# CLAREMONT POLYCHEMICAL SUPERFUND SITE Groundwater Treatment System Old Bethpage, New York

# MONTHLY REPORT of the Operations & Maintenance Activities During November 2011

Prepared for the:

## **New York State Department of Environmental Conservation**

Prepared by:

HRP Associates, Inc 197 Scott Swamp Road Farmington, CT 06032

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#### **ACRONYMS AND ABBREVIATIONS**

AS air stripping
ASF air stripper feed
CA carbon adsorber

CLP contract laboratories program

DOSRs daily operations summary reports

DTW depth to water gpd gallons per day gpm gallons per minute

GW groundwater

GWTP groundwater treatment plant

GWTS groundwater extraction, treatment, and reinjection system

HCl hydrochloric acid

HMI human-machine interface

HRP Associates, Inc.

HVAC heating, ventilation, and air conditioning

IG infiltration gallery
IW injection well

LGAC Liquid phase granular activated carbon

LTRA Long Term Response Action

MCC motor control cabinet

MCP master (main) control panel

NYSDEC New York State Department of Environmental Conservation

O&M operation and maintenance

PD plant discharge

PID photo ionization detector

PLC programmable logic controller

PW process water

SAIC Science Applications International Corporation

SAP sampling and analysis plan
SOP standard operating procedure
SSHP site safety and health plan

USACE United States Army Corps of Engineers
VGAC vapor-phase granular activated carbon

VFD variable frequency drive VOCs volatile organic compounds

#### 1.0 OPERATION AND MAINTENANCE ACTIVITIES

HRP Associates, Inc. (HRP) continued its daily operation and maintenance (O&M) of the Claremont Polychemical Superfund Site and its groundwater treatment system (GWTS) for November 2011. This period is defined as 0600 hours, November 1, 2011, through 0600 hours, December 1, 2011. O&M conducted during this reporting period was performed in accordance with the site O&M Manual.

The system operated for 30 days in the November reporting period. The plant experienced 6 minutes of downtime when the plant lost a power phase. The injection pumps were shut off for an additional 51 minutes to perform the injection well falling head test.

Each workday morning, readings of key operational parameters are recorded. These readings are used to monitor the plant's performance and as a basis for adjustments to the plant processes. These records (Daily Data Logs) are kept on-file at the plant.

#### 1.1 Daily Operations Summary Reports

The daily operation of the GWTS is documented in the Daily Operations Summary Reports (DOSR). The DOSRs include a summary of the daily O&M activities and are based on the daily operating logs and worksheets. The DOSR and the daily worksheets are kept on file at the plant.

#### 1.2 Summary of Maintenance Activities

Maintenance of the treatment system and associated equipment is performed in accordance with the Claremont Groundwater Treatment System O&M Manual. Routine activities and equipment function tests completed during this reporting period are summarized in the Monthly Maintenance Log. This report is electronically filed and is available for review.

System maintenance incorporates the equipment manufacturers' recommendations, operations experience, and good engineering and maintenance practices. A detailed accounting of daily operation and maintenance activities is provided in the plant operator's daily logbook, the site supervisor's daily logbook, the operator's daily activities summary reports, and the site supervisor's daily plant activity notes. These documents are filed on-site.

Significant maintenance activities completed during this reporting period included the following:

- Scheduled routine monthly tasks were completed and included motor amp load readings, injection well (IW) depth soundings, IW falling head tests, valve function tests, comprehensive site inspections, and infiltration gallery readings.
- Outdoor site maintenance was performed as needed. This included various landscaping tasks around the plant and in the well field.
- The process pumps were rotated (two on-line, one off) four times during this period as part of the preventive maintenance task.

- The process pH probes were cleaned, inspected, calibrated, and adjusted, as necessary.
- The nozzles on the settling tanks were cleaned by backwashing with compressed air.
- Outdoor landscaping projects continued.
- The MW-8A hose reel and several bladder pumps were tested under various scenarios.
   No leaks or problems were found with the reel. The stainless pump was kept in well SW-1 and the SW-1 PVC pump is to be used for non-dedicated sampling.
- Various indoor superstructure areas were painted
- The air stripper tower and ductwork were power washed.
- The street sign was replaced.
- Weep holes were drilled into the pan of INF P1 to direct water flow to floor drain.
- The monthly plant truck inspection was completed
- Gauge hoses were replaced as necessary on the outdoor carbon beds
- The air stripper return air duct flanges were tightened and the blower lubricated
- Preventive maintenance tasks were completed on the air compressor units.
- Brush and vines were cleaned up at the front gate prior to the Verizon cable repair and at the street crypt for the inspection of the backflow preventer devices

#### 2.0 MAINTENANCE LOGS

The following operating logbooks are currently in use:

- Plant Operator's Daily Log CL-40
- Site Supervisor's Daily Log CL-41
- Plant Operators Daily Log CL-42

Except for log book Nos. 36, 39, 40, 41 and 42, all the system log books were sent to SAIC Harrisburg to be copied into the Project Archives. They are to be returned and kept on file at the GWTP where they will be available for detailed review. All of the logbooks are identified on a master logbook inventory control file and are routinely checked as part of the site quality control program.

See the listing at the end of this document for the location of referenced documents, logs and worksheets.

#### 3.0 TECHNICAL SUPPORT ACTIVITIES

#### 3.1 HRP Personnel

 Adam Fox, Howard Hurd, and Darin Lemire were on-site for a visit and operations briefing.

#### 3.2 Sub-contractors and Manufacturing Representatives

• Sirina Fire Protection Systems was on-site for the quarterly fire sprinkler system inspection.

Verizon was on-site to repair and hang the FiOS cable splice box.

#### 3.3 Deliveries

- Mail was delivered on 9 occasions
- General Welding picked up 5 empty Nitrogen bottles and one full bottle.

#### 3.4 Visitors

 Valerie Egan and Mike Flaherty (NCDPW) were in to convey the County's sampling data plans and to meet with HRP personnel.

#### 4.0 HEALTH AND SAFETY

Work at the Claremont Polychemical groundwater treatment plant (GWTP) was conducted in accordance with the approved Site Safety and Health Plan (SSHP). Site safety inspections were performed daily and the reports are filed on-site. In addition to the daily safety inspections, comprehensive safety inspections are routinely performed. These worksheets are also on file.

No safety incidents or accidents occurred during this November 2011 period.

#### 5.0 PLANNED ACTIVITIES AND SCHEDULES

The status of project work and significant corrective maintenance activities is updated on a monthly basis. This Activities Schedule was last updated November 28 and is filed on-site.

Separate tentative schedules for equipment maintenance and sampling events are shown in the O&M Manual and the Sampling and Analysis Plan (SAP).

#### 6.0 MONITORING WELL WATER ELEVATIONS

The quarterly process water sampling task was completed November 16. After the event, the water level elevations and water quality data for the extraction wells were recorded in the database. The updated database is available for review. The table will be updated in January when the next groundwater sampling event is tentatively scheduled.

#### 7.0 TREATMENT SYSTEM FLOWS

The volume of treated water discharged by the treatment plant to the injection well field is determined daily from readings of the magnetic flow meter on the plant effluent line. A summary of these meter readings is provided in Table 7-1. The total volume of treated water discharged in November, as measured from 0600 hours on November 1, 2011, to 0600 hours on December 1, 2011, was 16,237,065 gallons. This volume is approximately 112 percent of the monthly targeted treatment goal. The cumulative amount of treated

water for this operating year (June 1, 2011 to present) is 93,619,317 gallons. This is approximately 5 percent above the targeted goal for water to be treated. A graphic representation of the daily system flows are provided in Figure 14-1. (Targeted goals are based on a treated water discharge rate of 335 gpm.)

The average discharge flow for November was 376 gallons per minute (gpm) and 541,236 gallons per day (gpd).

The flow monitoring units for the individual IW systems are fully functioning. This allows for reading the flow rate and volume discharged to each well system. The relative flows for November are indicated below:

Injection Well System	Flow Average (gpm)	Volume Discharged (gallons)
IW-1	95	4,121,480
IW-2	95	4,122,250
IW-3	116	5,032,250
IW-4	77	3,333,880
System	384	16,609,860

Flow to infiltration galleries IG-1 and IG-3 is restricted so that flow to IW-1 and IW-3 is maximized. Both galleries are draining adequately. The plant's effluent discharge flow is maximized and is limited by injection pump system capacity.

#### 8.0 CHEMICAL CONSUMPTION

Currently, the four chemical feed systems are offline, and their future use is not anticipated. All systems have been tested and are operational. Currently, the chemical feed tanks and feed tubing contain water.

Following is the inventory of the bulk chemicals at the plant:

	Inventory			
Chemical	No. of Containers	Container Type/Size		
Caustic	7	55-gallon drum		
Hydrochloric Acid (HCI)	1	55-gallon drum		
Citric Acid	1	55-gallon drum, (~200 lbs.)		

#### 9.0 CARBON SYSTEMS

#### 9.1 Aqueous-Phase Carbon

The presence of volatile or semi volatile organic compounds have not been detected in the effluent streams of the liquid-phase Carbon Adsorber (CA) vessels. The influent and effluent streams of the vessels continue to be monitored on a quarterly basis.

Both carbon adsorber vessels were last backwashed in September. As part of the daily monitoring, the differential pressures across the vessels are recorded. The differential pressures are starting to rise and backwashing may be required in December.

No spent carbon was generated by the CA operation and no carbon was added to the vessels in November.

#### 9.2 Vapor-Phase Carbon

Two vapor-phase Carbon Adsorber vessels are available for the off gas treatment of the air stripping (AS) stream. Currently, VGAC-1 is online. VGAC-2 is offline and ready for service. Monitoring of VOCs in the influent and effluent air stream of the active vessel is performed weekly with a photo-ionization detector (PID). VOCs have not been detected in the effluent air stream during these weekly monitoring events.

No spent vapor-phase carbon was generated during this period, and no carbon was added to the vessels.

#### 10.0 WASTE DISPOSAL

- No hazardous waste was generated or disposed of during this reporting period.
- Ten full drums and one partially filled drum of nonhazardous carbon sludge cake are on-site.
- No non-hazardous sludge was disposed of in November. Eight previously shipped suspect drums are awaiting disposition.

#### 11.0 MONTHLY DISCHARGE MONITORING REPORT

The plant is currently operating under an equivalency permit from the New York State Department of Environmental Conservation (NYSDEC). While this permit requires periodic submittal of discharge monitoring results, monthly discharge monitoring reporting is not required. Monitoring data will be provided to the NYSDEC upon request.

A letter requesting an extension of the authorization to discharge treated groundwater to the groundwater aquifer was submitted to Mr. Brian Baker of the NYSDEC Division of Water. The response and permit extension are pending.

#### 12.0 OTHER OPERATIONS, MAINTENANCE, OR MANAGEMENT ISSUES

The plant lost a leg in the incoming power supply for 6 minutes in a single event in November. This necessitated the shut- down of all process equipment until the full power was restored. The plant was manually restarted without further incident.

A groundwater sampling event is tentatively scheduled for January 2012. It has not been decided if this event will initiate the use of passive diffusion bags (PDB) instead of bladder pumps. Either method of sample collection will require resources. If bladder pumps are to be used, several bladders will be needed. If the PDBs are to be used, these will need to be procured and installed.

The output of influent pump 1 continues to drift as the VFD keeps the pump in the ramping mode.

The Variable Frequency Drive (VFD) for air stripper feed pump 2 continues to give earth fault errors. When active, P2 is operated through the VFD of the off-line pump.

The disposition of 8 drums of 'non-hazardous' waste is pending

Several other ongoing plant-wide issues include:

- Determine long term plan for process pump check valves.
- Repair leaks in injection pump discharge manifold.
- Install snow plow on plant truck.
- Replace bathroom fan.
- Replace level transducer for IW-2
- Update plant documents as necessary
- Complete Decembers' PD sampling task.

#### 13.0 PLANT DOCUMENTS

Procedures and standard forms are written, reviewed, and revised as needed. In November:

- Sections 8 and Attachment 5 of the O&M manual were updated.
- The Claremont Operating and Staffing Plan was updated.
- Form-030 (chain of custody) was revised for PW samples
- Claremont's 'Stand-alone' documents were put on the HRP-CT server

#### 14.0 TREATMENT PLANT AND WELL FIELD MONITORING RESULTS

The Claremont Polychemical GWTS is monitored through the analysis of off-site laboratory analytical data and on-site field data.

#### 14.1 Off-site Analytical Data Results

Monthly plant discharge (PD) samples are taken for organic analysis in compliance with the NYSDEC discharge permit. Quarterly groundwater (GW) samples are taken for organic analysis, and quarterly process water (PW) samples are taken for organic, inorganic, and generic analysis. November's sampling activities included:

- The quarterly PW samples was completed 11/16. The organic, inorganic and generic samples were shipped to TestAmerica-Edison.
- The December monthly PD samples are scheduled for 12/14.

#### 14.2 Field Data

Treatment plant effluent is monitored for pH and temperature on a weekly basis in order to obtain a monthly average in compliance with the NYSDEC discharge permit requirements. These readings are obtained from discharge samples taken from a controlled point with calibrated portable meters. A summary of these data is as follows:

Date	рН	Temperature (°C)
Nov. 7, 2011	6.78	14
Nov. 14, 2011	6.62	14
Nov.21, 2011	6.59	14
Nov. 28, 2011	6.50	14
Monthly Average	6.62	14

The NYSDEC discharge permit requires the PD to have an average monthly pH greater than 5.50. The treatment plant effluent pH averaged 6.62 for November and met the monthly average pH discharge requirement.

Soundings to determine the depth to the bottom of the IWs were taken on November 17. A summary of the historical data is included in Table 14-1. While the wells are stable, this data indicate that since the beginning of monitoring on June 17, 2004, there has been an accumulation of sediment in the four injection wells. IW-1 is the most severe case, with the influx of sand accounting for more than 100 feet of sediment in the bottom of the well. Over the past year, the depth to the bottom of the wells remain relatively stable.

Water elevations in the IWs are recorded on a daily basis as is the daily total flow discharged to the well field. These are depicted in Figure 14-1. The IW levels were generally steady while the pumps were active. The transducer for IW-2 continues to generate an unreliable signal.

The injection well falling head test was performed on November 22. A graphic representation of the time required to drop the water level to a static condition is presented in Figure 14-2. Comparisons of baseline data from March 2006 to that of recent tests (Figure 14-3) indicate

that all three of four wells are stable. The 4<sup>th</sup> well, IW-2 appears stable although the transducer is not functioning correctly.

Other data collected during November included:

- The plant air was sampled with PID on 4 occasions.
- The plant sound level readings were recorded twice.
- The depth-to-water readings were recorded for the injection wells. This was compared to the soundings and the transducer readings
- The flow-meter readings and the depth of water in the infiltration galleries were recorded.
- The process pump amp-load readings were recorded.
- The water levels were recorded on selected wells for a Nassau County Survey.

#### 15.0 PROCESS ANALYSIS, INTERPRETATIONS, AND CONCLUSIONS

#### 15.1 Influent Process

- Currently, the three extraction well pumps are on-line. The pumps are controlled by water level set points in the wells and in the EQ tank.
- Currently, the three influent pumps are operational with 2 pumps on-line at a time.
- There is some drift in the signal to influent pump-1.
- The seal leak in INF P1 has reappeared.

No other new issues arose with the extraction/influent system. Routine maintenance continues.

#### 15.2 Flow through Aeration Process

Both treatment trains are on-line for the treatment of the influent water.

The polymer, potassium permanganate, caustic, and HCl feed systems remain out of service as current water conditions make their use unnecessary. The flash and flocculation mixers at the clarifiers remain idle due to the discontinued use of the polymer and lack of solids generation. The reaction tanks and clarifier systems continue to operate as pass-through settling tanks.

#### **15.3** Settling Filter Process

The frequency of air sparging of the discharge nozzles and screens has increased. The tanks are drained and cleaned as necessary. The system is fully functional.

#### **15.4** Air Stripping Process

- The three ASF pumps are operational and are rotated into service two at a time.
- The VFD for ASF P2 continues to exhibit an earth ground fault. When on-line, Pump 2 operates through the off line pump's VFD.
- Pump #3 emits a high pitched whine, which will require future address.
- The AS tower return duct flanges were tightened. The tower and duct work were power washed.

No other issues arose with the air stripping system. Routine maintenance continues.

#### 15.5 Aqueous-Phase Carbon Treatment Process

• All three feed pumps are operational, with two pumps rotated into service at a time.

Other routine maintenance tasks continued.

#### **15.6 Treated Water Injection Process**

The plant's total discharge flow rate and volume are measured by a magnetic flow meter on the injection pump discharge manifold. Flow sensors and transmitters installed in the discharge line to each injection well system are on-line and connected to the MCP and HMI.

- The plant discharge system is online and fully operational.
- Water levels in the wells are stable.
- All three INJ pumps are operational, with two pumps rotated into service at a time
- The level transducer in IW-2 continues to produce an unreliable signal.
- The galleries are adequately draining.
- There is a leak in the pvc piping at the discharge of pump 2 and in the manifold prior to the main flow monitor

No other issues were encountered with the injection system in November. Routine maintenance tasks continue.

#### 16.0 GROUNDS

#### **16.1** Plant Perimeter

Routine maintenance tasks continue outside the plant. This includes weather related clean up tasks and landscaping duties. A project to remove the maintenance burden of weed control in the rock filled drainage area is ongoing.

#### 16.2 Well Field

Upkeep of the well field is coordinated with SUNY Farmingdale's maintenance department. The field has been adequately mowed and access remains good.

#### 16.3 Other

- The status of the area north of the plant has not changed. The sand and debris piles remain.
- The golf course maintenance crew clears the paths to the outer monitoring wells as needed.
- The USEPA asked for a photo survey of the condition of the old chemical plant. These are on the server.
- The new HRP Street sign was installed at the street driveway entrance.
- Verizon re-spliced and hanged the fiber optic cable downed during the hurricane in August.

There were no other significant issues outside the plant. Routine maintenance continues.

# **FIGURES**

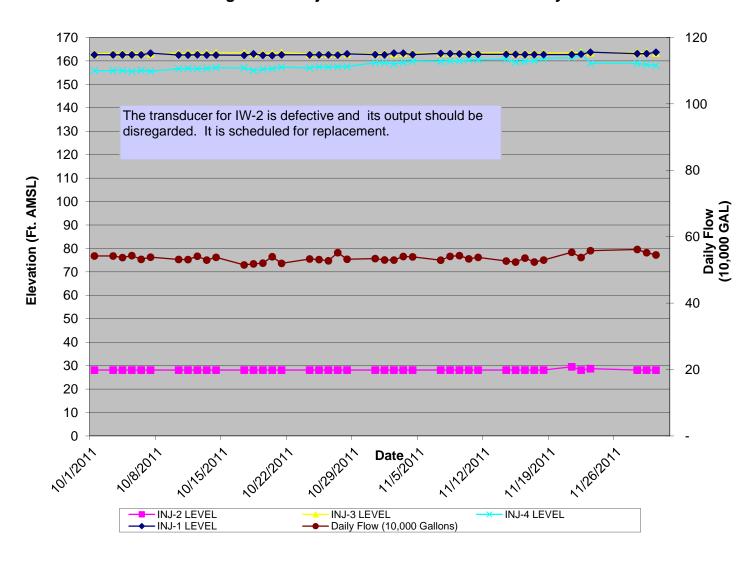


Figure 14-1 Injection Well Elevations and Daily Flow

Figure 14-2 Injection Well Falling Head Test November 22, 2011

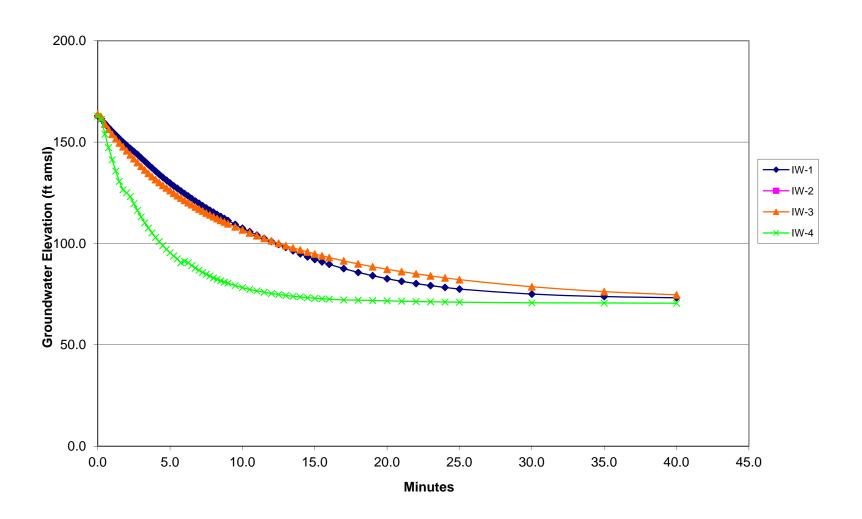
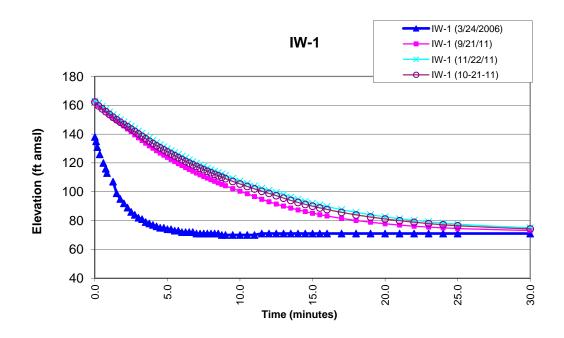
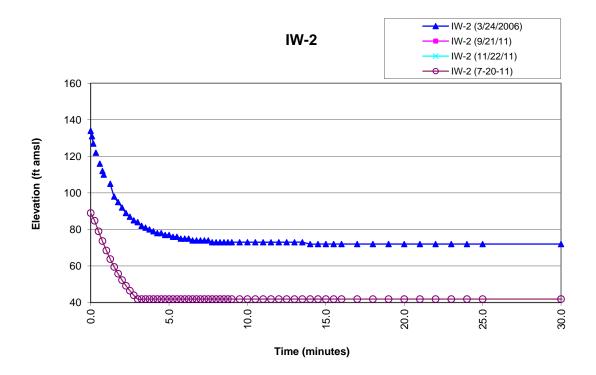
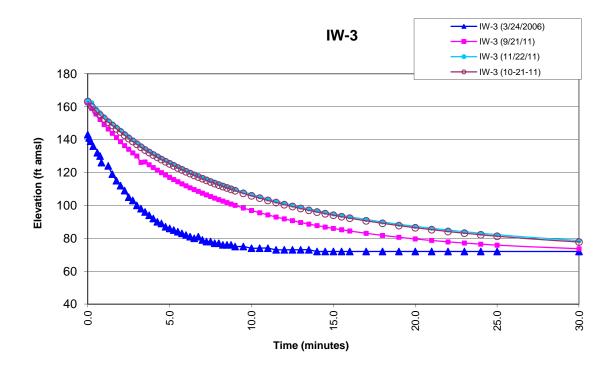
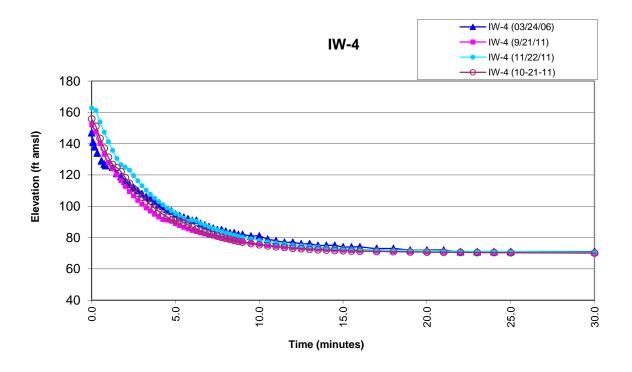


Figure 14-3 Comparison of Falling Head Tests









# **TABLES**

## TABLE 7-1 PLANT DISCHARGE FLOWMETER – DAILY TOTALIZER READINGS

#### November 2011

DATE	TOTALIZER READING	GALLONS PER DAY	GALLONS PER MINUTE
11/1/2011	444757732	562268	390
11/2/2011	445320000	530000	368
11/3/2011	445850000	540000	375
11/4/2011	446390000	1640000	380
11/7/2011	448030000	530000	368
11/8/2011	448560000	540000	375
11/9/2011	449100000	540000	375
11/10/2011	449640000	490000	340
11/11/2011	450130000	1660000	384
11/14/2011	451790000	530000	368
11/15/2011	452320000	520000	361
11/16/2011	452840000	540000	375
11/17/2011	453380000	530000	368
11/18/2011	453910000	1580000	366
11/21/2011	455490000	550000	382
11/22/2011	456040000	540000	375
11/23/2011	456580000	2790000	388
11/28/2011	459370000	560000	389
11/29/2011	459930000	550000	382
11/30/2011	460480000	514797	357
12/1/2011	460994797		
Nov. 2011 TOTAL TREATED WATER		16,237,065	
Nov. 2011 AVG. GPM DISCHARGED			376

TABLE 14-1 INJECTION WELL SOUNDINGS

	Injection Well 1		Injection Well 2		Injection Well 3		Injection Well 4	
Date	Depth to Bottom (ft)	Difference						
6/17/2004	248.50		248.50		253.20		205.00	
7/23/2004	247.97	0.53	248.19	0.31	251.20	2.00	203.50	1.50
8/16/2004	247.90	0.07	248.18	0.01	251.00	0.20	203.40	0.10
9/14/2004	247.95	-0.05	248.15	0.03	251.10	-0.10	203.95	-0.55
10/28/2004	247.79	0.16	248.20	-0.05	251.20	-0.10	203.15	0.80
11/15/2004	247.40	0.39	248.26	-0.06	251.03	0.17	204.03	-0.88
12/29/2004	247.87	-0.47	248.33	-0.07	250.82	0.21	204.40	-0.37
1/10/2005	247.83	0.04	248.12	0.21	250.54	0.28	204.70	-0.30
2/16/2005	247.50	0.33	248.25	-0.13	250.45	0.09	204.36	0.34
3/18/2005	247.82	-0.32	248.10	0.15	250.40	0.05	204.43	-0.07
4/5/2005	247.78	0.04	248.13	-0.03	250.47	-0.07	204.20	0.23
5/10/2005	247.81	-0.03	248.14	-0.01	250.45	0.02	204.22	-0.02
6/30/2005	247.62	0.19	247.25	0.89	250.36	0.09	204.04	0.18
7/26/2005	247.67	-0.05	246.82	0.43	249.93	0.43	204.11	-0.07
8/29/2005	247.71	-0.04	246.50	0.32	249.78	0.15	204.17	-0.06
9/27/2005	247.77	-0.06	246.29	0.21	249.77	0.01	203.90	0.27
10/24/2005	247.78	-0.01	246.00	0.29	249.44	0.33	203.84	0.06
11/14/2005	247.51	0.27	246.19	-0.19	249.10	0.34	203.57	0.27
12/27/2005	247.60	-0.09	245.70	0.49	249.32	-0.22	203.83	-0.26
1/27/2006	247.51	0.09	246.09	-0.39	249.21	0.11	203.98	-0.15
2/16/2006	247.50	0.01	245.69	0.40	249.19	0.02	203.98	0.00
3/23/2006*	247.59	-0.09	245.65	0.04	249.60	-0.41	203.75	0.23
4/28/2006	247.54	0.05	243.68	1.97	249.50	0.10	203.78	-0.03
5/24/2006	247.38	0.16	243.61	0.07	249.57	-0.07	203.90	-0.12
6/20/2006	247.47	-0.09	243.70	-0.09	249.46	0.11	203.14	0.76
7/28/2006	247.44	0.03	243.37	0.33	249.52	-0.06	203.33	-0.19
8/21/2006	247.34	0.10	243.19	0.18	249.42	0.10	202.88	0.45
9/22/2006	247.36	-0.02	242.70	0.49	249.27	0.15	203.05	-0.17
10/30/2006	247.16	0.20	242.64	0.06	249.48	-0.21	203.92	-0.87
11/29/2006	247.32	-0.16	242.50	0.14	249.22	0.26	203.19	0.73
12/29/2006	247.22	0.10	242.52	-0.02	249.29	-0.07	203.15	0.04
1/30/2007	247.44	-0.22	242.60	-0.08	249.47	-0.18	203.35	-0.20
2/21/2007	247.63	-0.19	242.56	0.04	249.42	0.05	203.32	0.03
3/29/2007	247.11	0.52	242.54	0.02	249.22	0.20	201.55	1.77
4/20/2007	247.17	-0.06	242.29	0.25	249.19	0.03	201.24	0.31
5/25/2007	246.85	0.32	242.86	-0.57	249.11	0.08	201.24	0.00
6/28/2007	246.63	0.22	242.15	0.71	248.80	0.31	200.96	0.28
7/26/2007	245.88	0.75	242.13	0.02	248.78	0.02	200.80	0.16
8/23/2007	245.96	-0.08	242.03	0.10	248.73	0.05	200.22	0.58
9/27/2007	245.79	0.17	241.96	0.07	246.80	1.93	200.29	-0.07
10/25/2007	244.69	1.10	242.08	-0.12	248.73	-1.93	200.14	0.15
11/19/2007	242.20	2.49	242.00	0.08	249.60	-0.87	201.05	-0.91
12/21/2007	235.02	7.18	241.56	0.44	249.62	-0.02	200.08	0.97
1/29/2008	232.46	2.56	241.98	-0.42	249.63	-0.01	200.03	0.05

2/29/2008	226.58	5.88	242.12	-0.14	249.82	-0.19	199.52	0.51
3/27/2008	220.50	6.08	241.90	0.22	249.50	0.32	199.30	0.22
4/29/2008	222.50	-2.00	242.02	-0.12	249.60	-0.10	198.98	0.32
5/30/2008	218.55	3.95	241.90	0.12	249.47	0.13	198.65	0.33
6/26/2008	218.60	-0.05	241.95	-0.05	249.50	-0.03	198.65	0.00
7/29/2008	214.98	3.62	242.20	-0.25	249.68	-0.18	198.68	-0.03
8/26/2008	207.03	7.95	241.90	0.30	249.72	-0.04	198.65	0.03
9/26/2008	202.40	4.63	241.93	-0.03	249.52	0.20	198.60	0.05
10/27/2008	200.68	1.72	241.88	0.05	249.50	0.02	198.59	0.01
11/20/2008	198.05	2.63	242.12	-0.24	249.54	-0.04	198.64	-0.05
12/29/2008	178.29	19.76	242.10	0.02	249.15	0.39	198.30	0.34
1/26/2009	167.50	10.79	241.90	0.20	248.87	0.28	198.28	0.02
2/25/2009	151.20	16.30	242.00	-0.10	248.80	0.07	198.80	-0.52
3/13/2009	148.68	2.52	241.87	0.13	248.94	-0.14	198.28	0.52
4/17/2009	148.52	0.16	241.67	0.20	249.00	-0.06	198.10	0.18
5/15/2009	147.60	0.92	241.64	0.03	249.05	-0.05	198.10	0.00
6/8/2009	147.50	0.10	241.60	0.04	248.95	0.10	197.92	0.18
7/27/2009	147.20	0.30	242.40	-0.80	249.00	-0.05	197.90	0.02
8/13/2009	147.20	0.00	241.55	0.85	248.90	0.10	198.00	-0.10
9/16/2009	147.20	0.00	241.50	0.05	248.90	0.00	198.00	0.00
10/28/2009	147.20	0.00	241.44	0.06	248.50	0.40	197.95	0.05
11/19/2009	146.90	0.30	241.50	-0.06	248.53	-0.03	198.00	-0.05
12/10/2009	147.40	-0.50	242.50	-1.00	249.20	-0.67	198.10	-0.10
1/22/2010	147.20	0.20	241.80	0.70	248.50	0.70	198.00	0.10
3/4/2010	147.28	-0.08	241.20	0.60	245.45	3.05	198.00	0.00
3/24/2010	144.95	2.33	241.60	-0.40	248.30	-2.85	198.00	0.00
4/19/2010	147.25	-2.30	241.65	-0.05	247.70	0.60	198.00	0.00
5/26/2010	147.28	-0.03	241.80	-0.15	248.00	-0.30	198.00	0.00
6/24/2010	147.18	0.10	241.72	0.08	248.80	-0.80	198.00	0.00
7/27/2010	144.50	2.68	241.10	0.62	248.90	-0.10	198.00	0.00
8/19/2010	146.95	-2.45	241.70	-0.60	249.05	-0.15	198.00	0.00
9/14/2010	146.00	0.95	241.70	0.00	249.10	-0.05	198.00	0.00
10/14/2010	145.90	0.10	241.65	0.05	249.10	0.00	198.00	0.00
11/8/2010	144.46	1.44	241.60	0.05	249.00	0.10	198.00	0.00
12/17/2010	145.83	-1.37	241.60	0.00	249.10	-0.10	198.00	0.00
2/24/2011	144.50	1.33	241.60	0.00	249.10	0.00	197.98	0.02
3/22/2011	145.80	-1.30	241.60	0.00	248.90	0.20	198.00	-0.02
4/12/2011	145.80	0.00	241.60	0.00	248.50	0.40	197.50	0.50
5/23/2011	148.80	-3.00	241.60	0.00	248.40	0.10	197.50	0.00
6/22/2011	145.80	3.00	241.60	0.00	248.00	0.40	197.83	-0.33
7/15/2011	147.28	-1.48	241.60	0.00	247.70	0.30	197.80	0.03
8/12/2011	145.85	1.43	241.50	0.10	248.25	-0.55	197.80	0.00
9/21/2011	145.90	-0.05	241.10	0.40	248.25	0.00	197.73	0.07
10/7/2011	144.30	1.60	239.95	1.15	247.90	0.35	197.75	-0.02
11/17/2011	145.70	-1.40	236.70	3.25	248.72	-0.82	197.70	0.05

Change From 6/17/04 to Present	102.80	11.80	4.48	7.30
Change From 6-04 thru 2- 06	1.00	2.81	4.01	1.02
*Injection wells IW-2 and IW	/-3 redeveloped duri	ng week ending 3/17/2006		
Change from 3-06 thru 10/07	2.90	3.57	0.87	3.61
Injection wells IW-1 and IW-	-3 were redeveloped	during week ending 11/9/07		
Change 11-07 thru 3/08	21.70	0.10	0.10	1.75
Injection wells IW-1 and IW-	3 were redeveloped	during week ending 4/25/08		
Change 4/08 to present	76.80	5.32	0.88	1.28

# **Associated and Referenced Documents**

Document	Location
Daily Data Logs and Worksheets	Monthly file folders
Daily Operating Log	
Daily activities Summary Report	
Daily Site Safety Inspection	
Employee Sign-in Sheet	
Supporting Worksheets	Monthly file folders
Visitor/Subcontractor Sign-in Sheet	
Air Monitoring Log	
Sound Monitoring Worksheet	
Daily Plant Activity Notes	
Comprehensive Site Safety Inspections	
Plant Operator's Daily Log Book	Current book issued to operator, completed
	books on file in shop cabinet
Site Supervisor's Daily Log Book	Current book issued to supervisor, completed
	books on file in shop cabinet
Daily Database	Electronic file in Claremont Docs/Claremont Ops
	Data/ monthly operating data folder and on
	server
Daily Operations Summary Report	Electronic file in Claremont Docs/Claremont Ops
	Data/ monthly operating data folder and on
	server
Monthly Operations Report	Electronic file in Claremont Docs/Claremont Ops
	Data/ monthly operating data folder and on
	server
Monthly Maintenance Log	Electronic file in Claremont Docs/Claremont Ops
	Data/ monthly operating data folder and on
	server
Activities Schedule	Electronic file in Claremont Docs/Claremont Ops
	Data/ monthly operating data folder and on
	server
Groundwater Elevation and Water Quality	Electronic file in Claremont Docs folder
Database	
Monthly Plant Truck Inspection Worksheet	JSJ files
Stand Alone Documents	Bindered copies in control room, electronic
Claremont O&M Manual	copies on server
Site Safety and Health Plan	
Standard Operating Procedures and Instruction	
manual	
Sampling and Analysis Plan	
Claremont Site Notebook	Electronic file on server