

**Z-AREA GROUNDWATER MONITORING REPORT FOR 2005 (U)**  
**WSRC-TR-2005-00549**  
**December 15, 2005**

## Introduction

In accordance with SRS Z-Area Saltstone Industrial Solid Waste Permit, #025500-1603, wells ZBG-1, ZBG-1A and ZBG-2 are monitored for the parameters listed below:

pH  
Specific Conductance  
Water level  
Arsenic  
Antimony  
Barium  
Cadmium  
Chromium  
Lead  
Mercury  
Nitrate as Nitrogen  
Nitrite as Nitrogen  
Selenium  
Silver  
Benzene and Toluene  
Radium 226 and 228 (sum)  
Gross alpha  
Nonvolatile beta

New wells ZBG-3, ZBG-4 and ZBG-5 were also monitored although the permit has not yet been modified to include them. The wells (with the exception of ZGB-1A which was dry) were sampled twice during 2005. The first event was during first quarter and the second was spread over third and fourth quarters of due to sampling difficulties described below.

The well sampling and analyses were conducted in accordance with Procedure Manual 3Q5, Hydrogeologic Data Collection except in the case of fourth quarter sampling at ZBG-3, ZBG-4 and ZBG-5 where Hydrasleeve no-purge samplers were used. These wells are low producers with historically turbid samples that appear to yield anomalously high results for some metals. Confronted with the choice of not sampling at all or obtaining extremely turbid samples with a bailer, SRS opted to try the Hydrasleeve. The hydrasleeve has reduced the turbidity of most samples, however the turbidities are still high, and the results for most metals remain anomalously high.

The analytical results are attached. The sampling did not reveal any evidence of a release from the Saltstone vaults. Flow directions and velocities were similar to those observed in past years.

## Flow Direction and Rate

Potentiometric surface maps for the water table aquifer were constructed using first and third quarter data. Flow rate can be estimated using the following equation:

$$\text{Flow(ft/day)} = \frac{\text{Hydraulic Conductivity (ft/day)}}{\text{Porosity (unitless)}} \times \frac{dh(\text{ft})}{dl(\text{ft})}$$

Where the hydraulic conductivity constant is 1.7 ft/day, the effective porosity value is 30 percent, the change in head is dh, and the horizontal distance is simply the distance between potentiometric contours (figures 1 and 2).

For first quarter of 2004, the calculation is as follows:

$$\frac{1.7 \text{ ft/day}}{0.30} \times \frac{12 \text{ ft}}{1300 \text{ ft}} = 0.052 \text{ ft/day or } 18.98 \text{ ft/year}$$

For third quarter of 2004, the calculation is as follows:

$$\frac{1.7 \text{ ft/day}}{0.30} \times \frac{10 \text{ ft}}{1400 \text{ ft}} = 0.04 \text{ ft/day or } 14.6 \text{ ft/year}$$

### Analytical results

The nitrate/nitrite results are by far the most important in determining whether or not an unexpected release is occurring. This is because nitrate is the most mobile constituent likely to leach from saltstone. As in past years, nitrate/nitrite was detected in the downgradient wells but higher concentrations were found in background well ZBG-1. Therefore the downgradient detections do not represent evidence of a release from the vaults.

Results for several metals including barium and chromium remained elevated in some downgradient wells. As previously reported the wells were installed at the top of the watertable which resides in a clayey, silty formation that produces very little water. Changes in the sampling procedure have reduced the turbidity of samples from these wells, but the turbidity remains well above the ideal 10 NTU limit. Elevated results for metals are expected from turbid samples.

Estimated concentrations (J qualified) were reported for arsenic and selenium in ZBG-4 and ZBG-5. Since the results are estimates well below the practical quantitation limits, no conclusions can be drawn about their meaning. However, it should be noted that there is no plausible mechanism for these metals to leach from saltstone and travel to the wells without being preceded by a plume of nitrate.

Well ZBG-3 yielded a radium 226 result of 41.1 pCi/L on 3/30/05. This appears to have been the result of sampling or laboratory error. The sample taken on 8/31/05 yielded a more ordinary result of 1.79 pCi/L.

### Conclusions

The ZBG well series was sampled twice during 2004. ZBG-1A was dry. Flow rate and direction were consistent with historical patterns. The sampling did not reveal any evidence of a release from the saltstone vaults.

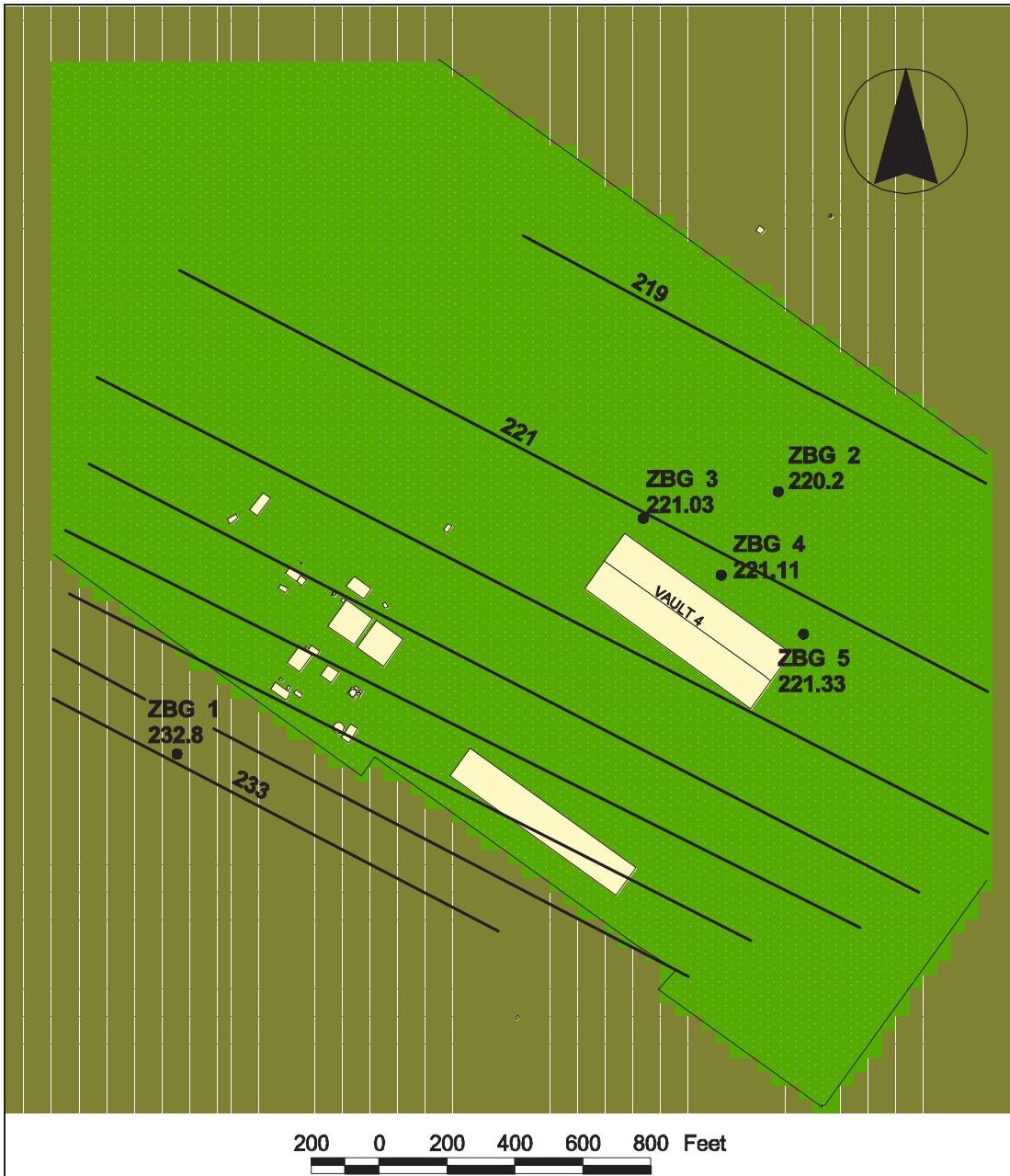


Figure 1. Water elevation data in Z-Area for first quarter of 2005.

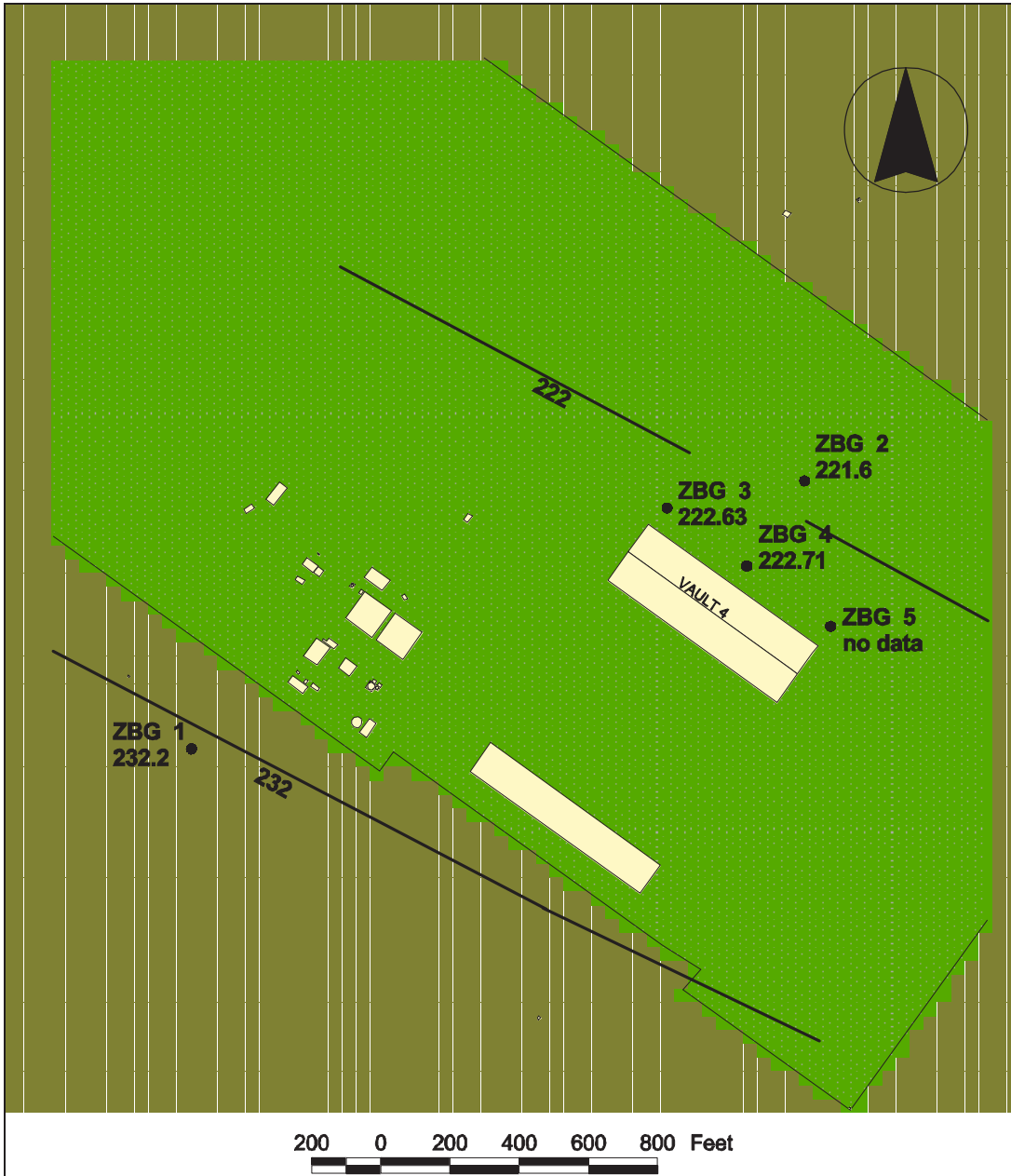


Figure 2. Water elevation data in Z-Area for third quarter of 2005.

Table 2. Monitoring data.

STATION_NAME	DATE	ANALYTE_NAME	METHOD	MDL	PQL	LAB_QUALIFIER	RESULT	UNITS
ZBG 1	3/21/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 1	3/21/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 1	3/21/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 1	3/21/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 1	8/24/2005 0:00	ANTIMONY	EPA6010B	3	30	U	30	ug/L
ZBG 1	8/24/2005 0:00	ANTIMONY	EPA6010B	3	30	U	30	ug/L
ZBG 2	3/21/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 2	3/21/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 2	8/24/2005 0:00	ANTIMONY	EPA6010B	3	30	U	30	ug/L
ZBG 3	3/30/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 3	3/30/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 3	8/31/2005 0:00	ANTIMONY	EPA6010B	3	30	U	30	ug/L
ZBG 4	3/29/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 4	3/29/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 4	8/31/2005 0:00	ANTIMONY	EPA6010B	3	30	U	30	ug/L
ZBG 5	3/29/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 5	3/29/2005 0:00	ANTIMONY	EPA6010B	10	100	U	100	ug/L
ZBG 5	8/31/2005 0:00	ANTIMONY	EPA6010B	3	30	U	30	ug/L
ZBG 5	8/31/2005 0:00	ANTIMONY	EPA6010B	3	30	U	30	ug/L
ZBG 1	3/21/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 1	3/21/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 1	3/21/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 1	3/21/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 1	8/24/2005 0:00	ARSENIC	EPA6010B	5	50	U	50	ug/L
ZBG 1	8/24/2005 0:00	ARSENIC	EPA6010B	5	50	U	50	ug/L
ZBG 2	3/21/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 2	3/21/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 2	8/24/2005 0:00	ARSENIC	EPA6010B	5	50	U	50	ug/L
ZBG 3	3/30/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 3	3/30/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 3	8/31/2005 0:00	ARSENIC	EPA6010B	5	50	U	50	ug/L
ZBG 4	3/29/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 4	3/29/2005 0:00	ARSENIC	EPA6010B	6	60	U	60	ug/L
ZBG 4	8/31/2005 0:00	ARSENIC	EPA6010B	5	50	J	6.77	ug/L
ZBG 5	3/29/2005 0:00	ARSENIC	EPA6010B	6	60	J	7.85	ug/L
ZBG 5	3/29/2005 0:00	ARSENIC	EPA6010B	6	60	J	7.85	ug/L
ZBG 5	8/31/2005 0:00	ARSENIC	EPA6010B	5	50	J	16	ug/L
ZBG 5	8/31/2005 0:00	ARSENIC	EPA6010B	5	50	J	13.5	ug/L
ZBG 1	3/21/2005 0:00	BARIUM	EPA6010B	2	20		27.9	ug/L
ZBG 1	3/21/2005 0:00	BARIUM	EPA6010B	2	20		26.7	ug/L
ZBG 1	3/21/2005 0:00	BARIUM	EPA6010B	2	20		27.9	ug/L
ZBG 1	3/21/2005 0:00	BARIUM	EPA6010B	2	20		26.7	ug/L
ZBG 1	8/24/2005 0:00	BARIUM	EPA6010B	2	20	J	16.4	ug/L
ZBG 1	8/24/2005 0:00	BARIUM	EPA6010B	2	20	J	16.2	ug/L
ZBG 2	3/21/2005 0:00	BARIUM	EPA6010B	2	20	J	9.43	ug/L
ZBG 2	3/21/2005 0:00	BARIUM	EPA6010B	2	20	J	9.43	ug/L

STATION_NAME	DATE	ANALYTE_NAME	METHOD	MDL	PQL	LAB_QUALIFIER	RESULT	UNITS
ZBG 2	8/24/2005 0:00	BARIUM	EPA6010B		2	20 J	11	ug/L
ZBG 3	3/30/2005 0:00	BARIUM	EPA6010B		2	20	29.8	ug/L
ZBG 3	3/30/2005 0:00	BARIUM	EPA6010B		2	20	29.8	ug/L
ZBG 3	8/31/2005 0:00	BARIUM	EPA6010B		1	10	93.5	ug/L
ZBG 4	3/29/2005 0:00	BARIUM	EPA6010B		2	20	265	ug/L
ZBG 4	3/29/2005 0:00	BARIUM	EPA6010B		2	20	265	ug/L
ZBG 4	8/31/2005 0:00	BARIUM	EPA6010B		1	10	785	ug/L
ZBG 5	3/29/2005 0:00	BARIUM	EPA6010B		2	20	58.1	ug/L
ZBG 5	3/29/2005 0:00	BARIUM	EPA6010B		2	20	58.1	ug/L
ZBG 5	8/31/2005 0:00	BARIUM	EPA6010B		1	10	226	ug/L
ZBG 5	8/31/2005 0:00	BARIUM	EPA6010B		1	10	223	ug/L
ZBG 1	3/21/2005 0:00	BENZENE	EPA8260B	0.33		1 U	1	ug/L
ZBG 1	3/21/2005 0:00	BENZENE	EPA8260B	0.33		1 U	1	ug/L
ZBG 1	8/24/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 2	3/21/2005 0:00	BENZENE	EPA8260B	0.33		1 U	1	ug/L
ZBG 2	3/21/2005 0:00	BENZENE	EPA8260B	0.33		1 U	1	ug/L
ZBG 2	8/24/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 3	3/30/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 3	3/30/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 3	8/31/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 4	3/29/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 4	3/29/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 4	8/31/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 5	3/29/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 5	3/29/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 5	8/31/2005 0:00	BENZENE	EPA8260B	0.3		1 U	1	ug/L
ZBG 1	3/21/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 1	3/21/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 1	3/21/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 1	3/21/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 1	8/24/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 1	8/24/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 2	3/21/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 2	3/21/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 2	8/24/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 3	3/30/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 3	3/30/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 3	8/31/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 4	3/29/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 4	3/29/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 4	8/31/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 5	3/29/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 5	3/29/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 5	8/31/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 5	8/31/2005 0:00	CADMIUM	EPA6010B		1	10 U	10	ug/L
ZBG 1	3/21/2005 0:00	CHROMIUM	EPA6010B		1	10 J	1.04	ug/L
ZBG 1	3/21/2005 0:00	CHROMIUM	EPA6010B		1	10 J	1.79	ug/L
ZBG 1	3/21/2005 0:00	CHROMIUM	EPA6010B		1	10 J	1.04	ug/L
ZBG 1	3/21/2005 0:00	CHROMIUM	EPA6010B		1	10 J	1.79	ug/L
ZBG 1	8/24/2005 0:00	CHROMIUM	EPA6010B		1	10 U	10	ug/L

STATION_NAME	DATE	ANALYTE_NAME	METHOD	MDL	PQL	LAB_QUALIFIER	RESULT	UNITS
ZBG 1	8/24/2005 0:00	CHROMIUM	EPA6010B	1	10	U	10	ug/L
ZBG 2	3/21/2005 0:00	CHROMIUM	EPA6010B	1	10	U	10	ug/L
ZBG 2	3/21/2005 0:00	CHROMIUM	EPA6010B	1	10	U	10	ug/L
ZBG 2	8/24/2005 0:00	CHROMIUM	EPA6010B	1	10	U	10	ug/L
ZBG 3	3/30/2005 0:00	CHROMIUM	EPA6010B	1	10	J	5.55	ug/L
ZBG 3	3/30/2005 0:00	CHROMIUM	EPA6010B	1	10	J	5.55	ug/L
ZBG 3	8/31/2005 0:00	CHROMIUM	EPA6010B	1	10		16.4	ug/L
ZBG 4	3/29/2005 0:00	CHROMIUM	EPA6010B	1	10	J	9.39	ug/L
ZBG 4	3/29/2005 0:00	CHROMIUM	EPA6010B	1	10	J	9.39	ug/L
ZBG 4	8/31/2005 0:00	CHROMIUM	EPA6010B	1	10		25.1	ug/L
ZBG 5	3/29/2005 0:00	CHROMIUM	EPA6010B	1	10		10.9	ug/L
ZBG 5	3/29/2005 0:00	CHROMIUM	EPA6010B	1	10		10.9	ug/L
ZBG 5	8/31/2005 0:00	CHROMIUM	EPA6010B	1	10		34.7	ug/L
ZBG 5	8/31/2005 0:00	CHROMIUM	EPA6010B	1	10		34.1	ug/L
ZBG 1	3/21/2005	DEPTH TO WATER					58.6	FT
ZBG 1	8/24/2005	DEPTH TO WATER					59.2	FT
ZBG 2	3/21/2005	DEPTH TO WATER					57.9	FT
ZBG 2	8/24/2005	DEPTH TO WATER					56.5	FT
ZBG 3	3/31/2005	DEPTH TO WATER					51.6	FT
ZBG 3	9/13/2005	DEPTH TO WATER					50	FT
ZBG 4	3/30/2005	DEPTH TO WATER					53	FT
ZBG 4	9/13/2005	DEPTH TO WATER					51.4	FT
ZBG 5	3/30/2005	DEPTH TO WATER					51	FT
ZBG 5	9/13/2005	DEPTH TO WATER						FT
ZBG 1	3/21/2005 0:00	ETHYLBENZENE	EPA8260B	0.21	1	U	1	ug/L
ZBG 1	3/21/2005 0:00	ETHYLBENZENE	EPA8260B	0.21	1	U	1	ug/L
ZBG 1	8/24/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 2	3/21/2005 0:00	ETHYLBENZENE	EPA8260B	0.21	1	U	1	ug/L
ZBG 2	3/21/2005 0:00	ETHYLBENZENE	EPA8260B	0.21	1	U	1	ug/L
ZBG 2	8/24/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 3	3/30/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 3	3/30/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 3	8/31/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 4	3/29/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 4	3/29/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 4	8/31/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 5	3/29/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 5	3/29/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 5	8/31/2005 0:00	ETHYLBENZENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 1	3/21/2005 0:00	GROSS ALPHA	L3.21-10001	4.4	9.89	U	1.99	pCi/L
ZBG 1	3/21/2005 0:00	GROSS ALPHA	L3.21-10001	4.4	9.89	U	1.99	pCi/L
ZBG 1	8/24/2005 0:00	GROSS ALPHA	L3.21-10001	2.37	6.21	U	1.61	pCi/L
ZBG 2	3/21/2005 0:00	GROSS ALPHA	L3.21-10001	4.39	10.7	U	3.07	pCi/L
ZBG 2	3/21/2005 0:00	GROSS ALPHA	L3.21-10001	4.39	10.7	U	3.07	pCi/L
ZBG 2	8/24/2005 0:00	GROSS ALPHA	L3.21-10001	2.35	4.41	U	0.215	pCi/L
ZBG 3	3/30/2005 0:00	GROSS ALPHA	L3.21-10001	4.46	12.5	J	5.88	pCi/L
ZBG 3	3/30/2005 0:00	GROSS ALPHA	L3.21-10001	4.46	12.5	J	5.88	pCi/L
ZBG 3	8/31/2005 0:00	GROSS ALPHA	L3.21-10001	3.23	9.99	J	4.89	pCi/L
ZBG 4	3/29/2005 0:00	GROSS ALPHA	L3.21-10001	4.43	11.1	U	3.64	pCi/L
ZBG 4	3/29/2005 0:00	GROSS ALPHA	L3.21-10001	4.42	10.7	U	3.08	pCi/L



STATION_NAME	DATE	ANALYTE_NAME	METHOD	MDL	PQL	LAB_QUALIFIER	RESULT	UNITS
ZBG 4	3/29/2005 0:00	GROSS ALPHA	L3.21-10001	4.43	11.1	U	3.64	pCi/L
ZBG 4	3/29/2005 0:00	GROSS ALPHA	L3.21-10001	4.42	10.7	U	3.08	pCi/L
ZBG 4	8/31/2005 0:00	GROSS ALPHA	L3.21-10001	3.19	7.31	U	1.12	pCi/L
ZBG 4	8/31/2005 0:00	GROSS ALPHA	L3.21-10001	3.2	8.1	U	2.05	pCi/L
ZBG 4	8/31/2005 0:00	GROSS ALPHA	L3.21-10001	3.19	7.31	U	1.12	pCi/L
ZBG 4	8/31/2005 0:00	GROSS ALPHA	L3.21-10001	3.2	8.1	U	2.05	pCi/L
ZBG 5	3/29/2005 0:00	GROSS ALPHA	L3.21-10001	4.85	13.9	J	7	pCi/L
ZBG 5	3/29/2005 0:00	GROSS ALPHA	L3.21-10001	4.85	13.9	J	7	pCi/L
ZBG 5	8/31/2005 0:00	GROSS ALPHA	L3.21-10001	3.66	11.9	J	6.61	pCi/L
ZBG 1	3/21/2005 0:00	LEAD	EPA6010B	2	20	J	13.2	ug/L
ZBG 1	3/21/2005 0:00	LEAD	EPA6010B	2	20	J	12.9	ug/L
ZBG 1	3/21/2005 0:00	LEAD	EPA6010B	2	20	J	13.2	ug/L
ZBG 1	3/21/2005 0:00	LEAD	EPA6010B	2	20	J	12.9	ug/L
ZBG 1	8/24/2005 0:00	LEAD	EPA6010B	2	20	J	11.6	ug/L
ZBG 1	8/24/2005 0:00	LEAD	EPA6010B	2	20	J	12	ug/L
ZBG 2	3/21/2005 0:00	LEAD	EPA6010B	2	20	U	20	ug/L
ZBG 2	3/21/2005 0:00	LEAD	EPA6010B	2	20	U	20	ug/L
ZBG 2	8/24/2005 0:00	LEAD	EPA6010B	2	20	U	20	ug/L
ZBG 3	3/30/2005 0:00	LEAD	EPA6010B	2	20	U	20	ug/L
ZBG 3	3/30/2005 0:00	LEAD	EPA6010B	2	20	U	20	ug/L
ZBG 3	8/31/2005 0:00	LEAD	EPA6010B	2	20	J	6.52	ug/L
ZBG 4	3/29/2005 0:00	LEAD	EPA6010B	2	20	J	4.96	ug/L
ZBG 4	3/29/2005 0:00	LEAD	EPA6010B	2	20	J	4.96	ug/L
ZBG 4	8/31/2005 0:00	LEAD	EPA6010B	2	20	J	14.7	ug/L
ZBG 5	3/29/2005 0:00	LEAD	EPA6010B	2	20	U	20	ug/L
ZBG 5	3/29/2005 0:00	LEAD	EPA6010B	2	20	U	20	ug/L
ZBG 5	8/31/2005 0:00	LEAD	EPA6010B	2	20	J	5.28	ug/L
ZBG 5	8/31/2005 0:00	LEAD	EPA6010B	2	20	J	4.57	ug/L
ZBG 1	3/21/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 1	3/21/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 1	3/21/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 1	3/21/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 1	8/24/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 1	8/24/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 2	3/21/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 2	3/21/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 2	8/24/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 3	3/30/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 3	3/30/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 3	3/30/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 3	3/30/2005 0:00	MERCURY	EPA7470A	0.02	0.2	U	0.2	ug/L
ZBG 3	8/31/2005 0:00	MERCURY	EPA7470A	0.02	0.2	J	0.0913	ug/L
ZBG 3	8/31/2005 0:00	MERCURY	EPA7470A	0.02	0.2	J	0.0324	ug/L
ZBG 4	3/29/2005 0:00	MERCURY	EPA7470A	0.02	0.2	J	0.0696	ug/L
ZBG 4	3/29/2005 0:00	MERCURY	EPA7470A	0.02	0.2	J	0.0696	ug/L
ZBG 4	8/31/2005 0:00	MERCURY	EPA7470A	0.02	0.2	J	0.0434	ug/L
ZBG 5	3/29/2005 0:00	MERCURY	EPA7470A	0.02	0.2	J	0.0708	ug/L
ZBG 5	3/29/2005 0:00	MERCURY	EPA7470A	0.02	0.2	J	0.0708	ug/L
ZBG 5	8/31/2005 0:00	MERCURY	EPA7470A	0.02	0.2	J	0.0262	ug/L
ZBG 1	3/21/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		1.61	mg/L

STATION_NAME	DATE	ANALYTE_NAME	METHOD	MDL	PQL	LAB_QUALIFIER	RESULT	UNITS
ZBG 1	3/21/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		1.57	mg/L
ZBG 1	3/21/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		1.61	mg/L
ZBG 1	3/21/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		1.57	mg/L
ZBG 1	8/24/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.017	0.05		1.93	mg/L
ZBG 1	8/24/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.017	0.05		1.92	mg/L
ZBG 2	3/21/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.55	mg/L
ZBG 2	3/21/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.551	mg/L
ZBG 2	3/21/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.55	mg/L
ZBG 2	3/21/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.551	mg/L
ZBG 2	8/24/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.017	0.05		0.507	mg/L
ZBG 3	3/30/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.665	mg/L
ZBG 3	3/30/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.665	mg/L
ZBG 3	8/31/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.017	0.05		0.513	mg/L
ZBG 4	3/29/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.498	mg/L
ZBG 4	3/29/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.509	mg/L
ZBG 4	3/29/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.498	mg/L
ZBG 4	3/29/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.509	mg/L
ZBG 4	8/31/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.017	0.05		0.231	mg/L
ZBG 4	8/31/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.017	0.05		0.232	mg/L
ZBG 5	3/29/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.105	mg/L
ZBG 5	3/29/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.003	0.02		0.105	mg/L
ZBG 5	8/31/2005 0:00	NITRATE-NITRITE AS NITROGEN	EPA353.1	0.017	0.05		0.651	mg/L
ZBG 1	3/21/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.56	21.6	U	5.96	pCi/L
ZBG 1	3/21/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.56	21.6	U	5.96	pCi/L
ZBG 1	8/24/2005 0:00	NONVOLATILE BETA	L3.21-10001	4.01	9.89	U	3.15	pCi/L
ZBG 2	3/21/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.55	20.4	U	0.832	pCi/L
ZBG 2	3/21/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.55	20.4	U	0.832	pCi/L
ZBG 2	8/24/2005 0:00	NONVOLATILE BETA	L3.21-10001	3.91	9.47	U	2.44	pCi/L
ZBG 3	3/30/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.61	21.3	U	3.86	pCi/L
ZBG 3	3/30/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.61	21.3	U	3.86	pCi/L
ZBG 3	8/31/2005 0:00	NONVOLATILE BETA	L3.21-10001	4.32	10	U	1.79	pCi/L
ZBG 4	3/29/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.57	21	U	3.18	pCi/L
ZBG 4	3/29/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.58	21.9	U	7.12	pCi/L
ZBG 4	3/29/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.57	21	U	3.18	pCi/L
ZBG 4	3/29/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.58	21.9	U	7.12	pCi/L
ZBG 4	8/31/2005 0:00	NONVOLATILE BETA	L3.21-10001	4.07	9.09	U	0.505	pCi/L
ZBG 4	8/31/2005 0:00	NONVOLATILE BETA	L3.21-10001	4.13	10.2	U	3.33	pCi/L
ZBG 4	8/31/2005 0:00	NONVOLATILE BETA	L3.21-10001	4.07	9.09	U	0.505	pCi/L
ZBG 4	8/31/2005 0:00	NONVOLATILE BETA	L3.21-10001	4.13	10.2	U	3.33	pCi/L
ZBG 5	3/29/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.91	22	U	3.92	pCi/L
ZBG 5	3/29/2005 0:00	NONVOLATILE BETA	L3.21-10001	9.91	22	U	3.92	pCi/L
ZBG 5	8/31/2005 0:00	NONVOLATILE BETA	L3.21-10001	4.46	11.1	U	4.24	pCi/L
ZBG 1	3/21/2005	PH					5.3	
ZBG 1	8/24/2005	PH					6.3	
ZBG 2	3/21/2005	PH					5.4	
ZBG 2	8/24/2005	PH					7	
ZBG 3	3/31/2005	PH					6.8	
ZBG 3	9/13/2005	PH					7	
ZBG 4	3/30/2005	PH					5.5	
ZBG 4	9/13/2005	PH					4.6	

STATION_NAME	DATE	ANALYTE_NAME	METHOD	MDL	PQL	LAB_QUALIFIER	RESULT	UNITS
ZBG 5	3/30/2005	PH					5.7	
ZBG 5	9/13/2005	PH					5.4	
ZBG 1	3/21/2005 0:00	RADIUM-226	RADA-008	0.719	1.79	J	0.906	pCi/L
ZBG 1	3/21/2005 0:00	RADIUM-226	RADA-008	0.719	1.79	J	0.906	pCi/L
ZBG 1	8/24/2005 0:00	RADIUM-226	RADA-008	0.377	1.06	J	0.803	pCi/L
ZBG 2	3/21/2005 0:00	RADIUM-226	RADA-008	0.525	1.25	U	0.437	pCi/L
ZBG 2	3/21/2005 0:00	RADIUM-226	RADA-008	0.535	1.19	U	0.267	pCi/L
ZBG 2	3/21/2005 0:00	RADIUM-226	RADA-008	0.525	1.25	U	0.437	pCi/L
ZBG 2	3/21/2005 0:00	RADIUM-226	RADA-008	0.535	1.19	U	0.267	pCi/L
ZBG 2	8/24/2005 0:00	RADIUM-226	RADA-008	0.432	0.954	U	0.218	pCi/L
ZBG 3	3/30/2005 0:00	RADIUM-226	RADA-008	0.735	6.2		41.1	pCi/L
ZBG 3	3/30/2005 0:00	RADIUM-226	RADA-008	0.735	6.2		41.1	pCi/L
ZBG 3	8/31/2005 0:00	RADIUM-226	RADA-008	0.326	1.24		1.79	pCi/L
ZBG 4	3/29/2005 0:00	RADIUM-226	RADA-008	0.74	2.16	J	2.05	pCi/L
ZBG 4	3/29/2005 0:00	RADIUM-226	RADA-008	0.74	2.16	J	2.05	pCi/L
ZBG 4	8/31/2005 0:00	RADIUM-226	RADA-008	0.428	0.924	U	0.162	pCi/L
ZBG 5	3/29/2005 0:00	RADIUM-226	RADA-008	0.705	1.79	J	1.02	pCi/L
ZBG 5	3/29/2005 0:00	RADIUM-226	RADA-008	0.705	1.79	J	1.02	pCi/L
ZBG 5	8/31/2005 0:00	RADIUM-226	RADA-008	0.38	0.928	J	0.404	pCi/L
ZBG 1	3/21/2005 0:00	RADIUM-228	RADA-009	0.927	2.01	U	0.054	pCi/L
ZBG 1	3/21/2005 0:00	RADIUM-228	RADA-009	0.927	2.01	U	0.054	pCi/L
ZBG 1	8/24/2005 0:00	RADIUM-228	RADA-009	0.692	1.47	J	0.712	pCi/L
ZBG 2	3/21/2005 0:00	RADIUM-228	RADA-009	0.827	1.77	U	-0.416	pCi/L
ZBG 2	3/21/2005 0:00	RADIUM-228	RADA-009	0.827	1.77	U	-0.416	pCi/L
ZBG 2	8/24/2005 0:00	RADIUM-228	RADA-009	0.537	1.06	U	0.296	pCi/L
ZBG 3	3/30/2005 0:00	RADIUM-228	RADA-009	0.863	2.22		7.35	pCi/L
ZBG 3	3/30/2005 0:00	RADIUM-228	RADA-009	0.863	2.22		7.35	pCi/L
ZBG 3	8/31/2005 0:00	RADIUM-228	RADA-009	0.789	1.54	U	0.35	pCi/L
ZBG 4	3/29/2005 0:00	RADIUM-228	RADA-009	0.771	1.68	U	0.238	pCi/L
ZBG 4	3/29/2005 0:00	RADIUM-228	RADA-009	0.771	1.68	U	0.238	pCi/L
ZBG 4	8/31/2005 0:00	RADIUM-228	RADA-009	0.82	1.75	J	0.868	pCi/L
ZBG 4	8/31/2005 0:00	RADIUM-228	RADA-009	0.88	1.92	J	1.12	pCi/L
ZBG 5	3/29/2005 0:00	RADIUM-228	RADA-009	0.811	1.8	U	0.748	pCi/L
ZBG 5	3/29/2005 0:00	RADIUM-228	RADA-009	0.811	1.8	U	0.748	pCi/L
ZBG 5	8/31/2005 0:00	RADIUM-228	RADA-009	0.827	1.85	J	1.08	pCi/L
ZBG 1	3/21/2005 0:00	SELENIUM	EPA6010B	5	50	J	5.31	ug/L
ZBG 1	3/21/2005 0:00	SELENIUM	EPA6010B	5	50	J	5.31	ug/L
ZBG 1	3/21/2005 0:00	SELENIUM	EPA6010B	5	50	U	50	ug/L
ZBG 1	3/21/2005 0:00	SELENIUM	EPA6010B	5	50	U	50	ug/L
ZBG 1	8/24/2005 0:00	SELENIUM	EPA6010B	6	60	J	7.7	ug/L
ZBG 1	8/24/2005 0:00	SELENIUM	EPA6010B	6	60	U	60	ug/L
ZBG 2	3/21/2005 0:00	SELENIUM	EPA6010B	5	50	U	50	ug/L
ZBG 2	3/21/2005 0:00	SELENIUM	EPA6010B	5	50	U	50	ug/L
ZBG 2	8/24/2005 0:00	SELENIUM	EPA6010B	6	60	J	6.33	ug/L
ZBG 3	3/30/2005 0:00	SELENIUM	EPA6010B	5	50	U	50	ug/L
ZBG 3	3/30/2005 0:00	SELENIUM	EPA6010B	5	50	U	50	ug/L
ZBG 3	8/31/2005 0:00	SELENIUM	EPA6010B	6	60	U	60	ug/L
ZBG 4	3/29/2005 0:00	SELENIUM	EPA6010B	5	50	J	6.64	ug/L
ZBG 4	3/29/2005 0:00	SELENIUM	EPA6010B	5	50	J	6.64	ug/L
ZBG 4	8/31/2005 0:00	SELENIUM	EPA6010B	6	60	U	60	ug/L

STATION_NAME	DATE	ANALYTE_NAME	METHOD	MDL	PQL	LAB_QUALIFIER	RESULT	UNITS
ZBG 5	3/29/2005 0:00	SELENIUM	EPA6010B	5	50	J	19.4	ug/L
ZBG 5	3/29/2005 0:00	SELENIUM	EPA6010B	5	50	J	19.4	ug/L
ZBG 5	8/31/2005 0:00	SELENIUM	EPA6010B	6	60	U	60	ug/L
ZBG 5	8/31/2005 0:00	SELENIUM	EPA6010B	6	60	U	60	ug/L
ZBG 1	3/21/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 1	3/21/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 1	3/21/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 1	3/21/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 1	8/24/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 1	8/24/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 2	3/21/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 2	3/21/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 2	8/24/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 3	3/30/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 3	3/30/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 3	8/31/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 4	3/29/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 4	3/29/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 4	8/31/2005 0:00	SILVER	EPA6010B	1	10	U	10	ug/L
ZBG 5	3/29/2005 0:00	SILVER	EPA6010B	1	10	J	1.45	ug/L
ZBG 5	3/29/2005 0:00	SILVER	EPA6010B	1	10	J	1.45	ug/L
ZBG 5	8/31/2005 0:00	SILVER	EPA6010B	1	10	J	1.33	ug/L
ZBG 5	8/31/2005 0:00	SILVER	EPA6010B	1	10	J	1.05	ug/L
ZBG 1	3/21/2005	SPECIFIC CONDUCTANCE					34	us/cm
ZBG 1	8/24/2005	SPECIFIC CONDUCTANCE					34	us/cm
ZBG 2	3/21/2005	SPECIFIC CONDUCTANCE					17	us/cm
ZBG 2	8/24/2005	SPECIFIC CONDUCTANCE					32	us/cm
ZBG 3	3/31/2005	SPECIFIC CONDUCTANCE					28	us/cm
ZBG 3	9/13/2005	SPECIFIC CONDUCTANCE					18	us/cm
ZBG 4	3/30/2005	SPECIFIC CONDUCTANCE					25	us/cm
ZBG 4	9/13/2005	SPECIFIC CONDUCTANCE					21	us/cm
ZBG 5	3/30/2005	SPECIFIC CONDUCTANCE					102	us/cm
ZBG 5	9/13/2005	SPECIFIC CONDUCTANCE					110	us/cm
ZBG 1	3/21/2005 0:00	TOLUENE	EPA8260B	0.39	1	U	1	ug/L
ZBG 1	3/21/2005 0:00	TOLUENE	EPA8260B	0.39	1	U	1	ug/L
ZBG 1	8/24/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 2	3/21/2005 0:00	TOLUENE	EPA8260B	0.39	1	U	1	ug/L
ZBG 2	3/21/2005 0:00	TOLUENE	EPA8260B	0.39	1	U	1	ug/L
ZBG 2	8/24/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 3	3/30/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 3	3/30/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 3	8/31/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 4	3/29/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 4	3/29/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 4	8/31/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 5	3/29/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 5	3/29/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 5	8/31/2005 0:00	TOLUENE	EPA8260B	0.25	1	U	1	ug/L
ZBG 1	3/21/2005 0:00	TRITIUM	L3.21-10015	0.835	2.14		4.33	pCi/mL
ZBG 1	3/21/2005 0:00	TRITIUM	L3.21-10015	0.835	2.14		4.33	pCi/mL

STATION_NAME	DATE	ANALYTE_NAME	METHOD	MDL	PQL	LAB_QUALIFIER	RESULT	UNITS
ZBG 1	8/24/2005 0:00	TRITIUM	L3.21-10015	0.803	2.01		3.53	pCi/mL
ZBG 2	3/21/2005 0:00	TRITIUM	L3.21-10015	0.833	2.05		3.05	pCi/mL
ZBG 2	3/21/2005 0:00	TRITIUM	L3.21-10015	0.833	2.05		3.05	pCi/mL
ZBG 2	8/24/2005 0:00	TRITIUM	L3.21-10015	0.807	1.93		2.26	pCi/mL
ZBG 3	3/30/2005 0:00	TRITIUM	L3.21-10015	0.848	2.05		2.56	pCi/mL
ZBG 3	3/30/2005 0:00	TRITIUM	L3.21-10015	0.848	2.05		2.56	pCi/mL
ZBG 3	8/31/2005 0:00	TRITIUM	L3.21-10015	0.848	2.03		2.28	pCi/mL
ZBG 4	3/29/2005 0:00	TRITIUM	L3.21-10015	0.832	2		2.42	pCi/mL
ZBG 4	3/29/2005 0:00	TRITIUM	L3.21-10015	0.832	2		2.42	pCi/mL
ZBG 4	8/31/2005 0:00	TRITIUM	L3.21-10015	0.839	2.07		3.03	pCi/mL
ZBG 5	3/29/2005 0:00	TRITIUM	L3.21-10015	0.837	1.85	U	0.308	pCi/mL
ZBG 5	3/29/2005 0:00	TRITIUM	L3.21-10015	0.837	1.85	U	0.308	pCi/mL
ZBG 5	8/31/2005 0:00	TRITIUM	L3.21-10015	0.853	1.88	U	0.266	pCi/mL
ZBG 1	3/21/2005	TURBIDITY					6	ntu
ZBG 1	8/24/2005	TURBIDITY					0.4	ntu
ZBG 2	3/21/2005	TURBIDITY					1.4	ntu
ZBG 2	8/24/2005	TURBIDITY					0.9	ntu
ZBG 3	3/31/2005	TURBIDITY					36	ntu
ZBG 3	9/13/2005	TURBIDITY					24	ntu
ZBG 4	3/30/2005	TURBIDITY					31	ntu
ZBG 4	9/13/2005	TURBIDITY					27	ntu
ZBG 5	3/30/2005	TURBIDITY					29	ntu
ZBG 5	9/13/2005	TURBIDITY					66.1	ntu
ZBG 1	3/21/2005 0:00	XYLENES	EPA8260B	0.25	1	U	1	ug/L
ZBG 1	3/21/2005 0:00	XYLENES	EPA8260B	0.25	1	U	1	ug/L
ZBG 1	8/24/2005 0:00	XYLENES	EPA8260B	0.25	1	U	1	ug/L
ZBG 2	3/21/2005 0:00	XYLENES	EPA8260B	0.25	1	U	1	ug/L
ZBG 2	3/21/2005 0:00	XYLENES	EPA8260B	0.25	1	U	1	ug/L
ZBG 2	8/24/2005 0:00	XYLENES	EPA8260B	0.25	1	U	1	ug/L
ZBG 3	3/30/2005 0:00	XYLENES	EPA8260B	0.34	1	U	1	ug/L
ZBG 3	3/30/2005 0:00	XYLENES	EPA8260B	0.34	1	U	1	ug/L
ZBG 3	8/31/2005 0:00	XYLENES	EPA8260B	0.25	1	U	1	ug/L
ZBG 4	3/29/2005 0:00	XYLENES	EPA8260B	0.34	1	U	1	ug/L
ZBG 4	3/29/2005 0:00	XYLENES	EPA8260B	0.34	1	U	1	ug/L
ZBG 4	8/31/2005 0:00	XYLENES	EPA8260B	0.25	1	U	1	ug/L
ZBG 5	3/29/2005 0:00	XYLENES	EPA8260B	0.34	1	U	1	ug/L
ZBG 5	3/29/2005 0:00	XYLENES	EPA8260B	0.34	1	U	1	ug/L
ZBG 5	8/31/2005 0:00	XYLENES	EPA8260B	0.25	1	U	1	ug/L