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

MONTHLY REPORT
of the
Operations & Maintenance Activities
During
June 2011

Prepared for the:

New York State Department of Environmental Conservation

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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	HRP Associates, Inc.
HVAC	heating, ventilation, and air conditioning
IG	infiltration gallery
IW	injection well
LGAC	Liquid 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

On June 1, 2011, the operation and maintenance of the Claremont Polychemical Superfund Site and its groundwater treatment system were transferred from the United States Environmental Protection Agency (USEPA) to the New York State Department of Environmental Conservation (NYSDEC). HRP Associates, Inc. (HRP) has been tasked by NYSDEC with the daily operation and maintenance (O&M) of the on-site groundwater extraction, treatment, and reinjection system (GWTS). This report is for June 2011, the period defined as 0600 hours, June 1, 2011, through 0600 hours, July 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 June reporting period. There was over 317 minutes of downtime for repairs, maintenance tasks, and power interruptions. The injection pumps were off an additional 260 minutes due to tests and flow cycling.

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 are kept on-file at the plant.

2.0 OPERATION AND MAINTENANCE LOGS

2.1 Daily Operations Summary Reports

The daily operations of the GWTS are documented in the Daily Operations Summary Reports (DOSR). The DOSRs include a summary of the daily O&M activities, the Daily Operating Logs, the Daily Activities Summary Reports, the Daily Site Safety Inspection sheets, Weekly Air Monitoring Logs, the Sound Level Monitoring Worksheets, and the Employee and Subcontractor/Visitor Sign-in Sheets. This report and the daily worksheets are kept on file at the plant.

2.2 Summary of Maintenance Activities

Maintenance of the treatment system and associated equipment is performed in accordance with the Claremont O&M Manual. Routine activities and equipment function tests completed during this reporting period are summarized in the Monthly Maintenance Log. This table is filed on-site 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 plant supervisor's daily plant activity notes. These documents are filed on-site.

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

- Monthly scheduled tasks included motor amp load readings, injection well (IW) depth soundings, IW falling head tests, valve function tests, comprehensive site inspections, and other function tasks.

- Outdoor site maintenance was performed as needed. This included various landscaping tasks.
- 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 pH element in the ASF system is not in service and is scheduled for replacement.
- ASF pump 2 continues to show an earth fault failure and further evaluation is scheduled.
- Unnecessary piping, tubing, and equipment were removed from the ASF pad.
- The transducer in extraction well #1 was reset from -90 feet from top of column (TOC) up from -100 ft. TOC.
- ASF pump 3 power line connections were tightened in the variable frequency drive cabinet (VFD) cabinet.
- The snow plow carriage was removed from the Dodge truck.
- Liquid CA vessel #2 was backwashed through 4 cycles which included air sparging.
- The sludge tank was drained of carbon sludge through the filter press and ~0.5 drum of dry cake was collected.
- The overload relay for injection pump #3 was replaced in the MCC bucket and the pump was returned to service.
- A leak developed in the discharge side piping of injection pump #2. This is scheduled for repair.
- Flow to IW-2 was restricted as the water level rose to overflow levels.
- Repairs were made on the covers of the operating wells as necessary.
- The extraction well pump control levels are adjusted as necessary to balance the water flows and pump on-time.
- Various outdoor equipment and structures were power washed.

2.3 **Operator's Logs**

The following operating logbooks are currently in use:

- Program/Project Manager's Field Activities Log CL-26
- Well Redevelopment Field Log CL-28
- Site Sampling and Technical Support Log CL-34
- Field Support Log CL-37
- Plant Operator's Daily Log CL-38
- Site Supervisor's Daily Log CL-39
- Plant Operators Daily Log CL-40

However except log book Nos. 39 and 40 all others were sent to SAIC Harrisburg to get copied to the Project Archives. They will 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.

3.0 TECHNICAL SUPPORT ACTIVITIES

3.1 Personnel

- Dick Cronce (SAIC) was on-site (2-days) for the transfer of operations and to perform exit interviews.
- Mike Peck (HRP) was on-site to set up IT services in the control room.
- John Moos (HRP) was on site to deliver the HRP truck.
- Bart Sattler (SAIC) was on-site to return the Dodge pick-up truck to SAIC.

3.2 Sub-contractors and Manufacturing Representatives

- Anthony Trafficante (Sirina) was on site to inspect the fire sprinkler system.
- Brian Hibshman (Aptus Controls) was on site to program the extraction well pump controls and tie up electrical baseline tasks.
- Anthony Lagonigro (Neutron Electric) was on site to install the MCC circuit breaker and returned to install the overload relay.

3.3 Deliveries

- Mail was delivered on 8 occasions
- UPS delivered the MCP switch tags.
- Fed Ex delivered an operator's cell phone

3.4 Visitors

- Tom Simmons (USACE) was on-site for the transfer of the plant operations.

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 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 June 2011 period.

The United States Army Corps of Engineers (USACE) has requested that the plant accident/exposure data log be updated monthly. This task was completed June 2, for the May, 2011 period.

5.0 PLANNED ACTIVITIES AND SCHEDULES

The schedule of significant O&M activities is updated on a monthly basis. This Activities Scheduled was last updated June 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

During the last quarterly groundwater sampling event, (March 2011), the water level elevations and water quality data for the monitoring wells were recorded. The database has been updated and is available for review. The next GW sampling event is scheduled for July.

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 for June, as measured from 0600 hours on June 1, 2011, to 0600 hours on July 1, 2011, was 15,118,119 gallons. This volume is approximately 104 percent of the monthly targeted treatment goal. The cumulative amount of treated water for this operating year (starting June 1, 2010) is 15,118,119 gallons. This is approximately 4 percent above the targeted goal for water to be treated. A graphic representation of the daily system flows are provided in Figure 14-1.

The average discharge flow for June was 350 gallons per minute (gpm) and 503,937 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 to each well system. The relative flows for June are indicated below:

Injection Well System	Flow Average (gpm)	Volume Discharged (gallons)
IW-1	93.6	4,042,340
IW-2	83.6	5,410,990
IW-3	108.9	4,705,300
IW-4	75.5	3,261,130
System	362	15,619,760

There is a discrepancy between the total of the individual flows with that of the plant discharge (PD) flowmeter of ~12 gpm. These errors are being addressed with the cleaning of the piping at the discharge flow elements.

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.

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

Chemical	Inventory	
	No. of Containers	Container Type/Size
Caustic	7	55-gallon drum
Hydrochloric Acid (HCl)	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 organic compounds (VOCs) has not been detected in the effluent streams of the liquid-phase Carbon Adsorber (CA) vessels. The influent and effluent streams of the vessels are monitored on a quarterly basis.

Vessel 2 was air sparged and backwashed through 4 cycles in June. Approximately 0.5 drum of carbon fines was removed. No carbon was added to the vessels.

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.

- Seven full drums and two partially filled drums of nonhazardous carbon sludge cake are on-site. Waste Management is working on the updated profile prior to accepting the material for disposal.
- No non-hazardous sludge was disposed of in June.

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

Responsibility for the GWTP operation has been turned over to the NYSDEC. Historic operating documents (SAIC and URS) have been transferred to the HRP servers.

The transducers were installed in the extraction wells and the programming for the pump controls is complete. Currently the well pumps are under PLC/Water level control.

The installation of INJ P3 is complete and the system is on-line

Schedules for the preliminary 2.11 operating budget were submitted

Several ongoing plant-wide issues include:

- Construct and install dedicated pump systems for selected monitoring wells.
- Determine long term plan for pump check valves.
- Repair leak in PD manifold.
- Ship out non-hazardous waste drums.
- Replace belts and pulley on AS blower
- Complete July GW and PD sampling tasks
- Complete repairs to ASF P2
- Determine cause of drift in performance of INJ P1

13.0 STANDARD OPERATING PROCEDURES (SOP)

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

- Various SAIC documents were updated with HRP headings
- Truck inspection form was generated (CPS-Form-029, rev. a)
- Time sheet procedures were written (CPS-ADM-003, rev. a)

- Autodialer instructions (CPS-GPO-001, rev. c), works sheet and unit were updated.

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 Offsite 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 and inorganic analysis, and quarterly process water (PW) samples are taken for organic, inorganic, and generic analysis.

The monthly PD samples were collected and shipped to Test America on 6/28/11.

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 the discharge sample in a controlled area with calibrated portable meters. A summary of these data is as follows:

Date	pH	Temperature (°C)
June 6, 2011	6.29	16
June 13, 2011	6.35	16
June 20, 2011	6.38	16
June 27, 2011	6.30	16
Monthly Average	**6.33**	**16**

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

Soundings to determine the depth to the bottom of the IWs were taken on June 22. A summary of the historical data is included in Table 14-1. 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. Of this sediment, 78 feet were deposited between April 2008 and March 2009.

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. During June, the plant continued its stable operation, and the plant effluent and IW levels were steady. The transducer for IW-2 continues to indicate a water level lower than actual.

The injection well falling head test was performed on June 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 four wells are stable. The response of the transducer for IW-2 is off and is reading ~35 feet lower than actual water levels.

Other data collected during June included:

- The plant air was sampled with PID on four occasions.
- The plant sound level were recorded
- The depth-to-water readings were recorded for the injection wells.

15.0 PROCESS ANALYSIS, INTERPRETATIONS, AND CONCLUSIONS

15.1 Influent Process

- Currently, the three extraction well pumps are on-line.
- Currently, the three influent pumps are operational with 2 pumps on-line at a time.
- June's influent flow was maintained to keep the treated water tanks at ~70 percent of capacity. This boosts the injection pump performance.
- Pressure transducers were installed in the three extraction wells. The pump control system is operational.
- The performance of INF P1 is erratic and tests on the variable frequency drive are underway.

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

15.2 Metals Removal Process

Both treatment trains are fully operational and 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 discharge nozzles and screens of the retention-settling tanks are subject to particulate fouling. As part of routine maintenance, the system is backwashed with pressurized air using a sparger. Periodically, the system needs to be shut down for cleaning using pressurized water, along with brushing.

The frequency of air sparging remains periodic; however, in June, the risers received minimal attention.

15.4 Air Stripping Process

- ASF P2 continues to exhibit an earth ground fault. Pumps 1 and 3 are operational and are on-line.
- The remote start-up of the ASF pumps remains troublesome as the check valves fail to operate as intended.
- Pump #3 emits a high-pitched whine, which will require future address.

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

15.5 Aqueous-Phase Carbon Treatment Process

- All three L-CA feed pumps are operational, with two pumps rotated into service at a time.
- The pressures through the vessels continue to be monitored.
- CA vessel 2 was backwashed through four cycles

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 system's main discharge line. 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 IW system is online and fully operational.
- Flow to IW-2 is currently restricted.
- 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 read ~30-35 feet below the actual depth to water (DTW) level. The transducer is beyond it normal life and should be replaced.

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

FIGURES

Figure 14-1 Injection Well Elevations and Daily Flow

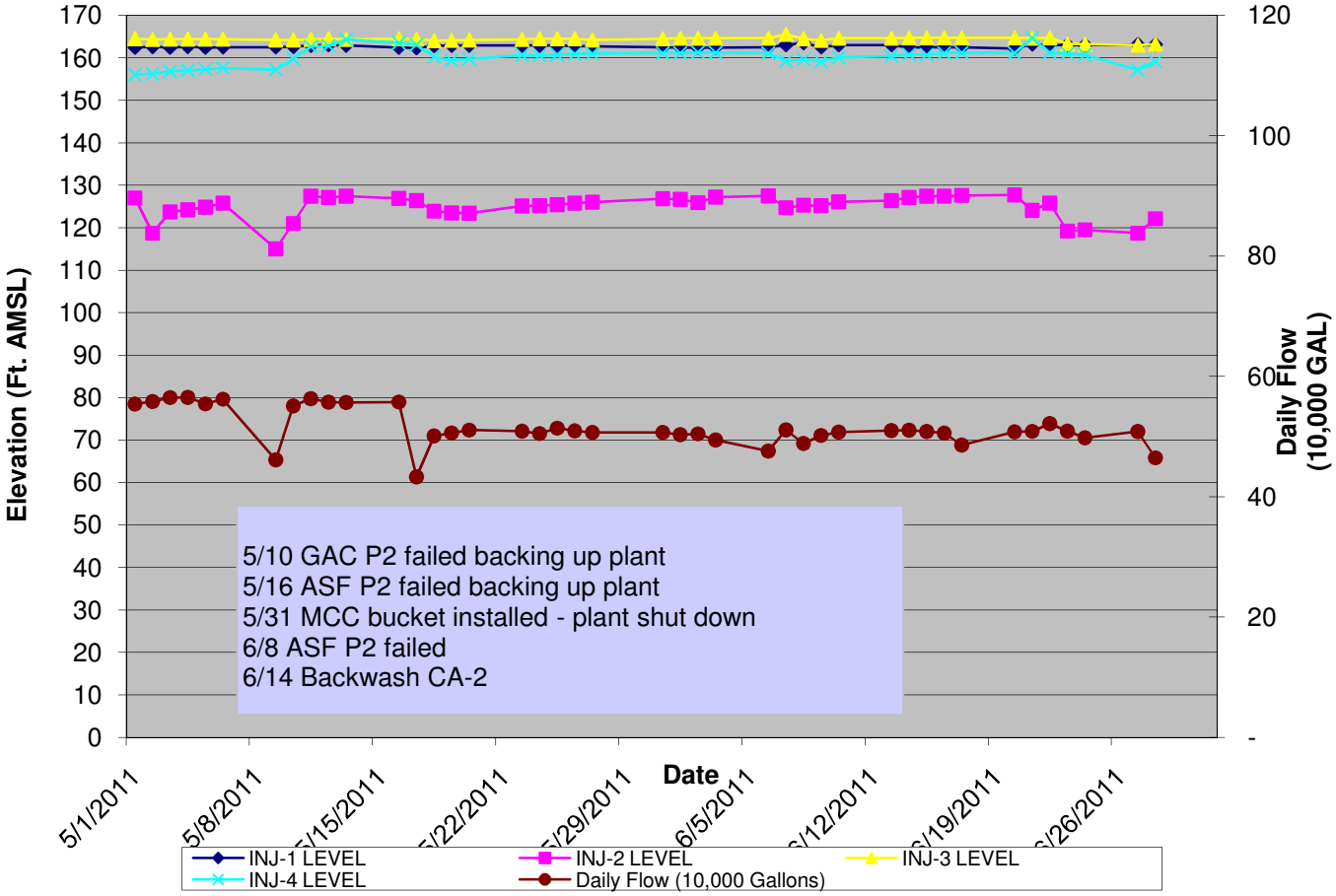


Figure 14.2 Injection Well Falling Head Test June 22, 2011

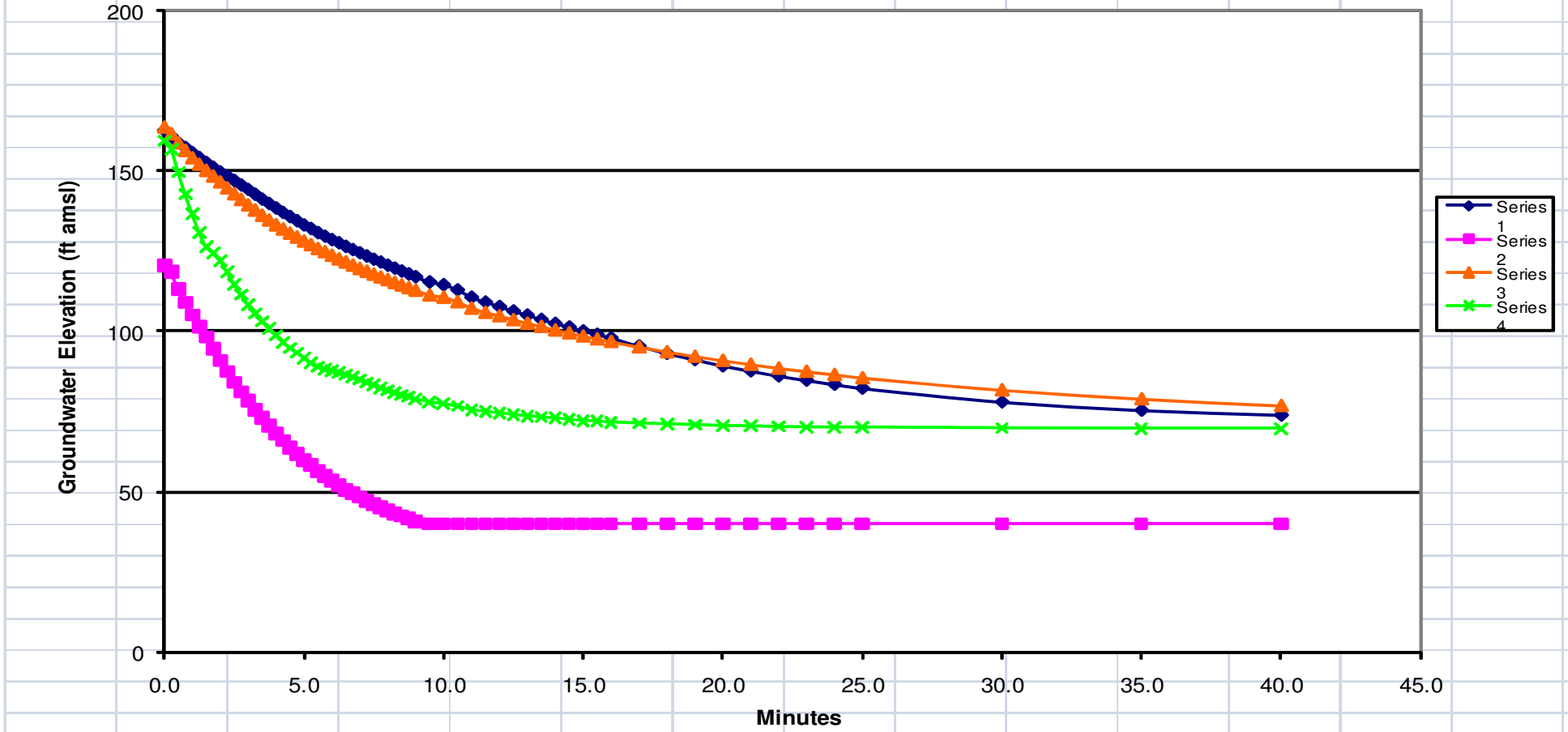
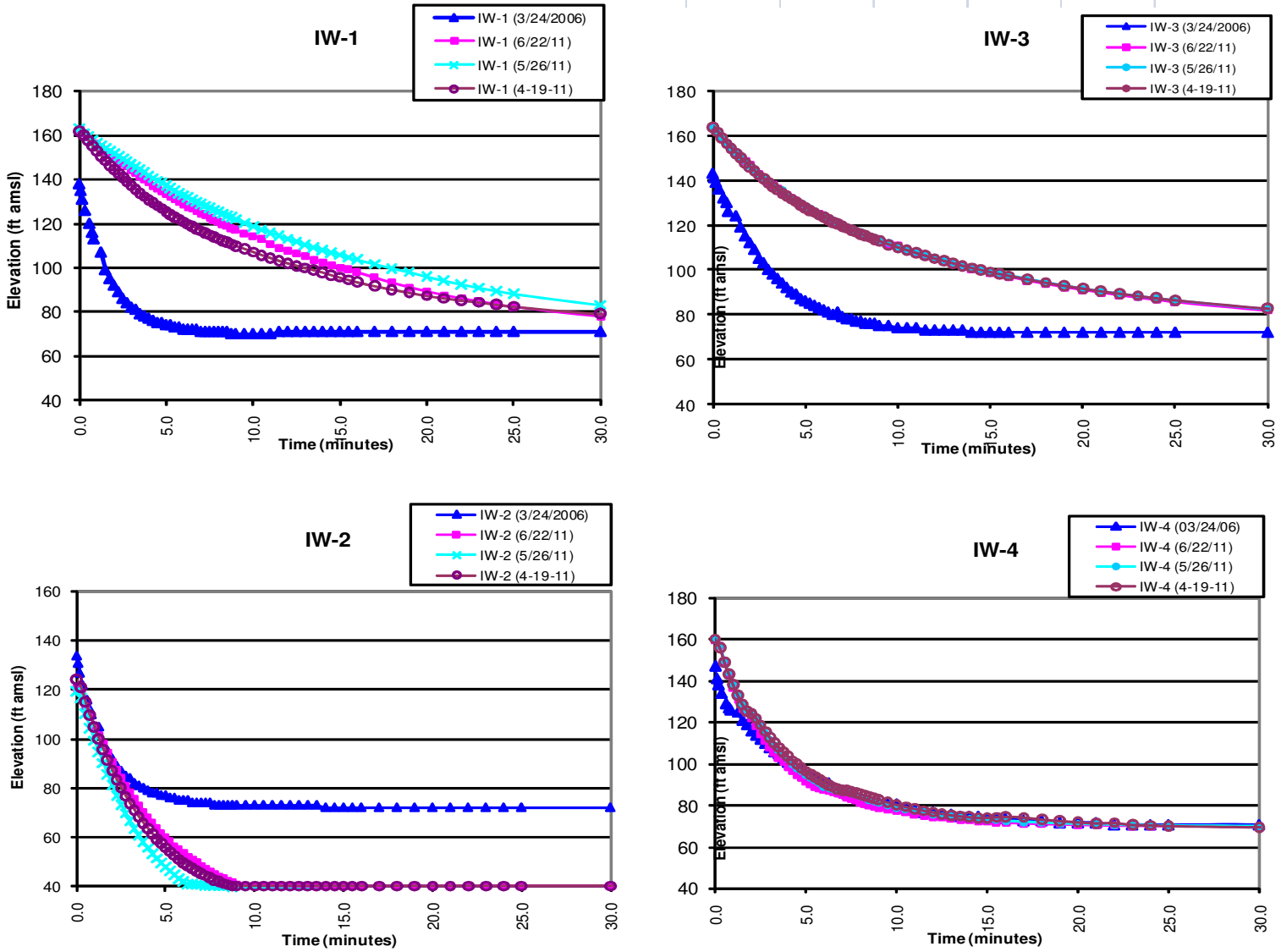


Figure 14.3 Comparison of Falling Head Test Data



TABLES

TABLE 7-1

CLAREMONT POLYCHEMICAL SUPERFUND SITE

MAGNETIC FLOW METER DAILY TOTALIZER READINGS

June 2011

DATE	TOTALIZER READING	GALLONS PER DAY	GALLONS PER MINUTE
6/1/2011	367375483	534517	371
6/2/2011	367910000	510000	354
6/3/2011	368420000	1530000	354
6/6/2011	369950000	510000	354
6/7/2011	370460000	450000	313
6/8/2011	370910000	500000	347
6/9/2011	371410000	500000	347
6/10/2011	371910000	1540000	356
6/13/2011	373450000	510000	354
6/14/2011	373960000	370000	257
6/15/2011	374330000	560000	389
6/16/2011	374890000	510000	354
6/17/2011	375400000	1520000	352
6/20/2011	376920000	500000	347
6/21/2011	377420000	510000	354
6/22/2011	377930000	480000	333
6/23/2011	378410000	520000	361
6/24/2011	378930000	1540000	356
6/27/2011	380470000	490000	340
6/28/2011	380960000	520000	361
6/29/2011	381480000	520000	361
6/30/2011	382000000	493599	343
7/1/2011	382493599		
June 2011 TOTAL TREATED WATER		**15,118,116**	
June 2011 AVERAGE GALLONS PER MINUTE DISCHARGED			**350**

Table 14.1 Injection Well Soundings

Date	Injection Well 1		Injection Well 2		Injection Well 3		Injection Well 4	
	Depth to Bottom (ft)	Difference	Depth to Bottom (ft)	Difference	Depth to Bottom (ft)	Difference	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

Change 6/17/04 to present	**102.70**	**6.90**	**5.20**	**7.17**
Change 6-04 through 2-06	1.00	2.81	4.01	1.02
*Injection wells IW-2 and IW-3 redeveloped during week ending 3/17/2006				
Change 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	**76.70**	**0.42**	**1.60**	**1.15**