

SB-05

**WATER WELL RECORD**

Form WWC-5

Division of Water Resources App. No.  

<p><b>1 LOCATION OF WATER WELL:</b>          County: <u>Douglas</u>          Street/Rural Address of Well Location; if unknown, distance &amp; direction from nearest town or intersection: If at owner's address, check here <input type="checkbox"/>  <u>Kansas 5 + N 200 Road</u>  <u>1700' West</u></p>	<p>Fraction <u>NE 1/4 NE 1/4 NW 1/4 NW 1/4</u>          Section Number <u>12</u> Township No. <u>T 15 S</u> Range Number <u>R 18 E</u> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>	<p>Global Positioning System (GPS) information:          Latitude: <u>39.7578824</u> (in decimal degrees)          Longitude: <u>-95.3678621</u> (in decimal degrees)          Elevation: .....          Datum: <input type="checkbox"/> WGS 84, <input type="checkbox"/> NAD 83, <input type="checkbox"/> NAD 27          Collection Method:  <input type="checkbox"/> GPS unit (Make/Model: .....)  <input type="checkbox"/> Digital Map/Photo, <input type="checkbox"/> Topographic Map, <input checked="" type="checkbox"/> Land Survey          Est. Accuracy: <input type="checkbox"/> &lt;3 m, <input type="checkbox"/> 3-5 m, <input type="checkbox"/> 5-15 m, <input type="checkbox"/> &gt;15 m</p>																																																						
<p><b>2 WATER WELL OWNER:</b> <u>USACE Kansas City District</u>          RR#, Street Address, Box #: <u>601 E. 12th St.</u>          City, State, ZIP Code: <u>Kansas City, MO, 64106</u></p>	<p><b>3 LOCATE WELL WITH AN "X" IN SECTION BOX:</b>          N  <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">X</td> <td style="border: 1px solid black; padding: 5px;"></td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">--NW--</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">--NE--</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">W</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">E</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">--SW--</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">--SE--</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;"></td> <td style="border: 1px solid black; padding: 5px;"></td> </tr> </table>         S           -----1 mile----- </p>		X		--NW--	--NE--	W	E	--SW--	--SE--																																														
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<p><b>4 DEPTH OF COMPLETED WELL</b> ..... ft.          Depth(s) Groundwater Encountered (1)..... ft. (2)..... ft. (3)..... ft.          WELL'S STATIC WATER LEVEL..... ft. below land surface measured on mo/day/yr.....          Pump test data: Well water was..... ft. after..... hours pumping..... gpm          EST. YIELD..... gpm. Well water was..... ft. after..... hours pumping..... gpm          Bore Hole Diameter <u>6</u> in. to <u>23</u> ft., and ..... in. to ..... ft.          WELL WATER TO BE USED AS: <input type="checkbox"/> Public water supply <input type="checkbox"/> Geothermal <input type="checkbox"/> Injection well  <input type="checkbox"/> Domestic <input type="checkbox"/> Feedlot <input type="checkbox"/> Oil field water supply <input type="checkbox"/> Dewatering <input type="checkbox"/> Other (Specify below)  <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Domestic-lawn &amp; garden <input type="checkbox"/> Monitoring well          Was a chemical/bacteriological sample submitted to Department? <input type="checkbox"/> Yes <input type="checkbox"/> No          If yes, mo/day/yr sample was submitted.....          Water well disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>																																																								
<p><b>5 TYPE OF CASING USED:</b> <input type="checkbox"/> Steel <input type="checkbox"/> PVC <input type="checkbox"/> Other .....          CASING JOINTS: <input type="checkbox"/> Glued <input type="checkbox"/> Clamped <input type="checkbox"/> Welded <input type="checkbox"/> Threaded          Casing diameter ..... in. to ..... ft., Diameter ..... in. to ..... ft., Diameter ..... in. to ..... ft.          Casing height above land surface..... in., Weight ..... lbs./ft., Wall thickness or gauge No. ....          TYPE OF SCREEN OR PERFORATION MATERIAL:  <input type="checkbox"/> Steel <input type="checkbox"/> Stainless Steel <input type="checkbox"/> PVC <input type="checkbox"/> Other (Specify) .....  <input type="checkbox"/> Brass <input type="checkbox"/> Galvanized Steel <input type="checkbox"/> None used (open hole)          SCREEN OR PERFORATION OPENINGS ARE:  <input type="checkbox"/> Continuous slot <input type="checkbox"/> Mill slot <input type="checkbox"/> Gauze wrapped <input type="checkbox"/> Torch cut <input type="checkbox"/> Drilled holes <input type="checkbox"/> None (open hole)  <input type="checkbox"/> Louvered shutter <input type="checkbox"/> Key punched <input type="checkbox"/> Wire wrapped <input type="checkbox"/> Saw cut <input type="checkbox"/> Other (specify) .....          SCREEN-PERFORATED INTERVALS: From..... ft. to ..... ft., From ..... ft. to ..... ft.          From..... ft. to ..... ft., From ..... ft. to ..... ft.          GRAVEL PACK INTERVALS: From..... ft. to ..... ft., From ..... ft. to ..... ft.          From..... ft. to ..... ft., From ..... ft. to ..... ft.</p>																																																								
<p><b>6 GROUT MATERIAL:</b> <input type="checkbox"/> Neat cement <input type="checkbox"/> Cement grout <input checked="" type="checkbox"/> Bentonite <input type="checkbox"/> Other .....          Grout intervals: From <u>0</u> ft. to <u>23</u> ft., From ..... ft. to ..... ft., From ..... ft. to ..... ft.          What is the nearest source of possible contamination:  <input type="checkbox"/> Septic tank <input type="checkbox"/> Lateral lines <input type="checkbox"/> Pit privy <input type="checkbox"/> Livestock pens <input type="checkbox"/> Insecticide storage <input type="checkbox"/> Other (specify below)  <input type="checkbox"/> Sewer lines <input type="checkbox"/> Cesspool <input type="checkbox"/> Sewage lagoon <input type="checkbox"/> Fuel storage <input type="checkbox"/> Abandoned water well  <input type="checkbox"/> Watertight sewer lines <input type="checkbox"/> Sepage pit <input type="checkbox"/> Feedyard <input type="checkbox"/> Fertilizer storage <input type="checkbox"/> Oil well/gas well          Direction from well ..... Distance from well .....</p>																																																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">FROM</th> <th style="width: 10%;">TO</th> <th style="width: 40%;">LITHOLOGIC LOG</th> <th style="width: 10%;">FROM</th> <th style="width: 10%;">TO</th> <th style="width: 20%;">LITHO. LOG (cont.) or PLUGGING INTERVALS</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>8</td> <td>Brown silt. Clay</td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>11</td> <td>Yellow Limestone</td> <td></td> <td></td> <td></td> </tr> <tr> <td>11</td> <td>18</td> <td>Lt. Brown Clay</td> <td></td> <td></td> <td></td> </tr> <tr> <td>18</td> <td>23</td> <td>Black shale</td> <td></td> <td></td> <td></td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHO. LOG (cont.) or PLUGGING INTERVALS	6	8	Brown silt. Clay				8	11	Yellow Limestone				11	18	Lt. Brown Clay				18	23	Black shale																											
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<p><b>7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION:</b> This water well was <input type="checkbox"/> constructed, <input type="checkbox"/> reconstructed, or <input checked="" type="checkbox"/> plugged under my jurisdiction and was completed on (mo/day/year) <u>9/18/2013</u> and this record is true to the best of my knowledge and belief.          Kansas Water Well Contractor's License No. <u>597</u> This Water Well Record was completed on (mo/day/year) <u>9/18/2013</u>          under the business name of <u>Cassade Drilling L.P.</u> by (signature) <u>[Signature]</u></p>																																																								
<p><b>INSTRUCTIONS:</b> Use typewriter or ball point pen. PLEASE PRESS FIRMLY and PRINT clearly. Please fill in blanks and check the correct answers. Send one copy to Kansas Department of Health and Environment, Bureau of Water, Geology Section, 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-3524. Send one copy to WATER WELL OWNER and retain one for your records. Include fee of \$5.00 for each constructed well. Visit us at <a href="http://www.kdheks.gov/waterwell/index.html">http://www.kdheks.gov/waterwell/index.html</a></p>																																																								

Bureau of Water  
Geology and Well Technology Section  
1000 SW Jackson St, Ste 420  
Topeka, KS 86612-1367



Phone: 785-296-3565  
Fax: 785-296-5509  
pchaffee@kdheks.gov  
www.kdheks.gov

Susan Mosier, MD, Secretary

Department of Health & Environment

Sam Brownback, Governor

July 31, 2015

Joshua Boeckmann  
Corps of Engineers, KC District  
Department of the Army  
635 Federal Building  
601 E. 12<sup>th</sup> St  
Kansas City, MO 64106-2824

Subject: Waiver Request – Flush-Mount Well Completion of Groundwater Monitoring Wells at the Former Forbes Atlas Missile Site S-2, E 750 Rd, Baldwin City, Douglas County, KS

Dear Mr. Boeckmann,

On July 16, 2015, the Kansas Department of Health and Environment, Bureau of Water (KDHE-BOW), received the above referenced request for waiver for five (5) shallow monitoring wells to be installed at the above referenced site. KDHE-BOW has reviewed the waiver request materials and provides approval to complete the proposed groundwater monitoring wells at grade (flush-mount).

In accordance with K.A.R. 28-30-6(s), please provide a scaled map showing the locations and latitude and longitude coordinates for each monitoring well to KDHE-BOW along with the water well record (WWC-5 Form) for one of the five wells completed under this waiver. Please include information on the flush-mount well completion method in appropriate areas of each WWC-5 Form as well as the name of the approving KDHE contact person.

While requests for waiver to allow less than the minimum grout interval of 20 feet (K.A.R. 28-30-6(b)(1)) are not required if the grout modification is based solely on targeting shallow groundwater, the reason for modifying the grout interval must be indicated on the WWC-5 Forms for the appropriate wells. Information provided in your request adequately justifies the shallow nature of the proposed monitoring wells.

If you have any questions concerning this letter or if you need assistance, feel free to contact me by telephone (785-296-3565), fax (785-296-5509), or email (pchaffee@kdheks.gov).

Sincerely,

Pamela K. Chaffee, P.G., Chief, Water Well Unit  
Geology & Well Technology Section, Bureau of Water  
Kansas Department of Health and Environment  
1000 SW Jackson, Suite 420  
Topeka, KS 66612-1367

Copy: File – BOW-GWIS-Douglas County



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, KANSAS CITY DISTRICT  
636 FEDERAL BUILDING  
801 E 12<sup>TH</sup> STREET  
KANSAS CITY MO 64106-2824

July 14, 2015

Environmental Programs Branch  
Planning, Programs and Project Management Division

Kansas Department of Health and Environment (KDHE)  
Bureau of Water – Geology Section  
1000 S.W. Jackson, Suite 420  
Topeka, Kansas 66612-1367

Ms. Pamela Chaffee:

Submitted for your review is a request for a waiver to allow the installation of flush mount groundwater monitoring wells. The U.S. Army Corps of Engineers (USACE), Kansas City District and its subcontractors will be performing Remedial Investigation activities at the former Forbes Atlas Missile Site S-2 located in Douglas County, Kansas. Field activities are being conducted in accordance with a Work Plan (WP) approved by KDHE and Environmental Protection Agency (EPA). To complete the investigation, 5 shallow permanent groundwater monitoring wells will be installed by a KDHE-licensed Water Well Contractor (KS #597, Steve Johnson). The wells will be placed in the parcels identified in Figure 1 and as depicted on Figure 2. The shallow wells will have a target depth of 30 feet and will have 10-foot screens. The depth of the shallow monitoring wells and screen placement will be determined in the field based on the observed saturated zone in cores to be collected from the well boreholes and the depth of perched groundwater encountered during drilling. Previous studies at this site have measured the shallow groundwater levels ranging from 7 to 9 feet below ground surface (bgs). These conditions will likely result in screens being placed at shallow depths bgs that will not allow for a full 20 feet of grout to be placed in the remainder of the borings. The wells will be grouted from the bentonite seal above the screen and filter pack to approximately 1 foot bgs as shown in Figure 3. If settling occurs after removal of drilling tools, additional grout will be added. The shallow monitoring wells will be completed as flush-mount wells, each with a 8-inch diameter protective cover, a 2-foot x 2-foot square concrete pad, and expandable well plug. The flush-mount installation was requested by the property owners.

Please see the next page for site information. If you have any questions, please contact me at (816) 389-3328 or by email at [Joshua.R.Boeckmann@usace.army.mil](mailto:Joshua.R.Boeckmann@usace.army.mil).

Sincerely,

BOECKMANN.JOSHUA  
A.RYAN.1385638406

Josh R. Boeckmann  
Project Manager

Digitally signed by  
BOECKMANN.JOSHUA.RYAN.1385638406  
DN: c=US, o=U.S. Government, ou=DoD,  
ou=PKI, ou=USA,  
cn=BOECKMANN.JOSHUA.RYAN.1385638406  
Date: 2015.07.14 12:10:51 -05'00'

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