

OFFUTT AIR FORCE BASE

PUBLIC NOTICE – ANNUAL UPDATE OF OFF-SITE GROUNDWATER IMPACTS FROM OLD JET ENGINE TEST STAND

The Offutt Air Force Base (OAFB) Environmental Restoration Program (ERP) has been monitoring the groundwater both on and off the base for many years in connection with ERP site Old Jet Engine Stand (OJETS), also referred to as SD041 (**Figure 1**). This public notice is to advise OAFB's neighbors of actual and potential impacts to off-base groundwater associated with SD041. The purpose of groundwater sampling at SD041 is to monitor plume changes as well as concentration changes of identified contaminants of concern (COCs) to ensure human health and the environment are protected.

OAFB is located just south of Bellevue, Nebraska. In 1987, the U.S. Environmental Protection Agency (EPA) issued a federal Resource Conservation and Recovery Act (RCRA) Hazardous Waste Management permit to OAFB that allowed the Base to operate a hazardous waste storage facility SD041. Under the permit, environmental contamination is investigated and cleaned up. Contamination in the form of chlorinated solvents including trichloroethene (TCE) and vinyl chloride (VC) have been found in soil and groundwater at SD041 which have been associated with the use of contaminated waste oils for dust suppression. The RCRA permit has been re-issued several times, most recently in 2010, and remains in effect for 10 years.



RCRA PART II PERMIT REQUIREMENTS

- EPA requires OAFB's RCRA permit to include a remedy for SD041 that focuses on treating contamination to protect human health and the environment by facilitating the natural decrease of contamination in groundwater. The remedy consists of several components:
 - **Groundwater Treatment Zones** consisting of barriers and injections of vegetable oil and organisms to facilitate the natural decrease of the contamination at key areas within the groundwater plumes.
 - **Monitored Natural Attenuation (MNA)** is used as a remedial action to monitor the remaining contamination in groundwater until EPA's Maximum Contaminant Levels (MCLs) for drinking water are met.
 - **Administrative Land Use Controls (LUCs)** are used to prevent unacceptable human exposure to TCE and VC in groundwater and are accomplished off-base by the following:
 - *Off Base Within Easement Boundaries:* (1) Construction Control – The U.S. Air Force controls construction within and 1,000 feet southeast of the runway clear-zone area. These control measures also prevent installation of domestic water wells. (2) OAFB conducts annual inspections and records to verify that no domestic wells have been installed within the off base plume footprint.
 - *Off Base Outside Easement Boundaries:* (1) OAFB has worked with owners of affected property to connect them to city water and disconnect them from private wells. (2) OAFB has worked with affected property owners to abandon existing wells where possible. (3) Current Bellevue City Code (Section 15-91 through 15-93) requires connection to the water main, when present, and prevents installing domestic water wells where the water has become polluted. (4) Notification of Contamination. OAFB sends a notification (this public notice) to off-base private landowners describing the location and toxicity of contaminants that are present. (5) OAFB conducts annual inspections and records reviews of state and local databases to: ensure no new proposed development or

construction is in the area; and verifies that no domestic drinking water wells have been installed within the off-base footprint of the plume.

Chemicals in Groundwater at SD041

- **COCs:** TCE and VC
- **COC Concentrations:** TCE and VC are above their EPA MCLs of 5 micrograms per liter (ug/L) and 2 ug/L, for drinking water within the SD041 groundwater plumes (see **Figure 1**). The EPA MCLs listed are designated for drinking water.
- **Location of COCs:** Contaminants are found in groundwater extending from within OAFB boundary, beyond Harlan-Lewis Road, east of base, and north and south of Cunningham Road. See attached **Figure 1**.
- **TCE** (depicted in **red** on **Figure 1**) is confined to the base boundary. TCE is currently below the EPA MCL for drinking water of 5 ug/L in all off-base monitoring wells near SD041 (located south of Cunningham Road, and just east of Harlan-Lewis Road).
- **VC** (depicted in **green** on **Figure 1**) extends beyond the base boundary. VC is currently above the EPA MCL for drinking water of 2 ug/L in off-base monitoring wells OJET-MW6D, and OJET-MW9D, and temporary off-base direct push well locations OJET-GS206, OJET-GS209, and OJET-GS210.
- **Effects of Exposure to COCs:** Potential long-term effects of drinking TCE- or VC-impacted groundwater above the MCLs could include central nervous system depression, liver and kidney effects, cancer, and birth defects. **(Note: There are currently no users of this groundwater within the shallow aquifer.)**

LUC Review Results: A search of the Nebraska Department of Natural Resources well registry found no groundwater production wells used for drinking water within SD041. Also, a review of the Sarpy County Plan: A Comprehensive Development Plan for Sarpy County, Nebraska, found no new planned developments within SD041.

Plume Status and Ongoing Remedial Activities:

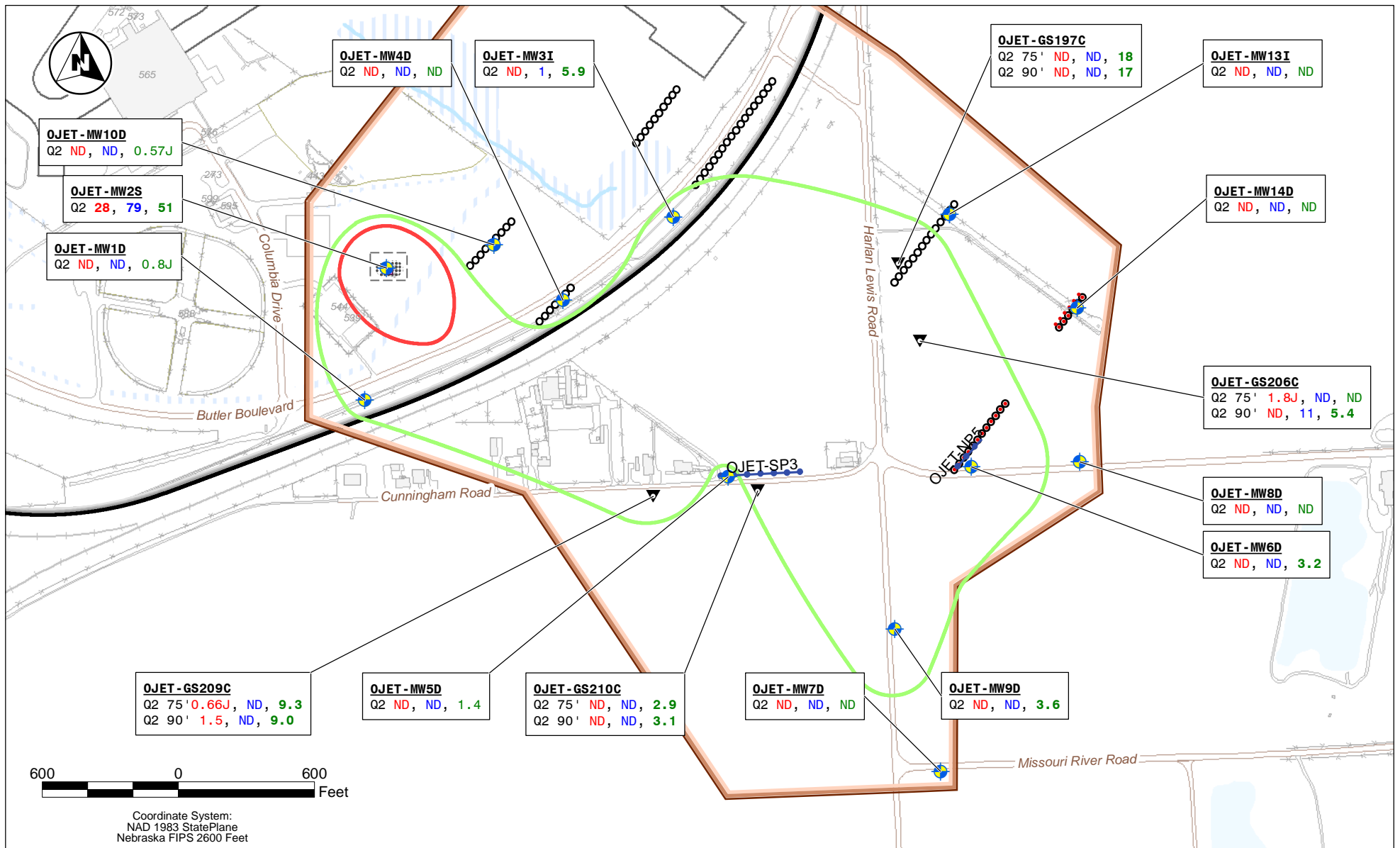
Over 1,000 gallons of emulsified vegetable oil (EVO) was injected into affected areas in the groundwater to assist with the natural decrease of COCs.

Semiannual groundwater monitoring will be conducted at SD041 in 2017. The analytical data will be used to evaluate the effectiveness of EVO injections, and the continued natural decrease of groundwater contamination. Additional EVO injections may be necessary in the future.

Please do not hesitate to call the OAFB contact below if you have questions or concerns.

Ms. Melissa Milner, Restoration Program Manager, Offutt AFB, 402-232-2560;

melissa.milner.1@us.af.mil – If there is community interest in re-establishing the Restoration Advisory Board (RAB), a group of community members discussing ongoing environmental cleanup efforts at SD041 and other sites listed in OAFB's RCRA permit via periodic public meetings, please send an email expressing your interest.



- Monitoring Well Sampled in 2016
- Direct Push Location Sampled in 2016
- Injection Demonstration Location
- 2014 IRT Injection Location
- IRT Location (2007)
- IRT Injection Location (2010)
- TCE Hotspot Injection Area

- SD041 Boundary
- Offutt AFB Boundary
- Fence
- Railroad
- Road
- Runway
- Building
- Creek/Ditch
- Wetland

- Notes:**
- Results are from 2016 sampling event and are in micrograms per liter (ug/L).
 - Red contours and results for TCE
 - Blue contours and results for cis-1,2-DCE
 - Green contours and results for Vinyl Chloride.
 - Bold results exceed screening levels.

Screening Levels (ug/L)	
TCE	5
cis-1,2-DCE	70
Vinyl Chloride	2

- Abbreviations:**
- cis-1,2-DCE cis-1,2-dichloroethene
 - I Intermediate
 - IRT In situ reductive treatment
 - J Estimated result due to QC anomaly
 - NA Not analyzed
 - ND Not detected
 - QC Quality control
 - S Shallow
 - SI Shallow intermediate
 - TCE Trichloroethene
 - ug/L Microgram per liter
 - ZVI PRB Zero-valent iron permeable reactive barrier



FIGURE NUMBER
1

**U.S. AIR FORCE
CIVIL ENGINEER CENTER**

**Impacted Groundwater
SD041
Offutt Air Force Base, NE
and Surrounding Area
2016**

ARGO/LRS JV



Off-Base Property Owners
Offutt AFB ERP

ERP Site	Parcel ID	Property Address	Owner Name	Historic Plume	Current Plume (2015)	OAFB Runway Easement
SD041	011590289	Cunningham Road	Frank Platt	N	N	N
SD041	011288655	102 Cunningham Road	GKM Enterprises Inc. GKM Enterprises Inc.	N	N	N
SD041	010937447	104 Cunningham Road	Aqua-Chem, Inc.	N	Y	N
SD041	010937420	106 Cunningham Road	Aqua Sod LLC	Y, part	Y, part	N
SD041	011573980; 010937331	Cunningham Road; 212 Cunningham Road	Duaine Armstrong, Armstrong-Jones Construction Co Inc	Y, part; Y	Y, part; Y	N; N
SD041	011573981; 010937382; 010937374;	202 Cunningham Road; 204 Cunningham Road; 206 Cunningham Road	Paddington Place Corporation	Y, part; Y; Y;	Y, part; Y; Y;	N; N; N
SD041	010937323; 010937315	302 Cunningham Road; Harlan Lewis Road	Wendl Properties LLC	Y; Y, part	Y; Y, part	N; 108E, 101E-1, 101E-2
SD041	011040416	Harlan Lewis Road	Plambeck Ag LLC	Y, part	Y, part	104E, 100E, 100E-2, 103E
SD041	010629483; 010629351	Harlan Lewis Road	USA	Y; Y, part	N; N	N; N
SD041	011017627; 011591162	Harlan Lewis Road	Bellevue Future Development LLC	N; Y, part	N; N	N; part, 107E
SD041	011591800	14402 Harlan Lewis Road	Bellevue Village LLC	Y, part	N	part, 107E
SD041	010626743	Missouri River Road	Rita Hurlbutt	Y, part	Y, part	part, 106E
SD041	011045876	Missouri River Road	Dickinson Sarpy LTD	N	N	part, 106E
SD041	011591801; 011591799	Cunningham Road; 14202 Harlan Lewis Road	City of Bellevue c/o Planning Department	N; Y, part	N; Y	N; part, 107E
SD041	010626743; 011045876		City of Bellevue c/o Sabrina Ohnmacht, City Clerk Sarpy County Planning Department			