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

MONTHLY REPORT
of the
Operations & Maintenance Activities
During
August 2011

Prepared for the:

New York State Department of Environmental Conservation

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Prepared: September 6, 2011

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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 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 August 2011. This period is defined as 0600 hours, August 1, 2011, through 0600 hours, September 1, 2011. O&M conducted during this reporting period was performed in accordance with the site O&M Manual.

The system operated for 31 days in the August reporting period. The plant experienced two periods of extended downtime this month. The processes were shut down for 365 minutes during which the carbon adsorber vessels were back washed as part of the maintenance task. On the second occasion, the plant lost power during to an area wide outage due to Hurricane Irene. This lasted 1994 minutes. The injection pumps were off for an additional 168 minutes so that the treated water tanks could recharge.

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.

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, 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. 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 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 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 loads 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.
- As the plant influent flow is ramping up, the frequency of cleaning the nozzles on the settling tank has increased.
- Both liquid carbon adsorber vessels were back washed which included pre-sparging with low pressure air. The carbon sludge was collected and dried in the filter press.
- The monthly truck inspection was completed.
- The bathroom fan motor was removed as it is not operating. The motor needs replacement.
- Control room leaks in the fire sprinkler drops were eliminated.
- Control room floor was cleaned and waxed.
- Unnecessary Pipes and fittings were removed from the ASF, GACF, and RCY pads.
- The exit lights at the NW and SW doors were re-wired.
- The multi port communication switch was replaced between the HMI and the PLC.
- Water was drained from the HP-air system
- The waste drums were staged, dried, and labeled. The drums were shipped to Chemical Waste Management (CWM). The drums were eventually returned to the site and they await disposition from CWM. This waste is still the responsibility of the USACE and SAIC.
- The IW-1 flow element and spool piece were removed, cleaned, reinstalled, and returned to service.
- Downed trees were removed from the truck access path to the extraction wells.
- The outdoor fire alarm bell was realigned and tested.

2.0 MAINTENANCE LOGS

The following operating logbooks are currently in use:

- Site Supervisor's Daily Log CL-39
- Plant Operators Daily Log CL-40

Except for log book Nos. 36, 39 and 40, all the system log books were sent to SAIC Harrisburg to be copied into 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

- Mike Peck continued to clear up IT related problems

3.2 Sub-contractors and Manufacturing Representatives

- Horwith Trucking was in to pick up waste drums. They returned the drums when they were refused by the Treatment Storage and Disposal (TSD) facility.
- General Welding was in to pick up the nitrogen bottles
- Sirina Fire protection Systems was in to inspect the sprinkler system.
- Verizon was in to repair the snapped fiber optic cable.

3.3 Deliveries

- Mail was delivered on 8 occasions
- UPS delivered the waste manifest

3.4 Visitors

- Valerie Egan (NCDPW) was in to request the DTW readings from the BP3 well cluster. She returned to pick up the data.
- Din Weng (TOB Lab) was in to pick up the organic GW samples.
- Shewen Bian (USACE) was in to sign the waste manifest.

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 August 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 August 31 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 groundwater sampling task was completed in August. The water level elevations and water quality data for the wells was recorded in the database. The updated database is available for review. The next GW sampling event is tentatively scheduled for October at which time the database will be further updated.

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 August, as measured from 0600 hours on August 1, 2011, to 0600 hours on September 1, 2011, was 15,371,276 gallons. This volume is approximately 103 percent of the monthly targeted treatment goal. The cumulative amount of treated water for this operating year (starting June 1, 2011) is 45,232,890 gallons. This is approximately 2 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 August was 344 gallons per minute (gpm) and 495,848 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 August are indicated below:

Injection Well System	Flow Average (gpm)	Volume Discharged (gallons)
IW-1	94	4,203,490
IW-2	86	3,856,300
IW-3	108	4,808,620
IW-4	70	3,115,760
System	358	15,984,170

There remains a discrepancy between the total of the individual flows with that of the plant discharge (PD) flowmeter of ~14 gpm.

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. The chemical feed tanks and feed tubing currently contain water.

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 continue to be monitored on a quarterly basis.

Due to the increasing differential pressure across CA vessels, both units were backwashed in August. As the water through the plant has increased, the differential pressures will continue to be monitored.

Approximately ¾ drum of spent carbon cake was generated during the backwash operation. 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.
- Nine full drums and one partially filled drum of nonhazardous carbon sludge cake are on-site.
- Eight drums were shipped to the CWM TSD facility under the approved waste profile. Upon arrival at the TSD, the background radiation level was unacceptable and the drums were returned to Claremont and are awaiting further analysis.
- No non-hazardous sludge was disposed of in August.

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 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.

Details are being worked out on how to proceed with the purchase of replacement parts and maintenance items.

Local stand-by electrical contractors (4) for the NYSDEC were contacted and price schedules were obtained.

Hurricane Irene passed through the area Saturday night (8/27) and power was lost at the plant Sunday morning at 1:30 am. Power remained out until Monday at 10:30. The Verizon fiber optic communication cable was snapped and some trees were felled in the path to the extraction wells. The plant was manually restarted. There was no damage to the systems.

Several ongoing plant-wide issues include:

- Assemble and install dedicated pump systems for selected monitoring wells.
- Determine long term plan for process pump check valves.
- Repair leak in PD manifold.
- Install snow plow on plant truck.
- Ship out non-hazardous waste.
- Repair VFD of ASF P2
- Replace bathroom fan.
- Replace level transducer for IW-2
- Determine cause of drift in performance of INJ P1
- Update plant documents with recent changes to the plant operations (INJ P3, EXT well transducers)
- Complete September's PD sampling tasks.

13.0 STANDARD OPERATING PROCEDURES (SOP)

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

- GW sampling field notes worksheet was revised. (CPS-Form-028)

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

- The GW sampling tasks were completed 8/1 and the organic and inorganic samples were shipped to Test America.
- The PW sampling tasks were completed 8/17 and all samples were shipped to Test America.
- September's PD sampling is scheduled for 9/14.

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

Date	pH	Temperature (°C)
August 1, 2011	6.39	18
August 8, 2011	6.20	19
August 15, 2011	6.45	17
August 22, 2011	6.45	18
August 30, 2011	6.45	16
Monthly Average	**6.39**	**18**

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 August 12. 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. 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 the latter part of July, the plant experienced lower flows resulting in fluctuations in the plant effluent. The IW levels were generally steady while the pumps were active. The transducer for IW-2 continues to generate an erratic signal.

The injection well falling head test was performed on August 24. 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 lower than actual water levels.

Other data collected during August included:

- The plant air was sampled with PID on five occasions.
- The plant sound level readings were recorded
- The depth-to-water readings were recorded for the injection wells.
- The flow-meter readings and the depth of water in the infiltration galleries were recorded.
- The process pump amp-load readings were recorded

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 the extraction well water level set points.
- Currently, the three influent pumps are operational with 2 pumps on-line at a time.
- There is some drift in the output of influent pump 1 (the discharge fluctuates 0-15 gpm).

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

15.2 Metals Removal 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 3 ASF pumps are operational and are rotated into service
- The VFD for ASF P2 continues to exhibit an earth ground fault. Pump 2 operates through the off line pump's VFD.
- 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 pressure through the vessels is rising and will continue to be monitored.
- Both vessels were backwashed with treated water in August.

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.
- 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 and erratic signal.
- The galleries are adequately draining.

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

FIGURES

Figure 14-1 Injection Well Elevations and Daily Flow

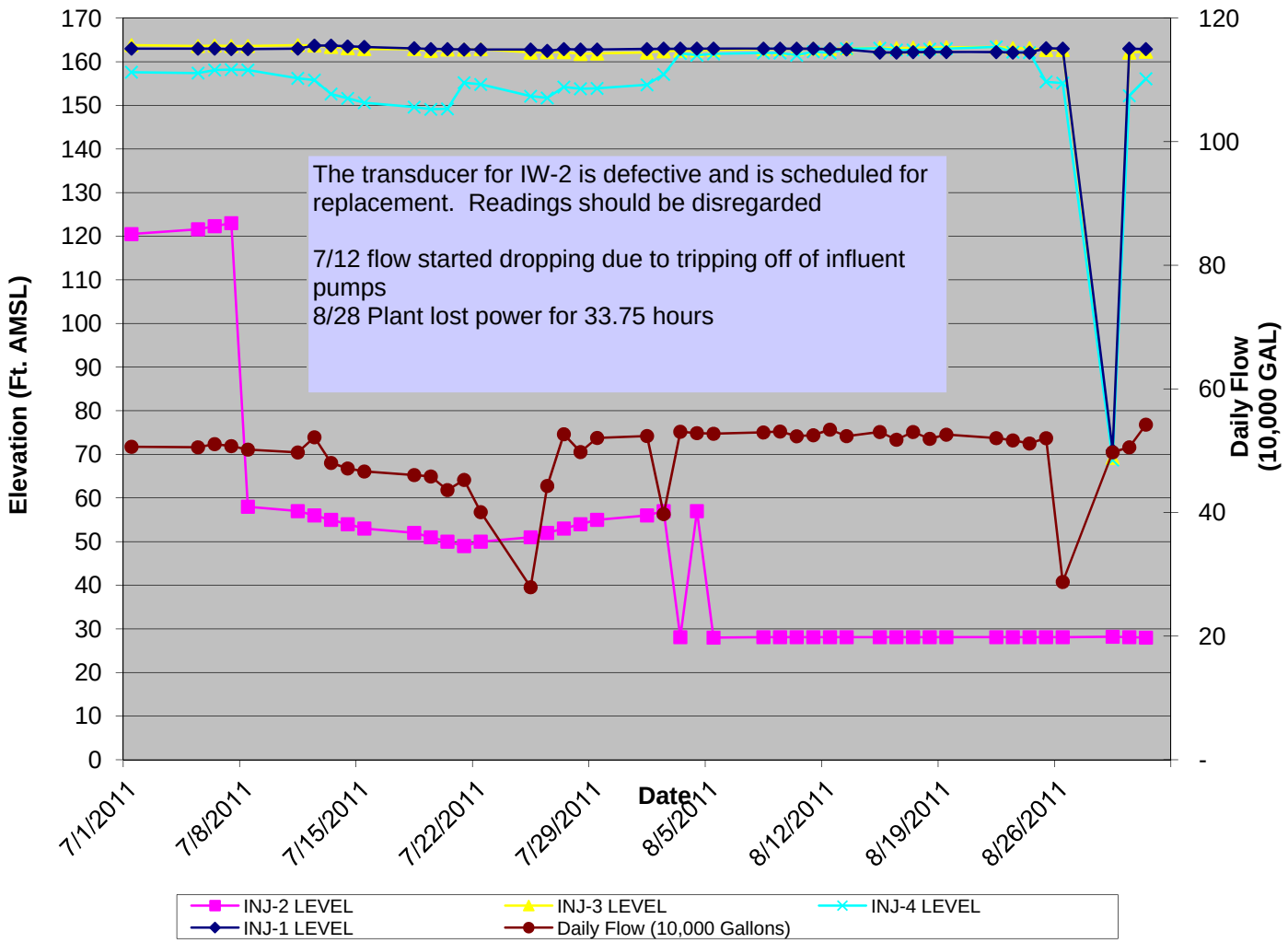


Figure 14-2 Injection Well Falling Head Test August 24, 2011

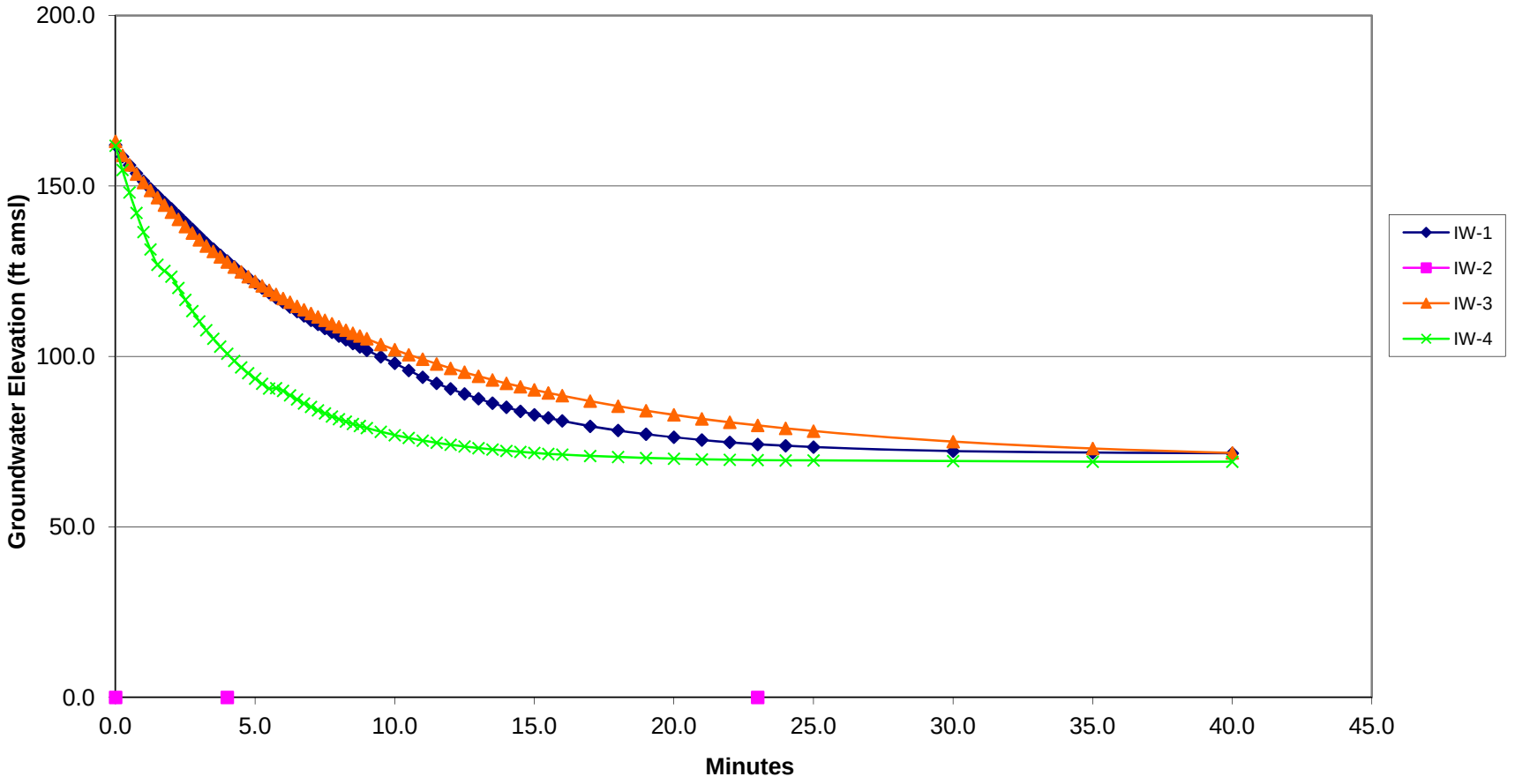
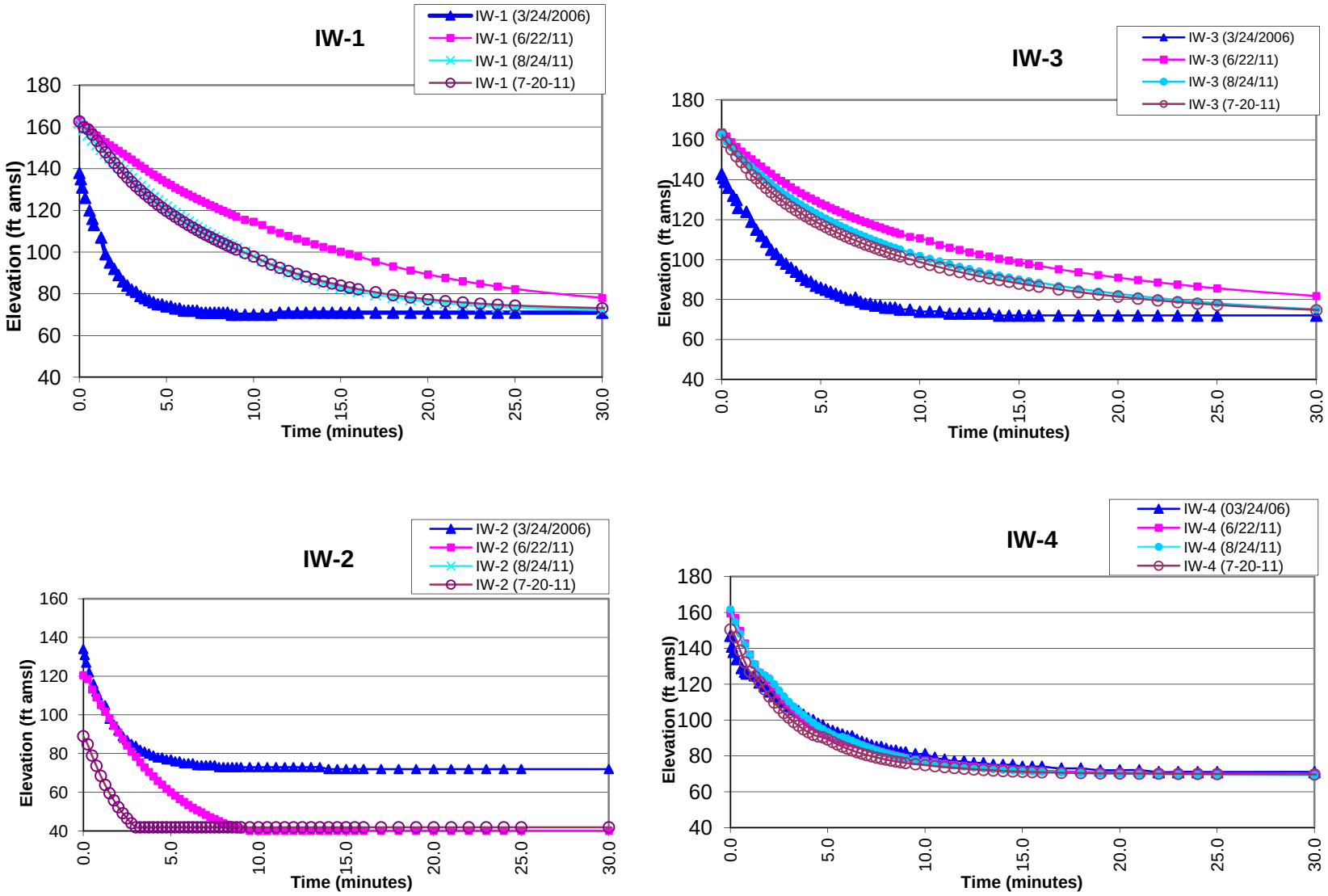


Figure 14-3 Comparison of Falling Head Tests



TABLES

TABLE 7-1
MAGNETIC FLOW METER DAILY TOTALIZER READINGS

August 2011

DATE	TOTALIZER READING	GALLONS PER DAY	GALLONS PER MINUTE
8/1/2011	397237094	552906	384
8/2/2011	397790000	400000	278
8/3/2011	398190000	530000	368
8/4/2011	398720000	530000	368
8/5/2011	399250000	1580000	366
8/8/2011	400830000	530000	368
8/9/2011	401360000	530000	368
8/10/2011	401890000	530000	368
8/11/2011	402420000	520000	361
8/12/2011	402940000	480000	333
8/13/2011	403420000	1100000	382
8/15/2011	404520000	530000	368
8/16/2011	405050000	520000	361
8/17/2011	405570000	530000	368
8/18/2011	406100000	520000	361
8/19/2011	406620000	1580000	366
8/22/2011	408200000	520000	361
8/23/2011	408720000	520000	361
8/24/2011	409240000	510000	354
8/25/2011	409750000	520000	361
8/26/2011	410270000	910000	211
8/29/2011	411180000	360000	250
8/30/2011	411540000	560000	389
8/31/2011	412100000	508370	353
9/1/2011	412608370		
Aug 2011 TOTAL TREATED WATER		**15,371,276**	
Aug 2011 AVG. GPM DISCHARGED			**344**

Table 14-1
Injection Well Soundings

	Injection Well 1		Injection Well 2		Injection Well 3		Injection Well 4	
Date	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
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

Change 6/17/04 to present	**102.65**	**7.00**	**4.95**	**7.20**
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	**76.65**	**0.52**	**1.35**	**1.18**