

### 2.3.3 Water Quality

This section considers the water quality of surface-water bodies and groundwater aquifers that could (1) affect plant water use and effluent discharge, or (2) be affected by the construction or operation of STP 3 & 4. This discussion is based on the surface water and groundwater data associated with the construction and operation of STP 1 & 2. No surface or groundwater quality data would preclude the development of STP 3 & 4. As discussed in Subsection 2.3.2, a review of the STP site's surface water rights and groundwater use indicates that sufficient water is available for construction and operation of STP 3 & 4.

#### 2.3.3.1 Surface Water

STP 3 & 4 will use a closed-cycle circulating water system similar to that used for STP 1 & 2 (see Section 3.4). The existing 7000-acre Main Cooling Reservoir (MCR) will be used for dissipation of waste heat. Makeup water for the MCR will be diverted from the Colorado River and provided by means of the Reservoir Makeup Pumping Facility (RMPF). The RMPF consists of a traveling screen intake structure, siltation basin, sharp crested weir, and 1200 cfs capacity pump station, once replacement pumps have been installed. The location of the existing screen intake structure is discussed in Subsection 1.2.4. All cooling system discharges from STP 3 & 4, including from the Ultimate Heat Sink (UHS), which is comprised of mechanical draft cooling towers, will be discharged to the MCR via a new discharge structure that will be built in the vicinity of STP 1 & 2 discharge structure. Water from the MCR would be discharged to the Colorado River in the future as necessary, based on the level and water quality of the MCR. Discharge of water to the Colorado River from the MCR would occur through the existing blowdown facility. Blowdown from the MCR to the Colorado River would occur as necessary to maintain the MCR water quality at an average of 3000 micro-Siemens per centimeter ( $\mu\text{S}/\text{cm}$ ) (Reference 2.3.3-1). The current Texas Pollution Discharge Elimination System (TPDES) permit (Reference 2.3.3-1) allows an average MCR discharge rate of 144 mgd with a daily maximum of 200 mgd. The permitted pH range for water discharged from the MCR is between 6.0 and 9.0 standard units. The water temperature daily average limit is 95°F with a daily maximum of 97°F. The total residual chlorine daily maximum is 0.05 mg/L. Any blowdown would occur at the TPDES permitted outfall location in the southeastern portion of the MCR. However, the last time that blowdown from the MCR occurred was 1997.

As discussed in Subsection 2.3.1, aside from some small onsite areas of standing water, sloughs, site drainage features, and the West Branch of the Colorado River, the Colorado River is the primary surface water body that could be affected by construction and operation of STP 3 & 4. The quality of water from the Colorado River is sufficient for plant operations. Existing water treatment methods and procedures are adequate for plant water use purposes. Little Robbins Slough intercepts and drains water from the western portion of the STP site and flows generally southeast to an area comprised of wetlands and marshlands located between the STP site and Matagorda Bay.

The portion of the Colorado River adjacent to the STP site, Colorado River Segment 1401, has been classified by the Texas Commission on Environmental Quality (TCEQ)

as Tidal (Reference 2.3.3-1). The closest surface water quality monitoring station to the STP site is located at the Lower Colorado River Authority's (LCRA) Selkirk Island monitoring station located approximately 2 miles downstream of FM 521 and approximately 1.5 miles east of the southeast portion of the MCR. Water quality data for this station for the period from January 2000 through September 2006 is included in Table 2.3.3-1 (Reference 2.3.3-3). Based on the data available at this location, the water quality is sufficient for plant use and there appears to be no environmental stressors associated with the existing water quality.

Freshwater flow from the Colorado River is important to the health and biological diversity of Matagorda Bay. A consortium of state agencies including the LCRA, Texas Parks and Wildlife Department (TPWD), TCEQ, and Texas Water Development Board (TWDB) recently selected 25 parts per thousand as the "desired salinity" in the eastern arm of Matagorda Bay, downstream of the mouth of the diverted Colorado River (Reference 2.3.3-4). It was agreed that this level of salinity would provide a "refuge" or "sanctuary" for important finfish and shellfish, particularly the Eastern oyster. In addition, TPWD designated this eastern arm of Matagorda Bay a finfish and shellfish nursery, making it off limits to commercial fishing and commercial harvesting of oysters. Table 2.3.3-2 shows targeted Colorado River freshwater inflows by month. Computer modeling indicated that an average monthly inflow of 36,000 acre-feet would be required to maintain an average salinity of 25 parts per thousand in the nursery area (Reference 2.3.3-4). As can be seen in the data presented in Section 5.2, STP withdrawal from the Colorado River is not expected to adversely impact achievement of this average monthly inflow rate.

Water quality data, primarily for metals and salts, for two reservoir sampling events performed during 2006 is summarized in Table 2.3.3-3.

Additional surface water sampling at the STP site includes sampling for radionuclides as part of the site's Radiological Environmental Monitoring Program (REMP). Surface water samples from various locations in the vicinity of the site were analyzed for the radionuclides indicated in Table 2.3.3-4 during 2005. The results of the analytical testing indicated that tritium was the only radionuclide that tested above its lower detection limit. Out of the 12 samples tested for tritium, only 4 indicated the presence tritium above detection limits. The sample location with the highest annual mean value was located in the south-southeast portion of the MCR near the blowdown discharge. The remainder of the radionuclides analyzed (40 samples) were not detected above their lower detection limits.

In addition to the sampling locations included in the REMP, there were historical sampling events for tritium at other locations. Water bodies sampled have included the west branch of the Colorado River, Little Robbins Slough, the east branch of Little Robbins Slough, an onsite ditch northeast of the MCR, and the MCR. The tritium data for these water bodies is summarized in Table 2.3.3-5. Sampling results indicate the presence of tritium in all six of the surface water body locations analyzed. Tritium was also detected in pressure relief wells (Table 2.3.3-6) installed within the above grade MCR dike. All measured tritium concentrations were below the U.S. Environmental Protection Agency's primary drinking water standard of 20,000 picoCuries per liter.

Since the relief wells discharge to the surface ditches around the dike, the results of the tritium analyses for these wells is considered surface water data.

Segment 1401 water uses support aquatic life, contact recreation, general use, and fish consumption. In 2004, Segment 1401 was assessed as “fully supported” for aquatic life, contact recreation, and for general uses. Fish consumption was not assessed (Reference 2.3.3-2). The draft 2006 water body assessment list shows the segment as not supporting contact recreational use due to the presence of the bacteria *enterococcus* (Reference 2.3.3-5). *Enterococcus* is normally found in human and animal waste (Reference 2.3.3-6). Water quality associated with bacteria generally deteriorates during periods of heavy precipitation. Runoff from livestock producing facilities could carry increased amounts of bacteria which could then be carried to the nearest surface water feature. Heavy rains could also tax wastewater treatment facilities by flooding the systems and flushing water not yet fully treated to surface water features for transport downstream. Since there had been no release of water to the Colorado River from STP 1 & 2 operations, the STP site would not be considered a potential source of the bacteria. However, water pumped from the Colorado River to the MCR could also transport bacteria, which would be removed from the water stream during the water treatment process.

### 2.3.3.2 Groundwater

Groundwater quality in the Gulf Coast Aquifer generally varies with depth and location. Water quality is good in terms of dissolved solids in the central and northeastern parts of the aquifer where the aquifer contains less than 500 milligrams per liter (mg/L) of total dissolved solids, but declines to the south where the total dissolved solids range from 1000 to more than 10,000 mg/L (Reference 2.3.3-7). Groundwater becomes more saline in the deeper subsurface and in discharge areas due to the long groundwater residence times and continued reaction with the aquifer minerals (Reference 2.3.3-8). Groundwater salinity is a function of total dissolved solids concentration. The salinity scale is as follows: fresh water (less than 1000 mg/L), slightly saline (1000 to 3000 mg/L) moderately saline (3000 to 10,000 mg/L), very saline (10,000 to 35,000 mg/L), and brine (greater than 35,000 mg/L) (Reference 2.3.3-8).

The aquifer of interest at the STP site is the Chicot Aquifer, which is the most shallow aquifer in the Gulf Coast Aquifer system. At the STP site, underlying aquifers within the Gulf Coast Aquifer System include the Evangeline, Jasper, and Catahoula Aquifers (Reference 2.3.3-8). The upper portion of the Chicot Aquifer is comprised of the Beaumont Formation.

The TCEQ is the entity responsible for protecting the state’s groundwater quality. To this end, the TCEQ has implemented a comprehensive statewide groundwater management policy of antidegradation and has instituted a groundwater quality assessment program that maintains a network designed to monitor the ambient groundwater quality of nine major aquifer systems in Texas. One of these nine aquifer systems, the Chicot Aquifer (part of Gulf Coast Aquifer system), underlies the STP site.

Radionuclides, including uranium, radium, and radon gas are naturally occurring within the central and northeastern portion of the Gulf Coast Aquifer, with a high occurrence in the Harris County area located northeast of Matagorda County (Reference 2.3.3-7).

Groundwater quality data from wells within 6 miles (9.6 kilometers) of the STP site located in the same portion of the Chicot Aquifer as the STP site wells are summarized in Table 2.3.3-7. The locations of the wells are indicated on Figure 2.3.2-1.

In 2005, sample analyses on 26 groundwater samples from drinking water wells included in the REMP were analyzed for radionuclides. The results are included in Table 2.3.3-8. The results indicated that Gross Beta was the only radionuclide detected above laboratory detection levels. The control station for the sampling event had higher results than the STP site samples. The location with the highest annual mean Gross Beta concentration was 14 miles (22.4 kilometers) north-northeast of STP 1 & 2. The elevated levels reflect natural radioactive material in the well water, activity not related to the STP site operations.

In 2005, sample analyses on six groundwater samples from monitoring wells included in the REMP were analyzed for the radionuclides. The results are included in Table 2.3.3-9. Tritium was the only radionuclide detected above laboratory detection levels. The location with the highest annual mean tritium concentration was directly south of, and adjacent to, the MCR, 3.8 miles south of STP 1 & 2.

In 2006, sample analyses on 16 groundwater samples from monitoring wells included in the REMP were analyzed for tritium. The results, as shown in Table 2.3.3-10, indicated levels above detection limits at only one groundwater sampling location, piezometer well number 435-02. This well is located approximately 700 feet west of the MCR embankment, approximately 2.9 miles (4.6 kilometers) southwest of STP 1 & 2.

#### 2.3.3.2.1 References

- 2.3.3-1 TCEQ 2005, STP Nuclear Operating Company, TPDES Permit No. 001908000 Renewal. July 21, 2005.
- 2.3.3-2 "Colorado River Basin: 2004 Assessment. Segment 1401," TCEQ (Texas Commission on Environmental Quality), April 14, 2007.
- 2.3.3-3 "Water Quality Data 2000-September 2006," LCRA (Lower Colorado River Authority), 2007. Available at <http://waterquality.lcra.org>, accessed on June 14, 2007.
- 2.3.3-4 "Matagorda Bay Freshwater Inflow Needs Study," LCRA et al. (Lower Colorado River Authority), TCEQ, Texas Parks and Wildlife, and the Texas Water Development Board, August 2006.
- 2.3.3-5 "Draft 2006 Water Body Assessments by Basin 14 Colorado River Basin," TCEQ 2007b, March 19, 2007. Available at [www.tceq.state.tx.us/compliance/monitoring/water/quality/data/06twqi/06\\_list.html](http://www.tceq.state.tx.us/compliance/monitoring/water/quality/data/06twqi/06_list.html).

- 2.3.3-6 MedicineNet 2007, Definition of *Enterococcus*, Available at [www.medterms.com/script/main/art.asp?articlekey=20162](http://www.medterms.com/script/main/art.asp?articlekey=20162) accessed on August 8, 2007.
- 2.3.3-7 "Water for Texas," TWDB (Texas Water Development Board) 2007a, Document No. GP-8-1, January 2007.
- 2.3.3-8 "Texas Water Development Board Report 365 Aquifers of the Gulf Coast of Texas," Mace et. al., Mace, Robert E., Sarah C. Davidson, Edward S. Angle, and William F. Mullican, III, February 2006.
- 2.3.3-9 Nalco (Nalco Analytical Resources), 2006a, STPNOC Cooling Water Data, Main Cooling Reservoir. Sampled July 25, 2006. Completed August 3, 2006.
- 2.3.3-10 Nalco 2006b, STPNOC Cooling Water Data, Main Cooling Reservoir. Sampled October 17, 2006. Completed October 31, 2006.
- 2.3.3-11 "Ground Water Quality Samples Matagorda County," TWDB, Ground Water Data System, February 6, 2007.

**Table 2.3.3-1(a)**  
**Surface Water Quality Data—Colorado River at Selkirk Island**

Date	Depth (m)	Temperature (°C)	NO <sub>2</sub> /NO <sub>3</sub> (mg/L)	TKN (mg/L)	O-P Diss. (mg/L)	DO (mg/L)	Total Phosphate (uG/L)	PHEOEHYTTN-A FLR Wet (mg/L)	Turbidity NTU
01/03/2000	0.3	No Data	3.2	1.85	0.2	No Data	No Data	1.41	No Data
01/03/2000	1.0	18.92	No Data	No Data	No Data	No Data	No Data	No Data	7.49
03/16/2000	0.3	No Data	2.12	0.836	0.46	No Data	No Data	0.501	No Data
03/16/2000	1.0	21.82	No Data	No Data	No Data	8.09	No Data	No Data	21.1
05/03/2000	0.3	No Data	<0.02	1.21	0.16	No Data	No Data	0.275	No Data
05/03/2000	1.0	25.07	No Data	No Data	No Data	5.52	No Data	No Data	13
07/11/2000	2.2	30.84	<0.02	0.713	0.06	2.7	No Data	0.18	10.6
09/12/2000	0.33	No Data	<0.02	0.946	<0.01	No Data	No Data	0.266	No Data
09/12/2000	0.5	30.72	No Data	No Data	No Data	6.12	No Data	No Data	5.47
11/06/2000	0.33	No Data	2	0.683	<0.01	No Data	No Data	0.331	No Data
11/06/2000	1.0	24.29	No Data	No Data	No Data	7.1	No Data	No Data	32.1
01/04/2001	0.33	No Data	0.98	0.594	0.11	No Data	No Data	0.237	No Data
01/04/2001	0.6	6.41	No Data	No Data	No Data	12.86	No Data	No Data	127
03/01/2001	0.33	No Data	1.22	0.434	0.19	No Data	No Data	0.255	No Data
03/01/2001	0.8	18.67	No Data	No Data	No Data	8.94	No Data	No Data	47.2
05/03/2001	0.2	25.82	No Data	No Data	No Data	10.15	No Data	No Data	25.7
05/03/2001	0.33	No Data	1.23	0.821	0.08	No Data	No Data	0.168	No Data
07/18/2001	0.33	No Data	<0.02	1.6	0.0754	No Data	No Data	0.158	No Data
07/18/2001	0.7	33	No Data	No Data	No Data	9.72	No Data	No Data	31.6
09/05/2001	0.33	No Data	0.707	1.09	0.258	No Data	No Data	0.408	No Data
09/05/2001	0.5	27.91	No Data	No Data	No Data	5.41	No Data	No Data	199
11/26/2001	0.33	No Data	0.735	0.489	0.907	No Data	No Data	0.118	No Data
11/26/2001	0.8	19.15	No Data	No Data	No Data	9.38	No Data	No Data	85.8

**Table 2.3.3-1(a)**  
**Surface Water Quality Data—Colorado River at Selkirk Island (Continued)**

Date	Depth (m)	Temperature (°C)	NO <sub>2</sub> /NO <sub>3</sub> (mg/L)	TKN (mg/L)	O-P Diss. (mg/L)	DO (mg/L)	Total Phosphate (uG/L)	PHEOEHYTTN-A FLR Wet (mg/L)	Turbidity NTU
01/16/2002	0.33	No Data	1.25	0.389	0.175	No Data	No Data	0.168	No Data
01/16/2002	0.5	14.35	No Data	No Data	No Data	10.62	No Data	No Data	40.7
03/20/2002	0.33	No Data	1.42	0.49	0.08	No Data	No Data	0.28	No Data
03/20/2002	0.8	22.15	No Data	No Data	No Data	8.55	No Data	No Data	8.52
05/09/2002	0.33	No Data	0.02	0.9	0.03	No Data	No Data	0.1	No Data
05/09/2002	0.8	29.04	No Data	No Data	No Data	8.81	No Data	No Data	7.71
07/01/2002	0.33	No Data	0.71	1.1	0.22	No Data	No Data	0.31	No Data
09/09/2002	0.33	No Data	0.19	1.41	0.39	No Data	No Data	0.7	No Data
09/09/2002	0.6	26.56	No Data	No Data	No Data	6.12	No Data	No Data	441
09/09/2002	2.0	26.56	No Data	No Data	No Data	5.88	No Data	No Data	No Data
11/05/2002	0.3	16.16	No Data	No Data	No Data	9.92	No Data	No Data	772
11/05/2002	0.33	No Data	0.25	1.14	0.17	No Data	No Data	0.55	No Data
11/05/2002	0.8	16.15	No Data	No Data	No Data	9.53	No Data	No Data	No Data
01/02/2003	0.3	14.54	0.77	1.19	0.08	11.35	No Data	0.37	392
01/02/2003	1.6	14.53	No Data	No Data	No Data	10.46	No Data	No Data	No Data
03/05/2003	0.3	12.76	0.76	0.51	0.07	10.99	No Data	0.21	123
05/07/2003	0.3	26.99	No Data	No Data	No Data	7.54	No Data	No Data	17
05/07/2003	0.33	No Data	0.14	2.04	0.01	No Data	No Data	0.08	0.08
05/07/2003	1.1	26.91	No Data	No Data	No Data	7.08	No Data	No Data	No Data
07/02/2003	0.3	31.19	No Data	No Data	No Data	7.57	No Data	No Data	17
07/02/2003	0.33	No Data	0.43	0.88	0.06	No Data	No Data	0.08	No Data
07/02/2003	1.2	30.57	No Data	No Data	No Data	6.82	No Data	No Data	No Data
09/30/2003	0.33	26.89	0.75	0.973	0.141	12.07	13.3	0.23	18.3

**Table 2.3.3-1(a)**  
**Surface Water Quality Data—Colorado River at Selkirk Island (Continued)**

Date	Depth (m)	Temperature (°C)	NO <sub>2</sub> /NO <sub>3</sub> (mg/L)	TKN (mg/L)	O-P Diss. (mg/L)	DO (mg/L)	Total Phosphate (uG/L)	PHEOEHYTTN-A FLR Wet (mg/L)	Turbidity NTU
11/03/2003	0.33	23.54	1.5	0.931	0.226	9.33	2.7	0.25	11.5
01/13/2004	0.33	14.33	2.08	0.526	0.326	10.79	1.2	0.34	18.3
03/09/2004	0.33	20.78	1.13	0.849	0.236	9.1	1.5	0.23	31.6
05/04/2004	0.34	21.1	1.49	0.764	0.271	8.44	1.0	0.39	158.0
07/13/2004	0.32	30.51	0.27	0.748	0.054	11.26	6.2	0.117	22.0
07/13/2004	1.2	30.23	No Data	No Data	No Data	10.13	No Data	No Data	No Data
09/14/2004	0.33	29.88	<0.02	1.01	0.054	9.77	5.9	0.125	10.9
09/14/2004	1.26	29.19	No Data	No Data	No Data	5.69	No Data	No Data	No Data
11/10/2004	0.33	21.34	1.633	0.72	0.225	8.92	<3.0	0.287	58.9
11/10/2004	0.88	21.2	No Data	No Data	No Data	8.83	No Data	No Data	No Data
01/06/2005	0.3	19.22	1.157	0.294	0.099	9.21	5.2	0.129	No Data
03/01/2005	0.3	17.58	1.922	0.661	0.146	9.67	<3.0	0.287	84.8
05/10/2005	0.3	23.44	0.1532	1.09	<0.04	5.73	8.3	0.068	39.4
07/05/2005	0.3	32.79	<0.02	0.704	<0.04	8.43	4.7	0.178	15.5
09/01/2005	0.33	31.82	<0.02	1.07	<0.04	5.41	No Data	0.671	7.59
11/01/2005	0.3	20.27	1.5167	0.6936	0.112	9.29	No Data	0.1886	8.79
01/10/2006	0.3	15.73	3.299	0.7941	0.296	10.25	No Data	0.3105	8.43
03/06/2006	0.33	21.58	2.0476	1.2867	0.376	12.2	No Data	0.3163	15.3
05/17/2006	0.33	25.4	1.0557	0.5182	0.176	7.44	No Data	0.228	18.0
07/17/2006	0.3	33.41	0.3	0.604	0.194	9.16	No Data	0.277	10.8
09/13/2006	0.3	28.97	0.16	1.62	0.064	6.27	No Data	0.221	14.8



**Table 2.3.3-1(b)**  
**Surface Water Quality Data—Colorado River at Selkirk Island**

Date	Depth (m)	TOC (mg/L)	Chloride (mg/L)	Chlorophyll-A-Phyto CHFLuG/L	E. Coli (#/100 ml)	Enterococcus IDEXX (MPN/100/ml)
01/03/2000	0.3	2.03	2,290	No Data	49	No Data
03/16/2000	0.3	3.21	1,200	No Data	128	No Data
05/03/2000	0.3	3.14	2,380	No Data	300	No Data
07/11/2000	2.2	2.09	4,690	No Data	7	No Data
09/12/2000	0.33	1.74	12,400	No Data	1	No Data
11/06/2000	0.33	2.1	3,040	No Data	600	No Data
01/04/2001	0.33	4.92	32.2	No Data	80	No Data
03/01/2001	0.33	3.61	45.5	No Data	49	No Data
05/03/2001	0.33	3.59	408	No Data	9	No Data
07/18/2001	0.33	4.14	1,530	No Data	142	No Data
09/05/2001	0.33	7.28	14.5	No Data	300	1,400
11/26/2001	0.33	3.52	35.6	No Data	No Data	209
01/16/2002	0.33	3.47	37.9	No Data	No Data	16.6
03/20/2002	0.33	2.62	783	No Data	No Data	30
05/09/2002	0.33	2.68	1,210	No Data	No Data	No Data
07/01/2002	0.33	4.74	39	No Data	No Data	240
09/09/2002	0.33	7.08	18.1	No Data	No Data	7,700
11/05/2002	0.33	4.7	6.21	No Data	No Data	1,900
01/02/2003	0.3	6.22	26.4	No Data	No Data	450
03/05/2003	0.3	4	31.4	No Data	No Data	19
05/07/2003	0.33	3.41	401	No Data	No Data	34
07/02/2003	0.33	2.59	687	No Data	No Data	33
09/30/2003	0.33	4.55	348	57	No Data	4
11/03/2003	0.33	3.22	354	14.9	No Data	41
01/13/2004	0.33	2.6	1,190	7.2	No Data	61
03/09/2004	0.33	5.5	110	8.2	No Data	180
05/04/2004	0.34	6.2	20.3	3.5	No Data	240
07/13/2004	0.32	4.2	33.9	26.3	No Data	540
09/14/2004	0.33	2.6	2,060	26.1	No Data	160
11/10/2004	0.33	5.88	93.2	5.7	No Data	1,600
01/06/2005	0.3	2.74	37.9	18.7	No Data	No Data
03/01/2005	0.3	4.92	30.8	<5	No Data	87
05/10/2005	0.3	3	267	32.7	No Data	10
07/05/2005	0.3	3.53	343	21	No Data	10
09/01/2005	0.33	2.89	4,450	No Data	No Data	20
11/01/2005	0.3	2.025	1,277.96	No Data	No Data	10
01/10/2006	0.3	3.527	969.356	No Data	No Data	1
03/06/2006	0.33	2.694	1,122.32	No Data	No Data	10
05/17/2006	0.33	3.353	1,289.32	No Data	No Data	op31
07/17/2006	0.3	4.3	203	No Data	No Data	10
09/13/2006	0.3	3.65	2,160	No Data	No Data	82

**Table 2.3.3-1(b)**  
**Surface Water Quality Data—Colorado River at Selkirk Island (Continued)**

Date	Depth (m)	Total Alkalinity CaCO <sub>3</sub> (mg/L)	Chlorophyll-A Corrected (ug/L)	Fecal Coli MFM-FCBR (#/100ml)
01/03/2000	0.3	222	21	64
03/16/2000	0.3	188	6.6	168
05/03/2000	0.3	163	10.9	700
07/11/2000	2.2	162	4.8	6
09/12/2000	0.33	158	15.8	2
11/06/2000	0.33	134	3.7	600
01/04/2001	0.33	137	0.9	112
03/01/2001	0.33	152	2.51	132
05/03/2001	0.33	182	21.9	8
07/18/2001	0.33	165	19.2	400
09/05/2001	0.33	94.1	1	No Data
11/26/2001	0.33	176	0.836	No Data
01/16/2002	0.33	189	6.48	No Data
03/20/2002	0.33	224	15.6	No Data
05/09/2002	0.33	148	18	No Data
07/01/2002	0.33	108	7.5	No Data
09/09/2002	0.33	81	12.9	No Data
11/05/2002	0.33	75	1.3	No Data
01/02/2003	0.3	151	5.4	No Data
03/05/2003	0.3	184	9.1	No Data
05/07/2003	0.33	183	27.6	No Data
07/02/2003	0.33	167	16.7	No Data
09/30/2003	0.33	166	No Data	No Data
11/03/2003	0.33	203	No Data	No Data
01/13/2004	0.33	205	No Data	No Data
03/09/2004	0.33	136	No Data	No Data
05/04/2004	0.34	94	No Data	No Data
07/13/2004	0.32	183	No Data	No Data
09/14/2004	0.33	182	No Data	No Data
11/10/2004	0.33	133	No Data	No Data
01/06/2005	0.3	218	No Data	No Data
03/01/2005	0.3	162	No Data	No Data
05/10/2005	0.3	176	No Data	No Data
07/05/2005	0.3	160	No Data	No Data
09/01/2005	0.33	171	No Data	No Data
11/01/2005	0.3	223.1	5.9808	No Data
01/10/2006	0.3	235.3	5.72448	No Data
03/06/2006	0.33	215	24.6153	No Data
05/17/2006	0.33	118.7	6.94093	No Data
07/17/2006	0.3	160	18.8	No Data
09/13/2006	0.3	170	15.2	No Data

**Table 2.3.3-1(c)**  
**Surface Water Quality Data—Colorado River at Selkirk Island**

Date	Depth (m)	NH <sub>3</sub> -N Total (mg/L)	pH (SU)	PHEOPHTN A (ug/L)	Residual Total (Nonfilterable) (mg/L)	Residual Total Filtrate Dissolved-180 (mg/L)	Specific Conductivity Field (µmhos/cm)	Sulfate SO <sub>4</sub> (mg/L)
01/03/2000	0.3	<0.02	No Data	6.9	21	4,280	No Data	340
01/03/2000	1.0	No Data	8.16	No Data	No Data	No Data	7,766	No Data
03/16/2000	0.3	0.098	No Data	2.3	21	2,380	No Data	206
03/16/2000	1.0	No Data	8.08	No Data	No Data	No Data	4,287	No Data
05/03/2000	0.3	0.291	No Data	2.6	34	No Data	No Data	338
05/03/2000	1.0	No Data	7.95	No Data	No Data	No Data	7,241d	No Data
07/11/2000	2.2	<0.02	7.74	1.3	31	No Data	23,468	582
09/12/2000	0.33	<0.02	No Data	5.2	91	No Data	No Data	1,650
09/12/2000	0.5	No Data	8.14	No Data	No Data	No Data	33,826	No Data
11/06/2000	0.33	0.135	No Data	1.2	47	No Data	No Data	408
11/06/2000	1.0	No Data	7.85	No Data	No Data	No Data	9,539	No Data
01/04/2001	0.33	0.0223	No Data	<0.5	66	No Data	No Data	35.1
01/04/2001	0.6	No Data	8.02	No Data	No Data	No Data	432	No Data
03/01/2001	0.33	<0.02	No Data	0.593	37	No Data	No Data	35.2
03/01/2001	0.8	No Data	8.2	No Data	No Data	No Data	508	No Data
05/03/2001	0.2	No Data	8.65	No Data	No Data	No Data	1,815d	No Data
05/03/2001	0.33	0.037	No Data	6.6	30	No Data	No Data	91.2
07/18/2001	0.33	<0.02	No Data	7.34	29	No Data	No Data	217
07/18/2001	0.7	No Data	8.59	No Data	No Data	No Data	5,189	No Data
09/05/2001	0.33	<0.02	No Data	<0.5	113	No Data	No Data	15.4
09/05/2001	0.5	No Data	7.61	No Data	No Data	No Data	260	No Data
11/26/2001	0.33	<0.02	No Data	<0.5	77	No Data	No Data	30.4

**Table 2.3.3-1(c)**  
**Surface Water Quality Data—Colorado River at Selkirk Island (Continued)**

Date	Depth (m)	NH <sub>3</sub> -N Total (mg/L)	pH (SU)	PHEOPHTN A (ug/L)	Residual Total (Nonfilterable) (mg/L)	Residual Total Filtrate Dissolved-180 (mg/L)	Specific Conductivity Field (µmhos/cm)	Sulfate SO <sub>4</sub> (mg/L)
11/26/2001	0.8	No Data	7.9	No Data	No Data	No Data	504	No Data
01/16/2002	0.33	0.0413	No Data	1.73	42	No Data	No Data	36.5
01/16/2002	0.5	No Data	7.87	No Data	No Data	No Data	537	No Data
03/20/2002	0.33	0.04	No Data	9.7	11	No Data	No Data	132
03/20/2002	0.8	No Data	8.3	No Data	No Data	No Data	3,094	No Data
05/09/2002	0.33	<0.02	No Data	4.4	14	No Data	No Data	177
07/01/2002	0.33	0.06	No Data	2.5	38	No Data	No Data	18
09/09/2002	0.33	<0.02	No Data	5.8	320	No Data	No Data	7.2
09/09/2002	0.6	No Data	7.83	No Data	No Data	No Data	224	No Data
09/09/2002	2.0	No Data	7.8	No Data	No Data	No Data	225	No Data
11/05/2002	0.3	No Data	8.17	No Data	No Data	No Data	142	No Data
11/05/2002	0.33	<0.02	No Data	<0.5	506	No Data	No Data	4.83
01/02/2003	0.3	<0.02	8	1.7	408	No Data	379	26.1
01/02/2003	1.6	No Data	7.92	No Data	No Data	No Data	379	No Data
03/05/2003	0.3	<0.02	8.08	2.2	193	No Data	477	32.6
05/07/2003	0.3	No Data	7.88	No Data	No Data	No Data	1,755	No Data
05/07/2003	0.33	0.243	No Data	6.4	24	No Data	No Data	82
05/07/2003	1.1	No Data	7.85	No Data	No Data	No Data	1,757	No Data
07/02/2003	0.3	No Data	8.2	No Data	No Data	No Data	2,686	No Data
07/02/2003	0.33	0.069	No Data	3.6	18	No Data	No Data	116
07/02/2003	1.2	No Data	8.16	No Data	No Data	No Data	2,721	No Data
09/30/2003	0.33	0.02	8.37	No Data	31	969	1,793	78.1

**Table 2.3.3-1(c)**  
**Surface Water Quality Data—Colorado River at Selkirk Island (Continued)**

Date	Depth (m)	NH <sub>3</sub> -N Total (mg/L)	pH (SU)	PHEOPHTN A (ug/L)	Residual Total (Nonfilterable) (mg/L)	Residual Total Filtrate Dissolved-180 (mg/L)	Specific Conductivity Field (µmhos/cm)	Sulfate SO <sub>4</sub> (mg/L)
11/03/2003	0.33	<0.02	8.03	No Data	20	873	1,616	65.2
01/13/2004	0.33	<0.02	7.86	No Data	24	2,450	4,239	171
03/09/2004	0.33	<0.02	7.9	No Data	21	447	788	53.5
05/04/2004	0.34	0.029	7.82	No Data	44	249	305	18.8
07/13/2004	0.32	<0.02	8.4	No Data	21	279	504	24.6
07/13/2004	1.2	No Data	8.34	No Data	No Data	No Data	510	No Data
09/14/2004	0.33	<0.02	8.22	No Data	11	3,650	6,933	271
09/14/2004	1.26	No Data	7.92	No Data	No Data	No Data	10,360	No Data
11/10/2004	0.33	0.038	7.61	No Data	49	354	679	36.3
11/10/2004	0.88	No Data	7.61	No Data	No Data	No Data	649	No Data
01/06/2005	0.3	<0.02	8.21	No Data	29	337	599	34.1
03/01/2005	0.3	<0.02	8.08	No Data	67	278	477	27.1
05/10/2005	0.3	0.215	7.8	No Data	44	668	1,294	61.1
07/05/2005	0.3	<0.02	8.21	No Data	18	829	1,593	65.8
09/01/2005	0.33	<0.02	8.26	No Data	13	9,420	20,720	654
11/01/2005	0.3	0.07909	8.07	<3	8	2,335	4,743	180.455
01/10/2006	0.3	0.03709	8.14	<3	9	1,810	3,912	153.04
03/06/2006	0.33	<0.02	8.47	<3	23	2,115	4,272	174.74
05/17/2006	0.33	0.087443	7.93	<3	14	2,365	4,552	195.828
07/17/2006	0.3	<0.02	8.28	<3	9	571	1,172	50.8
09/13/2006	0.3	0.176	7.89	5.11	16	4,010	7,295	271

Source: Reference 2.3.3-3

**Table 2.3.3-2  
Matagorda Bay Monthly Target Inflow Needs for the Colorado River**

<b>Month</b>	<b>Colorado River (Acre-feet)</b>	<b>Colorado River (Cubic Feet/second)</b>
January	205,600	3,344
February	194,500	3,502
March	63,200	1,028
April	60,400	1,015
May	255,400	4,154
June	210,500	3,538
July	108,400	1,763
August	62,000	1,008
September	61,900	1,040
October	71,300	1,160
November	66,500	1,118
December	68,000	1,143

Source: Reference 2.3.3-4

**Table 2.3.3-3  
Water Quality Data—Main Cooling Reservoir [1]**

Parameter	Sample Date [2] July 25, 2006		Sample Date [3] Oct. 17, 2006	
	<u>Filtered</u>	<u>Total</u>	<u>Filtered</u>	<u>Total</u>
Aluminum (Al)	<0.5	1.7	<1.0	1.4
Barium (Ba)	<2.0	<2.0	<4.0	<4.0
Boron (B)	1.2	1.2	1.1	1.1
Cadmium (Cd)	<2.00	<2.00	<0.40	<0.40
Calcium (Ca)	48	53	50	53
Chromium (Cr)	<0.05	<0.05	<0.10	0.24
Copper (Cu)	<0.05	<0.05	<0.10	<0.10
Iron (Fe)	<0.05	1.4	<0.10	0.95
Lead (Pb)	<1.0	<1.0	<2.0	<2.0
Lithium (Li)	<0.05	<0.05	<0.10	<0.10
Magnesium (Mg)	78	78	78	78
Manganese (Mn)	<0.05	0.26	<0.10	<0.10
Molybdenum (Mo)	<0.5	<0.5	<1.0	<1.0
Nickel (Ni)	<0.5	<0.5	<1.0	<1.0
Phosphorus (P)	<5.0	<5.0	<9.9	<9.9
Phosphorus (PO <sub>4</sub> )	<15.3	<15.3	<30.3	<30.4
Potassium (K)	22.0	22.0	24.0	24.0
Silica (SiO <sub>2</sub> )	19.0	28	17.0	25.0
Sodium (Na)	560	560	620	620
Strontium (Sr)	0.81	0.81	0.82	0.82
Vanadium (V)	<1.00	<1.00	<4.95	<4.96
Zinc (Zn)	<0.05	<0.05	<0.10	<0.10
Calcium (C <sub>a</sub> CO <sub>3</sub> )	120	130	120	130
Magnesium (C <sub>a</sub> CO <sub>3</sub> )	320	320	320	320
Sodium (C <sub>a</sub> CO <sub>3</sub> )	1,200	1,200	1,400	1,400
Calculated Hardness (C <sub>a</sub> CO <sub>3</sub> )	440	450	440	450
Bromide (Br)	–	6.6	–	6.9
Chloride (Cl)	–	1,100	–	1,100
Nitrate (NO <sub>3</sub> )	–	<2.0	–	<2.0

**Table 2.3.3-3  
Water Quality Data—Main Cooling Reservoir [1] (Continued)**

Parameter	Sample Date [2] July 25, 2006		Sample Date [3] Oct. 17, 2006	
	<u>Filtered</u>	<u>Total</u>	<u>Filtered</u>	<u>Total</u>
Nitrite (NO <sub>2</sub> )	–	<2.0	–	<2.0
Sulfate (SO <sub>4</sub> )	–	190	–	190
Chloride (C <sub>a</sub> CO <sub>3</sub> )	–	1,500	–	1,500
Nitrate (C <sub>a</sub> CO <sub>3</sub> )	–	<1.6	–	<1.6
Sulfate (C <sub>a</sub> CO <sub>3</sub> )	–	190	–	200
Bicarbonate (C <sub>a</sub> CO <sub>3</sub> )	–	170	–	190
Carbonate (C <sub>a</sub> CO <sub>3</sub> )	–	36	–	17
Methyl Orange (C <sub>a</sub> CO <sub>3</sub> )	–	210	–	210
Phenolphthalein (C <sub>a</sub> CO <sub>3</sub> )	–	18	–	<10
pH	–	8.8 S.U.	–	8.5 S.U.
Conductivity	–	3,600 μS/cm	–	3,700 μS/cm
Suspended Solids (Total @ 105C)	–	150	–	30

[1] All concentration units in mg/L unless noted otherwise.

[2] Reference 2.3.3-9.

[3] Reference 2.3.3-10.



**Table 2.3.3-4  
2005 Radiological Environmental Monitoring Program Analysis Summary**

Medium:	Surface Water					Units: PicoCuries per Kilogram
ANALYSIS TYPE	TOTAL ANALYSES /NONROUTINE MEASUREMENTS	LOWER LIMIT OF DETECTION	INDICATOR LOCATIONS MEAN [1] RANGE	LOCATION WITH HIGHEST ANNUAL MEAN		CONTROL LOCATIONS MEAN [1] RANGE
				LOCATION INFORMATION	MEAN [1] RANGE	
Hydrogen-3 (Tritium)	12/0	2.6E+02	1.3E+04 (4/8) (1.2E+04 - 1.4E+04)	3 miles SSE (#216)	1.3E+04 (4/4) (1.2E+04 - 1.4E+04)	– (0/4)
Iodine-131	40/0	5.3E+00	– (0/27)	–	–	– (0/13)
Cesium-134	40/0	1.8E+00	– (0/27)	–	–	– (0/13)
Cesium-137	40/0	1.6E+00	– (0/27)	–	–	– (0/13)
Manganese-54	40/0	1.6E+00	– (0/27)	–	–	– (0/13)
Iron-59	40/0	5.1E+00	– (0/27)	–	–	– (0/13)
Cobalt-58	40/0	1.7E+00	– (0/27)	–	–	– (0/13)
Cobalt-60	40/0	1.7E+00	– (0/27)	–	–	– (0/13)
Zinc-65	40/0	3.4E+00	– (0/27)	–	–	– (0/13)
Zirconium-95	40/0	3.1E+00	– (0/27)	–	–	– (0/13)
Niobium-95	40/0	2.1E+00	– (0/27)	–	–	– (0/13)
Lanthanum-140	40/0	4.2E+00	– (0/27)	–	–	– (0/13)
Barium-140	No Data			–	–	

[1] Number of positive measurements / total measurements at specified locations.

**Table 2.3.3-5  
Tritium Concentration in Surface Water Bodies (pCi/Liter)**

Year	West Branch of Colorado River (Offsite #213)	Little Robbins Slough (Onsite #212)	East Branch of Little Robbins Slough (Onsite #211)	Ditch NE of (Onsite #229)	MCR Blowdown (Onsite #237)	MCR Blowdown (Onsite #216)
1995	505	7,725	3,297	3,576	5,673	10,850
	1,661	2,663	3,139	3,428	3,735	13,550
	2,630	2,046	2,719	3,110	2,330	13,558
	1,758	1,758	3,190	1,382	3,492	12,737
1996	2,369	2,207	3,038	3,687	3,065	16,638
	3,405	2,820	3,029	3,653	4,132	17,410
	994	782	1,860	1,534	3,420	13,877
	2,383	3,317	2,903	3,753	3,904	9,678
1997	269	3,387	2,733	2,752	4,805	11,434
	2,322	4,123	3,392	4,593	4,685	9,864
	183	3,809	4,726	5,506	6,155	9,777
	1,954	4,352	4,652	5,745	6,020	7,973
1998	858	5,086	5,038	5,948	6,665	9,042
	5,641	4,382	4,382	6,576	6,713	9,223
	209	209	4,828	5,755	6,052	9,481
	498	4,491	5,297	6,175	7,628	10,815
1999	2,939	5,136	6,048	6,199	7,743	11,226
	5,637	3,139	5,637	6,095	7,298	10,832
	6,093	5,534	6,162	6,598	7,451	10,633
	2,715	6,236	6,352	6,944	7,692	10,695
2000	4,601	5,920	6,182	6,230	7,114	11,039
	5,876	5,502	5,747	6,015	6,400	11,385
	5,732	5,813	5,618	6,595	5,697	9,203
	5,391	5,727	5,866	6,731	6,355	8,931
2001	1,905	5,468	5,681	5,938	7,289	8,179
	1,890	3,111	5,501	4,945	6,546	9,646
	1,016	2,429	5,803	3,657	7,527	9,342
	2,110	5,630	5,480	6,090	4,110	9,290
2002	4,015	6,257	5,860	6,248	7,460	9,756
	4,888	4,636	5,526	6,717	6,890	9,911
	334	2,259	4,935	5,166	8,496	10,744
	1,703	5,308	4,447	5,870	6,366	10,535
2003	1,800	4,450	4,890	5,738	7,290	11,083
	2,126	4,847	5,216	4,163	6,180	11,055
	271	2,783	4,728	4,135	6,376	9,420
	4,094	5,847	5,301	6,505	6,692	8,128
2004	722	4,377	4,704	5,051	6,690	9,433
	1,842	1,649	4,959	5,613	6,564	10,978
	5,498	3,898	4,545	6,526	7,129	8,917
	264	4,078	5,508	5,994	6,699	9,228
2005	3,040	5,190	5,830	6,230	8,020	11,900
	2,470	4,330	5,820	1,970	6,820	13,700
	1,580	5,570	6,000	6,400	6,900	13,700
	3,907	3,907	5,748	6,267	6,804	12,601

**Table 2.3.3-6  
Tritium Concentration (pCi/L) in Existing STP Site Pressure Relief Wells**

<b>DATE</b>	<b>MCR Relief Well (onsite) #701</b>	<b>MCR Relief Well (onsite) #238</b>
1990	-	-
	-	-
	-	674
	-	0
1991	-	1167
	-	739
	-	2194
	-	2030
1992	-	2093
	-	2360
	-	2640
	-	-
1993	-	2870
	-	3151
	-	4243
	-	-
1994	-	0
	-	5061
	-	-
	-	5497
1995	4784	-
	4408	-
	3770	-
	-	-
1996	3470	-
	3279	-
	3368	-
	2842	-
1997	2958	-
	3645	-
	5154	-
	5757	-

**Table 2.3.3-6**  
**Tritium Concentration (pCi/L) in Existing STP Site Pressure Relief Wells (Continued)**

DATE	MCR Relief Well (onsite) #701	MCR Relief Well (onsite) #238
1998	6387	–
	7181	–
	7672	–
	7106	–
1999	6975	–
	6505	–
	6526	–
	6553	–
2000	6282	–
	5873	–
	5993	–
	6106	–
2001	5546	–
	5817	–
	6262	–
	6143	–
2002	6972	–
	6543	–
	5653	–
	6427	–
2003	6098	–
	6257	–
	6052	–
	5882	–
2004	5655	–
	5971	–
	6287	–
	5657	–
2005	6030	–
	6259	–
	6535	–
	6082	–

**Table 2.3.3-7(a)**  
**Groundwater Analytical Data in Vicinity of STP**

Well Owner	Date Sampled	Sample Depth (ft)	pH SU	Silica (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Carbonate (mg/L)	Bicarbonate (mg/L)	Sulfate (mg/L)
STP (TWDB # 8016602)	05/15/1991	572	8.2	–	28.2	4.28	70.8	–	0	240.41	12
	10/21/1992	572	7.5	15	18	5	142	1.3	0	349.02	22
	06/25/1997	572	7.71	15.8	10.5	3.54	162	1.48	0	319.73	20.7
	05/08/2001	572	7.36	16	11	3.72	173	1.31	0	305.09	11.7
Hoechst/Celanese Chemical (TWDB # 8016305)	05/10/2001	829	7.56	14.5	8.2	2.97	182	1.05	0	300.21	9.82
Selkirk Water (TWDB # 8109701)	09/23/1982	800	8.3	–	5	1	178	–	0	335.6	12
	04/28/1992	800	8.26	14	4.5	1.3	178	1.4	2.4	358.78	12
	06/12/1997	800	8.31	14.1	2.72	0.55	171	0.95	4.8	325.83	15.8
	05/08/2001	800	7.78	14.3	3.98	1.3	168	0.76	6.3	342.31	10.7
	08/18/2005	800	8.09	14.4	4.8	1.6	162	1.1	0	–	–

**Table 2.3.3-7(b)**  
**Groundwater Analytical Data in Vicinity of STP (Continued)**

Well Owner/ No.	Date Sampled	Sample Depth (ft)	Chloride (mg/L)	Fluoride (mg/L)	Nitrate (mg/L)	Dissolved Solids (mg/L)	Specific Cond. ( $\mu$ S/cm)	Hardness as $C_aCO_3$	Sodium (%)	Sodium Absorption Ratio	Residual $Na_2CO_3$
STP (TWDB #8016602)	05/15/1991	572	33	0.37	1.4	268	--	87	63	3.28	2.18
	10/21/1992	572	45.5	1.05	2.66	424	692	65	82	7.63	4.41
	06/25/1997	572	68.9	1.49	<0.18	441	750	40	89	11.04	4.43
	05/08/2001	572	109	0.79	<0.09	476	865	42	89	11.51	4.15
Hoechst/ Celanese Chemical (TWDB #8016305)	05/10/2001	829	120	0.86	<0.09	487	888	32	92	13.85	4.27
Selkirk Water (TWDB # 8109701)	09/23/1982	800	84	0.9	0.45	446	830	16	95	19.01	5.17
	04/28/1992	800	54	0.99	0.18	445	766	16	95	19.02	5.63
	06/12/1997	800	48.6	0.88	<0.18	419	719	9	97	24.73	5.32
	05/08/2001	800	57	0.86	<0.09	431	749	15	95	18.7	5.51
	08/18/2005	800	–	–	–	–	735	19	95	16.35	–

Reference 2.3.3-11

**Table 2.3.3-8  
2005 Radiological Environmental Monitoring Program Analysis Summary**

Medium:	Drinking Water					Units: PicoCuries per Kilogram
ANALYSIS	TOTAL ANALYSES	LOWER	INDICATOR LOCATIONS	LOCATION WITH HIGHEST ANNUAL MEAN		CONTROL LOCATIONS
TYPE	/NONROUTINE	LIMIT OF	MEAN (f)*	LOCATION	MEAN (f)*	MEAN (f)*
	MEASUREMENTS	DETECTION	RANGE	INFORMATION	RANGE	RANGE
Gross Beta	26/0	1.8E+00	1.8E+00 (12/13) (1.2E+00 – 3.0E+00)	14 miles NNE (#228)	2.3E+00 (13/13) (1.4E+00 – 4.3E+00)	2.3E+00 (13/13) (1.4E+00 – 4.3E+00)
Hydrogen-3 (tritium)	8/0	2.6E+02	– (0/4)	–	–	– (0/4)
Iodine-131	26/0	3.2E+00	– (0/13)	–	–	– (0/13)
Cesium-134	26/0	2.0E+00	– (0/13)	–	–	– (0/13)
Cesium-137	26/0	1.9E+00	– (0/13)	–	–	– (0/13)
Manganese-54	26/0	1.8E+00	– (0/13)	–	–	– (0/13)
Iron-59	26/0	4.9E+00	– (0/13)	–	–	– (0/13)
Cobalt-58	26/0	1.8E+00	– (0/13)	–	–	– (0/13)
Cobalt-60	26/0	1.9E+00	– (0/13)	–	–	– (0/13)
Zinc-65	26/0	4.0E+00	– (0/13)	–	–	– (0/13)
Zirconium-95	26/0	3.3E+00	– (0/13)	–	–	– (0/13)
Niobium-95	26/0	2.2E+00	– (0/13)	–	–	– (0/13)
Lanthanum-140	26/0	3.1E+00	– (0/13)	–	–	– (0/13)

**Table 2.3.3-9**  
**2005 STP Site Radiological environmental Monitoring Program Analysis Summary**

Medium:	Groundwater ( <i>On site test well</i> )					Units: PicoCuries per Kilogram
ANALYSIS	TOTAL ANALYSES	LOWER	INDICATOR LOCATIONS	LOCATION WITH HIGHEST ANNUAL MEAN		CONTROL LOCATIONS
TYPE	/NONROUTINE	LIMIT OF	MEAN (f)*	LOCATION	MEAN (f)*	MEAN (f)*
	MEASUREMENTS	DETECTION	RANGE	INFORMATION	RANGE	RANGE
Hydrogen-3 (tritium)	6/0	2.6E+02	1.2E+03 (6/6) (1.0E+03 – 1.6E+03)	3.8 miles S (#235)	1.2E+03 (6/6) (1.0E+03 – 1.6E+03)	no samples
Iodine-131	6/0	5.3E+00	– (0/6)	–	–	no samples
Cesium-134	6/0	1.9E+00	– (0/6)	–	–	no samples
Cesium-137	6 0	1.8E+00	– (0/6)	–	–	no samples
Manganese-54	6/0	1.7E+00	– (0/6)	–	–	no samples
Iron-59	6/0	5.4E+00	– (0/6)	–	–	no samples
Cobalt-58	6/0	1.8E+00	– (0/6)	–	–	no samples
Cobalt-60	6/0	1.7E+00	– (0/6)	–	–	no samples
Zinc-65	6/0	3.6E+00	– (0/6)	–	–	no samples
Zirconium-95	6/0	3.2E+00	– (0/6)	–	–	no samples
Niobium-95	6/0	2.2E+00	– (0/6)	–	–	no samples
Lanthanum-140	6/0	4.1E+00	– (0/6)	–	–	no samples



**Table 2.3.3-10  
Tritium Results in STP Controlled Area Groundwater Wells**

STATION CODE	LOCATION DESCRIPTION	GPS COORDINATES	Tritium Activity Level (picocuries/Liter)							
				COLLECTION DATE				COLLECTION DATE		COLLECTION DATE
			LSN	week of 4/10/2006	LSN	04/27/06	LSN	05/03/06	LSN	08/21/06
255	Piezometer Well #415 depth 110'	28° 44.770 96° 00.435	40689	<LLD	-	-	-	-	-	-
256	Piezometer Well #417 depth 100'	28° 46.636 96° 00.416	40690	<LLD	-	-	-	-	-	-
257	Piezometer Well #421-02 depth 80'	28° 44.821 96° 04.964	40691	<LLD	-	-	-	-	-	-
258	Piezometer Well #435-01 depth 50'	28° 45.832 96° 04.863	40692	<LLD	-	-	-	-	-	-
259	Piezometer Well #35-02 depth 50'	28° 45.831 96° 04.856	40693	593	40751	340			41413 41414	309 444
260	Piezometer Well #37 depth 74'	28° 44.467 96° 02.425	40693	<LLD	-	-	-	-	-	-
261	Piezometer Well #446 depth 78'	28° 45.182 96° 00.208	40695	<LLD	-	-	-	-	-	-

**Table 2.3.3-10  
Tritium Results in STP Controlled Area Groundwater Wells (Continued)**

STATION CODE	LOCATION DESCRIPTION	GPS COORDINATES	Tritium Activity Level (picocuries/Liter)							
				COLLECTION DATE				COLLECTION DATE		COLLECTION DATE
			LSN	week of 4/10/2006	LSN	04/27/06	LSN	05/03/06	LSN	08/21/06
262	Piezometer Well # 446A depth 40' North pipe	28° 45.183 96° 00.209	40696	<LLD	-	-	-	-	-	-
263	Piezometer Well # 447 depth 104' South Pipe	28° 46.196 96° 00.235	40697	<LLD	-	-	-	-	-	-
264	Piezometer Well # 447A depth 46'	28° 46.197 96° 00.235	40698	<LLD	-	-	-	-	-	-
265	Piezometer Well # 602 depth 80'	28° 48.178 96° 03.337	NOT SAMPLED - obstruction in well pipe		-	-	-	-	-	-
266	Piezometer Well # 602A depth 40'	28° 48.177 96° 03.337	40699	<LLD	-	-	-	-	-	-
267	Windmill North of Heavy Haul Rd near Well #417	28° 00.000 96° 00.000	40700	<LLD	-	-	-	-	-	-
268	Windmill East of MCR	28° 00.000 96° 00.000	40701	<LLD	-	-	-	-	-	-

**Table 2.3.3-10  
Tritium Results in STP Controlled Area Groundwater Wells (Continued)**

STATION CODE	LOCATION DESCRIPTION	GPS COORDINATES	Tritium Activity Level (picocuries/Liter)							
				COLLECTION DATE				COLLECTION DATE		COLLECTION DATE
			LSN	week of 4/10/2006	LSN	04/27/06	LSN	05/03/06	LSN	08/21/06
245	Water well located on private property approx.1 mile south of MCR reservoir on private land	28° 44.397 96° 01.891	-	-	-	-	40806	<LLD	40806	<LLD
269	Windmill South of the East corner of STP MCR on private land	28° 44.388 96° 01.114	-	-	-	-	40807	<LLD	40807	<LLD

LLD – Lower Limit Detection (<300 pCi/L)

LSN – Lab Sample Number

