.00	1095.45	20\40	56.00	59.50	1106.95	69.50	1096.95	71.00	1095.45	NP	NP	NP
MW-31A	G-154545T	2617943.95	503233.70	1167.38	1165.35	2.03	0.02	2.00	10.00	105.00	1060.35	10\20	91.20	94.50	1070.85	104.50	1060.85	112.00	1053.35	106.00	1059.35	SH
MW-31B	G-154545S	2617935.17	503238.63	1166.95	1165.06	1.89	0.01	2.00	8.00	60.90	1104.16	10\20	47.00	50.00	1115.06	60.00	1105.06	62.00	1103.06	NP	NP	NP
MW-32A	G-154545R	2619697.25	499062.26	1154.17	1152.35	1.82	0.02	2.00	7.75	99.37	1052.98	4\8	82.00	88.50	1063.85	98.50	1053.85	99.50	1052.85	99.55	1052.80	SH
MW-32B	G-154545P	2619696.91	499069.08	1154.10	1152.31	1.79	0.01	2.00	7.75	81.50	1070.81	10\20	69.00	71.00	1081.31	81.00	1071.31	82.00	1070.31	NP	NP	NP
MW-32D	G-154545O	2619697.54	499055.63	1154.02	1152.07	1.95	0.02	2.00	5.63	112.13	1039.94	10\20	103.50	106.50	1045.57	111.50	1040.57	113.00	1039.07	99.50	1052.57	SH
MW-33A	sent	2622410.84	502847.91	1160.32	1158.43	1.89	0.02	2.00	6.00	111.00	1047.43	10\20	96.50	100.50	1057.93	110.50	1047.93	112.00	1046.43	NP	NP	NP
MW-33B	G-154545N	2622401.05	502854.78	1160.37	1158.53	1.84	0.01	2.00	8.00	84.26	1074.27	10\20	69.50	73.50	1085.03	83.50	1075.03	84.50	1074.03	NP	NP	NP
MW-33D	G-154545M	2622421.53	502856.97	1160.24	1158.29	1.95	0.02	2.00	6.00	125.50	1032.79	10\20	118.00	120.00	1038.29	125.00	1033.29	127.00	1031.29	116.50	1041.79	SS
MW-34A	G-154545L	2624442.78	498806.30	1156.79	1155.05	1.74	0.02	2.00	8.00	112.50	1042.55	10\20	98.00	102.00	1053.05	112.00	1043.05	113.00	1042.05	113.00	1042.05	SS
MW-34B	G-154545K	2624443.06	498814.11	1157.00	1155.00	2.00	0.01	2.00	8.00	75.50	1079.50	20\40	61.00	65.00	1090.00	75.00	1080.00	76.00	1079.00	NP	NP	NP
MW-34D	G-154545J	2624442.36	498796.40	1156.73	1154.83	1.90	0.02	2.00	5.63	126.04	1028.79	10\20	117.30	120.00	1034.83	125.00	1029.83	127.50	1027.33	112.90	1041.93	SS
MW-35A	G-154545I	2629595.76	496323.64	1139.81	1137.80	2.01	0.02	2.00	8.00	92.00	1045.80	4\8	78.50	81.50	1056.30	91.50	1046.30	92.50	1045.30	NP	NP	NP
MW-35B	G-154545H	2629595.84	496329.37	1139.57	1137.76	1.81	0.01	2.00	8.00	67.60	1070.16	20\40	53.00	57.00	1080.76	67.00	1070.76	68.00	1069.76	NP	NP	NP
MW-35D	G-154545FM	2629595.80	496317.10	1139.67	1137.78	2.20	0.02	2.00	6.00	106.50	1031.28	10\20	98.00	100.50	1037.28	105.50	1032.28	117.00	1020.78	93.00	1044.78	SS
MW-36A (Abandoned)	G-154545G	2634814.84	496694.95	1076.62	1076.84	-0.22	0.02	2.00	6.00	38.72	1038.12	10\20	25.00	28.00	1048.84	38.00	1038.84	39.00	1037.84	NP	NP	NP
MW-36B (Abandoned)	G-154545F	2634805.75	496692.86	1076.65	1076.80	-0.15	0.01	2.00	6.00	27.50	1049.30	20\40	14.00	17.00	1059.80	27.00	1049.80	28.50	1048.30	NP	NP	NP
MW-36D (Abandoned)	G-154545FG	2634824.46	496697.59	1076.79	1076.93	-0.14	0.02	2.00	6.00	49.00	1027.93	10\20	41.00	43.00	1033.93	48.00	1028.93	49.00	1027.93	39.00	1037.93	SS
MW-37A (Abandoned)	G-154545E	2633418.32	491651.94	1085.20	1083.05	2.15	0.02	2.00	10.00	41.00	1042.05	4\8	28.30	30.50	1052.55	40.50	1042.55	48.00	1035.05	41.40	1041.65	SS
MW-37B (Abandoned)	G-154545D	2633416.51	491631.65	1085.19	1083.07	2.12	0.01	2.00	8.00	29.50	1053.57	20\40	21.70	24.00	1059.07	29.00	1054.07	30.00	1053.07	NP	NP	NP
MW-37D (Abandoned)	abandoned	2633413.67	491666.00	1085.06	1082.98	2.08	0.02	2.00	6.00	51.00	1031.98	10\20	43.50	45.50	1037.48	50.50	1032.48	51.80	1031.18	41.50	1041.48	SS
MW-38A	G-154545C	2638131.88	496248.57	1082.32	1079.98	2.34	0.02	2.00	8.00	50.90	1029.08	10\20	41.70	44.70	1035.28	49.20	1030.78	51.00	1028.98	49.20	1030.78	SS
MW-38D	G-154545B	2638138.80	496250.60	1081.92	1079.98	2.20	0.02	2.00	6.00	64.00	1015.98	10\20	55.60	58.50	1021.48	63.50	1016.48	65.00	1014.98	49.20	1030.78	SS
MW-39A	G-154545A	2640062.25	499304.69	1082.82	1081.00	1.82	0.02	2.00	8.00	49.60	1031.40	10\20	40.00	44.00	1037.00	48.50	1032.50	49.60	1031.40	48.50	1032.50	SS
MW-39D	G-154545FF	2640059.10	499298.90	1082.95	1081.00	1.95	0.02	2.00	6.00	55.50	1025.50	10\20	50.50	52.50	1028.50	55.30	1025.70	59.00	1022.00	48.50	1032.50	SS/SH
MW-40A	G-154545FE	2623018.62	511963.35	1172.09	1170.09	2.00	0.02	2.00	7.25	126.14	1043.95	4\8	123.00	120.50	1049.59	125.50	1044.59	145.00	1025.09	127.60	1042.49	SS/SH
MW-40B	G-154545FD	2623006.75	511962.76	1172.34	1170.38	1.96	0.01	2.00	6.00	64.75	1105.63	20\40	51.00	54.00	1116.38	64.00	1106.38	65.50	1104.88	NP	NP	NP
MW-41A	G-154545FN	2624371.47	512001.33	1168.63	1166.32	2.31	0.02	2.00	6.00	83.30	1083.02	10\20	68.40	71.50	1094.82	81.50	1084.82	83.30	1083.02	82.30	1084.02	SS
MW-41B	G-154545FC	2624361.83	512001.37	1168.68	1166.27	2.41	0.01	2.00	6.00	46.50	1119.77	20\40	33.00	36.00	1130.27	46.00	1120.27	47.00	1119.27	NP	NP	NP
MW-41D	G-154545FB	2624353.22	512000.98	1168.61	1166.41	2.20	0.02	2.00	5.25	92.50	1073.91	10\20	85.00	87.00	1079.41	92.00	1074.41	93.00	1073.41	82.00	1084.41	SS
MW-42A	G-154545FA	2629385.20	501582.56	1146.53	1144.54	1.99	0.02	2.00	6.00	96.71	1047.83	10\20	83.00	86.00	1058.54	96.00	1048.54	97.50	1047.04	NP	NP	NP
MW-42B	G-154545EZ	2629385.28	501592.64	1146.64	1144.51	2.13	0.01	2.00	6.00	63.50	1081.01	20\40	50.00	53.00	1091.51	63.00	1081.51	64.50	1080.01	NP	NP	NP
MW-42D	G-154545EY	2629384.99	501572.17	1146.20	1144.41	2.20	0.02	2.00	6.00	109.23	1035.18	10\20	101.20	103.20	1041.21	108.20	1036.21	109.20	1035.21	97.80	1046.61	SS
MW-43A	G-154545EX	2629243.07	504317.91	1142.90	1141.02	1.88	0.02	2.00	6.00	101.51	1039.51	10\20	87.50	90.50	1050.52	100.50	1040.52	102.00	1039.02	NP	NP	NP
MW-43B	G-154545EW	2629244.24	504328.20	1142.74	1140.90	1.84	0.01	2.00	6.00	50.95	1089.95	10\20	37.00	40.00	1100.90	50.00	1090.90	52.00	1088.90	NP	NP	NP
MW-43D	G-154545EV	2629242.21	504308.09	1142.95	1140.95	2.00	0.02	2.00	5.25	111.90	1029.05	10\20	104.00	106.40	1034.55	111.40	1029.55	114.00	1026.95	101.50	1039.45	SS
MW-44A	G-154545EU	2632953.68	500415.12	1093.68	1091.91	1.77	0.02	2.00	6.00	40.00	1051.91	10\20	25.00	29.50	1062.41	39.50	1052.41	42.50	1049.41	NP	NP	NP
MW-44B	G-154545ET	2632954.90	500426.32	1092.46	1090.62	1.84	0.01	2.00	6.00	26.50	1064.12	20\40	13.00	16.00	1074.62	26.00	1064.62	30.00	1060.62	NP	NP	NP

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
MW-44D	G-154545ES	2632952.84	500403.76	1094.20	1092.31	1.89	0.02	2.00	5.25	56.60	1035.71	10\20	48.80	50.80	1041.51	55.80	1036.51	57.00	1035.31	44.00	1048.31	SS
MW-45A (Abandoned)	G-154545ER	2635043.54	499241.12	1081.53	1079.57	1.96	0.02	2.00	6.00	38.50	1041.07	4\8	26.10	28.00	1051.57	38.00	1041.57	39.00	1040.57	NP	NP	NP
MW-45B (Abandoned)	G-154545EQ	2635053.92	499241.15	1081.54	1079.54	2.00	0.01	2.00	6.00	27.52	1052.02	20\40	15.00	17.00	1062.54	27.00	1052.54	28.50	1051.04	NP	NP	NP
MW-45D (Abandoned)	G-154545EP	2635032.46	499241.76	1081.44	1079.66	1.78	0.02	2.00	6.00	48.50	1031.16	10\20	40.50	43.00	1036.66	48.00	1031.66	49.70	1029.96	39.00	1040.66	SS
MW-46A	G-154545EO	2637464.94	499387.37	1082.70	1080.71	1.99	0.01	2.00	6.00	44.26	1036.45	20\40	30.20	33.20	1047.51	43.20	1037.51	48.00	1032.71	47.50	1033.21	NA
MW-46B	G-154545EN	2637464.42	499396.68	1082.81	1080.77	2.04	0.01	2.00	6.00	31.76	1049.01	20\40	18.00	21.00	1059.77	31.00	1049.77	34.00	1046.77	NP	NP	NP
MW-46D	G-154545EM	2637465.40	499375.99	1082.65	1080.71	1.94	0.02	2.00	6.00	58.00	1022.71	10\20	50.50	52.50	1028.21	57.50	1023.21	58.50	1022.21	47.50	1033.21	SS
MW-47A (Abandoned)	G-154545EL	2603834.71	524480.73	1201.73	1199.76	1.97	0.02	2.00	8.00	123.30	1076.46	10\20	105.10	112.80	1086.96	122.80	1076.96	135.30	1064.46	126.00	1073.76	SH
MW-47B (Abandoned)	G-154545EK	2603819.42	524480.21	1201.67	1199.77	1.90	0.01	2.00	6.00	85.60	1114.17	20\40	71.90	74.80	1124.97	84.80	1114.97	86.60	1113.17	NP	NP	NP
MW-48A (Abandoned)	abandoned	2607436.75	519363.04	1193.44	1191.36	2.08	0.02	2.00	8.00	121.20	1070.16	10\20	108.10	110.70	1080.66	120.70	1070.66	124.00	1067.36	122.00	1069.36	SS
MW-48B (Abandoned)	abandoned	2607442.66	519367.88	1193.35	1191.35	2.00	0.01	2.00	6.00	83.50	1107.85	20\40	70.50	73.00	1118.35	83.00	1108.35	83.50	1107.85	NP	NP	NP
MW-48D (Abandoned)	abandoned	2607427.86	519358.29	1193.65	1191.64	2.01	0.02	2.00	6.00	131.00	1060.64	10\20	120.80	125.50	1066.14	130.50	1061.14	133.00	1058.64	119.40	1072.24	SS
MW-52A	G-154545EJ	2627012.55	508784.57	1155.22	1153.51	1.71	0.02	2.00	6.00	58.89	1094.62	10\20	45.30	48.00	1105.51	58.00	1095.51	65.00	1088.51	60.00	1093.51	SH
MW-52B	G-154545EI	2627004.24	508778.94	1155.65	1153.91	1.74	0.01	2.00	8.00	53.11	1100.80	20\40	39.00	42.50	1111.41	52.50	1101.41	54.00	1099.91	NP	NP	NP
MW-53A	G-154545EH	2627897.77	508169.88	1136.36	1134.42	1.94	0.02	2.00	6.00	97.70	1036.72	4\8	84.40	87.00	1047.42	97.00	1037.42	101.00	1033.42	99.90	1034.52	SS
MW-53B	G-154545EG	2627885.40	508166.61	1136.91	1134.89	2.02	0.01	2.00	6.00	38.10	1096.79	20\40	24.50	27.50	1107.39	37.50	1097.39	39.00	1095.89	NP	NP	NP
MW-54A	G-154545EF	2627893.82	508858.25	1121.58	1119.72	1.86	0.02	2.00	6.00	76.96	1042.76	4\8	62.00	66.00	1053.72	76.00	1043.72	83.50	1036.22	81.50	1038.22	SS
MW-54B	G-154545FO	2627883.88	508855.98	1121.59	1119.72	1.87	0.01	2.00	8.00	31.00	1088.72	20\40	21.00	24.00	1095.72	29.00	1090.72	31.00	1088.72	NP	NP	NP
MW-55A	G-154545EE	2628135.40	508377.66	1126.49	1124.52	1.97	0.02	2.00	6.00	84.53	1039.99	10\20	72.00	74.00	1050.52	84.00	1040.52	87.00	1037.52	85.00	1039.52	SS
MW-55B	G-154545ED	2628125.88	508374.22	1127.27	1125.08	2.19	0.01	2.00	6.00	66.50	1058.58	10\20	52.50	56.00	1069.08	66.00	1059.08	68.00	1057.08	NP	NP	NP
MW-56A	G-154545EC	2628206.01	508215.32	1125.96	1124.17	1.79	0.02	2.00	6.00	79.50	1044.67	4\8	66.00	69.00	1055.17	79.00	1045.17	82.00	1042.17	81.00	1043.17	SS
MW-56B	G-154545FP	2628195.32	508217.29	1126.24	1124.44	1.80	0.01	2.00	6.00	31.50	1092.94	20\40	18.00	21.00	1103.44	31.00	1093.44	32.70	1091.74	NP	NP	NP
MW-57B	G-154545EB	2607621.51	516363.44	1196.27	1194.32	1.95	0.01	2.00	6.00	65.50	1128.82	20\40	53.00	55.00	1139.32	65.00	1129.32	67.00	1127.32	NP	NP	NP
MW-58A (Abandoned)	abandoned	2620357.49	515008.03	1175.37	1173.48	1.89	0.02	2.00	8.00	133.00	1040.48	10\20	120.00	122.50	1050.98	132.50	1040.98	144.50	1028.98	135.00	1038.48	SS/SH
MW-58B (Abandoned)	abandoned	2620346.02	515009.76	1175.39	1173.40	1.99	0.01	2.00	5.63	82.65	1090.75	20\40	68.40	70.70	1102.70	80.70	1092.70	135.00	1038.40	134.00	1039.40	SS
MW-59A (Abandoned)	abandoned	2621708.41	515882.45	1162.95	1161.06	1.89	0.02	2.00	5.25	127.80	1033.26	4\8	111.50	113.10	1047.96	123.10	1037.96	124.00	1037.06	NP	NP	NP
MW-59B (Abandoned)	abandoned	2621700.91	515887.73	1163.04	1161.29	1.75	0.02	2.00	5.25	51.79	1109.50	10\20	36.80	38.00	1123.29	48.00	1113.29	49.00	1112.29	NP	NP	NP
MW-59D (Abandoned)	abandoned	2621717.33	515878.49	1162.57	1160.85	1.72	0.02	2.00	5.25	142.00	1018.85	10\20	130.20	132.20	1028.65	137.20	1023.65	139.00	1021.85	125.00	1035.85	SS
MW-60A	G-154545EA	2624702.83	489585.15	1145.83	1143.95	1.88	0.02	2.00	5.50	102.50	1041.45	10\20	88.00	92.00	1051.95	102.00	1041.95	115.00	1028.95	102.50	1041.45	SH
MW-60B (Abandoned)	G-154545DZ	2624703.22	489598.70	1146.15	1144.12	2.03	0.01	2.00	6.00	80.50	1063.62	20\40	67.00	70.00	1074.12	80.00	1064.12	83.00	1061.12	NP	NP	NP
MW-61A	G-154545DY	2608656.02	492900.05	1108.96	1106.91	2.05	0.02	2.00	6.25	86.00	1020.91	10\20	73.00	75.70	1031.21	85.70	1021.21	87.00	1019.91	NP	NP	NP
MW-61B	G-154545DX	2608644.38	492898.60	1108.96	1106.84	2.12	0.01	2.00	6.25	35.30	1071.54	20\40	21.00	25.00	1081.84	35.00	1071.84	38.00	1068.84	NP	NP	NP
MW-61D	G-154545DW	2608667.93	492901.85	1108.96	1106.85	2.11	0.02	2.00	8.00	102.50	1004.35	10\20	94.30	97.00	1009.85	102.00	1004.85	103.00	1003.85	87.50	1019.35	SH
MW-62A (Abandoned)	G-154545DV	2635396.62	493874.24	1078.66	1076.62	2.04	0.02	2.00	6.25	37.50	1039.12	10\20	25.00	27.00	1049.62	37.00	1039.62	37.50	1039.12	NP	NP	NP
MW-62B (Abandoned)	G-154545DU	2635385.06	493871.95	1078.57	1076.52	2.05	0.01	2.00	6.25	24.50	1052.02	20\40	15.00	17.00	1059.52	24.00	1052.52	25.00	1051.52	NP	NP	NP
MW-62D (Abandoned)	G-154545DT	2635407.14	493876.96	1078.89	1076.90	1.99	0.02	2.00	8.00	49.50	1027.40	10\20	41.00	44.00	1032.90	49.00	1027.90	50.00	1026.90	37.60	1039.30	SS
MW-63B (Abandoned)	G-154545DS	2613167.91	519473.60	1177.45	1175.66	1.90	0.01	2.00	6.00	28.80	1146.86	10\20	13.00	18.50	1157.16	28.50	1147.16	31.40	1144.26	NP	NP	NP
MW-64B (Abandoned)	G-154545DR	2628038.55	510106.02	1144.20	1142.35	1.85	0.01	2.00	6.00	29.50	1112.85	20/40	16.00	19.00	1123.35	29.00	1113.35	31.00	1111.35	NP	NP	NP
MW-65A	G-154545DQ	2613203.05	506090.52	1163.99	1164.83	FM	0.02	2.00	6.50	103.00	1061.83	4/8	91.70	92.50	1072.33	102.50	1062.33	107.50	1057.33	NA	NA	NA
MW-65B	G-154545DP	2613193.30	506091.23	1164.02	1164.86	FM	0.02	2.00	6.50	66.20	1098.66	10/20	31.90	35.40	1129.46	65.40	1099.46	66.50	1098.36	NA	NA	NA
MW-66A (Abandoned)	abandoned	2613278.51	506026.73	1163.09	1163.93	FM	0.02	2.00	6.50	99.50	1064.43	4/8	86.40	89.00	1074.93	99.00	1064.93	104.50	1059.43	NA	NA	NA
MW-66B (Abandoned)	abandoned	2613268.32	506027.61	1163.08	1163.92	FM	0.02	2.00	6.50	64.50	1099.42	10/20	30.20	34.00	1129.92	64.00	1099.92	98.00	1065.92	NA	NA	NA
MW-67A (Abandoned)	abandoned	2613306.23	506004.48	1162.44	1163.28	FM	0.02	2.00	6.50	98.50	1064.78	4/8	85.80	88.00	1075.28	98.00	1065.28	102.50	1060.78	NA	NA	NA
MW-67B (Abandoned)	abandoned	2613314.55	505999.49	1162.68	1163.52	FM	0.02	2.00	6.50	64.50	1099.02	10/20	30.70	34.00	1129.52	64.00	1099.52	66.00	1097.52	NA	NA	NA
MW-68B (Abandoned)	abandoned	2613320.78	506024.53	1164.06	1164.90	FM	0.02	2.00	6.50	66.50	1098.40	10/20	32.20	36.00	1128.90	66.00	1098.90	68.50	1096.40	NA	NA	NA
MW-69B (Abandoned)	abandoned	2613341.62	506046.74	1165.08	1165.92	FM	0.02	2.00	6.50	66.50	1099.42	10/20	32.30	36.00	1129.92	66.00	1099.92	68.00	1097.92	NA	NA	NA
MW-70B (Abandoned)	abandoned	2613362.30	506068.63	1165.27	1166.11	FM	0.02	2.00	6.50	66.50	1099.61	10/20	32.00	36.00	1130.11	66.00	1100.11	68.00	1098.11	NA	NA	NA
MW-71B	G-154545DO	2613382.62	506090.27	1165.38	1166.22	FM	0.02	2.00	6.50	66.50	1099.72	10/20	33.70	36.00	1130.22	66.00	1100.22	68.00	1098.22	NA	NA	NA
MW-72A	G-154545DN	2622930.98	512064.69	1170.37	1171.21	FM	0.02	2.00	6.50	108.50	1062.71	4/8	86.00	88.00	1083.21	108.00	1063.21	110.00	1061.21	NA	NA	NA
MW-72B	G-154545DM	2622921.73	512064.19	1169.92	1170.76	FM	0.02	2.00	6.50	70.50	1100.26	10/20	37.00	40.00	1130.76	70.00	1100.76	71.20	1099.56	NA	NA	NA

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
MW-73A	G-154545DL	2623060.93	511909.15	1166.95	1167.79	FM	0.02	2.00	6.50	108.50	1059.29	4/8	83.00	88.00	1079.79	108.00	1059.79	109.00	1058.79	NA	NA	NA
MW-73B	G-154545DK	2623052.30	511908.70	1166.90	1167.74	FM	0.02	2.00	6.50	70.50	1097.24	10/20	37.00	40.00	1127.74	70.00	1097.74	72.00	1095.74	NA	NA	NA
MW-74A	G-154545DJ	2623093.85	511934.84	1166.94	1167.78	FM	0.02	2.00	6.50	108.60	1059.18	4/8	85.50	88.10	1079.68	108.10	1059.68	110.00	1057.78	NA	NA	NA
MW-74B	G-154545DI	2623085.26	511934.80	1167.04	1167.88	FM	0.02	2.00	6.50	70.50	1097.38	10/20	37.00	40.00	1127.88	70.00	1097.88	71.00	1096.88	NA	NA	NA
MW-75A	G-154545DH	2623130.00	511962.35	1167.13	1167.97	FM	0.02	2.00	6.50	107.60	1060.37	4/8	86.10	87.10	1080.87	107.10	1060.87	110.00	1057.97	NA	NA	NA
MW-75B	G-154545DG	2623120.34	511961.81	1167.30	1168.14	FM	0.02	2.00	6.50	70.50	1097.64	10/20	38.20	40.00	1128.14	70.00	1098.14	71.00	1097.14	NA	NA	NA
MW-76A	G-154545FQ	2623158.64	511983.32	1166.24	1167.08	FM	0.02	2.00	6.50	108.50	1058.58	4/8	86.20	88.00	1079.08	108.50	1058.58	110.00	1057.08	NA	NA	NA
MW-76B	G-154545DF	2623148.91	511982.59	1166.48	1167.32	FM	0.02	2.00	6.50	71.00	1096.32	10/20	38.40	40.50	1126.82	70.50	1096.82	71.00	1096.32	NA	NA	NA
MW-77A	G-154545DE	2623192.11	512008.01	1165.73	1166.57	FM	0.02	2.00	6.50	104.00	1062.57	4/8	81.30	83.50	1083.07	103.50	1063.07	107.00	1059.57	NA	NA	NA
MW-77B	G-154545DD	2623180.56	512007.28	1165.79	1166.63	FM	0.02	2.00	6.50	70.50	1096.13	10/20	38.70	40.00	1126.63	70.00	1096.63	71.00	1095.63	NA	NA	NA
MW-78A	G-154545DC	2623223.84	512032.75	1165.27	1166.11	FM	0.02	2.00	6.50	105.50	1060.61	4/8	83.60	85.00	1081.11	105.00	1061.11	106.90	1059.21	NA	NA	NA
MW-78B	G-154545DB	2623213.77	512031.30	1165.35	1166.19	FM	0.02	2.00	6.50	70.50	1095.69	10/20	37.00	40.00	1126.19	70.00	1096.19	71.00	1095.19	NA	NA	NA
MW-79A	G-141658A	2610432.14	492336.21	1109.34	1107.15	2.19	0.01	2.00	6.00	86.00	1021.15	NAT	71.00	76.00	1031.15	86.00	1021.15	86.00	1021.15	85.70	1021.45	SH
MW-79B	G-141658B	2610428.14	492345.18	1109.39	1107.17	2.22	0.01	2.00	6.00	40.40	1066.77	20/40	27.90	30.20	1076.97	40.20	1066.97	40.40	1066.77	NP	NP	NP
MW-80A	G-141658C	2610925.54	492067.12	1107.43	1105.27	2.16	0.01	2.00	6.00	79.17	1026.10	NAT	67.10	69.17	1036.10	79.17	1026.10	79.17	1026.10	82.50	1022.77	SS
MW-80B	G-141658D	2610916.24	492064.59	1107.65	1105.46	2.19	0.01	2.00	6.00	40.00	1065.46	20/40	26.70	30.00	1075.46	40.00	1065.46	40.40	1065.06	NP	NP	NP
MW-80D	G-141658E	2610935.55	492068.65	1107.40	1105.22	2.18	0.02	2.00	6.00	92.70	1012.52	10\20	86.50	87.70	1017.52	92.70	1012.52	92.80	1012.42	82.50	1022.72	SS
MW-81A	G-141658F	2611637.99	492369.38	1108.48	1106.30	2.18	0.01	2.00	6.00	92.00	1014.30	NAT	82.00	79.00	1027.30	92.00	1014.30	92.00	1014.30	94.20	1012.10	SS
MW-81B	G-141658G	2611635.91	492360.36	1108.47	1106.29	2.18	0.01	2.00	6.00	38.40	1067.89	20/40	26.10	28.20	1078.09	38.20	1068.09	38.40	1067.89	NP	NP	NP
MW-81D	G-141658H	2611633.37	492349.85	1108.53	1106.40	2.13	0.02	2.00	6.00	104.60	1001.80	10/20	97.80	99.10	1007.30	104.10	1002.30	104.60	1001.80	94.20	1012.20	SS
MW-82A	G-141124A	2619288.65	493318.05	1149.14	1147.10	2.04	0.02	2.00	6.00	94.50	1052.60	NAT	67.20	89.50	1057.60	94.50	1052.60	94.75	1052.35	NP	NP	NP
MW-82B	G-141124B	2619284.94	493325.47	1149.12	1147.20	1.92	0.01	2.00	6.00	66.50	1080.70	12/20	58.90	61.20	1086.00	65.70	1081.50	66.40	1080.80	NP	NP	NP
MW-82D	G-141124C	2619293.00	493310.90	1149.22	1147.10	2.12	0.02	2.00	6.00	125.50	1021.60	12/20	117.50	120.00	1027.10	125.00	1022.10	125.75	1021.35	112.00	1035.10	SS
MW-83A	G-141124D	2621924.08	495274.66	1152.41	1150.20	2.21	0.02	2.00	6.00	109.00	1041.20	NAT	103.00	103.50	1046.70	108.50	1041.70	110.00	1040.20	NP	NP	NP
MW-83B	G-141124E	2621921.79	495302.77	1152.28	1150.40	1.88	0.01	2.00	6.00	80.00	1070.40	12/20	72.70	75.00	1075.40	80.00	1070.40	80.00	1070.40	NP	NP	NP
MW-83D	G-141124F	2621922.97	495288.85	1152.32	1150.30	2.02	0.02	2.00	6.00	122.50	1027.80	12/20	113.70	116.00	1034.30	121.00	1029.30	122.50	1027.80	111.00	1039.30	SS
MW-84A	G-141124G	2624277.77	495685.51	1145.34	1143.20	2.14	0.02	2.00	6.00	91.65	1051.55	NAT	86.30	87.13	1056.07	91.13	1052.07	91.65	1051.55	NP	NP	NP
MW-84AR (Abandoned	abandoned	2624273.89	495704.26	1145.26	1143.20	2.06	0.02	2.00	6.00	103.00	1040.20	NAT	96.50	97.50	1045.70	102.50	1040.70	103.00	1040.20	102.50	1040.70	SS
MW-84B	G-141124I	2624272.04	495712.90	1145.62	1143.30	2.32	0.01	2.00	6.00	72.00	1071.30	12/20	64.70	66.50	1076.80	71.50	1071.80	72.00	1071.30	NP	NP	NP
MW-84D	G-141124J	2624275.75	495695.58	1145.37	1143.20	2.17	0.02	2.00	6.00	110.00	1033.20	12/20	100.80	103.50	1039.70	108.50	1034.70	110.00	1033.20	97.50	1045.70	SS
MW-85A	G-141124K	2628326.53	494439.02	1132.58	1130.50	2.08	0.01	2.00	6.00	86.00	1044.50	NAT	80.50	81.00	1049.50	86.00	1044.50	87.00	1043.50	86.00	1044.50	SS
MW-85B	G-141124L	2628315.15	494449.81	1132.39	1130.40	1.99	0.02	2.00	6.00	66.30	1064.10	12/20	60.00	62.00	1068.40	67.00	1063.40	66.30	1064.10	NP	NP	NP
MW-85D	G-141124M	2628338.54	494428.03	1132.59	1130.40	2.19	0.02	2.00	6.00	96.00	1034.40	12/20	87.85	90.00	1040.40	95.00	1035.40	96.35	1034.05	84.50	1045.90	SS
MW-86A	G-144684A	2631939.21	493759.74	1114.15	1111.78	2.37	0.01	2.00	8.50	62.50	1049.28	NAT	49.75	52.50	1059.28	62.50	1049.28	63.50	1048.28			
MW-86B	G-144684B	2631933.61	493758.65	1114.58	1112.08	2.50	0.01	2.00	8.50	54.00	1058.08	20/40	41.00	43.00	1069.08	53.00	1059.08	54.00	1058.08			
MW-86D	G-144684C	2631944.47	493760.43	1113.90	1111.48	2.42	0.02	2.00	6.00	74.50	1036.98	10/20	67.50	68.98	1042.50	74.50	1036.98	75.20	1036.28	63.00	1048.48	SS
MW-87A	G-144683A	2635039.81	491898.03	1078.38	1075.83	2.55	0.01	2.00	8.50	46.00	1029.83	NAT	34.00	36.00	1039.83	46.00	1029.83	47.00	1028.83			
MW-87B	G-144683B	2635035.21	491900.97	1078.38	1075.83	2.55	0.01	2.00	8.50	27.00	1048.83	20/40	15.00	17.00	1058.83	27.00	1048.83	28.00	1047.83			
MW-87D	G-144683C	2635044.01	491895.21	1078.39	1075.83	2.56	0.02	2.00	6.00	55.60	1020.23	10/20	49.40	50.10	1025.73	55.60	1020.23	65.00	1010.83	46.00	1029.83	SS
MW-88A	G-144663A	2637643.92	494045.13	1081.22	1078.71	2.51	0.01	2.00	8.50	45.00	1033.71	NAT	33.00	35.00	1043.71	45.00	1033.71	46.00	1032.71			
MW-88B	G-144663B	2637639.18	494044.21	1081.27	1078.71	2.56	0.01	2.00	8.50	30.00	1048.71	20/40	18.00	20.00	1058.71	30.00	1048.71	31.00	1047.71			
MW-88D	G-144663C	2637648.62	494046.08	1081.30	1078.71	2.59	0.02	2.00	6.00	57.50	1021.21	10/20	49.50	50.50	1028.21	55.50	1023.21	57.50	1021.21	45.00	1033.71	SS
MW-89A	G-141658I	2610430.84	494253.88	1160.99	1158.81	2.18	0.02	2.00	6.00	139.20	1019.61	NAT	126.80	129.20	1029.61	139.20	1019.61	139.20	1019.61	NP	NP	NP
MW-89B	G-141658J	2610408.69	494254.10	1161.37	1159.20	2.17	0.01	2.00	6.00	75.70	1083.50	20/40	63.00	65.00	1094.20	75.70	1083.50	75.70	1083.50	NP	NP	NP
MW-89D	G-141658K	2610451.41	494254.27	1160.65	1158.55	2.10	0.02	2.00	6.00	150.60	1007.95	10/20	143.10	145.00	1013.55	150.60	1007.95	150.60	1007.95	125.00	1033.55	SS
MW-89E	G-157027A	2610466.38	494253.06	1157.24	1161.43	-0.55	0.01	2.00	6.00	95.00	1066.43	NAT	82.30	85.00	1076.43	95.00	1066.43	95.00	1066.43	NP	NP	NP
MW-90A	G-141658L	2611235.54	494302.04	1151.11	1148.94	2.17	0.01	2.00	8.00	123.40	1025.54	NAT	123.40	112.20	1036.74	123.40	1025.54	123.40	1025.54	NP	NP	NP
MW-90B	G-141658M	2611226.60	494297.96	1150.77	1148.60	2.17	0.01	2.00	6.00	75.45	1073.15	20/40	63.50	65.35	1083.25	75.45	1073.15	75.45	1073.15	NP	NP	NP
MW-90D	G-141658N	2611244.85	494306.05	1151.44	1149.25	2.19	0.02	2.00	6.00	135.20	1014.05	10/20	129.10	130.20	1019.05	135.20	1014.05	135.20	1014.05	125.20	1024.05	SS
MW-91A	G-141658O	2612076.97	494323.00	1152.04	1149.85	2.19	0.01	2.00	8.00	119.20	1030.65	10/20	106.70	109.20	1040.65	119.20	1030.65	119.20	1030.65	NA	NP	NA

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
MW-91B	G-141658P	2612067.85	494317.53	1151.87	1149.66	2.21	0.01	2.00	6.00	77.60	1072.06	20/40	65.50	67.60	1082.06	77.60	1072.06	78.10	1071.56	NA	NP	NA
MW-91D	G-141658Q	2612085.70	494327.97	1151.95	1149.78	2.17	0.02	2.00	6.00	130.20	1019.58	10/20	124.00	125.20	1024.58	130.20	1019.58	130.60	1019.18	120.00	1029.78	SH
MW-92A	G-141658R	2610047.26	492722.58	1108.78	1106.58	2.20	0.01	2.00	6.00	82.16	1024.42	NAT	70.20	72.16	1034.42	82.16	1024.42	82.16	1024.42	82.50	1024.08	SH
MW-92B	G-141658S	2610047.80	492733.82	1108.65	1106.44	2.21	0.01	2.00	6.00	40.10	1066.34	20/40	28.00	30.10	1076.34	40.10	1066.34	40.80	1065.64	NP	NP	NP
MW-93A	G-141658T	2612162.89	493551.29	1124.26	1122.07	2.19	0.01	2.00	6.00	94.20	1027.87	20/40	82.20	84.20	1037.87	94.20	1027.87	94.20	1027.87	95.00	1027.07	SH
MW-93B	G-141658U	2612154.07	493546.80	1123.90	1121.70	2.20	0.01	2.00	6.00	70.00	1051.70	10/20	56.20	60.00	1061.70	70.00	1051.70	70.30	1051.40	NP	NP	NP
MW-94A	G-144677A	2617023.16	496428.72	1153.06	1150.75	2.31	0.01	2.00	8.50	94.00	1056.75	NAT	81.60	84.00	1066.75	94.00	1056.75	95.00	1055.75			
MW-94B	G-144677B	2617023.07	496434.50	1153.09	1150.56	2.53	0.01	2.00	8.50	74.00	1076.56	20/40	62.00	64.00	1086.56	74.00	1076.56	75.00	1075.56			
MW-94D	G-144677C	2617023.47	496422.56	1153.25	1150.82	2.43	0.02	2.00	6.00	121.40	1029.42	10/20	122.40	115.90	1034.92	121.40	1029.42	125.00	1025.82	110.50	1040.32	SH
MW-95A	G-144678A	2617552.81	494508.64	1156.81	1154.32	2.49	0.01	2.00	8.50	104.00	1050.32	NAT	91.00	93.00	1061.32	103.00	1051.32	104.00	1050.32			
MW-95B	G-144678B	2617546.97	494508.01	1156.46	1154.15	2.31	0.01	2.00	8.50	76.00	1078.15	20/40	62.50	65.00	1089.15	75.00	1079.15	76.00	1078.15			
MW-95D	G-144678C	2617558.46	494509.13	1156.82	1154.45	2.37	0.02	2.00	6.00	130.00	1024.45	10/20	123.70	124.50	1029.95	129.50	1024.95	130.00	1024.45	118.00	1036.45	SH
MW-96A	G-144679A	2621468.23	493387.73	1148.56	1146.00	2.56	0.01	2.00	8.50	92.50	1053.50	NAT	80.10	82.50	1063.50	92.50	1053.50	93.50	1052.50			
MW-96B	G-144679B	2621468.23	493387.80	1148.56	1146.00	2.56	0.01	2.00	8.50	81.00	1065.00	20/40	69.00	71.00	1075.00	81.00	1065.00	82.50	1063.50			
MW-96D	G-144679C	2621476.25	493387.89	1148.58	1146.00	2.58	0.02	2.00	6.00	106.50	1039.50	10/20	100.60	101.50	1044.50	106.00	1040.00	110.00	1036.00	96.50	1049.50	SS
MW-97A	G-144680A	2623938.04	493492.83	1143.08	1140.60	2.48	0.01	2.00	8.50	93.00	1047.60	NAT	81.00	83.00	1057.60	93.00	1047.60	94.00	1046.60			
MW-97B	G-144680B	2623932.70	493492.45	1143.18	1140.60	2.58	0.01	2.00	8.50	73.00	1067.60	20/40	66.00	68.00	1072.60	73.00	1067.60	74.00	1066.60			
MW-97D	G-144680C	2623943.48	493493.13	1143.18	1140.60	2.58	0.02	2.00	6.00	105.50	1035.10	10/20	99.00	99.98	1040.62	105.50	1035.10	106.00	1034.60	94.00	1046.60	SS
MW-98A	G-144681A	2626495.30	493604.94	1141.52	1139.00	2.52	0.01	2.00	8.50	92.00	1047.00	NAT	80.00	82.00	1057.00	92.00	1047.00	94.00	1045.00			
MW-98B	G-144681B	2626488.71	493605.28	1141.58	1139.00	2.58	0.01	2.00	8.50	69.00	1070.00	20/40	63.00	64.00	1075.00	69.00	1070.00	75.00	1064.00			
MW-98D	G-144681C	2626502.36	493605.21	1141.58	1139.00	2.58	0.02	2.00	6.00	105.00	1034.00	10/20	96.00	97.00	1042.00	102.00	1037.00	105.00	1034.00	92.00	1047.00	SS
MW-99A	G-144682A	2627117.43	498780.95	1163.04	1160.69	2.35	0.01	2.00	8.50	112.00	1048.69	NAT	99.50	102.00	1058.69	112.00	1048.69	112.00	1048.69			
MW-99B	G-144682B	2627118.41	498787.93	1163.19	1160.87	2.32	0.01	2.00	8.50	86.00	1074.87	20/40	73.00	75.00	1085.87	85.00	1075.87	86.00	1074.87			
MW-99D	G-144682C	2627116.78	498773.69	1162.76	1160.38	2.38	0.02	2.00	6.00	125.00	1035.38	10/20	117.50	118.50	1041.88	123.50	1036.88	125.00	1035.38	112.00	1048.38	SS
MW-100A	G-144662A	2629718.84	493770.41	1141.18	1138.60	2.58	0.01	2.00	8.50	93.00	1045.60	NAT	81.00	83.00	1055.60	93.00	1045.60	105.00	1033.60	94.00	1044.60	SS
MW-100B	G-144662B	2629718.07	493777.19	1141.12	1138.60	2.52	0.01	2.00	8.50	75.00	1063.60	20/40	62.80	65.00	1073.60	75.00	1063.60	76.00	1062.60			
MW-100D	G-144662C	2629718.36	493783.73	1141.22	1138.60	2.62	0.02	2.00	6.00	104.90	1033.70	#5	97.50	99.90	1038.70	104.90	1033.70	110.00	1028.60	94.00	1044.60	SS
MW-101A	G-143845A	2610929.39	491574.12	1107.43	1104.99	2.44	0.01	2.00	8.50	93.00	1011.99	NAT	81.00	83.00	1021.99	93.00	1011.99	105.00	999.99			
MW-101B	G-143845C	2610923.62	491573.82	1107.44	1104.99	2.45	0.01	2.00	8.50	40.00	1064.99	20/40	28.00	30.00	1074.99	40.00	1064.99	41.00	1063.99			
MW-101D	G-144676	2610935.30	491574.49	1107.45	1104.99	2.46	0.02	2.00	6.00	96.20	1008.79	10/20	88.00	90.00	1014.99	95.00	1009.99	96.20	1008.79	83.00	1021.99	SS
MW-102A	G-144675A	2622929.38	514541.24	1170.90	1168.76	2.14	0.01	2.00	8.50	127.00	1041.76	NAT	115.00	117.00	1051.76	127.00	1041.76	128.00	1040.76			
MW-102B	G-144675B	2622923.37	514540.93	1171.13	1168.76	2.37	0.01	2.00	8.50	60.00	1108.76	20/40	46.00	50.00	1118.76	60.00	1108.76	61.00	1107.76			
MW-102D	G-154545BC	2622935.91	514541.49	1171.08	1168.76	2.32	0.02	2.00	6.00	139.50	1029.26	10/20	133.00	134.50	1034.26	139.50	1029.26	141.50	1027.26	128.00	1040.76	SS
MW-103A	G-143845D	2623590.77	513115.79	1173.58	1171.11	2.47	0.01	2.00	8.50	126.50	1044.61	NAT	112.00	116.00	1055.11	126.00	1045.11	126.50	1044.61			
MW-103B	G-143845E	2623591.23	513110.25	1173.80	1171.36	2.44	0.01	2.00	8.50	60.00	1111.36	20/40	48.00	50.00	1121.36	60.00	1111.36	60.00	1111.36			
MW-103D	G-144661	2623589.45	513132.90	1173.22	1170.78	2.44	0.02	2.00	6.00	135.70	1035.08	10/20	128.50	130.00	1040.78	135.00	1035.78	135.70	1035.08	126.00	1040.76	SS
MW-104O	G-152732A	2634073.87	499205.00	1081.69	1078.59	3.10	0.01	2.00	8.00	7.50	1071.09	20-40	5.00	5.30	1073.29	7.30	1071.29	7.50	1071.09	NP	NP	NP
MW-104B	G-152732B	2634082.83	499205.61	1081.27	1078.38	2.89	0.01	2.00	8.00	25.10	1053.28	20-40	12.80	15.10	1063.28	24.60	1053.78	25.50	1052.88	NP	NP	NP
MW-104A	G-152732C	2634092.18	499205.59	1081.26	1078.50	2.76	0.01	2.00	8.00	41.20	1037.30	natural	28.80	31.10	1047.40	40.60	1037.90	41.40	1037.10	40.50	1038.00	SS
MW-104D	G-152732D	2634100.80	499205.35	1081.87	1078.81	3.07	0.02	2.00	8.00	49.60	1029.21	10-20	43.40	44.60	1034.21	49.10	1029.71	50.30	1028.51	40.50	1038.31	SS
MW-105O	G-152732E	2635040.67	496662.29	1080.04	1076.73	3.31	0.01	2.00	8.00	6.70	1070.03	20-40	4.90	5.00	1071.73	6.60	1070.13	7.10	1069.63	NP	NP	NP
MW-105B	G-152732F	2635042.34	496652.98	1079.77	1076.72	3.05	0.01	2.00	8.00	24.95	1051.77	20-40	12.60	14.75	1061.97	24.25	1052.47	25.10	1051.62	NP	NP	NP
MW-105A	G-152732G	2635041.98	496642.99	1079.60	1076.84	2.76	0.01	2.00	8.00	40.26	1036.58	natural	27.81	30.17	1046.67	39.67	1037.17	40.50	1036.34	40.30	1036.54	SS
MW-106A	G-144674A	2630544.55	506843.26	1118.06	1115.50	2.56	0.01	2.00	8.50	67.00	1048.50	NAT	55.00	57.00	1058.50	67.00	1048.50	68.00	1047.50			
MW-106B	G-144674B	2630539.26	506844.10	1117.98	1115.50	2.48	0.01	2.00	8.50	35.00	1080.50	20/40	23.00	25.00	1090.50	35.00	1080.50	36.00	1079.50			
MW-106D	G-144674C	2630549.50	506842.72	1118.18	1115.50	2.68	0.02	2.00	6.00	79.00	1036.50	10/20	72.80	74.00	1041.50	79.00	1036.50	80.00	1035.50	68.00	1047.50	SS
MW-107A	G-144667A	2631375.72	506138.76	1135.79	1136.12	-0.33	0.01	2.00	8.50	88.00	1048.12	NAT	75.40	78.00	1058.12	88.00	1048.12	89.00	1047.12			
MW-107B	G-144667B	2631374.08	506125.16	1136.72	1136.95	-0.23	0.01	2.00	8.50	55.00	1081.95	20/40	43.00	45.00	1091.95	55.00	1081.95	56.00	1080.95			
MW-107D	G-144667C	2631375.03	506131.87	1136.35	1136.70	-0.35	0.02	2.00	6.00	100.50	1036.20	10/20	94.20	95.50	1041.20	100.50	1036.20	101.50	1035.20	89.20	1047.50	SS
MW-108A	G-144666A	2631915.55	505912.28	1126.74	1126.95	-0.21	0.01	2.00	8.50	81.00	1045.95	NAT	69.00	71.00	1055.95	81.00	1045.95	82.00	1044.95			

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
MW-108B	G-144666B	2631917.07	505899.47	1126.98	1127.28	-0.30	0.01	2.00	8.50	45.00	1082.28	20/40	33.00	35.00	1092.28	45.00	1082.28	46.00	1081.28			
MW-108D	G-144666C	2631916.34	505906.33	1126.87	1127.11	-0.24	0.02	2.00	6.00	93.50	1033.61	10/20	87.00	88.50	1038.61	93.50	1033.61	95.50	1031.61	81.50	1045.61	SS
MW-109O	G-152732H	2634805.17	501911.81	1085.88	1083.06	2.82	0.01	2.00	8.00	9.50	1073.56	20-40	6.50	6.70	1076.36	9.20	1073.86	9.50	1073.56	NP	NP	NP
MW-109B	G-152732I	2634805.75	501904.25	1085.98	1083.11	2.87	0.01	2.00	8.00	29.30	1053.81	20-40	17.10	19.20	1063.91	28.70	1054.41	30.50	1052.61	NP	NP	NP
MW-109A	G-152732J	2634807.18	501896.06	1086.25	1083.19	3.07	0.01	2.00	8.00	46.95	1036.24	natural	34.40	36.85	1046.34	46.35	1036.84	46.95	1036.24	46.70	1036.49	SS
MW-110A	G-143845F	2634397.71	504432.79	1094.10	1091.71	2.39	0.01	2.00	8.50	45.00	1046.71	NAT	36.50	39.50	1052.21	44.50	1047.21	45.00	1046.71			
MW-110B	G-143845G	2634397.16	504438.89	1094.49	1092.01	2.48	0.01	2.00	8.50	28.50	1063.51	20/40	20.00	23.00	1069.01	28.00	1064.01	28.50	1063.51			
MW-110D	G-144670	2634398.64	504425.93	1094.36	1091.71	2.65	0.02	2.00	6.00	55.00	1036.71	10/20	49.00	50.00	1041.71	55.00	1036.71	57.00	1034.71	44.75	1046.96	SS
MW-111O	G-152732K	2636152.14	499356.67	1082.48	1079.40	3.08	0.01	2.00	8.00	6.80	1072.60	20-40	4.80	5.00	1074.40	6.50	1072.90	7.00	1072.40	NP	NP	NP
MW-111B	G-152732L	2636151.75	499348.24	1082.61	1079.42	3.19	0.01	2.00	8.00	24.60	1054.82	20-40	12.30	14.50	1064.92	24.00	1055.42	25.00	1054.42	NP	NP	NP
MW-111A	G-152732M	2636151.56	499337.97	1082.82	1079.82	3.00	0.01	2.00	8.00	41.33	1038.49	natural	29.10	31.23	1048.59	40.73	1039.09	41.33	1038.49	40.20	1039.62	SS
MW-112A	G-144669	2637365.72	501825.77	1082.03	1082.38	2.20	0.01	2.00	8.50	48.00	1034.38	NAT	40.50	42.50	1039.88	47.50	1034.88	56.00	1026.38	48.00	1034.38	SH
MW-112B	G-143845H	2637365.30	501832.67	1082.02	1082.38	2.20	0.01	2.00	8.50	26.00	1056.38	20/40	19.80	21.00	1061.38	26.00	1056.38	26.50	1055.88			
MW-113A	G-143845I	2637420.11	500472.22	1080.47	1080.82	2.20	0.01	2.00	8.50	41.00	1039.82	NAT	35.00	36.00	1044.82	41.00	1039.82	42.00	1038.82			
MW-113B	G-143845J	2637419.51	500477.68	1080.42	1080.82	2.20	0.01	2.00	8.50	31.00	1049.82	20/40	25.00	26.00	1054.82	31.00	1049.82	32.00	1048.82			
MW-113D	G-144668	2637420.34	500466.05	1080.49	1080.82	2.20	0.02	2.00	6.00	55.50	1025.32	10/20	48.00	48.70	1032.12	53.70	1027.12	55.50	1025.32	41.50	1039.32	SS
MW-114A	G-144665A	2637470.60	497206.93	1080.32	1077.87	2.20	0.01	2.00	8.50	47.00	1030.87	NAT	32.80	37.00	1040.87	47.00	1030.87	48.00	1029.87			
MW-114B	G-144665B	2637465.73	497204.32	1080.43	1077.87	2.20	0.01	2.00	8.50	30.00	1047.87	20/40	17.80	20.00	1057.87	30.00	1047.87	31.00	1046.87			
MW-114D	G-144665C	2637475.70	497209.79	1080.23	1077.87	2.20	0.02	2.00	6.00	58.00	1019.87	10/20	51.90	52.44	1025.43	58.00	1019.87	60.00	1017.87	48.00	1029.87	SS
MW-115A	G-144672A	2637702.52	495346.88	1081.67	1079.36	2.20	0.01	2.00	8.50	48.00	1031.36	NAT	41.10	43.00	1036.36	48.00	1031.36	49.00	1030.36			
MW-115B	G-144672B	2637696.42	495346.87	1081.77	1079.36	2.20	0.01	2.00	8.50	33.00	1046.36	20/40	26.00	28.00	1051.36	33.00	1046.36	34.00	1045.36			
MW-115D	G-144672C	2637708.86	495346.84	1081.66	1079.36	2.20	0.02	2.00	6.00	59.40	1019.96	10/20	53.00	53.89	1025.47	59.40	1019.96	60.00	1019.36	49.00	1030.36	SS
MW-116A	G-144673A	2636335.80	495297.60	1080.53	1078.07	2.20	0.01	2.00	8.50	42.50	1035.57	NAT	35.75	37.50	1040.57	42.50	1035.57	43.50	1034.57			
MW-116B	G-144673B	2636331.54	495297.24	1080.49	1078.07	2.20	0.01	2.00	8.50	32.00	1046.07	20/40	24.90	27.00	1051.07	32.00	1046.07	33.00	1045.07			
MW-116D	G-144673C	2636334.22	495293.68	1080.46	1078.07	2.20	0.02	2.00	6.00	53.50	1024.57	10/20	47.00	47.98	1030.09	53.50	1024.57	55.00	1023.07	43.00	1035.07	SS
MW-117A	G-144664A	2631041.42	495048.00	1122.26	1122.36	2.20	0.01	2.00	8.50	76.00	1046.36	NAT	63.50	66.00	1056.36	76.00	1046.36	76.00	1046.36			
MW-117B	G-144664B	2631040.50	495053.98	1122.06	1122.36	2.20	0.01	2.00	8.50	53.00	1069.36	20/40	40.90	43.00	1079.36	53.00	1069.36	54.00	1068.36			
MW-117D	G-144664C	2631042.35	495042.20	1122.41	1122.36	2.20	0.02	2.00	6.00	86.50	1035.86	10/20	80.00	81.50	1040.86	86.50	1035.86	95.00	1027.36	76.00	1046.36	SS
MW-118A	G-144671A	2625890.45	496207.70	1143.87	1141.67	2.20	0.01	2.00	8.50	95.25	1046.42	NAT	83.00	84.75	1056.92	95.25	1046.42	105.00	1036.67	97.00	1044.67	SH
MW-118B	G-144671B	2625884.54	496207.84	1143.91	1141.81	2.10	0.01	2.00	8.50	75.00	1066.81	20/40	68.00	70.00	1071.81	75.00	1066.81	76.00	1065.81			
MW-119B	G-152732N	2607941.55	499593.35	1159.28	1159.66	-0.38	0.01	2.00	8.00	84.10	1075.56	20-40	71.80	74.00	1085.66	83.50	1076.16	84.50	1075.16	NP	NP	NP
MW-119A	G-152733	2607952.61	499580.81	1159.14	1159.38	-0.24	0.01	2.00	6.00	129.60	1029.78	natural	116.50	119.70	1039.68	129.20	1030.18	137.00	1022.38	129.90	1029.48	SS
MW-120B	G-152732O	2609372.70	499438.97	1166.33	1166.51	-0.17	0.01	2.00	8.00	75.60	1090.91	20-40	63.00	65.50	1101.01	75.00	1091.51	77.00	1089.51	NP	NP	NP
MW-120E	G-152732P	2609372.68	499430.79	1166.43	1166.76	-0.34	0.01	2.00	8.00	105.20	1061.56	20-40	92.90	95.30	1071.46	104.80	1061.96	105.50	1061.26	NP	NP	NP
MW-120A	G-152765	2609372.30	499419.07	1166.32	1166.72	-0.40	0.01	2.00	6.00	138.60	1028.12	natural	125.00	128.70	1038.02	138.20	1028.52	148.00	1018.72	138.10	1028.62	SS
MW-120D	G-152766	2609371.09	499409.47	1166.62	1166.88	-0.26	0.02	2.00	6.00	148.80	1018.08	10-20	142.00	144.00	1022.88	148.40	1018.48	150.00	1016.88	138.00	1028.88	SS
MW-121B	G-152732Q	2609779.26	500071.59	1170.13	1170.48	-0.35	0.01	2.00	8.00	85.80	1084.68	20-40	73.40	75.70	1094.78	85.20	1085.28	86.60	1083.88	NP	NP	NP
MW-121E	G-152732R	2609763.30	500071.29	1170.07	1170.27	-0.21	0.01	2.00	8.00	115.60	1054.67	natural	103.70	105.50	1064.77	115.00	1055.27	116.00	1054.27	NP	NP	NP
MW-121A	G-152767	2609752.79	500071.02	1170.04	1170.27	-0.23	0.01	2.00	6.00	142.50	1027.77	natural	130.00	132.60	1037.67	142.10	1028.17	152.00	1018.27	141.80	1028.47	SS
MW-122B	G-152732S	2609232.29	498114.61	1166.52	1166.89	-0.37	0.01	2.00	8.00	107.80	1059.09	20-40	94.30	97.60	1069.29	107.10	1059.79	108.50	1058.39	NP	NP	NP
MW-122A	G-152734	2609240.41	498101.34	1165.76	1166.25	-0.49	0.01	2.00	6.00	138.40	1027.85	natural	126.00	128.50	1037.75	138.00	1028.25	142.00	1024.25	138.00	1028.25	SH
MW-123B	G-152732T	2608666.00	499909.02	1168.97	1169.33	-0.35	0.01	2.00	8.00	100.20	1069.13	20-40	86.90	90.10	1079.23	99.60	1069.73	100.40	1068.93	NP	NP	NP
MW-123A	G-152735	2608677.91	499909.07	1168.99	1169.28	-0.30	0.01	2.00	6.00	141.70	1027.58	natural	127.50	131.80	1037.48	141.30	1027.98	147.00	1022.28	141.90	1027.38	SS
MW-124B	G-152732U	2609107.79	501496.31	1161.59	1162.12	-0.53	0.01	2.00	8.00	79.80	1082.32	20-40	66.80	69.70	1092.42	79.20	1082.92	80.50	1081.62	NP	NP	NP
MW-124A	G-152732V	2609115.81	501486.16	1161.89	1162.25	-0.36	0.01	2.00	8.00	110.40	1051.85	natural	96.80	100.30	1061.95	109.80	1052.45	110.50	1051.75	NP	NP	NP
MW-124D	G-152736	2609125.65	501475.69	1161.82	1162.24	-0.42	0.02	2.00	6.00	126.10	1036.14	10-20	118.80	121.30	1040.94	125.70	1036.54	127.00	1035.24	115.10	1047.14	SH
MW-125B	G-152732W	2609468.11	500661.63	1162.14	1162.54	-0.40	0.01	2.00	8.00	86.80	1075.74	20-40	74.00	76.70	1085.84	86.20	1076.34	87.30	1075.24	NP	NP	NP
MW-125A	G-152732X	2609457.06	500663.23	1162.05	1162.35	-0.30	0.01	2.00	8.00	128.00	1034.35	natural	115.60	117.90	1044.45	127.40	1034.95	128.50	1033.85	127.50	1034.85	SH
MW-125D	G-152737	2609446.30	500664.74	1161.52	1161.80	-0.28	0.02	2.00	6.00	139.20	1022.60	10-20	132.40	134.40	1027.40	138.80	1023.00	140.00	1021.80	127.50	1034.30	SH
MW-126B	G-152732Y	2607482.56	504514.66	1171.29	1171.60	-0.31	0.01	2.00	8.00	92.50	1079.10	20-40	78.80	82.30	1089.30	91.80	1079.80	93.20	1078.40	NP	NP	NP

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
MW-126A	G-152732Z	2607483.63	504504.82	1170.87	1171.21	-0.34	0.01	2.00	8.00	122.40	1048.81	natural	109.90	112.30	1058.91	121.80	1049.41	123.10	1048.11	NP	NP	NP
MW-126D	G-152768	2607483.02	504494.77	1170.26	1170.71	-0.45	0.02	2.00	6.00	153.60	1017.11	10-20	146.50	148.80	1021.91	153.20	1017.51	154.00	1016.71	141.50	1029.21	SS
MW-127E	G-152732AA	2606121.31	506941.60	1169.40	1169.84	-0.43	0.01	2.00	8.00	61.70	1108.14	20-40	48.30	51.60	1118.24	61.10	1108.74	61.90	1107.94	NP	NP	NP
MW-127B	G-152732AB	2606121.65	506931.42	1169.37	1169.66	-0.29	0.01	2.00	8.00	82.00	1087.66	20-40	67.60	71.90	1097.76	81.40	1088.26	82.80	1086.86	NP	NP	NP
MW-127A	G-152738	2606121.55	506918.35	1168.95	1169.30	-0.35	0.01	2.00	6.00	128.40	1040.90	natural	117.50	118.50	1050.80	128.00	1041.30	137.00	1032.30	128.50	1040.80	SH
MW-128A	G-152715D	2624836.13	498190.80	1156.97	1154.26	2.71	0.01	2.00	8.00	106.20	1048.06	NAT	93.00	96.20	1058.06	106.20	1048.06	106.20	1048.06	NP	NP	NP
MW-128B	G-152715E	2624838.49	498197.84	1156.94	1154.30	2.64	0.01	2.00	8.00	90.10	1064.20	20/40	77.90	79.50	1074.80	90.10	1064.20	90.10	1064.20	NP	NP	NP
MW-128D	G-152957A	2624833.49	498183.94	1156.84	1154.10	2.74	0.02	2.00	6.00	117.00	1037.10	10/20	109.50	112.00	1042.10	117.00	1037.10	117.00	1037.10	107.40	1046.70	SS
MW-129A	G-152715F	2627766.39	496542.43	1149.77	1146.77	3.00	0.01	2.00	8.00	99.50	1047.27	NAT	86.00	89.50	1057.27	99.50	1047.27	99.50	1047.27	NP	NP	NP
MW-129B	G-152715G	2627771.40	496545.39	1149.72	1146.79	2.93	0.01	2.00	8.00	84.10	1062.69	10/20	72.00	74.10	1072.69	84.10	1062.69	84.10	1062.69	NP	NP	NP
MW-129D	G-152957B	2627759.96	496536.62	1149.46	1146.52	2.94	0.02	2.00	6.00	112.00	1034.52	10/20	104.00	106.00	1040.52	111.00	1035.52	112.00	1034.52	101.00	1045.52	SS
MW-130A	G-152715H	2629053.38	496650.27	1145.47	1143.16	2.31	0.01	2.00	8.00	99.00	1044.16	NAT	87.00	89.00	1054.16	99.00	1044.16	99.00	1044.16	NP	NP	NP
MW-130B	G-152715I	2629059.01	496659.85	1145.92	1143.22	2.70	0.01	2.00	8.00	79.90	1063.32	10/20	64.00	69.90	1073.32	79.90	1063.32	79.90	1063.32	NP	NP	NP
MW-130D	G-152957C	2629047.82	496641.12	1145.15	1142.69	2.46	0.02	2.00	6.00	106.00	1036.69	10/20	100.00	101.00	1041.69	106.00	1036.69	117.00	1025.69	98.00	1044.69	SS/SH
MW-131A	G-152715J	2626341.54	496939.83	1148.09	1145.38	2.71	0.01	2.00	8.00	99.00	1046.38	NAT	86.00	88.50	1056.88	98.50	1046.88	99.00	1046.38	NP	NP	NP
MW-131B	G-152715K	2626348.52	496944.69	1147.94	1145.27	2.67	0.01	2.00	8.00	80.50	1064.77	20/40	68.00	70.50	1074.77	80.50	1064.77	80.50	1064.77	NP	NP	NP
MW-131D	G-152957D	2626333.42	496933.31	1148.10	1145.22	2.88	0.02	2.00	6.00	107.00	1038.22	10/20	101.00	102.00	1043.22	107.00	1038.22	107.00	1038.22	98.00	1047.22	SS
MW-132A	G-152715L	2625254.59	497254.40	1160.09	1157.28	2.81	0.01	2.00	8.00	105.50	1051.78	NAT	93.00	95.40	1061.88	105.40	1051.88	105.50	1051.78	NP	NP	NP
MW-132B	G-152715M	2625258.17	497261.76	1159.81	1157.00	2.81	0.01	2.00	6.00	91.50	1065.50	20/40	78.60	81.30	1075.70	91.30	1065.70	91.50	1065.50	NP	NP	NP
MW-132D	G-152957E	2625250.89	497247.01	1160.44	1157.27	3.17	0.02	2.00	6.00	117.00	1040.27	10/20	110.00	112.00	1045.27	117.00	1040.27	117.00	1040.27	107.50	1049.77	SS
MW-133A	G-152715N	2622522.67	509720.93	1167.41	1167.03	0.38	0.01	2.00	8.00	106.50	1060.53	NAT	93.80	96.50	1070.53	106.50	1060.53	106.50	1060.53	NP	NP	NP
MW-133B	G-152715O	2622522.69	509729.90	1167.55	1167.03	0.52	0.01	2.00	8.00	76.00	1091.03	20/40	64.00	66.00	1101.03	76.00	1091.03	76.00	1091.03	NP	NP	NP
MW-133D	G-152957F	2622523.17	509713.15	1167.19	1167.05	0.14	0.02	2.00	6.00	117.50	1049.55	10/20	110.00	111.00	1056.05	117.00	1050.05	117.50	1049.55	106.50	1060.55	SS
MW-134A	G-152715P	2623417.21	509045.74	1168.44	1168.62	-0.18	0.01	2.00	8.00	113.00	1055.62	NAT	101.00	103.00	1065.62	113.00	1055.62	113.00	1055.62	NP	NP	NP
MW-134B	G-152715Q	2623413.31	509052.47	1168.55	1168.71	-0.16	0.01	2.00	8.00	78.00	1090.71	20/40	66.00	68.00	1100.71	78.00	1090.71	78.00	1090.71	NP	NP	NP
MW-134D	G-152957G	2623421.55	509039.29	1168.68	1168.85	-0.17	0.02	2.00	6.00	127.00	1041.85	10/20	115.00	123.00	1045.85	127.00	1041.85	127.00	1041.85	114.00	1054.85	SH/SS
MW-135A	G-152715R	2623150.45	509762.33	1165.77	1165.62	0.15	0.01	2.00	8.00	110.00	1055.62	NAT	96.00	99.70	1065.92	109.70	1055.92	110.00	1055.62	NP	NP	NP
MW-135B	G-152715S	2623151.02	509772.44	1165.71	1165.69	0.02	0.01	2.00	8.00	70.00	1095.69	20/40	58.00	60.00	1105.69	70.00	1095.69	70.00	1095.69	NP	NP	NP
MW-135D	G-152957H	2623149.03	509752.68	1165.51	1165.67	-0.16	0.02	2.00	6.00	122.00	1043.67	10/20	115.00	117.00	1048.67	122.00	1043.67	122.00	1043.67	110.00	1055.67	SS
MW-136E	G-152732AC	2623075.88	510559.75	1168.29	1168.69	-0.40	0.01	2.00	8.00	60.60	1108.09	20-40	38.50	40.50	1128.19	60.00	1108.69	61.00	1107.69	NP	NP	NP
MW-136B	G-152732AD	2623064.05	510560.70	1168.14	1168.34	-0.20	0.01	2.00	8.00	75.10	1093.24	20-40	62.00	65.00	1103.34	74.50	1093.84	75.35	1092.99	NP	NP	NP
MW-136A	G-152732AE	2623054.23	510561.26	1167.96	1168.40	-0.44	0.01	2.00	8.00	109.60	1058.80	natural	96.20	99.50	1068.90	109.00	1059.40	110.00	1058.40	109.10	1059.30	SS
MW-136D	G-152769	2623043.85	510561.58	1167.61	1168.07	-0.46	0.02	2.00	6.00	124.80	1043.27	10-20	118.00	120.00	1048.07	124.40	1043.67	127.00	1041.07	109.10	1058.97	SS
MW-137E	G-152732AF	2622857.08	511706.78	1166.17	1166.44	-0.27	0.01	2.00	8.00	62.75	1103.69	20-40	39.25	42.35	1124.09	62.05	1104.39	62.75	1103.69	NP	NP	NP
MW-137B	G-152732AG	2622846.21	511704.35	1166.04	1166.43	-0.38	0.01	2.00	8.00	72.70	1093.73	20-40	60.30	62.60	1103.83	72.10	1094.33	75.30	1091.13	NP	NP	NP
MW-137A	G-152732AH	2622837.54	511702.36	1166.31	1166.48	-0.17	0.01	2.00	8.00	103.20	1063.28	natural	91.10	93.20	1073.28	102.70	1063.78	103.60	1062.88	NP	NP	NP
MW-137D	G-152739	2622826.93	511700.85	1165.98	1166.54	-0.56	0.02	2.00	6.00	117.00	1049.54	10-20	109.00	112.20	1054.34	116.60	1049.94	117.00	1049.54	104.20	1062.34	SS
MW-138B	G-152732AI	2622378.08	512817.20	1176.22	1173.22	3.00	0.01	2.00	8.00	74.59	1098.63	20-40	61.96	64.49	1108.73	73.99	1099.23	75.50	1097.72	NP	NP	NP
MW-138A	G-152740	2622366.41	512816.57	1175.83	1173.35	2.48	0.01	2.00	6.00	127.00	1046.35	10-20	113.50	117.10	1056.25	126.60	1046.75	137.00	1036.35	127.20	1046.15	SS
MW-139B	G-152732AJ	2621297.04	514275.44	1180.61	1177.86	2.75	0.01	2.00	8.00	81.75	1096.11	20-40	69.30	71.33	1106.53	81.20	1096.66	82.67	1095.19	NP	NP	NP
MW-139A	G-152741	2621290.29	514264.29	1180.32	1177.69	2.63	0.01	2.00	6.00	141.40	1036.29	natural	130.90	131.50	1046.19	141.00	1036.69	142.00	1035.69	139.90	1037.79	SS
MW-140O	G-152732AK	2634717.20	503393.26	1092.60	1089.93	2.67	0.01	2.00	8.00	9.30	1080.63	20-40	6.30	6.50	1083.43	9.00	1080.93	9.40	1080.53	NP	NP	NP
MW-140B	G-152732AL	2634717.22	503383.63	1092.42	1089.89	2.53	0.01	2.00	8.00	23.10	1066.79	20-40	10.90	13.00	1076.89	22.50	1067.39	23.10	1066.79	NP	NP	NP
MW-140A	G-152732AM	2634717.63	503375.83	1092.50	1089.68	2.82	0.01	2.00	8.00	47.20	1042.48	natural	34.80	37.00	1052.68	46.50	1043.18	47.50	1042.18	46.70	1042.98	SS
MW-140D	G-152742	2634718.42	503365.40	1092.30	1090.06	2.23	0.02	2.00	6.00	61.90	1028.16	10-20	54.70	57.10	1032.96	61.50	1028.56	62.00	1028.06	46.70	1043.36	SS
MW-141A	G-157069	2608446.60	502590.64	1162.07	1165.96	-0.35	0.02	2.00	6.00	115.00	1050.96	12/20	101.00	105.00	1060.96	115.00	1050.96	145.00	1020.96	125.00	1040.96	SS
MW-141B	G-157027B	2608446.50	502597.16	1162.10	1166.08	-0.32	0.02	2.00	6.00	60.00	1106.08	20/40	46.00	50.00	1116.08	60.00	1106.08	60.00	1106.08	NP	NP	NP
MW-141E	G-157027C	2608446.50	502604.35	1162.07	1165.94	-0.28	0.01	2.00	6.00	90.00	1075.94	natural	75.00	80.00	1085.94	90.00	1075.94	90.00	1075.94	NP	NP	NP
MW-142A	G-157070	2610572.95	495594.89	1154.43	1158.21	-0.38	0.02	2.00	6.00	135.00	1023.21	10/20	112.20	115.00	1043.21	125.00	1033.21	135.00	1023.21	131.00	1027.21	SS
MW-142E	G-157027D	2610563.98	495595.06	1154.15	1157.96	-0.40	0.02	2.00	8.50	100.00	1057.96	natural	91.00	90.00	1067.96	100.00	1057.96	100.00	1057.96	NP	NP	NP

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
MW-143B	G-157071/G-157	2621339.98	502719.77	1155.87	1160.09	-0.57	0.02	2.00	6.00	62.00	1098.09	10/20	48.00	52.00	1108.09	62.00	1098.09	62.00	1098.09	NP	NP	NP
MW-144A	G-157072	2614012.25	503570.97	1164.17	1168.17	-0.34	0.02	2.00	6.00	101.00	1067.17	12/20	85.00	91.00	1077.17	101.00	1067.17	105.00	1063.17	101.00	1067.17	SH
MW-144E	G-157027F	2614019.84	503573.10	1164.47	1168.52	-0.31	0.02	2.00	6.00	85.00	1083.52	20/40	71.00	75.00	1093.52	85.00	1083.52	85.00	1083.52	NP	NP	NP
MW-145A	G-157073	2617407.83	500652.84	1160.75	1164.91	-0.33	0.02	2.00	6.00	95.70	1069.21	10/20	81.00	85.70	1079.21	95.70	1069.21	96.00	1068.91	NP	NP	NP
MW-145E	G-157027G	2617414.44	500652.99	1160.89	1165.03	-0.37	0.01	2.00	8.50	82.00	1083.03	natural	69.00	72.00	1093.03	82.00	1083.03	82.00	1083.03	NP	NP	NP
MW-146A	Awaiting # from DNR	2618871.66	494899.38	1148.18	1152.23	-0.32	0.02	2.00	8.50	97.00	1055.23	12/20	85.00	87.00	1065.23	97.00	1055.23	125.00	1027.23	97.00	1055.23	SS
MW-146B	G-157027H	2618871.66	494899.37	1148.01	1152.32	-0.43	0.01	2.00	8.50	77.00	1075.32	20/40	65.00	67.00	1085.32	77.00	1075.32	77.00	1075.32	NP	NP	NP
MW-147A	G-157027I	2620042.45	494474.75	1148.92	1153.30	-0.25	0.01	2.00	8.50	100.00	1053.30	natural	88.00	90.00	1063.30	100.00	1053.30	100.00	1053.30	NP	NP	NP
MW-147B	G-157027J	2620045.18	494471.71	1148.74	1152.68	-0.32	0.01	2.00	8.50	77.00	1075.68	20/40	64.50	67.00	1085.68	77.00	1075.68	77.00	1075.68	NP	NP	NP
MW-147D	G-157074	2620047.88	494467.74	1148.52	1152.27	-0.35	0.01	2.00	6.00	125.00	1027.27	12/20	112.00	115.00	1037.27	125.00	1027.27	132.00	1020.27	100.00	1052.27	SS
MW-148B	Awaiting # from DNR	2620179.92	504425.78	1160.53	1162.42	-0.48	0.02	2.00	6.00	75.00	1087.42	12/20	63.00	65.00	1097.42	75.00	1087.42	75.00	1087.42	NP	NP	NP
MW-149A	G-157075	2622398.38	502086.76	1152.23	1156.22	-0.41	0.02	2.00	6.00	90.00	1066.22	12/20	77.50	80.00	1076.22	90.00	1066.22	100.00	1056.22	NP	NP	NP
MW-150A	G-157076	2624201.15	499856.55	1147.59	1151.59	-0.34	0.02	2.00	6.00	90.00	1061.59	12/20	78.00	80.00	1071.59	90.00	1061.59	90.00	1061.59	NP	NP	NP
MW-150B	G-157027K	2624200.78	499864.11	1147.51	1151.47	-0.37	0.01	2.00	8.50	75.00	1076.47	natural	62.80	65.00	1086.47	75.00	1076.47	75.00	1076.47	NP	NP	NP
MW-151A	G-157077	2624392.64	506668.08	1158.65	1162.63	-0.43	0.01	2.00	8.50	104.00	1058.63	natural	91.30	94.00	1068.63	104.00	1058.63	104.00	1058.63	NP	NP	NP
MW-151B	G-157027L	2624386.31	506667.26	1158.72	1162.65	-0.40	0.02	2.00	6.00	80.00	1082.65	20/40	67.00	70.00	1092.65	80.00	1082.65	80.00	1082.65	NP	NP	NP
MW-152B	G-157078/G-157	2627865.21	506805.72	1148.37	1152.22	-0.34	0.02	2.00	6.00	70.00	1082.22	20/40	58.00	60.00	1092.22	70.00	1082.22	75.00	1077.22	NP	NP	NP
MW-153A	Awaiting # from DNR	2627200.19	504130.22	1146.17	1150.05	-0.38	0.02	2.00	6.00	99.50	1050.55	12/20	87.00	89.50	1060.55	99.50	1050.55	100.00	1050.05	97.00	1053.05	SH
MW-153B	G-157027N	2627192.86	504129.53	1146.28	1149.96	-0.34	0.01	2.00	8.50	79.00	1070.96	natural	67.00	69.00	1080.96	79.00	1070.96	79.00	1070.96	NP	NP	NP
MW-154A	G-157079	2631170.17	504308.25	1141.11	1144.87	-0.32	0.02	2.00	6.00	86.00	1058.87	12/20	71.00	76.00	1068.87	86.00	1058.87	86.00	1058.87	NP	NP	NP
MW-154B	G-157027O	2631165.22	504308.20	1141.16	1144.88	-0.32	0.02	2.00	8.50	65.00	1079.88	natural	52.80	55.00	1089.88	65.00	1079.88	65.00	1079.88	NP	NP	NP
MW-155A	G-157027P	2629444.96	502435.45	1141.95	1145.78	-0.44	0.01	2.00	8.50	99.00	1046.78	natural	85.40	89.00	1056.78	99.00	1046.78	99.00	1046.78	NP	NP	NP
MW-155E	G-157027Q	2629444.89	502444.32	1141.78	1145.73	-0.45	0.01	2.00	8.50	79.00	1066.73	natural	65.80	69.00	1076.73	79.00	1066.73	79.00	1066.73	NP	NP	NP
MW-156A	G-157027R	2633019.60	501928.83	1093.89	1097.95	-0.46	0.01	2.00	8.50	46.00	1051.05	natural	33.00	36.00	1061.05	46.00	1051.05	46.00	1051.05	NP	NP	NP
MW-156B	G-157027S	2633018.32	501922.48	1093.96	1097.94	-0.51	0.01	2.00	8.50	26.00	1068.32	20/40	14.00	16.00	1078.32	26.00	1068.32	26.00	1068.32	NP	NP	NP
MW-157A	G-157027T	2632549.30	499117.46	1102.64	1106.31	-0.26	0.01	2.00	8.50	55.00	1051.31	natural	43.00	45.00	1061.31	55.00	1051.31	55.00	1051.31	NP	NP	NP
MW-157B	G-157027U	2632559.03	499118.08	1101.91	1105.77	-0.45	0.01	2.00	8.50	37.00	1068.77	20/40	25.00	27.00	1078.77	37.00	1068.77	37.00	1068.77	NP	NP	NP
MW-158A	G-157027V	2635279.53	493887.42	1076.69	1080.40	-0.33	0.01	2.00	8.50	37.00	1043.40	20/40	22.00	27.00	1053.40	37.00	1043.40	37.00	1043.40	NP	NP	NP
MW-158B	G-157027W	2635272.00	493887.38	1076.36	1080.47	-0.36	0.02	2.00	8.50	24.00	1056.47	10/20	12.00	14.00	1066.47	24.00	1056.47	24.00	1056.47	NP	NP	NP
MW-158D	Awaiting # from DNR	2635266.75	493887.31	1076.63	1080.84	-0.35	0.02	2.00	6.00	49.00	1031.84	10/20	42.00	44.00	1036.84	49.00	1031.84	50.00	1030.84	34.00	1046.84	SS
MW-159A	G-157080	2629111.80	510307.65	1163.51	1167.72	-0.52	0.02	2.00	6.00	120.00	1047.72	10/20	108.00	110.00	1057.72	120.00	1047.72	127.00	1040.72	122.00	1045.72	SH
MW-159B	G-157027X	2629111.63	510300.52	1163.57	1167.57	-0.29	0.01	2.00	8.50	85.00	1082.57	natural	72.50	75.00	1092.57	85.00	1082.57	85.00	1082.57	NP	NP	NP
OW-01	G-154545DA	2607922.86	499747.98	1161.41	1159.51	1.90	0.02	4.00	8.00	152.30	1007.21	10/20	51.80	62.00	1097.51	152.00	1007.51	152.50	1007.01	152.50	1007.01	SH
OW-02	G-154545CZ	2607882.80	499737.42	1161.57	1159.42	2.15	0.02	2.00	6.00	151.30	1008.12	12/25	52.10	61.00	1098.42	151.00	1008.42	151.50	1007.92	151.00	1008.42	SH
OW-03	G-154545CY	2607936.15	499790.42	1161.69	1159.38	2.31	0.02	2.00	6.00	152.00	1007.38	12/25	52.00	61.70	1097.68	151.70	1007.68	152.00	1007.38	152.00	1007.38	SH
OW-04	G-154545CX	2607936.23	499764.72	1161.75	1159.50	2.25	0.02	2.00	6.00	152.30	1007.20	12/25	50.20	62.00	1097.50	152.00	1007.50	152.60	1006.90	152.50	1007.00	SH
OW-05	Awaiting # from DNR	2634934.82	495184.29	1080.35	1078.11	2.24	0.01	4.00	8.00	39.00	1039.11	16/35	16.10	18.50	1059.61	38.50	1039.61	55.20	1022.91	39.00	1039.11	SS
OW-06	G-154545CW	2634884.33	495208.11	1079.22	1076.55	2.67	0.01	2.00	6.00	70.30	1006.25	16/35	49.90	60.00	1016.55	70.00	1006.55	122.00	954.55	39.50	1037.05	SS
OW-07	G-154545CV	2634884.15	495203.34	1079.06	1076.66	2.40	0.01	2.00	6.00	39.00	1037.66	16/35	16.50	18.70	1057.96	38.70	1037.96	39.50	1037.16	39.50	1037.16	SS
OW-08	G-154545FR	2634786.34	495194.19	1078.43	1075.64	2.79	0.01	2.00	6.00	39.70	1035.94	16/35	16.00	19.40	1056.24	39.40	1036.24	39.70	1035.94	39.70	1035.94	SS
OW-09	G-154545CU	2634937.80	495134.36	1080.96	1078.72	2.24	0.01	2.00	6.00	39.30	1039.42	16/35	16.40	19.00	1059.72	39.00	1039.72	40.00	1038.72	40.00	1038.72	SS
OW-10	G-154545CT	2635084.86	495206.73	1079.79	1076.84	2.95	0.01	2.00	5.63	39.50	1037.34	16/30	17.00	19.00	1057.84	39.00	1037.84	39.50	1037.34	39.00	1037.84	SS
OW-11	G-097847H	2635254.36	495167.81	1078.66	1075.87	2.79	0.01	2.00	7.00	43.00	1032.87	# 00	20.00	23.00	1052.87	43.00	1032.87	45.00	1030.87	44.00	1031.87	SS
OW-12	G-097847I	2636332.13	495279.48	1080.19	1077.53	2.66	0.01	2.00	7.00	41.00	1036.53	# 00	18.00	21.00	1056.53	41.00	1036.53	42.00	1035.53	41.00	1036.53	SS
OW-13	G-097847J	2634929.33	495121.80	1081.25	1078.32	2.93	0.01	2.00	7.00	38.50	1039.82	# 00	15.50	18.50	1059.82	38.50	1039.82	40.00	1038.32	39.00	1039.32	SS

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
OW-14	G-097847K	2634937.07	494987.77	1080.52	1077.67	2.85	0.01	2.00	7.00	39.00	1038.67	# 00	16.00	19.00	1058.67	39.00	1038.67	40.00	1037.67	39.00	1038.67	SS
OW-15	G-097847L	2634948.12	494788.06	1080.66	1078.15	2.51	0.01	2.00	7.00	41.00	1037.15	# 00	18.00	21.00	1057.15	41.00	1037.15	43.00	1035.15	42.00	1036.15	SS
OW-16	G-097847M	2633480.01	495159.25	1078.22	1075.13	3.09	0.01	2.00	7.00	38.00	1037.13	# 00	15.00	18.00	1057.13	38.00	1037.13	40.00	1035.13	39.00	1036.13	SS
OW-17	G-097847A	2607999.94	499877.66	1161.58	1159.10	2.48	0.02	2.00	7.00	138.00	1021.10	# 1	45.00	48.00	1111.10	138.00	1021.10	150.50	1008.60	150.00	1009.10	SH
OW-18	G-097847B	2608114.43	499884.02	1162.21	1159.80	2.41	0.02	2.00	7.00	138.00	1021.80	# 1	45.00	48.00	1111.80	138.00	1021.80	150.00	1009.80	149.50	1010.30	SS
OW-19	G-097847C	2608709.98	499902.62	1172.28	1169.49	2.79	0.02	2.00	7.00	144.00	1025.49	# 1	46.00	49.00	1120.49	144.00	1025.49	150.00	1019.49	149.00	1020.49	SS
OW-20	G-097847D	2607954.58	499696.42	1162.79	1160.12	2.67	0.02	2.00	7.00	139.00	1021.12	# 1	46.00	49.00	1111.12	139.00	1021.12	149.00	1011.12	148.00	1012.12	SS
OW-21	G-097847E	2607936.83	499559.45	1159.81	1156.90	2.91	0.02	2.00	7.00	147.00	1009.90	# 1	44.00	47.00	1109.90	147.00	1009.90	155.00	1001.90	154.00	1002.90	SS
OW-22	G-097847F	2608019.74	499355.14	1161.24	1158.59	2.65	0.02	2.00	7.00	140.00	1018.59	# 1	42.00	45.00	1113.59	140.00	1018.59	153.00	1005.59	152.50	1006.09	SS
OW-23	G-097847G	2607158.35	499656.44	1162.08	1158.88	3.20	0.02	2.00	7.00	130.00	1028.88	# 1	47.00	50.00	1108.88	130.00	1028.88	137.50	1021.38	136.50	1022.38	SS
OW-24	G-154545CS	2629552.06	496984.50	1153.07	1149.56	3.51	0.02	2.00	7.88	100.00	1049.56	10/20	46.50	50.00	1099.56	95.00	1054.56	103.00	1046.56	101.00	1048.56	SH
OW-25	G-154545CR	2629511.42	496932.08	1155.71	1152.33	3.38	0.02	2.00	7.88	110.00	1042.33	10/20	42.50	50.00	1102.33	105.00	1047.33	113.00	1039.33	111.00	1041.33	SH
OW-26	G-154545CQ	2629214.17	496664.05	1148.64	1145.12	3.52	0.02	2.00	7.88	100.00	1045.12	10/20	45.50	50.00	1095.12	95.00	1050.12	103.00	1042.12	101.00	1044.12	SH
OW-27	G-154545CP	2629582.05	496942.21	1153.30	1149.80	3.50	0.02	2.00	7.88	95.00	1054.80	10/20	45.00	50.00	1099.80	90.00	1059.80	100.00	1049.80	98.00	1051.80	SH
OW-28	G-154545CO	2629581.52	496898.00	1153.81	1150.76	3.05	0.02	2.00	7.88	100.00	1050.76	10/20	47.00	50.00	1100.76	95.00	1055.76	103.00	1047.76	101.00	1049.76	SH
OW-30	G-154545CN	2629965.06	497303.88	1131.58	1128.69	2.89	0.02	2.00	7.88	85.00	1043.69	10/20	47.00	50.00	1078.69	80.00	1048.69	88.00	1040.69	87.00	1041.69	SH
OW-31	G-154545CM	2624242.96	497898.99	1155.78	1152.35	3.43	0.02	2.00	7.88	105.00	1047.35	10/20	45.00	47.00	1105.35	97.00	1055.35	105.00	1047.35	104.00	1048.35	SS
OW-32	G-154545CL	2624139.95	497845.07	1153.87	1151.31	2.56	0.02	2.00	7.88	100.00	1051.31	10/20	47.00	50.00	1101.31	95.00	1056.31	105.00	1046.31	104.00	1047.31	SH
OW-33	G-154545FS	2623750.57	497669.79	1154.67	1152.38	2.29	0.02	2.00	7.88	113.39	1038.99	10/20	45.00	50.00	1102.38	110.00	1042.38	119.00	1033.38	118.50	1033.88	SS/SH
OW-34	G-154545FT	2624320.18	497868.57	1154.70	1151.61	3.09	0.02	2.00	7.88	93.00	1058.61	10/20	44.00	48.00	1103.61	93.00	1058.61	102.50	1049.11	102.00	1049.61	SS/SH
OW-35	G-154545CK	2624360.77	497738.45	1154.10	1150.66	3.44	0.02	2.00	7.88	100.00	1050.66	10/20	47.00	50.00	1100.66	95.00	1055.66	105.00	1045.66	104.00	1046.66	SS/SH
OW-36	G-154545CJ	2624413.00	497337.59	1157.23	1153.96	3.27	0.02	2.00	7.88	110.00	1043.96	10/20	45.00	50.00	1103.96	105.00	1048.96	113.25	1040.71	113.00	1040.96	SS/SH
OW-37	G-154545CI	2624838.27	498178.35	1157.36	1154.41	2.95	0.02	2.00	7.88	105.00	1049.41	10/20	45.00	50.00	1104.41	100.00	1054.41	109.00	1045.41	108.75	1045.66	SS/SH
OW-38	G-154545CH	2621733.08	496294.86	1151.19	1147.66	3.53	0.02	2.00	7.88	90.00	1057.66	10/20	47.00	50.00	1097.66	90.00	1057.66	99.00	1048.66	98.00	1049.66	SS/SH
OW-39	G-154545CG	2621620.02	496212.33	1151.39	1147.82	3.57	0.02	2.00	7.88	100.00	1047.82	10/20	46.00	50.00	1097.82	95.00	1052.82	98.00	1049.82	97.00	1050.82	SH
OW-40	G-154545CF	2621297.36	495975.58	1157.66	1154.21	3.45	0.02	2.00	7.88	105.00	1049.21	10/20	47.00	50.00	1104.21	100.00	1054.21	105.00	1049.21	104.00	1050.21	SH
OW-41	G-154545CE	2621816.64	496281.90	1150.22	1146.75	3.47	0.02	2.00	7.88	95.00	1051.75	10/20	47.00	50.00	1096.75	90.00	1056.75	97.00	1049.75	95.00	1051.75	SH
OW-42	G-154545CD	2621899.70	496169.43	1151.21	1147.71	3.50	0.02	2.00	7.88	95.00	1052.71	10/20	47.00	50.00	1097.71	90.00	1057.71	97.00	1050.71	95.00	1052.71	SH
OW-43	G-154545CC	2622135.38	495845.76	1156.74	1153.24	3.50	0.02	2.00	7.88	105.00	1048.24	10/20	47.00	50.00	1103.24	100.00	1053.24	105.00	1048.24	103.00	1050.24	SH
OW-44	G-154545CB	2622302.63	496682.05	1147.84	1144.63	3.21	0.02	2.00	7.88	95.00	1049.63	10/20	47.00	50.00	1094.63	90.00	1054.63	95.00	1049.63	94.00	1050.63	SH
OW-45	G-154545CA	2619203.17	494842.21	1152.47	1149.11	3.36	0.02	2.00	7.88	108.00	1041.11	10/20	41.00	44.00	1105.11	104.00	1045.11	117.00	1032.11	114.00	1035.11	SS
OW-46	G-154545BZ	2619059.00	494783.36	1151.55	1148.16	3.39	0.02	2.00	7.88	100.00	1048.16	10/20	43.00	46.00	1102.16	96.00	1052.16	106.00	1042.16	105.50	1042.66	SS
OW-47	G-154545BY	2618684.83	494630.88	1153.44	1149.85	3.59	0.02	2.00	7.88	100.00	1049.85	10/20	43.00	47.00	1102.85	97.00	1052.85	115.00	1034.85	100.00	1049.85	SH
OW-48	G-154545BX	2619283.37	494800.47	1153.38	1150.11	3.27	0.02	2.00	7.88	114.50	1035.61	10/20	44.50	48.50	1101.61	113.50	1036.61	118.50	1031.61	118.00	1032.11	SS
OW-49	G-154545BW	2619315.78	494671.87	1154.09	1150.81	3.28	0.02	2.00	7.88	110.50	1040.31	10/20	45.00	50.00	1100.81	110.00	1040.81	114.50	1036.31	114.00	1036.81	SS
OW-50	G-154545BV	2619465.62	494300.16	1151.16	1147.70	3.46	0.02	2.00	7.88	97.50	1050.20	10/20	45.00	47.00	1100.70	97.00	1050.70	105.00	1042.70	104.50	1043.20	SS
OW-51	G-154545BU	2619790.64	495096.02	1149.86	1146.50	3.36	0.02	2.00	7.88	105.00	1041.50	10/20	47.00	50.00	1096.50	100.00	1046.50	105.00	1041.50	NP	NP	NP
OW-52	G-141658V	2610585.60	493033.91	1107.14	1104.93	2.21	0.02	2.00	6.00	86.00	1018.93	10/20	53.65	55.65	1049.28	86.00	1018.93	86.40	1018.53	NA	NA	NA
OW-53	G-141658W	2610555.96	493019.67	1107.13	1104.92	2.21	0.02	2.00	6.00	82.00	1022.92	10/20	49.55	51.65	1053.27	82.00	1022.92	82.20	1022.72	NA	NA	NA
OW-54	G-141658X	2611356.56	493520.93	1115.39	1113.19	2.20	0.02	2.00	6.00	86.50	1026.69	10/20	54.10	56.15	1057.04	86.50	1026.69	86.70	1026.49	NA	NA	NA
OW-55	G-141658Y	2610821.53	492991.93	1107.05	1104.87	2.18	0.02	2.00	6.00	88.00	1016.87	10/20	55.17	57.17	1047.70	87.60	1017.27	88.00	1016.87	NA	NA	NA
OW-56	G-141658Z	2611642.99	493196.43	1112.15	1109.96	2.19	0.02	2.00	6.00	83.00	1026.96	10/20	50.67	52.67	1057.29	83.00	1026.96	83.50	1026.46	NA	NA	NA
OW-57	G-141658AA	2611768.76	493277.87	1114.84	1112.62	2.22	0.02	2.00	6.00	83.00	1029.62	10/20	50.65	52.65	1059.97	83.00	1029.62	83.40	1029.22	NA	NA	NA
OW-58	G-141658AB	2611366.56	493009.96	1109.00	1106.77	2.23	0.02	2.00	6.00	86.00	1020.77	10/20	53.60	55.67	1051.10	86.00	1020.77	86.50	1020.27	NA	NA	NA
OW-59	G-141658AC	2611579.97	493019.21	1110.50	1108.33	2.17	0.02	2.00	6.00	84.50	1023.83	10/20	52.17	54.17	1054.16	84.50	1023.83	84.90	1023.43	NA	NA	NA
OW-60	G-143845B	2627137.87	497440.67	1149.15	1146.66	2.49	0.01	2.00	8.50	101.00	1045.66	NAT	76.00	81.00	1065.66	101.00	1045.66	101.00	1045.66	NA	NA	NA
OW-61	G-143845K	2627191.65	497571.53	1148.81	1146.51	2.30	0.01	2.00	8.50	101.30	1045.21	NAT	75.00	81.00	1065.51	101.30	1045.21	101.30	1045.21	NA	NA	NA
OW-62	G-143845L	2627351.22	497954.27	1151.40	1149.12	2.28	0.01	2.00	8.50	101.30	1047.82	NAT	75.80	81.00	1068.12	101.30	1047.82	101.30	1047.82	NA	NA	NA
OW-63	G-143845M	2627527.96	497841.89	1152.90	1150.58	2.32	0.01	2.00	8.50	101.30	1049.28	NAT	75.80	81.00	1069.58	101.30	1049.28	101.30	1049.28	NA	NA	NA
OW-64	G-143845N	2627299.94	497308.27	1148.12	1145.62	2.50	0.01	2.00	8.50	101.30	1044.32	NAT	75.00	81.00	1064.62	101.30	1044.32	101.30	1044.32	NA	NA	NA

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
OW-65	G-143845O	2627672.94	497146.26	1147.36	1144.93	2.43	0.01	2.00	8.50	101.30	1043.63	NAT	76.00	81.00	1063.93	101.30	1043.63	101.30	1043.63	NA	NA	NA
OW-66	G-143845P	2622938.07	497314.20	1147.09	1144.70	2.39	0.01	2.00	8.50	86.00	1058.70	NAT	66.00	71.00	1073.70	86.00	1058.70	86.00	1058.70	NA	NA	NA
OW-67	G-143845Q	2622730.72	497150.23	1149.64	1147.31	2.33	0.01	2.00	8.50	86.00	1061.31	NAT	67.50	71.00	1076.31	86.00	1061.31	86.00	1061.31	NA	NA	NA
OW-68	G-143845R	2622418.58	496526.17	1146.89	1144.49	2.40	0.01	2.00	8.50	77.20	1067.29	NAT	58.00	62.20	1082.29	77.20	1067.29	77.20	1067.29	NA	NA	NA
OW-69	G-143845S	2623044.57	497134.81	1147.02	1144.82	2.20	0.01	2.00	8.50	86.00	1058.82	NAT	66.00	71.00	1073.82	86.00	1058.82	86.00	1058.82	NA	NA	NA
OW-70	G-143845T	2623340.91	496845.85	1146.14	1143.72	2.42	0.01	2.00	8.50	86.00	1057.72	NAT	66.00	71.00	1072.72	86.00	1057.72	86.00	1057.72	NA	NA	NA
OW-71	G-143845U	2623796.31	497474.10	1158.23	1155.75	2.48	0.01	2.00	8.50	109.00	1046.75	NAT	73.50	78.50	1077.25	108.50	1047.25	109.00	1046.75	NA	NA	NA
OW-72	G-143845V	2620345.78	495292.98	1156.05	1153.61	2.44	0.01	2.00	8.50	97.00	1056.61	NAT	74.00	77.00	1076.61	97.00	1056.61	97.00	1056.61	NA	NA	NA
OW-73	G-143845W	2620217.61	495239.66	1157.61	1154.97	2.64	0.01	2.00	8.50	97.00	1057.97	NAT	73.00	77.00	1077.97	97.00	1057.97	97.00	1057.97	NA	NA	NA
OW-74	G-143845X	2619854.18	494895.06	1148.38	1146.17	2.21	0.01	2.00	8.50	85.80	1060.37	NAT	62.00	65.80	1080.37	85.80	1060.37	86.00	1060.17	NA	NA	NA
OW-75	G-143845Y	2620487.46	495139.42	1154.51	1152.14	2.37	0.01	2.00	8.50	97.00	1055.14	NAT	74.00	77.00	1075.14	97.00	1055.14	97.00	1055.14	NA	NA	NA
OW-76	G-143845Z	2620657.85	494777.17	1148.68	1146.27	2.41	0.01	2.00	8.50	97.00	1049.27	NAT	74.00	77.00	1069.27	97.00	1049.27	97.00	1049.27	NA	NA	NA
OW-77	G-143845AA	2621414.78	495808.38	1157.82	1155.32	2.50	0.01	2.00	8.50	85.00	1070.32	NAT	61.80	65.00	1090.32	85.00	1070.32	85.00	1070.32	NA	NA	NA
OW-78	G-143845AB	2609111.28	499977.47	1163.94	1161.86	2.08	0.01	2.00	8.50	137.00	1024.86	NAT	87.80	97.00	1064.86	137.00	1024.86	137.00	1024.86	NA	NA	NA
OW-79	G-143845AC	2608989.60	499915.27	1167.29	1167.59	-0.30	0.01	2.00	8.50	135.50	1032.09	NAT	89.00	95.50	1072.09	135.50	1032.09	137.00	1030.59	NA	NA	NA
OW-80	G-143845AD	2608751.82	499731.59	1169.30	1166.93	2.37	0.01	2.00	8.50	113.00	1053.93	NAT	63.60	73.00	1093.93	113.00	1053.93	113.00	1053.93	NA	NA	NA
OW-81	G-143845AE	2609233.49	499803.10	1164.13	1161.98	2.15	0.01	2.00	8.50	137.00	1024.98	NAT	89.00	97.00	1064.98	137.00	1024.98	137.20	1024.78	NA	NA	NA
OW-82	G-143845AF	2609366.00	499415.33	1169.05	1166.76	2.29	0.01	2.00	8.50	137.00	1029.76	NAT	87.90	97.00	1069.76	137.00	1029.76	137.00	1029.76	NA	NA	NA
OW-83	G-143845AG	2609754.89	500075.01	1173.20	1170.94	2.26	0.01	2.00	8.50	137.10	1033.84	NAT	89.00	97.00	1073.94	137.10	1033.84	137.10	1033.84	NA	NA	NA
OW-89	G-143845AH	2632605.05	496433.60	1092.56	1092.96	-0.40	0.01	2.00	8.50	47.30	1045.66	NAT	34.50	37.30	1055.66	47.30	1045.66	47.80	1045.16	NA	NA	NA
OW-90	G-153176	2625244.14	498690.84	1153.30	1152.00	2.72	0.01	2.00	8.50	103.00	1049.00	NAT	83.00	88.00	1064.00	103.00	1049.00	103.00	1049.00	NA	NA	NA
OW-91(Abandoned)	G-151349	2625889.66	497888.61	1150.12	1147.35	2.84	0.01	2.00	8.00	105.00	1042.35	NAT	73.00	85.00	1062.35	105.00	1042.35	105.00	1042.35	NA	NA	NA
OW-92	G-152715A	2625155.78	498583.33	1154.30	1151.63	2.67	0.01	2.00	8.00	104.10	1047.53	NAT	85.00	89.10	1062.53	104.10	1047.53	104.10	1047.53	NA	NA	NA
OW-93	G-152615I	2625291.12	498721.87	1156.87	1153.90	2.97	0.01	2.00	8.50	97.00	1056.90	NAT	83.00	87.00	1066.90	97.00	1056.90	97.00	1056.90	NA	NA	NA
OW-94	G-152715B	2625433.51	498611.46	1153.21	1150.48	2.73	0.01	2.00	8.00	105.00	1045.48	NAT	84.00	90.00	1060.48	105.00	1045.48	105.00	1045.48	NA	NA	NA
OW-95	G-152715C	2625755.73	498358.54	1150.04	1147.57	2.47	0.01	2.00	8.00	104.00	1043.57	NAT	85.00	89.00	1058.57	104.00	1043.57	104.00	1043.57	NA	NA	NA
OW-96	G-151351	2628354.01	496783.72	1146.64	1143.33	3.25	0.01	2.00	8.00	94.00	1049.33	NAT	66.00	74.00	1069.33	94.00	1049.33	94.00	1049.33	NA	NA	NA
OW-97	G-152615A	2628422.98	496909.51	1146.21	1143.71	2.50	0.01	2.00	8.50	103.00	1040.71	NAT	56.00	83.00	1060.71	103.00	1040.71	103.00	1040.71	NA	NA	NA
OW-98	G-152615B	2628617.39	497268.67	1150.67	1148.38	2.29	0.01	2.00	8.50	104.00	1044.38	NAT	80.00	84.00	1064.38	104.00	1044.38	104.00	1044.38	NA	NA	NA
OW-99	G-152615C	2628520.49	496667.07	1146.97	1144.12	2.85	0.01	2.00	8.50	99.50	1044.62	NAT	99.50	79.50	1064.62	99.50	1044.62	99.50	1044.62	NA	NA	NA
OW-100	G-152615D	2628885.60	496489.50	1147.39	1144.96	2.43	0.01	2.00	8.50	98.00	1046.96	NAT	74.00	78.00	1066.96	98.00	1046.96	98.00	1046.96	NA	NA	NA
OW-101	G-151347	2622907.33	509987.52	1168.26	1168.27	-0.01	0.01	2.00	8.00	109.00	1059.27	NAT	68.00	79.00	1089.27	109.00	1059.27	109.00	1059.27	NA	NA	NA
OW-102	G-152615E	2623025.62	510070.30	1166.49	1166.47	0.02	0.01	2.00	8.50	109.50	1056.97	NAT	73.00	79.00	1087.47	109.50	1056.97	109.50	1056.97	NA	NA	NA
OW-103	G-152615F	2623370.57	510291.27	1169.13	1169.11	0.02	0.01	2.00	8.50	112.00	1057.11	NAT	76.00	82.00	1087.11	112.00	1057.11	112.00	1057.11	NA	NA	NA
OW-104	G-152615G	2622969.37	509760.45	1167.73	1167.73	0.00	0.01	2.00	8.50	109.00	1058.73	NAT	73.00	79.00	1088.73	109.00	1058.73	109.00	1058.73	NA	NA	NA
OW-105	G-152615H	2623170.60	509450.30	1165.40	1165.34	0.06	0.01	2.00	8.50	114.00	1051.34	NAT	79.00	84.00	1081.34	114.00	1051.34	114.00	1051.34	NA	NA	NA
TH-EW-12	G-154545FU	2610738.32	493102.14	1107.37	1105.17	2.20	0.02	2.00	6.00	87.50	1017.67	10/20	51.50	57.17	1048.00	87.50	1017.67	93.00	1012.17	90.50	1014.67	SH
TH-EW-13	G-154545FV	2611511.12	493072.65	1111.04	1108.85	2.19	0.02	2.00	6.00	84.83	1024.02	10/20	52.17	53.50	1055.35	83.83	1025.02	84.50	1024.35	84.00	1024.85	SH
TH-EW-14R1	G-152958A	2625268.99	498721.42	1156.72	1154.02	0.85	0.01	3.00	8.00	103.00	1154.02	NAT	82.00	88.00	1154.02	103.00	1154.02	103.00	1154.02	103.00	1154.02	SS
TH-EW-14R2	G-152958B	2625871.91	497850.00	1151.08	1147.74	3.15	0.01	3.00	8.00	105.00	1147.74	NAT	52.00	85.00	1147.74	105.00	1147.74	105.50	1147.74	105.00	1147.74	SS
TH-EW-15	G-151348	2622870.43	509960.21	1172.51	1168.34	4.17	0.01	3.00	8.00	109.00	1168.34	NAT	41.00	79.00	1168.34	109.00	1168.34	109.00	1168.34	109.00	1168.34	SS
TH-EW-16	G-151352	2628310.33	496736.54	1147.71	1144.38	3.90	0.01	3.00	8.00	99.00	1144.38	NAT	53.00	74.00	1144.38	99.00	1144.38	99.00	1144.38	99.00	1144.38	SS
PZ-01		2632385.13	499049.59	1116.38	1114.43	1.95	0.01	1.00	2.60	67.80	1046.63	20/40	45.00	47.80	1066.63	67.80	1046.63	69.00	1045.43	NP	NP	NP
PZ-02		2631558.74	499022.44	1130.80	1128.98	1.82	0.01	1.00	3.13	78.90	1050.08	20/40	56.00	58.70	1070.28	78.70	1050.28	80.00	1048.98	NP	NP	NP
PZ-03		2633505.55	501788.92	1087.47	1085.73	1.74	0.01	1.00	3.13	30.10	1055.63	20/40	8.00	10.10	1075.63	30.10	1055.63	31.00	1054.73	NP	NP	NP
PZ-04		2636059.39	501690.72	1086.65	1084.66	1.99	0.01	1.00	3.13	33.70	1050.96	20/40	11.70	13.70	1070.96	33.70	1050.96	34.00	1050.66	NP	NP	NP
PZ-05		2639988.15	502024.73	1085.66	1084.19	1.47	0.01	1.00	3.13	33.90	1050.29	20/40	11.90	13.90	1070.29	33.90	1050.29	35.00	1049.19	NP	NP	NP
PZ-06		2636834.71	504539.69	1088.42	1086.41	2.01	0.01	1.00	3.13	29.70	1056.71	20/40	7.70	9.70	1076.71	29.70	1056.71	31.00	1055.41	NP	NP	NP
PZ-11	G-157081	2633021.33	501935.48	1097.61	1097.92	-0.31	0.02	2.00	6.00	60.00	1037.92	10/20	53.50	55.00	1042.92	60.00	1037.92	65.00	1032.92	NP	NP	NP

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
PZ-12	G-157082	2632569.72	499118.82	1105.36	1105.72	-0.36	0.02	2.00	6.00	68.00	1037.72	10/20	61.00	63.00	1042.72	68.00	1037.72	70.00	1035.72	NP	NP	SS
PZ-13	G-157083	2633396.43	499150.91	1085.78	1086.09	-0.31	0.02	2.00	6.00	40.00	1046.09	10/20	33.00	35.00	1051.09	40.00	1046.09	40.00	1046.09	NP	NP	NP
PZ-14	G-157084	2633403.55	499154.07	1084.94	1085.31	-0.37	0.02	2.00	6.00	54.00	1031.31	10/20	47.00	49.00	1036.31	54.00	1031.31	57.00	1028.31	NP	NP	SS
EW-1	G-100738	2634923.15	495188.01	1079.43	1078.08	1.35	0.04	12.00	24.00	39.00	1039.08	80/120	18.90	23.00	1055.08	39.00	1039.08	39.00	1039.08	39.00	1039.08	SS
EW-2	G-127291A	2632445.94	496479.68	1104.28	1101.00	3.28	0.05	12.00	24.00	57.85	1043.15	# 1	20.25	46.85	1054.15	56.85	1044.15	58.80	1042.20	58.00	1043.00	SH
EW-3	G-127291B	2629583.28	497009.50	1150.01	1148.00	2.01	0.04	12.00	24.00	103.04	1044.96	NA	58.29	87.04	1060.96	102.04	1045.96	103.80	1044.20	102.80	1045.20	SS
EW-4	G-127291C	2627116.15	497384.35	1148.68	1146.00	2.68	0.02	12.00	24.00	102.25	1043.75	NA	51.75	82.25	1063.75	101.25	1044.75	103.00	1043.00	102.80	1043.20	SS
EW-5	G-127291D	2624295.95	497923.55	1153.98	1151.00	2.98	0.02	12.00	24.00	103.10	1047.90	NA	51.30	81.10	1069.90	102.10	1048.90	104.50	1046.50	103.50	1047.50	SH
EW-6	G-127291E	2622893.13	497269.21	1147.98	1144.00	3.98	0.04	12.00	24.00	87.30	1056.70	NA	42.90	71.30	1072.70	86.30	1057.70	89.50	1054.50	88.50	1055.50	SS
EW-7	G-127291F	2621781.70	496331.02	1148.38	1146.00	2.38	0.02	12.00	24.00	92.21	1053.79	NA	47.21	76.21	1069.79	91.21	1054.79	92.50	1053.50	91.50	1054.50	SS
EW-8	G-100739	2607941.21	499754.08	1160.39	1159.03	1.36	0.04	12.00	24.00	152.00	1007.03	80/120	59.50	72.00	1087.03	152.00	1007.03	156.00	1003.03	152.00	1007.03	SH
EW-9	G-127291G	2620401.52	495319.73	1154.67	1152.00	2.67	0.04	12.00	24.00	98.23	1053.77	NA	49.41	77.23	1074.77	97.23	1054.77	104.00	1048.00	103.00	1049.00	SS
EW-10	G-127291H	2619241.53	494857.11	1150.64	1148.00	2.64	0.02	12.00	24.00	99.77	1048.23	NA	45.00	78.77	1069.23	98.77	1049.23	104.00	1044.00	99.50	1048.50	SS
FEW-11	G-127291I	2609168.88	499998.83	1162.77	1161.00	1.77	0.05	12.00	24.00	138.05	1022.95	NA	42.48	92.05	1068.95	137.05	1023.95	140.00	1021.00	139.00	1022.00	SS
EW-12	G-140506A	2610718.18	493104.87	1113.72	1110.80	2.92	0.03	12.00	24.00	90.50	1020.30	10/20	10.00	60.50	1050.30	90.50	1020.30	92.50	1018.30	91.50	1019.30	SH
EW-13	G-140506B	2611520.73	493092.65	NA	1109.39		0.03	12.00	24.00	83.00	1026.39	10/20	13.00	53.00	1056.39	83.00	1026.39	85.00	1024.39	84.00	1025.39	SH
FEW-14	G-153001	2625283.55	498733.83	1155.99	1154.01	1.98	0.03	12.00	24.00	108.00	1046.01	#2	56.80	87.00	1067.01	104.10	1049.91	108.00	1046.01	105.00	1154.01	SS
FEW-15	G-153002	2622859.07	509950.92	1169.64	1167.62	2.02	0.03	12.00	24.00	111.00	1056.62	#0	40.70	79.90	1087.72	110.00	1057.62	111.00	1056.62	109.00	1167.62	SS
EW-16	G-153003	2628322.89	496730.64	1146.97	1144.95	2.02	0.03	12.00	24.00	102.00	1042.95	#0	55.60	80.00	1064.95	100.00	1044.95	102.00	1042.95	99.00	1144.95	SS
NLF-MW01S	UNL	2627482.80	508537.55	1151.59	1148.91	2.68	0.01	2.00	8.50	44.70	1104.21	10/30	33.00	34.40	1114.51	44.40	1104.51	46.00	1102.91	NP	NP	NP
NLF-MW01I	UNL	2627492.64	508537.67	1151.47	1148.90	2.57	0.01	2.00	8.50	64.70	1084.20	10/30	51.50	54.40	1094.50	64.40	1084.50	66.00	1082.90	63.20	1085.70	SH
NLF-MW02S	UNL	2627651.96	508654.32	1146.71	1144.07	2.64	0.01	2.00	8.50	40.30	1103.77	10/30	27.60	30.00	1114.07	40.00	1104.07	41.20	1102.87	NP	NP	NP
NLF-MW02I	UNL	2627655.27	508651.08	1146.66	1143.97	2.69	0.01	2.00	8.50	58.50	1085.47	10/30	45.30	48.20	1095.77	58.20	1085.77	59.30	1084.67	57.20	1086.77	SH
NLF-MW03S	UNL	2627718.61	508563.28	1149.38	1146.67	2.71	0.01	2.00	8.50	43.70	1102.97	10/30	31.60	33.40	1113.27	43.40	1103.27	44.40	1102.27	NP	NP	NP
NLF-MW03I	UNL	2627718.46	508576.40	1148.89	1146.21	2.68	0.01	2.00	8.50	62.00	1084.21	10/30	49.00	52.40	1093.81	62.40	1083.81	65.00	1081.21	62.00	1084.21	SH
NLF-MW04S	UNL	2627719.69	508471.47	1151.54	1148.83	2.71	0.01	2.00	8.50	44.90	1103.93	10/30	32.40	34.60	1114.23	44.60	1104.23	46.00	1102.83	NP	NP	NP
NLF-MW04I	UNL	2627719.58	508481.31	1151.22	1148.63	2.59	0.01	2.00	8.50	56.80	1091.83	10/30	43.00	46.50	1102.13	56.50	1092.13	58.00	1090.63	56.00	1092.63	SH
NLF-MW05S	UNL	2627687.94	508382.55	1149.23	1146.51	2.72	0.01	2.00	8.50	44.50	1102.01	10/30	32.30	34.20	1112.31	44.20	1102.31	44.90	1101.61	NP	NP	NP
NLF-MW05I	UNL	2627691.34	508372.75	1148.65	1146.03	2.62	0.01	2.00	8.50	54.40	1091.63	10/30	42.20	44.20	1101.83	54.20	1091.83	60.00	1086.03	59.70	1086.33	SH
NLF-MW06S	UNL	2627629.12	508365.46	1150.94	1148.24	2.70	0.01	2.00	8.50	45.50	1102.74	10/30	33.00	35.20	1113.04	42.20	1106.04	46.00	1102.24	NP	NP	NP
NLF-MW06I	UNL	2627639.03	508359.02	1150.51	1147.88	2.63	0.01	2.00	8.50	62.70	1085.18	10/30	50.00	52.40	1095.48	62.40	1085.48	64.00	1083.88	62.10	1085.78	SH
NLF-MW07S	UNL	2627553.24	508403.93	1152.38	1149.79	2.59	0.01	2.00	8.50	48.30	1101.49	10/30	35.00	38.00	1111.79	48.00	1101.79	49.30	1100.49	NP	NP	NP
NLF-MW07I	UNL	2627559.79	508404.00	1152.38	1149.72	2.59	0.01	2.00	8.50	65.60	1084.12	10/30	52.70	55.30	1094.42	65.30	1084.42	66.30	1083.42	64.70	1085.02	SH
NPR-MW01S	UNL	2626816.17	504709.21	1150.69	1148.19	2.51	0.01	2.00	8.50	56.30	1091.89	10/30	43.80	46.10	1102.09	56.10	1092.09	56.90	1091.29	NP	NP	NP
NPR-MW01I	UNL	2626822.73	504709.28	1150.61	1147.90	2.71	0.01	2.00	8.50	91.40	1056.50	NAT	80.00	81.10	1066.80	91.10	1056.80	91.50	1056.40	89.00	1058.90	SS
NPR-MW02S	UNL	2626883.56	504555.87	1149.23	1146.63	2.75	0.01	2.00	8.50	55.30	1091.33	10/30	43.00	45.10	1101.53	55.10	1091.53	56.30	1090.33	NP	NP	NP
NPR-MW02I	UNL	2626890.12	504555.94	1149.17	1146.42	2.60	0.01	2.00	8.50	90.70	1055.72	NAT	45.50	80.40	1066.02	90.40	1056.02	91.50	1054.92	89.80	1056.62	SS
BAZE-EW-01	UNL	2616100.05	502126.72	1163.30	NA		0.02	6.00	10.00	75.50	NA	16/30	49.00	53.00	NA	73.00	NA	75.50	NA	NP	NP	NP
BAZE-IW-01	UNL	2616088.45	502117.03	1163.06	NA		0.02	4.00	8.00	73.00	NA	16/30	49.00	53.00	NA	73.00	NA	75.00	NA	NP	NP	NP
BAZE-IW-02	UNL	2616111.13	502135.81	1163.49	NA		0.02	4.00	8.00	73.00	NA	16/30	49.00	53.00	NA	73.00	NA	75.00	NA	NP	NP	NP
BAZE-MW-01	UNL	2616042.51	502209.13	1165.18	NA		0.01	2.00	8.25	78.00	NA	20/40	48.00	55.00	NA	75.00	NA	78.00	NA	NP	NP	NP
BAZE-MW-02	UNL	2616116.85	502075.19	1163.66	NA		0.01	2.00	8.25	73.00	NA	20/40	47.00	53.00	NA	73.00	NA	75.00	NA	NP	NP	NP
BAZE-MW-03	UNL	2616128.60	502084.65	1163.66	NA		0.01	2.00	8.25	73.00	NA	20/40	47.00	53.00	NA	73.00	NA	75.00	NA	NP	NP	NP
BAZE-MW-04	UNL	2616140.55	502094.05	1163.65	NA		0.01	2.00	8.25	73.00	NA	20/40	47.00	53.00	NA	73.00	NA	75.00	NA	NP	NP	NP
BAZE-MW-05	UNL	2616145.22	502038.03	1165.35	NA		0.01	2.00	8.25	78.00	NA	20/40	52.00	58.00	NA	78.00	NA	78.00	NA	NP	NP	NP
BAZE-MW-06	UNL	2616157.13	502044.01	1165.82	NA		0.01	2.00	8.25	76.00	NA	20/40	50.00	56.00	NA	76.00	NA	78.00	NA	NP	NP	NP
BAZE-MW-07	UNL	2616168.23	502053.89	1167.10	NA		0.01	2.00	8.25	79.00	NA	20/40	53.00	59.00	NA	79.00	NA	79.00	NA	NP	NP	NP
BAZE-MW-08	UNL	2616202.28	501950.73	1166.37	NA		0.01	2.00	8.25	76.00	NA	20/40	50.00	56.00	NA	76.00	NA	78.00	NA	NP	NP	NP
BAZE-MW-09	UNL	2616214.12	501959.62	1166.81	NA		0.01	2.00	8.25	76.00	NA	20/40	50.00	56.00	NA	76.00	NA	78.00	NA	NP	NP	NP

Table 3-6
Monitoring Well Construction Details Table
Former Nebraska Ordnance Plant, Mead, Nebraska

ID	DNR registration No.	E-83 Easting (NAD83)	N-83 Northing (NAD 83)	TOC-88 TOC Elev (ft NAVD 88)	Ground Surface Elev (ft NAVD 88)	STICK UP	SLOT SIZE	Well Dia. (inches)	Boring Dia. (inches)	Bottom of Well Depth (ft bgs)	Bottom of Well Elevation (ft NAVD88)	Filter pack size	Depth to Top of Filter Pack (ft bgs)	Top of Screen Depth (ft bgs)	Top of Screen Elevation (ft NAVD88)	Bottom of Screen Depth (ft bgs)	Bottom of Screen Elevation (ft NAVD88)	Bottom of Boring Depth (ft bgs)	Bottom of Boring Elevation (ft NAVD88)	Top of Bedrock Depth (ft bgs)	Top of Bedrock Elevation (ft NAVD88)	Bedrock Type
BAZE-MW-10	UNL	2616225.63	501970.02	1166.96	NA		0.01	2.00	8.25	76.00	NA	20/40	50.00	56.00	NA	76.00	NA	76.00	NA	NP	NP	NP
BAZE-MW-11	UNL	2616437.05	501626.79	1161.20	NA		0.01	2.00	8.25	72.00	NA	20/40	46.00	52.00	NA	72.00	NA	75.00	NA	NP	NP	NP
GCW-2 (Abandoned)	abandoned	2613252.36	506039.55	1163.17	NA		0.02	6.00	16.00	60.00	NA	20/40	50.00	NA	NA	60.00	NA	62.00	NA	NP	NP	NP
GCW-2 PZ N (Abando	abandoned	2613252.84	506040.07	1162.59	NA		0.03	2.00	16.00	37.00	NA	16/30	12.00	35.00	NA	37.00	NA	62.00	NA	NP	NP	NP
GCW-2 PZ S (Abando	abandoned	2613252.39	506039.09	1162.56	NA		0.02	2.00	16.00	56.00	NA	20/40	47.10	54.00	NA	56.00	NA	62.00	NA	NP	NP	NP
GCW-1	Awaiting # from DNR	2622991.70	511987.67	1167.69	NA		0.02	12.00	24.00	108.00	NA	20/40	89.00	NA	NA	108.00	NA	110.30	NA	NP	NP	NP
GCW-1 PZ N	NA	2622990.98	511987.59	1166.89	NA		0.02	2.00	24.00	66.00	NA	20/40	39.00	64.00	NA	66.00	NA	110.30	NA	NP	NP	NP
GCW-1 PZ S	NA	2622992.24	511987.34	1166.93	NA		0.02	2.00	24.00	99.50	NA	4/8	85.60	97.50	NA	99.50	NA	110.30	NA	NP	NP	NP
MW-06-30A	MUD	2628947.80	514835.86	1199.31	1197.00	2.31																
MW-06-30B	MUD	2628942.36	514835.12	1199.37	1197.04	2.33																
MW-06-31A	MUD	2633854.92	509717.60	1149.98	1147.74	2.24																
MW-06-31B	MUD	2633861.66	509718.75	1150.02	1147.66	2.36																
KM-01 (Abandoned)	abandoned	2633083.28	503038.31											42.0		46.0		68.00		67		
KM-02 (Abandoned)	abandoned	2634645.89	503202.13											24.3		34.3		47.60		46		
KM-03 (Abandoned)	abandoned	2632919.45	502798.88											91.0		101.0		152.4		79		

Notes:

BAZE = Biologically Active Zone Enhancement
ft = feet
bgs = below ground surface
NGVD = National Geodetic Vertical Datum
DNR - Department of Natural Resources
EW = Extraction Well

UNL = University of Nebraska-Lincoln
FEW = Focused Extraction Well
MW = Monitoring Well
OW = Observation Well
NA = Information not available
NP = Top of bedrock was not penetrated

PZ = piezometer
NS = Monitoring well elevations have not been surveyed at the time of this report
SS = Sandstone
SH = Shale
* = Historical well installed but construction details are not available
GCW = groundwater circulation well

Information Missing
Information is preliminary and measurements may change.

FIGURES

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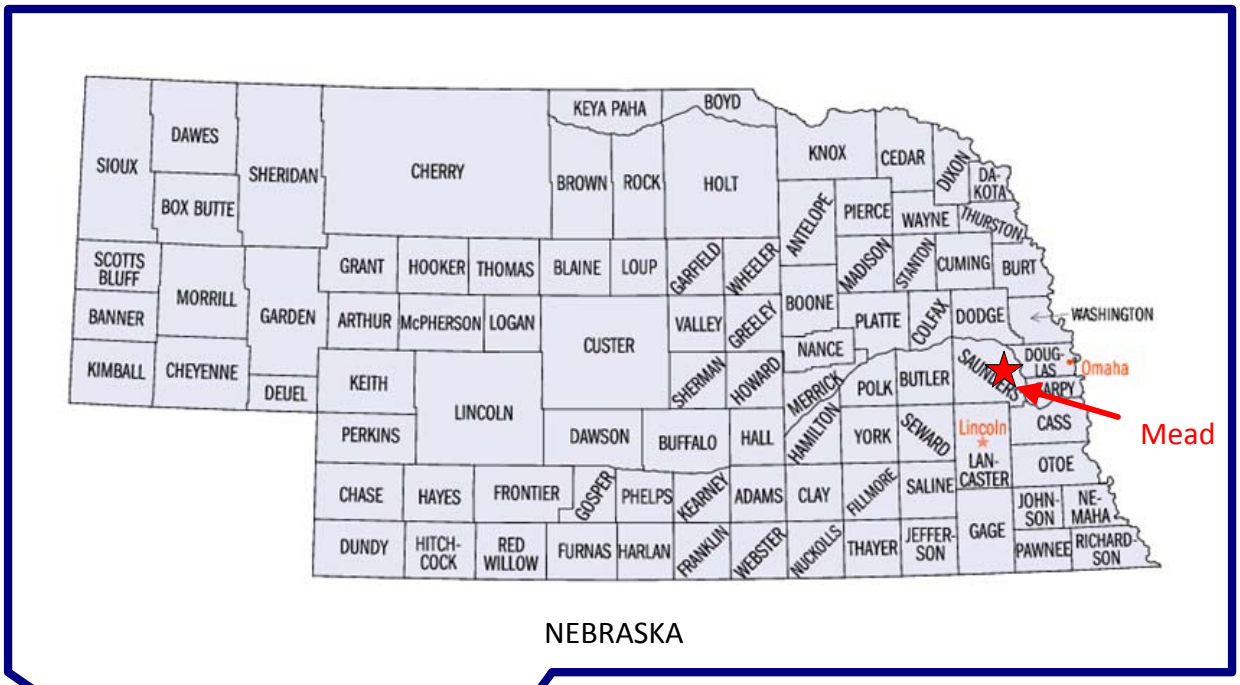

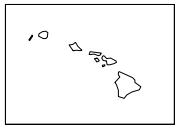

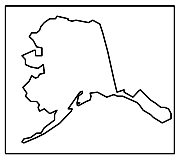

ECC	US Army Corps of Engineers® Kansas City District	
Designed by: DM	FORMER NEBRASKA ORDNANCE PLANT MEAD, NEBRASKA	
Drawn by: ROW	Site Location Map	
Checked by: BB		
Submitted by: MJ	Drawing No: Figure 1-1	Date: 1/8/2010

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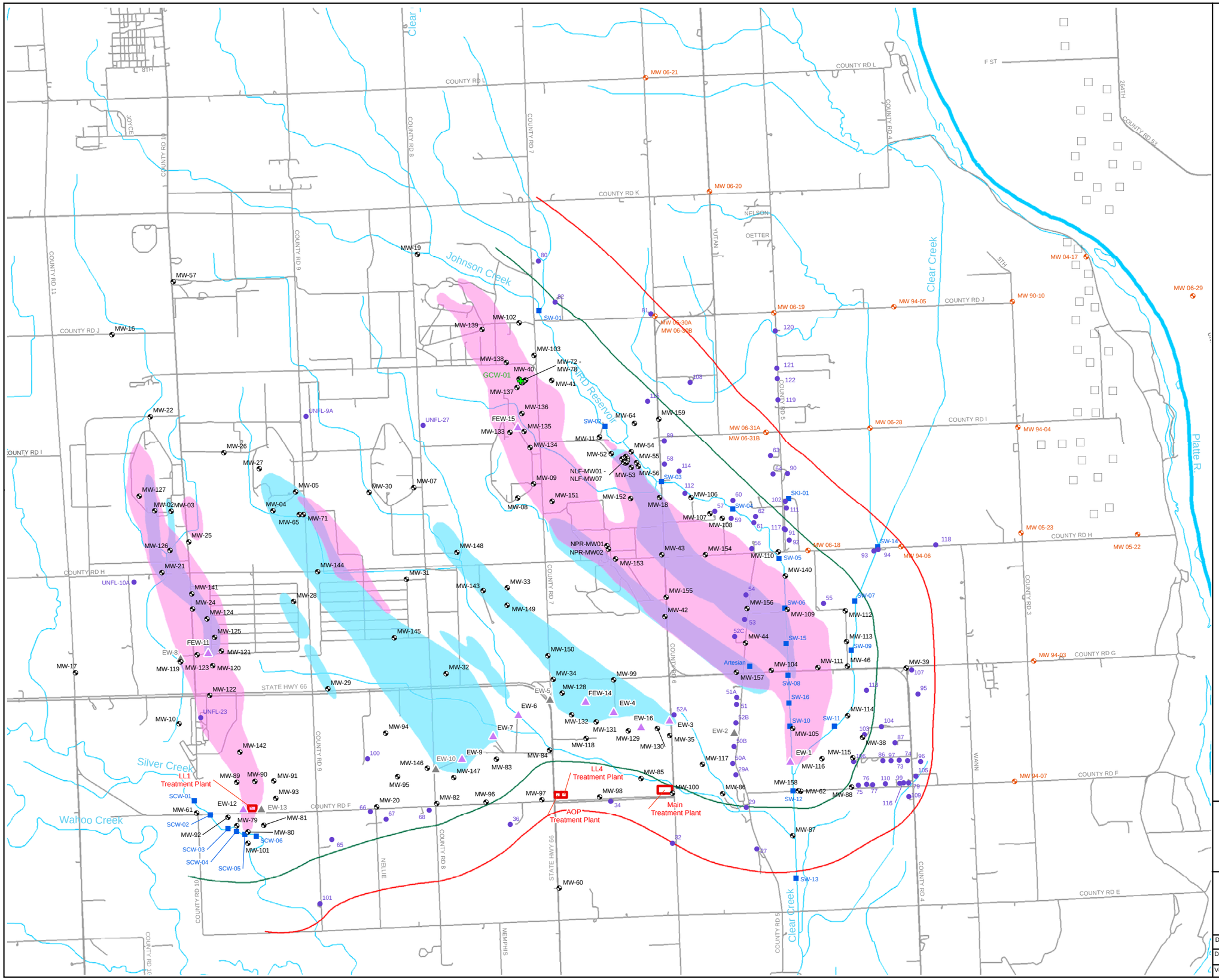

EXPLANATION

- Groundwater Monitoring Well/ Well Cluster
- Water Supply Well
- Groundwater Extraction Well
- Groundwater Extraction Well (Inactive)
- Groundwater Circulation Well
- Metropolitan Utility District Extraction Well
- Metropolitan Utility District Monitoring Well
- Surface Water Sample Location
- Half-Mile Buffer Zone
- One Mile Buffer Zone
- Treatment Plant
- Approximate Area of TCE at a Concentration of 5 ug/L or Greater (2008)
- Approximate Area of RDX at a Concentration of 2 ug/L or Greater (2008)
- Approximate Area of Both TCE at a Concentration of 5 ug/L or Greater and RDX at a Concentration of 2 ug/L or Greater (2008)

NOTE:
TCE and RDX plume delineations are based on Groundwater Monitoring Program data, direct-push data, and other data. The plume delineations represent a combination of the shallow zone data and the intermediate zone data.

Observation wells not shown due to scale.

TCE - trichloroethene

RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine

ug/L - micrograms per liter

N

0 1,500 3,000 6,000 9,000 12,000

Feet

US Army Corps of Engineers®
Kansas City District

Figure 1-2
Current Extent of Groundwater Contamination for OU2

Drawn by: M Johanson	Reviewed by: S Carter	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 9/24/2010	Date: 11/9/2010	
Version:	Revision Date / Initials: 11/9/2010 MGJ	

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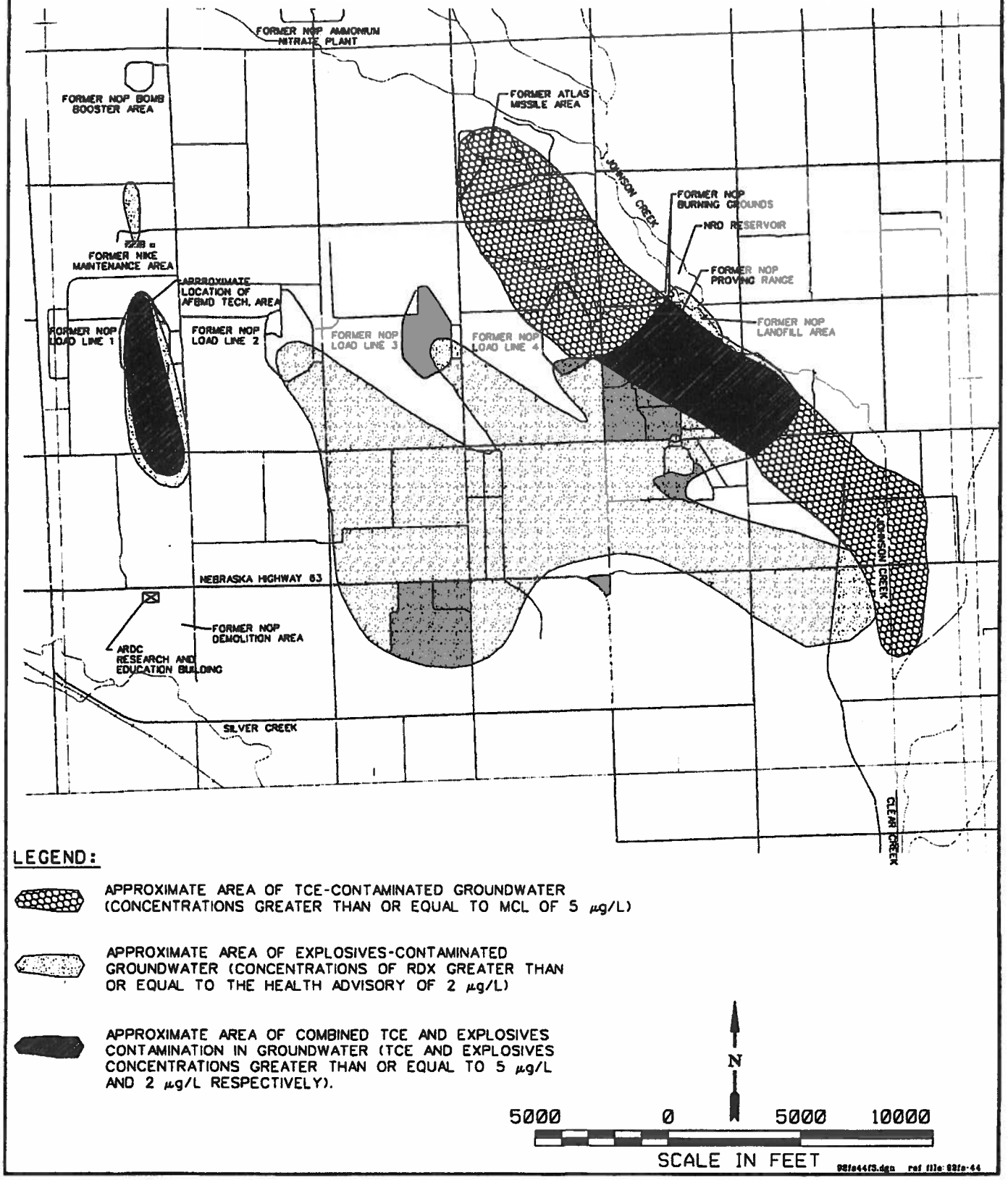
Figure 1-3

Contamination Plume Extent as shown in the 1996 ROD



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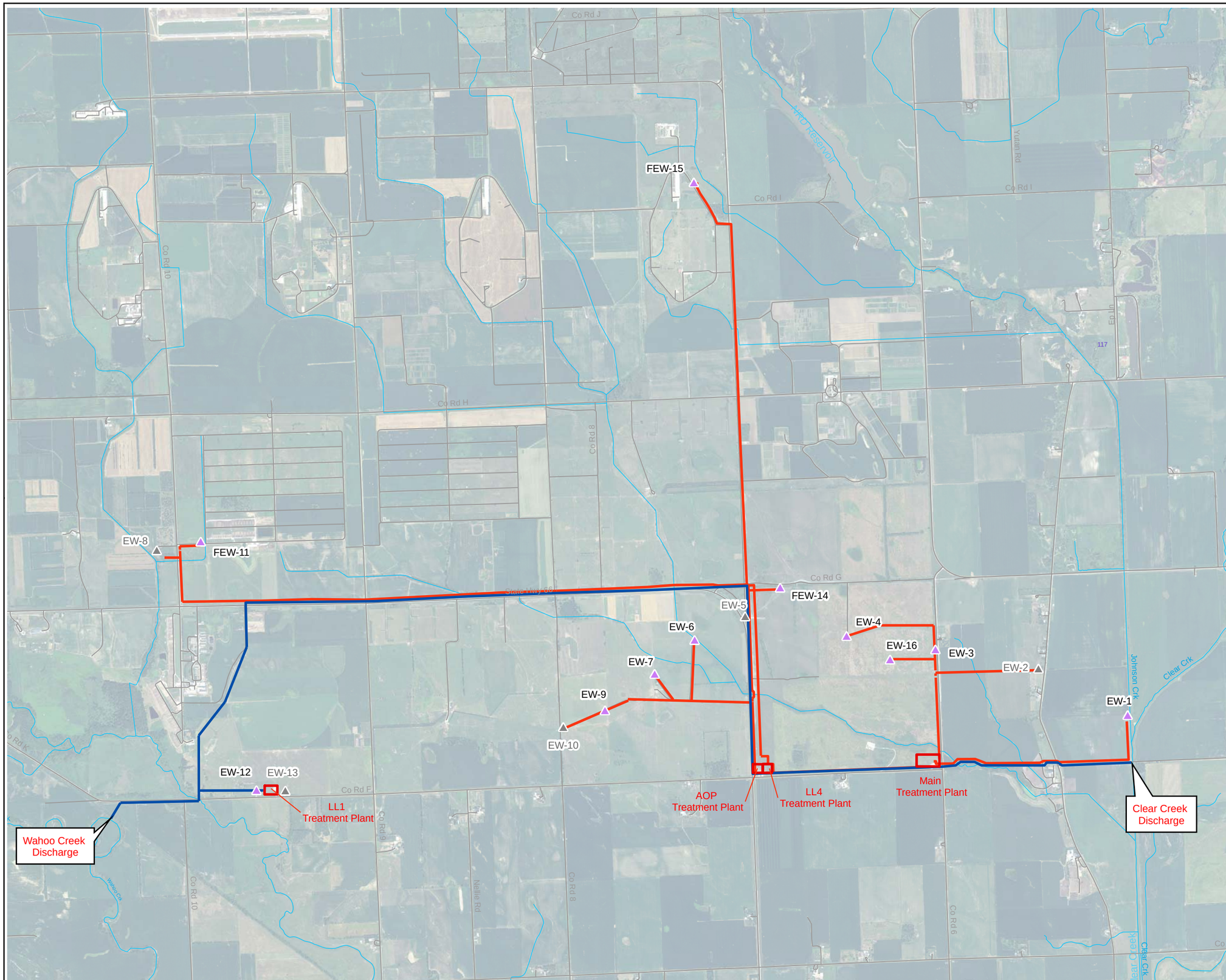

Legend

- Inactive Groundwater Extraction Well
- Active Groundwater Extraction Well
- Treatment Plant
- Influent Pipeline
- Effluent Pipeline

N

0 1,000 2,000 4,000 6,000 8,000

Feet

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Figure 3-1
Groundwater Treatment Plant Locations and Associated Piping

Drawn by: M Johanson	Reviewed by:	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 4/4/2011	Date:	
Version:	Revision Date / Initials:	

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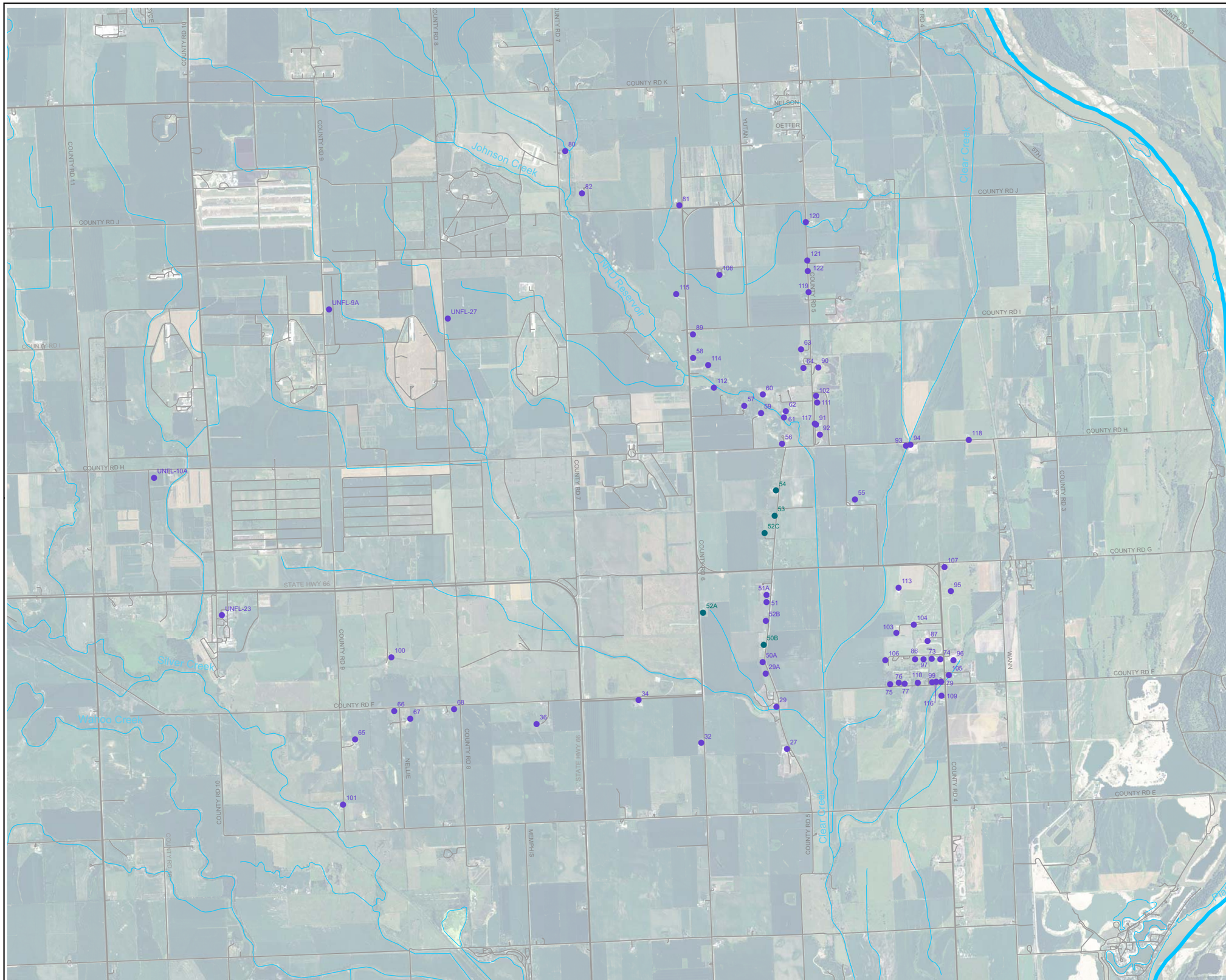

EXPLANATION

- Water Supply Well
- Water Supply Well with Alternate Water Supply

N

0 1,500 3,000 6,000 9,000 12,000

Feet

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Figure 3-2
Water Supply Well Locations

Drawn by: M Johanson	Reviewed by: S Carter	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 9/14/2010	Date: 11/4/2010	
Version:	Revision Date / Initials: 11/5/2010 MGJ	

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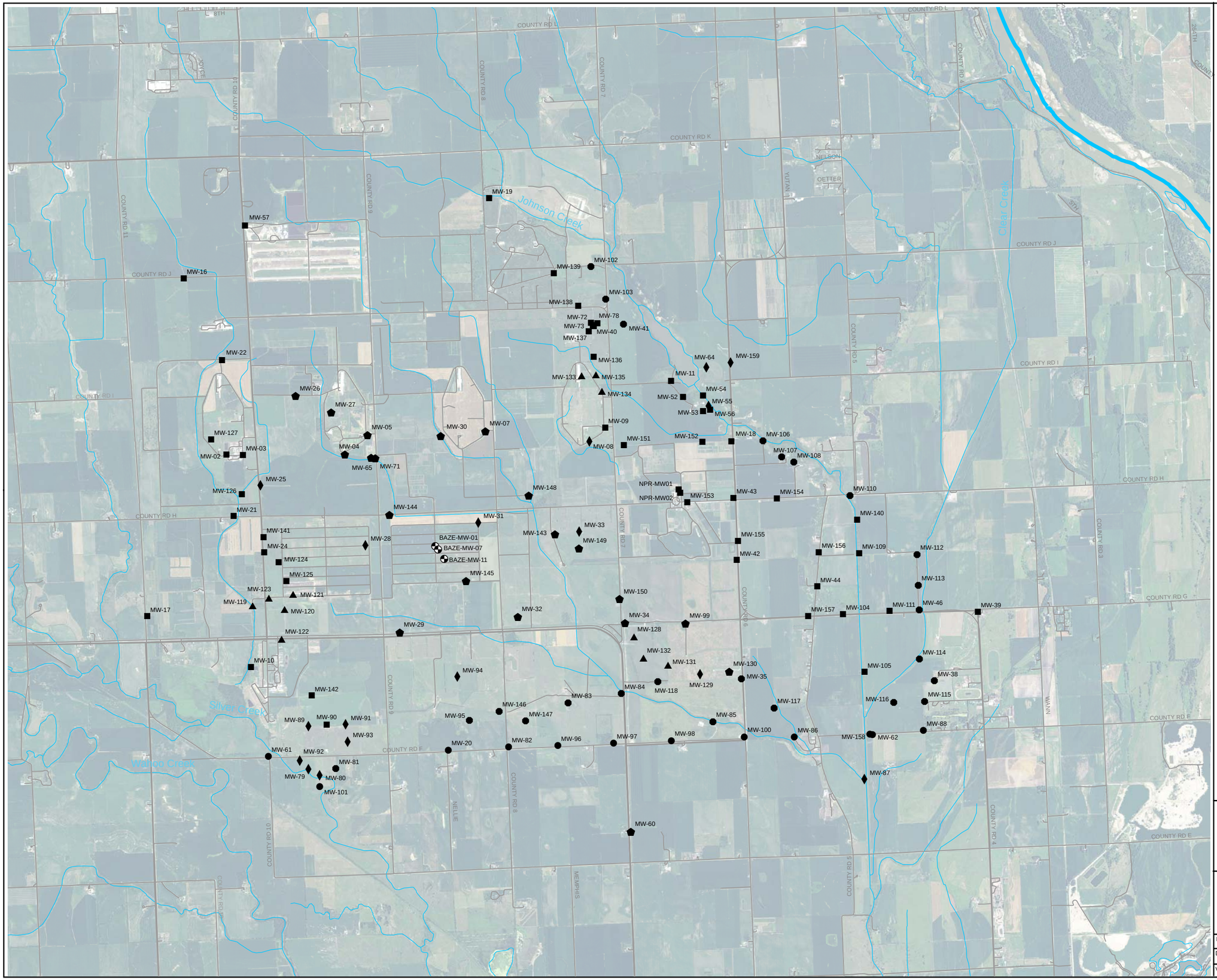

EXPLANATION

- Compliance Well
- Load Line 1 and Atlas Missile Area Interior Plume Monitoring Well
- Load Line 2 and Load Line 3 Interior Plume Monitoring Well
- Focused Extraction Monitoring Well
- Perimeter Monitoring Well
- Upgradient/Sidegradient/Downgradient Monitoring Well
- BAZE Well

N

0 1,500 3,000 6,000 9,000 12,000

Feet

ECC

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Figure 3-3
Monitoring Well Locations

Drawn by: M Johanson	Reviewed by: S Carter	Notes and Sources Projection: North American Datum 1983 Nebraska State Plane Units: Feet
Date: 9/24/2010	Date: 11/4/2010	
Version:	Revision Date / Initials: 11/8/2010 MGJ	

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