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

MONTHLY REPORT
of the
Operations & Maintenance Activities
During
November 2012

WA D006130-19
SITE # 130015

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
DBA	doing business as
DOSR	daily operations summary report
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. dba HRP Engineering, P.C.
HVAC	heating, ventilation, and air conditioning
IG	infiltration gallery
IW	injection well
LGAC, LCA	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
PDB	Passive Diffusion Bags
PD	plant discharge
PID	photo ionization detector
PLC	programmable logic controller
psi	pressure in pounds per square inch
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, VCA	vapor-phase granular activated carbon
VFD	variable frequency drive
VOCs	volatile organic compounds

1.0 OPERATION AND MAINTENANCE ACTIVITIES

HRP Associates, Inc. dba HRP Engineering, P.C. (HRP) continued its daily operation and maintenance (O&M) of the Claremont Polychemical Superfund Site and its groundwater treatment system (GWTS) for November 2012. This period is defined as 0600 hours, November 1, 2012, through 0600 hours, December 1, 2012. O&M conducted during this reporting period was performed in accordance with the site O&M Manual.

The system operated for 30 days in this reporting period with 1133 minutes of process downtime. The downtime was due to a power outage resulting from Hurricane Sandy and related events.

Each workday morning, readings of key process parameters are recorded. These readings are used to monitor the plant's performance and as a basis for adjustments to the plant operations. These readings are recorded in the Daily Database which is an electronic file maintained in monthly operating data folders.

At the end of this report is a list of the manuals, logs, reports, and databases maintained by the treatment plant. The locations of these documents are included.

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. These worksheets include:

Daily Operating Log – process meter readings (CPS-Form-008)
Daily Activities Summary Report - plant operator activities (CPS-Form-007)
Daily Site Safety Inspection – Site checklist for unsafe conditions (CPS-Form-009)
Employee Sign-In Sheet – employee log in (CPS-Form-11)

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.

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

- Scheduled routine monthly tasks which 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 clean up tasks and grounds keeping.
- The process pumps were rotated (two on-line, one off) three times during this period as part of the preventive maintenance task.
- The remaining plant exit doors were scraped and painted.
- The plow pump was removed and taken to RW Truck for service
- Two perimeter fence warning signs were re-hanged
- Storm related clean up tasks were completed at the plant and along the paths to the monitoring wells
- Ice, snow and vines were removed from the Verizon cable.
- The sludge tank was emptied through the filter press.
- The second outdoor heat trace thermostat was assembled.
- The shop tool rack was re-hanged.
- The heat trace thermostats were mounted and activated. The heaters were connected.
- The pH meters were calibrated. Those for the reaction tanks and ASF did not take calibration and are not in service.
- The plant heater blower was lubricated.
- The flow meter for IW-4 was not functioning. It was taken off line, disassembled, cleaned, reinstalled on returned to service. The totalizer was reset to zero.
- The backflow preventer device crypt was cleared of debris and overgrowth as the annual testing was scheduled for 12/3.
- The monthly in-house truck inspection was completed.

2.0 MAINTENANCE LOGS

The following operating logbooks are currently in use:

- Well Maintenance Field Log CL-28
- Sampling support Field Log CL-37
- Site Supervisor's Daily Log CL-41, CL-45
- Plant Operator's Daily Log CL-44

Of the remaining 42 project logbooks, 40 are in the process of being scanned and delivered to the NYSDEC. 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 HRP Personnel

There were no HRP personnel at the GWTP during this period but resources were put to coordinating the upcoming plant shutdown and extraction well sampling.

3.2 NYSDEC Personnel, sub-contractors and other visitors

There were no visitors in November

3.3 Deliveries

- Fed Ex delivered the monitoring well PDBs and returned to deliver the Extraction well PDBs.
- UPS delivered the tethers for the extraction wells
- Mail was delivered 5 times.
- TA-NYC dropped off the sampling bottle order and sample coolers.

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 were performed twice in November. These worksheets are also on file.

No safety incidents or accidents occurred during this November 2012 period.

5.0 PLANNED ACTIVITIES AND SCHEDULES

The status of project work and significant corrective maintenance activities is updated on a monthly basis. This Project Status Report was updated November 27 and is electronically filed. In addition to this report, Table 12-1 - Summary of Maintenance Issues has been updated. This is a table of action items and maintenance issues concerning the treatment system.

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

The upcoming extended plant shutdown is scheduled to start the week of 12/5 and go on for a minimum of 3 weeks. Tentative tasks scheduled for this period can be found in Attachment 1.

6.0 MONITORING WELL WATER ELEVATIONS

The water level elevations and water quality data for the well system was updated after the August quarterly groundwater sampling event. This database is available for review. The water level elevation data is included in the quarterly groundwater monitoring report.

Due to the stabilized nature of PDB samples, the water quality data will no longer be recorded. The next update of the water level data will take place after the quarterly groundwater event to be scheduled for December.

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, 2012, to 0600 hours on December 1, 2012, was 14,802,281 gallons. This volume is approximately 102 percent of the monthly targeted treatment goal. The cumulative volume of water discharged for this contract year (June 1, 2012 to present) was 91,378,030 and is ~4 % above target. 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.)

In November, the plant discharge flow averaged 343 gallons per minute (gpm) and 493,409 gallons per day (gpd).

Month	Flow Average (gpm)	Volume Discharged (gpd)
June	380	546,715
July	357	513,599
August	344	495,778
September	338	487,288
October	320	460,217
November	343	493,409
Goal	**335**	**482,400**

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

Injection Well System	Flow Average (gpm)	Volume Discharged to well (gallons)*
IW-1	21.1	911,889
IG-1	77.9	3,365,266
IW-2	69.6	3,008,096
IW-3	27.9	1,204,344

IG-3	85.2	3,681,432
IW-4	79.7	3,441,868
System	**361**	**15,616,895**

The discrepancy between the individual injection system meter readings and the total plant effluent meter readings (~18 gpm) is due in part to the type of flow meters utilized to measure the discharge (paddle wheel vs. magnetic vs. turbine), sludge build up in the piping at the flow elements, rounding factors in the meters, and the relative time the readings are taken. The elements and local pipe will be cleaned during the December plant shutdown.

The flow to IW-1 and IW-3 is maximized and the valves to the galleries are fully open. Both galleries are draining adequately.

The plant's total effluent discharge is limited by plumbing constraints, by injection pump capacity and the ability of the wells to accept water.

8.0 CHEMICAL CONSUMPTION

The four chemical feed systems are offline, and their future use is not anticipated. The systems are periodically tested and are operational. With the exception of the permanganate feed tank, the chemical feed tanks and feed tubing contain water for testing and inspection purposes. Currently the KMnO4 tank needs a repair to a cracked drain nozzle.

There are no bulk chemicals onsite.

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 (LCA) vessels. The influent and effluent streams of the vessels continue to be monitored on a quarterly basis.

As part of the daily monitoring task, the differential pressure across each vessel is recorded. Based on this data and the discharge pressure of the LCA feed pumps, the vessels were last backwashed in August. Currently the differential pressure across vessel #1 is 6.0 psi and across vessel #2 is 6.0 psi. Backwashing of both vessels is scheduled for the plant shut down.

No carbon has been added to the vessels.

9.2 Vapor-Phase Carbon

Two vapor-phase Carbon Adsorber vessels (VCA) are available for the off gas treatment of the air stripping (AS) stream. Currently, VCA-1 is online. VCA-2 is offline and ready for service. Monitoring of VOCs in the influent and effluent air stream of the active vessel is normally

performed weekly with a photo-ionization detector (PID). Currently the PID is not able to be calibrated. A new instrument has been purchased and delivery is pending.

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

10.0 WASTE DISPOSAL

Currently, there are 6 drums of non-hazardous carbon waste stored inside the facility. There was no waste removed from the facility in November.

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 the permit requires periodic submittal of discharge monitoring results, monthly discharge monitoring reporting is not required. A review of the monthly discharge analytical results, which are included within Section 14.0, indicated all analyzed parameters were below noted permit limits.

The plant's water discharge permit expires December 31, 2013.

12.0 OTHER OPERATIONS, MAINTENANCE, OR MANAGEMENT ISSUES

The plant experienced an extended power outage due to Hurricane Sandy. The plant was down 280 minutes on 11/1 as a result. The plant experienced further outages on 11/7 (213 minutes) and 11/8 (640 minutes). These power outages required manual plant process shutdowns and manual restarts.

It has been determined that more extensive sampling of the extraction wells is required. In order to install passive diffusion bags (PDBs) in the wells, the plant will have to be shut down and the extraction pumps pulled. A list of maintenance tasks to be executed during the ~month long process shutdown has been compiled. This list is found as Attachment 1.

Two pinhole leaks were discovered in the side wall of the EQ tank. The welder will look at these holes when he looks at the LCA vessels.

Other issues being addressed include:

- A third emergency exit light (SW exit) is to be replaced.
- The seals on the snow plow pump are leaking and a solenoid valve wire has been severed. The pump was sent out for repairs.
- The plant furnace does not stay active.
- Other on-going plant maintenance issues are summarized on Table 12-1 and in the Project Status Report (filed on-site).

13.0 PLANT DOCUMENTS

Procedures and standard forms are written, reviewed, and revised as needed. During November, the following changes were made:

- The Sign-in Sheet, Form-011 was revised to rev. D
- The Daily Safety Inspection Worksheet, Form -09 was revised to rev. F
- The Daily Data Sheet, Form-08 was revised to rev. L

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. Novembers' sampling activities included:

- The monthly PD samples were collected 11/15 and shipped to TA-Edison for organic analysis.
- The extraction well tethers were measured and reset according to instructions from John Moss. The actual depths for the PDB placement were recorded
- The December PD samples are scheduled for 12/12.
- The quarterly GW sample task has not been scheduled, but is expected to occur in late December.

On October 17 and November 15 the plant discharge was sampled. The results for both events follow:

Plant Discharge				
Parameters	**Discharge Limitations**	**Units**	**Results Oct '12**	**Results Nov '12**
pH (range)	5.5 – 8.5	SU	6.15	6.39
Tetrachloroethylene	5	ug/l	U	U
Trichloroethylene	5	ug/l	0.36 J	0.27J
1,2-(cis) Dichloroethylene	5	ug/l	U	U
1,2-(trans)Dichloroethylene	5	ug/l	U	U
Methylene Chloride	5	ug/l	U	U
1.1 Dichloroethylene	5	ug/l	U	U
1,1-Dichloroethane	5	ug/l	U	U
Chloroform	7	ug/l	U	U
1,1,1-Trichloroethane	5	ug/l	U	U

Benzene	0.7	ug/l	U	U
Toluene	5	ug/l	U	U
Chlorobenzene	5	ug/l	U	U
Ethylbenzene	5	ug/l	U	U
Bis(2-ethylhexyl)phthalate	4200	ug/l	U	U
Di-n-butyl phthalate	770	ug/l	U	U
Antimony, Total recoverable	3	ug/l	U	NS
Arsenic, Total recoverable	50	ug/l	U	NS
Barium, Total recoverable	2000	ug/l	U	NS
Lead, Total recoverable	50	ug/l	U	NS
Selenium, Total recoverable	40	ug/l	U	NS
Iron, Total recoverable	500	ug/l	U	NS
Manganese, Total recoverable	500	ug/l	16.2	NS
Nitrogen, Total (as N)	10	mg/l	0.26	NS
Solids, Total Dissolved	1000	mg/l	243	NS
Chromium, Hexavalent	100	ug/l	U	NS
Chloride Ion	NL	mg/l	128	NS
Fluoride Ion	NL	mg/l	U	NS
Sulfate Ion	NL	mg/l	30.4	NS

NS not sampled
U analyzed for but not detected
J estimated value
NL monitor only

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	pH	Temperature (°C)
November 5	6.27	12
November 12	6.21	14
November 19	6.67	13
November 26	6.40	13
November average	**6.39**	**13**

The NYSDEC discharge permit requires the plant discharge to have an average monthly pH greater than 5.50. The treatment plant effluent pH averaged 6.39 in November and met the monthly average pH discharge requirement. A graph of the plant discharge monthly pH average trend over several months is provided in Table 14-1.

Normally weekly air monitoring readings are taken with a PID of the influent and effluent air streams of the active vapor phase carbon adsorber vessel following the air stripping tower. Currently vessel #1 is on-line. The plant PID is inoperative and a new PID has been ordered, there were no readings taken in November.

Measurements to determine the well depth from the top of the injection well column to the bottom were taken on 11/16. A summary of the historical data is included in Table 14-2. Although there has been an accumulation of sediment in all four injection wells, the wells currently appear to be stable. 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. The total sediment accumulation in IW-2 is ~ 40 feet.

Water elevations in the IWs are normally 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 are active. With the exception of IW-1, the transducers in IW-2, IW-3, and IW-4 are producing unreliable signals. The water levels are physically monitored more frequently. On 11/16 the DTW readings for the injection wells were recorded.

	Sounding Depth (ft)	Transducer	Depth to Water (ft)
IW-1	144.3	160.9	6.64
IW-2	203.9	Nm	20.4
IW-3	248.15	Nm	5.30
IW-4	197	Nm	14.30

The injection well falling head test was performed on November 26. Due to the questionable output of the level transducers, the only data recorded was for IW-1. 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 the performance of IW-1 is unchanged. All wells appear to be draining adequately.

Other routine data collected during November included:

- The plant sound level readings were recorded twice (11/9, 11/22), (included with daily worksheets).
- The flow-meter readings and the depth of water in the infiltration galleries were recorded in site supervisor's notebook and included with the monthly filings. (11/28)
- The process motors amp load readings were recorded (11/20)
- Weekly utility meter readings were recorded.

15.0 PROCESS ANALYSIS, INTERPRETATIONS, AND CONCLUSIONS

15.1 Extraction and Influent Processes

- The three extraction well pumps are fully functional and are on-line.
- The 3 extraction well flow monitors are fully functional.
- Two pin-hole leaks were observed in the EQ tank side wall.
- The three influent pumps are operational with 2 pumps on-line at a time.
- There continues to be some drift in the flow control signal to influent pump-1.
- The influent pumps were rotated 3 times in November.
- The 2 influent flow controllers are fully functional.
- The extraction well pumps are scheduled to be removed from the wells in early December for extensive stabilized sampling.
- Routine maintenance continues.

15.2 Flow through Aeration Process

- Both treatment trains are on-line and the influent water is split relatively evenly to each train.
- The polymer, potassium permanganate, caustic, and hydrochloric acid 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

- Air sparging of the drain screens is performed as necessary
- 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. They were rotated three times in November.
- 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 vapor phase carbon beds are drained of condensate as necessary.
- The blower is checked daily and is fully functional.
- 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. The pumps were rotated 3 times in November.
- The pin-hole leak in the side wall of LCA-2 is stable and remains of low concern.
- Currently the differential pressure across the vessels is high and extensive backwashing is scheduled for the December shutdown.
- 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. The paddle wheel flow sensors and flow transmitters installed in the discharge line to each injection well system are on-line and connected to the MCP and HMI. The turbine flow meters in the infiltration gallery valve boxes are fully functional.

- The plant discharge system is online and fully operational.
- All three INJ pumps are operational with 2 units generally on-line. The pumps were rotated three times in November.
- There is a leak in the pump discharge manifold prior to the plant effluent flow sensor. This leak is minor and no action is required.
- Except for IW-1, the injection well transducers are all producing unreliable signals.
- The galleries are adequately draining.
- Flow to IW-2 while slightly restricted, is flowing at 75 gpm.
- No other issues were encountered with the injection system in November. Routine maintenance tasks continue.

16.0 GROUNDS

Routine maintenance tasks continue outside the plant. This includes weather related clean up tasks and landscaping duties and well maintenance.

16.1 Plant Perimeter

- General outdoor clean up continues. Including wind-blown debris.
- Two warning sign were re-hanged on the perimeter fence.
- Gate locks were lubricated
- Vines were cleared from the front gate and on the Verizon cable.

16.2 Well Field

- The frequency of DTW readings has increased due to the poor signals from the injection well transducers.
- The extraction well area were checked and cleared for truck access and the paths to the monitoring wells were checked for down trees.
- Trees were cleared from the paths to the MW-8 and MW-6 well clusters .

16.3 Other

- The plant truck was brought to Connecticut for the emission test. The truck passed on this second trip
- The monthly in-house inspection of the plant truck was completed.
- Miscellaneous trips for local purchases were made.

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

FIGURES

Figure 14-1 Injection Well Elevations and Daily Flow

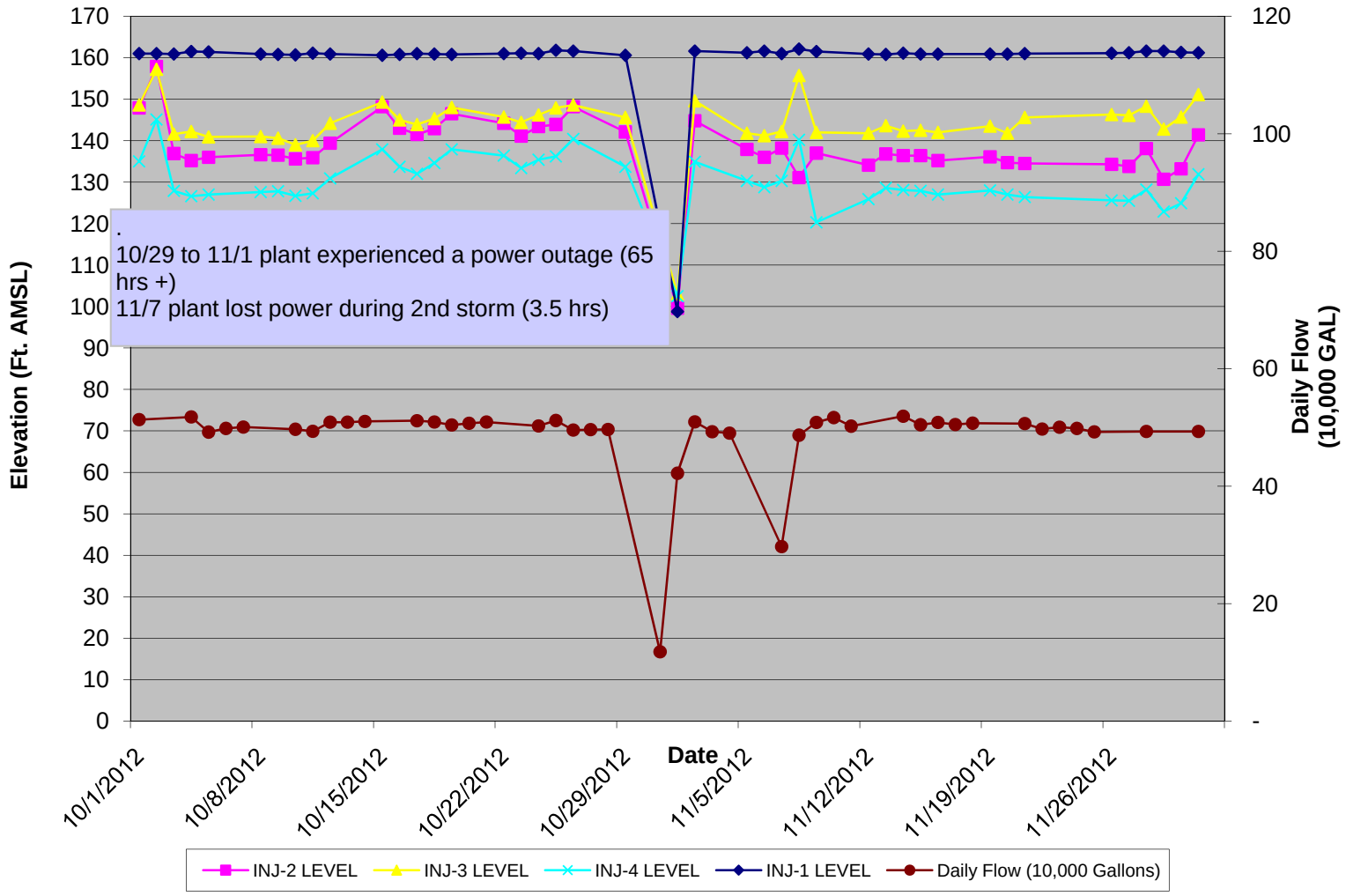


Figure 14-2 Injection Well Falling Head Test - November 28, 2012

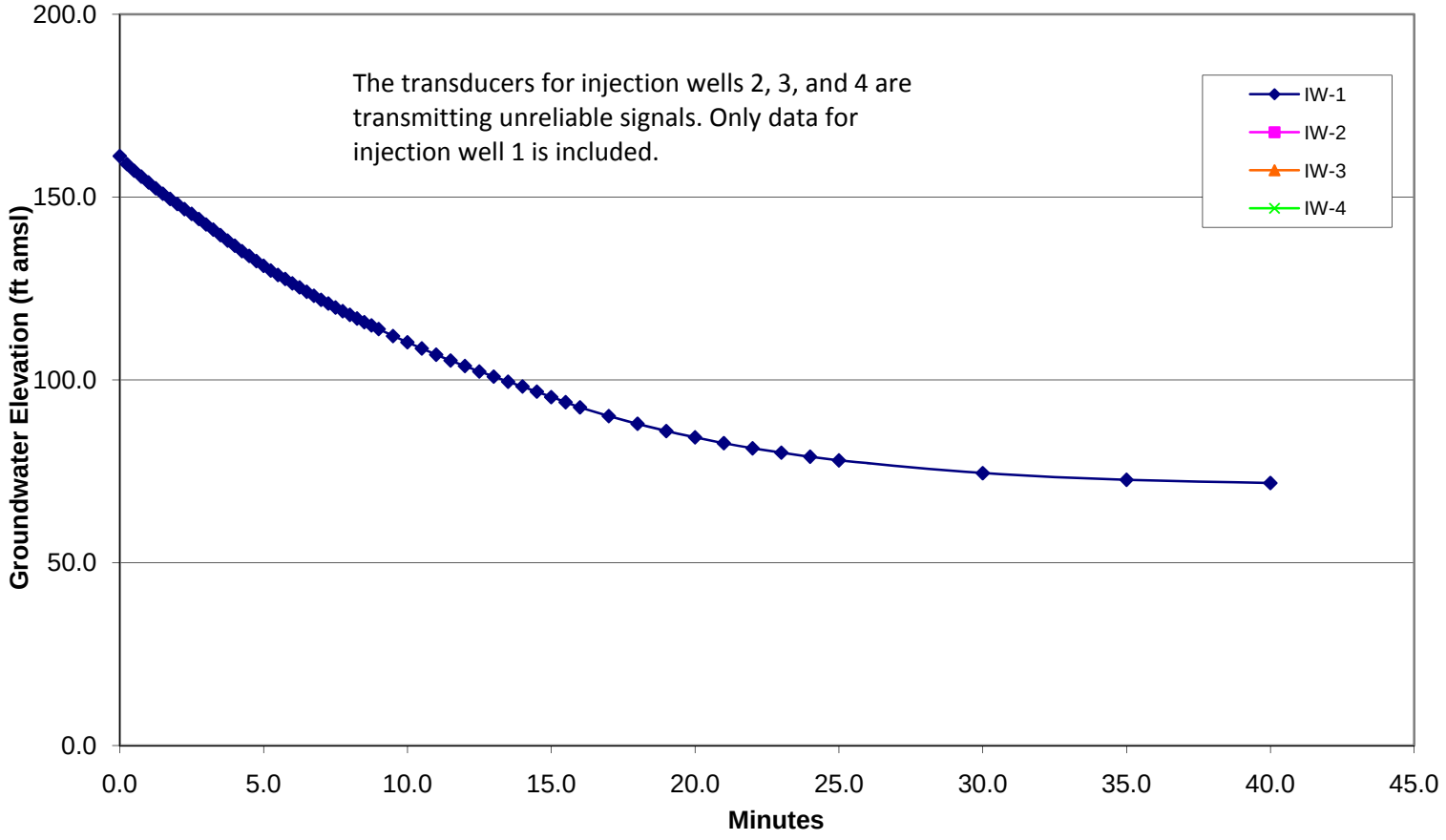
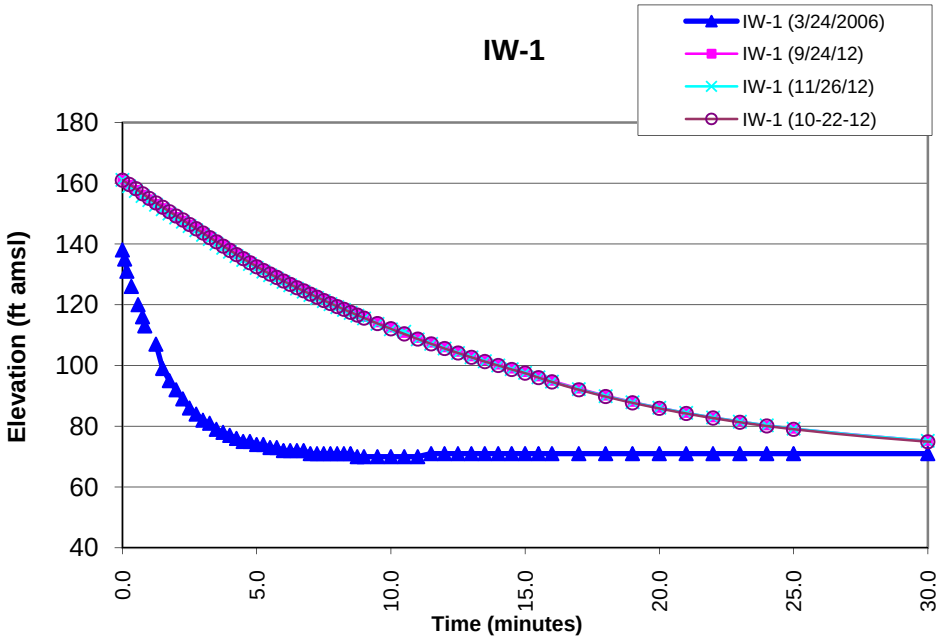
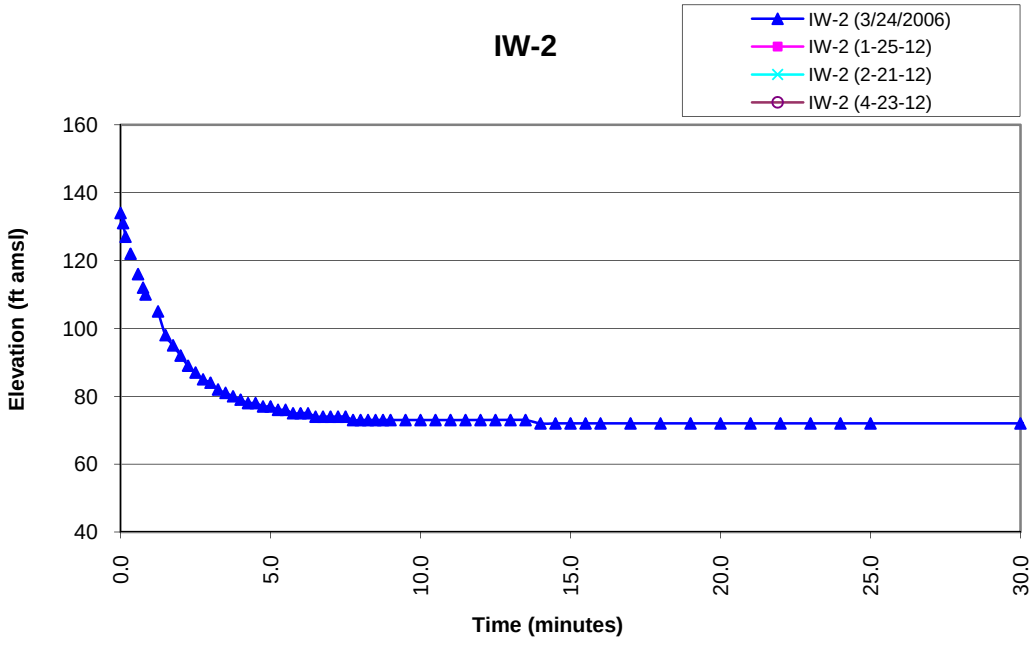
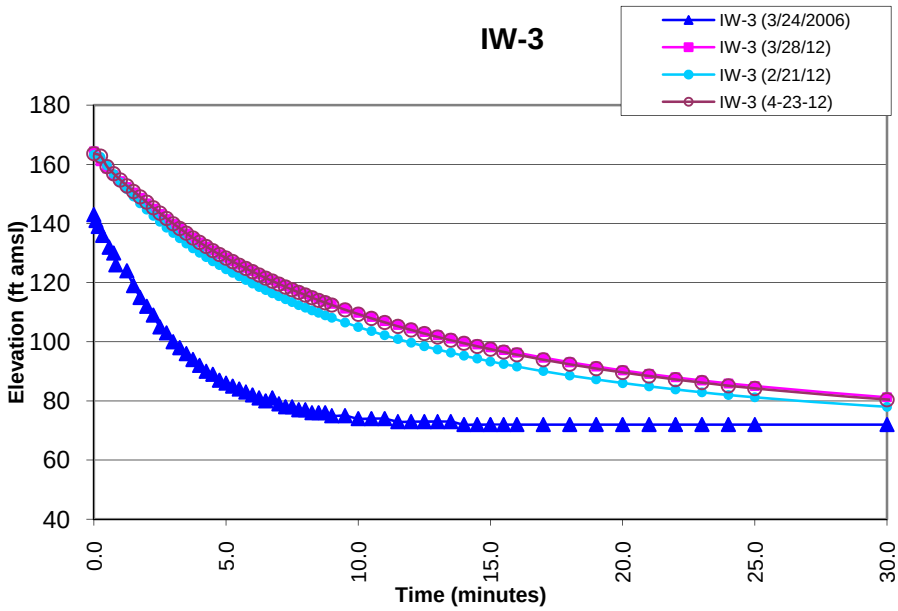
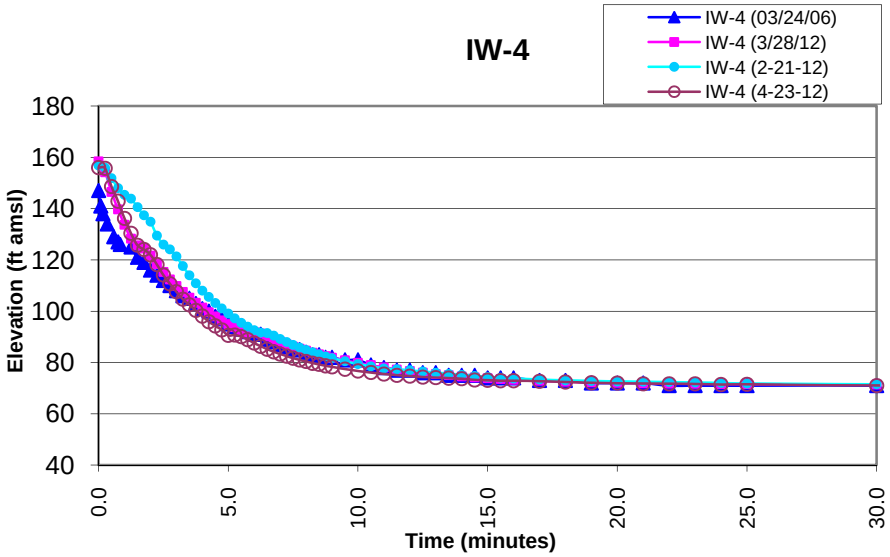


Figure 14-3 Comparison of Falling Head Tests






IW-3
IW-3 (3/24/2006)
IW-3 (3/28/12)
IW-3 (2/21/12)
IW-3 (4-23-12)
Elevation (ft amsl)
180
160
140
120
100
80
60
40
0.0
5.0
10.0
15.0
20.0
25.0
30.0
Time (minutes)


IW-4
IW-4 (03/24/06)
IW-4 (3/28/12)
IW-4 (2-21-12)
IW-4 (4-23-12)
Elevation (ft amsl)
180
160
140
120
100
80
60
40
0.0
5.0
10.0
15.0
20.0
25.0
30.0
Time (minutes)

TABLES

TABLE 7-1

MAGNETIC FLOWMETER DAILY TOTALIZER READINGS

November 2012

DATE	TOTALIZER READING	GALLONS PER DAY	GALLONS PER MINUTE
11/1/2012	635480000	420000	292
11/2/2012	635900000	1530000	354
11/5/2012	637430000	490000	340
11/6/2012	637920000	490000	340
11/7/2012	638410000	300000	208
11/8/2012	638710000	500000	347
11/9/2012	639210000	1510000	350
11/12/2012	640720000	520000	361
11/13/2012	641240000	560000	389
11/14/2012	641800000	460000	319
11/15/2012	642260000	500000	347
11/16/2012	642760000	1530000	354
11/19/2012	644290000	500000	347
11/20/2012	644790000	510000	354
11/21/2012	645300000	2530000	351
11/26/2012	647830000	500000	347
11/27/2012	648330000	500000	347
11/28/2012	648830000	500000	347
11/29/2012	649330000	490000	340
11/30/2012	649820000	462281	321
12/1/2012	650282281		
Nov. '12 Treated Water Volume		**14,802,281**	
Nov. '12 Avg. GPM Discharged			**343**

Table 12-1

Miscellaneous Outstanding Maintenance Issues at the Claremont Polychemical GWTP (updated 11-27-12)

Date Added	Problem or Condition	Action	Cost	Option	Option Cost	Priority level
June 2011	**ASF Sys Pump #3 Motor** motor bearings are making noise	Replace 10.0 hp motor when it fails	$800	none	n/a	2
June 2011	**VFD ASF-P2**	Replace/service	$?	Leave out of service	0	2
2008	**INF Sys check valves** (3) not operating correctly, must be manually opened and closed	Rebuild existing check valves in place (3)	$675 ea	a-replace CV with like kind cast iron swing check b-replace CV with pvc ball check (3) c-manually control valves	$X $400 0	2
2008	**LCAF Sys. Check valves** not operating correctly, must be manually opened and closed	Rebuild existing check valves in place (3)	$675 ea	a-replace *CV* with like kind cast iron swing check b-replace *CV* with pvc ball check c-manually control valves	$X $400 + 0	2
2008	**INJ Pump shut off valves** cannot isolate individual pumps	Replace valves (4) w/ 6" PVC valves	$400 ea	Leave valves in place	$0	2
2008	**ASF Sys check valves** not operating correctly, must be manually opened and closed	Rebuild check valves (3)	$675 ea	a-replace CV with like kind cast iron swing check b-replace CV with pvc ball check c-manually control valves	$X $400+ 0	2
Aug. 2009	**EQ Tank Discharge Valve** Cannot isolate tank	Replace valve w/8" PVC valve	$900	Leave valve in place (empty tank when it needs to be isolated)	$0	3
2008	**RCY Sys. Check valves** not operating correctly, must be manually opened and closed	Rebuild check valves (2)	$675 ea	a-replace *CV* with like kind cast iron swing check b-replace *CV* with pvc ball check c-manually control valves	$X $400+ 0	3
July 2011	**VFD INF-P1** Ramping	Replace/service	$?	Leave in Place – Control flow by throttling valves	0	2

Date Added	Problem or Condition	Action	Cost	Option	Option Cost	Priority level
2008	**INJ Pump check valves** (2) not operating correctly, must be manually opened and closed	Rebuild existing check valves in place (2)	$800 ea	a-replace CV with like kind cast iron swing check b-replace CV with pvc swing check c-manually control valves	$1300 $1500+ 0	2
Dec. 2011	**LCA -Vessel 2** (Pin Hole leak)	Drips –not a hazard cost $1000 to weld and need to shut down plant	$1000	Under enhanced inspection action taken as needed	0	3
Aug. 2010 April 2012	**IW-2 Transducer** **IW-3, IW-4 Transducer**	Replace transducer (may require tech support)	$1200/ ea	Manually monitor wells	0	3
2008	**Discharge Manifold** leak	Make repairs	$500	Leave as is	0	3
Aug. 2008	**Air Compressor system** is worn and leaking and in need of an overhaul	Have system serviced	12,000	a-replace both units with one sized for current duty b-run system on as-needed basis	$ 0	4
2009	**Filter Press** – control cabinet hydraulic leaks	Have system serviced	$?	Leave as is		4
2009	**Sludge Transfer Pump** is undersized for filter press feed	Replace pump with M-8	$2500	Use existing pump	$0	4
2009	**Sludge transfer piping**	Re-pipe press feed	$200	Leave piping as is use 2” hose to M-8 pump	$0	4
	INF Pump Seals (historically, pump 2 is due to fail)	Proactively replace seals	$300	Replace seals when needed	$0	Budget for
Dec. ‘11	**Plow Pump** seal leak, solenoid coil failure	Purchase parts and make repairs in-house	$250	Send truck to mechanic for repairs	$500	2
Jan. 2012	**INF Pump-2 Motor** (1) Motor bearings are starting to make noise	Proactively Replace 5.0 hp motor	$600	Replace motor when necessary		Budget for
April 2012	**Injection P2** Seal leak	Replace seal	300	Pull pump and make repairs if possible Leave as is until repairs are required	0	3
April 2012	**Permanganate tank** -drain nozzle leak	Re-weld nozzle	500	-Replace nozzle with bulkhead fitting -Leave as is	100 0	4

Date Added	Problem or Condition	Action	Cost	Option	Option Cost	Priority level
May 2012	**ASF Tank** LL alarm-pump control false signals	Have units serviced	?	Do nothing Keep flushing system	0	3
May 2012	Seasonal heat trace wiring on outdoor piping is not controlled	Install thermostats on each system **– Thermostats installed Nov-12**	$450	Leave as is and manually actuate	0	1
Sept. 2012	**Injection pump flow** does not meet design specifications	Cut back on required discharge flows	$0	Leave as is Replace INJ pump impellers Return system flowmeter piping to 3” pvc Re-plumb discharge manifold to 4”	$0 ~$2500 ea $175 ea $250 ea	
Sept. 2012	**Well IW-2** is not readily accepting re-injection water	Run as is **Currently well is adequately draining**	$0	Redevelop well Install, new injection well Install new infiltration gallery		
Course of action Taken - RED	Priority level – 1- Urgent and must be done 2- Not urgent but needs to be done 3 – Not urgent but should be done 4 – Would like done					

TABLE 14-1

Month	Mo. $pH_{AVG.}$
May '11	6.25
June '11	6.33
July '11	6.12
Aug '11	6.39
Sept '11	6.38
Oct '11	6.22
Nov '11	6.62
Dec '11	6.60
Jan '12	6.58
Feb '12	6.50
Mar '12	6.57
Apr '12	6.52
May '12	6.28
June '12	6.32
July '12	6.54
Aug '12	6.32
Sept '12	6.20
Oct '12	6.15
Nov '12	6.39

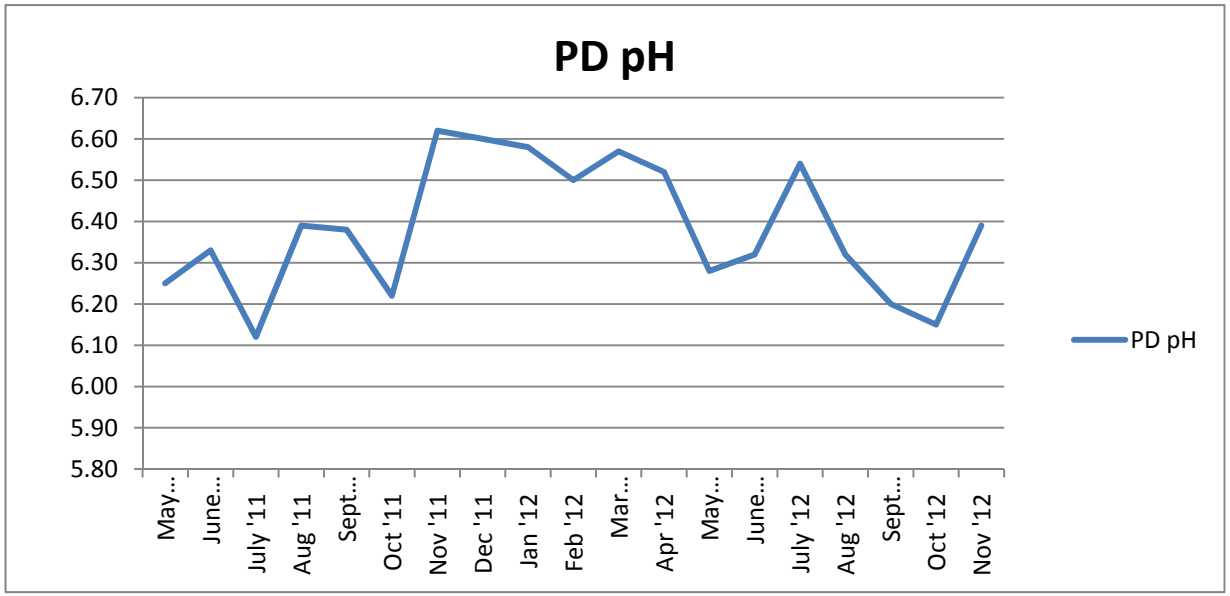


TABLE 14-2 Injection Well Soundings

This table contains selected dates and data

	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
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
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
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
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
12/2/2011	145.95	0.25	233.80	-2.90	248.30	-0.42	194.65	-3.05
1/5/2012	148.80	2.85	233.20	-0.60	247.98	-0.32	197.70	3.05
2/2/2012	145.85	-2.95	224.45	-8.75	248.10	0.12	197.60	-0.10
3/7/2012	147.85	2.00	223.30	-1.15	248.10	0.00	197.50	-0.10
4/2/2012	148.80	0.95	218.80	-4.50	247.97	-0.13	197.50	0.00
5/18/2012	145.80	-3.00	217.95	-0.85	247.78	-0.19	197.49	-0.01
6/26/2012	144.30	-1.50	205.70	-12.25	217.00	-30.78	197.40	-0.09
7/20/2012	145.85	1.55	205.55	-0.15	248.00	31.00	197.40	0.00
8/16/2012	144.90	-0.95	205.70	0.15	248.10	0.10	197.20	-0.20
9/20/2012	145.84	0.94	205.70	0.00	248.09	-0.01	197.10	-0.10
11/1/2012	145.95	0.11	205.15	-0.55	248.00	-0.09	197.00	-0.10

Change From 6/17/04 to Present	**-102.55**	**-43.35**	**-5.20**	**-8.00**
Change From 6-04 thru 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 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	**-76.55**	**-36.87**	**-1.60**	**-1.98**

Associated and Referenced Documents

Document	Location
Daily Worksheets Daily Operating Log Daily activities Summary Report Daily Site Safety Inspection Employee Sign-in Sheet	Original paper copies in monthly file folders at plant. Electronic copies on Farmington Server: >Claremont Data>year>month>month daily worksheets
Supporting Worksheets Visitor/Subcontractor Sign-in Sheet Air Monitoring Log Sound Monitoring Worksheet Daily Plant Activity Notes Comprehensive Site Safety Inspections	Original paper copies in monthly file folders at plant. Electronic copies on Farmington Server: -with daily worksheets -with daily worksheets -with daily work sheets >operating data>Daily Plant Activity Notes>yr>month >Claremont Data>yr>mo>by date of inspection
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	Current database is an Electronic file on site, in Claremont Docs/Claremont Ops Data/ monthly folder. Past docs on server: > Claremont Data>yr>month>
Daily Operations Summary Report	Current report is an Electronic file on site, in Claremont Docs/Claremont Ops Data/ monthly folder. Past docs on server: > Claremont Data>yr>month>
Monthly O&M Report	Electronic file on server: >Claremont Data>yr>month>
Monthly Maintenance Log	Electronic file on server: > Claremont Data>yr>month>
Project Status Report formerly Activities Schedule	Electronic file on server: >Claremont Data>yr>month>
Groundwater Elevation and Water Quality Database	Electronic file on server: >Operating data
Monthly Plant Truck Inspection Worksheet	Electronic file on server: >Claremont Data>yr>month>
Stand Alone Documents Claremont O&M Manual Site Safety and Health Plan Standard Operating Procedures and Instruction manual Sampling and Analysis Plan Log of Operating System Drawings	Bindered copies in control room, electronic copies on server> Stand Alone Documents
Sampling forms	Electronic file on server: >Sampling> Sampling Forms
Chain of Custody Documents	Electronic File on server: >Sampling> yr>mo
Claremont Site Notebook	Electronic file on server : >Stand alone documents> Claremont notebook

Farmington Server Path: HRP CT Server: J drive/N/Newen…./Claremont Polychemical.../Operating Data (4-6-12)

ATTACHMENT 1

Maintenance and project tasks proposed for the upcoming extended plant process shutdown:

Task	Equipment	Sub tasks
Clean Process Flow Sensors	Plant Discharge Injection well Influent Extraction well	Isolate units Remove flow sensor element Remove pipe section Clean pipe Reassemble Calibrate as necessary
Clean Process tanks	Train 1 Train 2 ASF if necessary GACF if necessary VCA	Empty tanks and Flush/vacuum to sump Clean clarifier baffles and pump out sludge Power wash screens on settling tank drains
Backwash LCA Vessels	LCA-1 LCA-2	Perform multiple cycles for each vessel over several days to allow for water volume disposition
Evaluate leak at INJ P2	Determine if gasket leak or mechanical seal issue (Seal will need to be purchased ~$300)	Remove motor Remove pump head Evaluate surfaces.
PM check valves	ASF GACF INF INJ	Remove covers Clean an lubricate surfaces Note what more extensive work is required.
Refurbish isolation valves on INJ Pumps	P1 and P2	Remove valve Evaluate Clean as possible
Clean EQ tank Strainer	EQ Tank	Isolate and remove strainer Clean unit reinstall
Evaluate ASF Tank level monitors	LAHH-2-1-1-1 LAHH-2-1-1-2	Remove units Clean as possible reinstall
Evaluate AS Tower Media		Open tower man-ways Inspect media Determine further action

Items not requiring shutdown:

- Install motor at ASF P-3 using motor taken from P2 in 2011
- Cut grass at monitoring wells
- Post storm – clean paths to monitoring wells
- Clean mold on metal surfaces
- General plant and equipment painting
- Remove actuators from discharge valves of settling tanks
- Continuing adding fill to BP-3 well path