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

MONTHLY REPORT
of the
Operations & Maintenance Activities
During
December 2012

WA D006130-19
SITE # 130015

Prepared for the:

New York State Department of Environmental Conservation

Prepared by:

HRP Associates, Inc
dba HRP Engineering, P.C.
197 Scott Swamp Road
Farmington, CT 06032

Prepared: January 8, 2013

TABLE OF CONTENTS

Page

ACRONYMS AND ABBREVIATIONS ..... Preceding Text

1.0 OPERATION AND MAINTENANCE ACTIVITIES **1**

1.1 Daily Operations Summary Reports 1
1.2 Summary of Maintenance Activities 1

2.0 MAINTENANCE LOGS **2**

3.0 TECHNICAL SUPPORT ACTIVITIES **2**

3.1 HRP Personnel 2
3.2 NYSDEC Personnel, sub-contractors and other visitors 3
3.3 Deliveries 3

4.0 HEALTH AND SAFETY **3**

5.0 PLANNED ACTIVITIES AND SCHEDULES **4**

6.0 MONITORING WELL WATER ELEVATIONS **4**

7.0 TREATMENT SYSTEM FLOWS **4**

8.0 CHEMICAL CONSUMPTION **6**

9.0 CARBON SYSTEMS **6**

9.1 Aqueous-Phase Carbon 6
9.2 Vapor-Phase Carbon 6

10.0 WASTE DISPOSAL **6**

11.0 MONTHLY DISCHARGE MONITORING REPORT **6**

12.0 OTHER OPERATIONS, MAINTENANCE, OR MANAGEMENT ISSUES **7**

13.0 PLANT DOCUMENTS **7**

14.0 TREATMENT PLANT AND WELL FIELD MONITORING RESULTS **7**

14.1 Off-site Analytical Data Results 7
14.2 Field Data 8

15.0 PROCESS ANALYSIS, INTERPRETATIONS, AND CONCLUSIONS **10**

15.1 Extraction and Influent Processes 10
15.2 Flow through Aeration Process 10
15.3 Settling Filter Process 10
15.4 Air Stripping Process 11
15.5 Aqueous-Phase Carbon Treatment Process 11
15.6 Treated Water Injection Process 11

16.0 GROUNDS **11**

16.1 Plant Perimeter 11
16.2 Well Field 12
16.3 Other 12

TABLE OF CONTENTS (cont'd)

LIST OF FIGURES

Figure 14-1, Injection Well Water Elevations and Daily Flow..... Following Text
Figure 14-2, Injection Well Falling Head Test ..... Following Text
Figure 14-3, Comparison of Falling Head Tests ..... Following Text

LIST OF TABLES

Table 7-1, Magnetic Flow Meter Daily Totalizer Readings..... Following Text
Table 12-1, Plant Corrective Action Summary ..... Following Text
Table 14-1, Plant Discharge- Monthly pH Average..... Following Text
Table 14-2, Injection Well Soundings..... Following Text

List of Associated and Referenced Documents.....Following Text

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) during December 2012. This period is defined as 0600 hours, December 1, 2012, through 0600 hours, January 1, 2013. O&M conducted during this reporting period was performed in accordance with the site O&M Manual.

The plant was maintained for 31 days in this reporting period although the treatment system was shut down for nearly 27 days for testing at the extraction wells.

Up until the process shutdown, readings of key process parameters were recorded each workday morning. These readings are used to monitor the plant's performance and as a basis for adjustments to the plant operations. These readings were 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 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 snow plow pump was rebuilt, installed and tested.
- The pumps were removed from the extraction wells. The pumps and pitless adaptors were cleaned of deposits.
- Both LCA vessels were backwashed through several cycles which included pre-air sparging. The waste water was collected in the floor sump, transferred to the sludge settling tank. The solids were collected in the filter press and the clear water was returned to the head of the system.
- The dried carbon cake was removed from the press and transferred to metal drums. (~3/4 drum)
- The EQ tank was emptied to allow for internal inspection and potential repair.
- The IW flow elements and piping spool pieces were removed, cleaned of sludge, and re-installed.
- The EX flow elements and piping spool pieces were removed, cleaned of sludge, and re-installed.
- The ASF tank level transducers were removed, cleaned, and reinstalled.
- 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-45
- Plant Operator's Daily Log CL-44

40 completed logbooks 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 directed the extraction well sampling and some of the maintenance projects.

3.2 NYSDEC Personnel, sub-contractors and other visitors

- Backflow Specialists was in to perform the annual inspection on the plant backflow preventer devices. 12/3
- BK Fire was in for the quarterly fire sprinkler inspection. 12/4
- Brian Gibson and Robert Dubois of Miller Environmental were onsite to remove the extraction well pumps from the wells. 12/5,6
- Plainview Water was onsite to get information on the sewer connections of the old Claremont plant. 12/5
- TA-NYC was onsite to pick up the PD samples for delivery to TA-Edison. 12/12
- Accurate Welding was onsite to review the tank repair jobs and to provide a quotation for the work. 12/14
- TA-NYC was onsite to pick up the GW samples for delivery to TA-Edison. 12/20
- Din Weng of TOB Lab was onsite to pick up the split GW samples and to drop off samples bottles.
- TA-NYC was onsite to pick up the extraction well samples for delivery to TA-Edison. 12/27

3.3 Deliveries

- UPS delivered the PID meter order
- Mail was delivered 4 times.

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 December. These worksheets are also on file.

The extraction well pump motor controllers and power supplies were LOTO. The modules remain locked out.

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

5.0 PLANNED ACTIVITIES AND SCHEDULES

The status of project work and significant corrective maintenance activities is updated on a monthly basis. The Project Status Report was updated December 31 and is electronically filed. The Summary of Maintenance issues was also updated on 12/31. Both documents were combined into Table 12-1 - Claremont Corrective Action Summary. This is a status of plant conditions and concerns.

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

Currently, the GWTS is off line. It will remain in this mode until the extraction well pumps are re-installed and re-activated. This is tentatively scheduled for the second week in January. One of the pending corrective actions to be undertaken during this shutdown is the welding repairs to LCA vessels 1 and 2 and to the EQ tank. These repairs have not yet been approved or scheduled.

6.0 MONITORING WELL WATER ELEVATIONS

The water level elevations and water quality data for the well system was last 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.

With the recently completed groundwater sampling in December, the data base will be updated in early January.

Due to the stabilized nature of PDB samples, the water quality data will no longer be recorded.

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 December, as measured from 0600 hours on December 1, 2012, to 0600 hours on January 1, 2013, was 2,117,718 gallons. As the treatment system was operating for only ~4 days in December, this volume is approximately 14 percent of the monthly targeted treatment goal. The cumulative volume of water discharged for this contract year (June 1, 2012 to present) was 93,495,749 and is ~9 % below 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 December, the plant discharge flow averaged 47 gallons per minute (gpm) and 68,313 gallons per day (gpd). However for the period of operation, the average flow was 360 gpm and 518,624 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
December	47	68,313
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 December are indicated below:

Injection Well System	Flow Average (gpm)	Volume Discharged to well (gallons)
IW-1	2.9	130,224
IG-1	10.1	452,174
IW-2	10.3	460,989
IW-3	3.4	150,643
IG-3	11.3	506,328
IW-4	12.3	550,191
System	**50.4**	**2,250,549**

The discrepancy between the individual injection system meter readings and the total plant effluent meter readings (~3 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. Some of these factors have been addressed during the current GWTS shut down.

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 extensively backwashed through several cycles each during the current shutdown. During this operation, ~5 cubic feet of carbon was removed from the vessels.

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 in use. VCA-2 is offline and ready for service. Monitoring of VOCs in the influent and effluent air stream of the active vessel will continue when the system is back on line.

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 7 metal drums of non-hazardous carbon waste stored inside the facility. There is no hazardous waste onsite. There was no waste removed from the facility in December.

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 GWTS is currently offline. The extraction well pumps are scheduled for re-installation the week of 1/7. The plant start-up will depend on the status of any needed repairs.

More pinhole leaks have been observed in the LCA vessels (6). Two leaks have been observed in the EQ tank. One quotation for the tank repairs has been received with 2 more pending.

Other on-going plant maintenance issues are summarized on Table 12-1.

13.0 PLANT DOCUMENTS

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

- The installation drawings for the extraction wells were updated to reflect the 'as-built' specifications.
- A procedure (GPO-002) was written for the new PID meter

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. Decembers' sampling activities included:

- The PDBs were installed in the extraction wells 12/6.
- The monthly PD samples were collected 12/12 and shipped to TA-Edison for organic analysis.
- The quarterly GW sample were collected 12/17-20 and shipped to TA-Edison for organic analysis.
- The extraction well GW samples were collected 12/27 and shipped to TA-Edison for organic analysis.

The December 12 plant discharge sample results follow:

Plant Discharge			
Parameters	**Discharge Limitations**	**Units**	**Results Dec.'12**
pH (range)	5.5 – 8.5	SU	6.11
Tetrachloroethylene	5	ug/l	U
Trichloroethylene	5	ug/l	U
1,2-(cis) Dichloroethylene	5	ug/l	U
1,2-(trans)Dichloroethylene	5	ug/l	U
Methylene Chloride	5	ug/l	U
1.1 Dichloroethylene	5	ug/l	U
1,1-Dichloroethane	5	ug/l	U
Chloroform	7	ug/l	U
1,1,1-Trichloroethane	5	ug/l	U
Benzene	0.7	ug/l	U
Toluene	5	ug/l	U
Chlorobenzene	5	ug/l	U
Ethylbenzene	5	ug/l	U
Bis(2-ethylhexyl)phthalate	4200	ug/l	U
Di-n-butyl phthalate	770	ug/l	U
Antimony, Total recoverable	3	ug/l	NS
Arsenic, Total recoverable	50	ug/l	NS
Barium, Total recoverable	2000	ug/l	NS
Lead, Total recoverable	50	ug/l	NS
Selenium, Total recoverable	40	ug/l	NS
Iron, Total recoverable	500	ug/l	NS
Manganese, Total recoverable	500	ug/l	NS
Nitrogen, Total (as N)	10	mg/l	NS
Solids, Total Dissolved	1000	mg/l	NS
Chromium, Hexavalent	100	ug/l	NS
Chloride Ion	NL	mg/l	NS
Fluoride Ion	NL	mg/l	NS
Sulfate Ion	NL	mg/l	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. As the plant was offline most of the month, only 2 readings were recorded. A summary of these data is as follows:

Date	pH	Temperature (°C)
December 3	6.21	13
December 31	6.01	9
December average	**6.11**	**11**

The NYSDEC discharge permit requires the plant discharge to have an average monthly pH greater than 5.50. The treatment plant effluent pH averaged 6.11 in December 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 both vessels have been offline for most of the month. The plant PID instrument was recently replaced and the air monitoring will resume.

Measurements to determine the well depth from the top of the injection well column to the bottom were taken on 1/3/13. 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 1/3/13 the DTW readings for the injection wells were recorded.

	Sounding Depth (ft)	Transducer	Depth to Water (ft)
IW-1	145.90	68.3	99.60
IW-2	202.65	173.2	99.97
IW-3	248.10	107.7	100.62
IW-4	197.05	105.1	100.72

The injection well falling head test was performed on December 19. 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 December included:

- The plant sound level readings were recorded twice (12/7, 12/28), (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. (12/28)
- Weekly utility meter readings were recorded.
- Additional DTW readings were taken at selected (mw-1a, 2a, 3a, 4a, 6a) shallow monitoring wells (12/28).
- The depth to bottom and DTW readings were taken at the extraction wells (12/6)

15.0 PROCESS ANALYSIS, INTERPRETATIONS, AND CONCLUSIONS

For most of December 12/5-12/31, the GWTS was off line. All process pumps were shut off during this period but were operated manually if necessary.

15.1 Extraction and Influent Processes

- The three extraction well pumps were removed from the wells 12/6.
- The 3 extraction well flow monitors were cleaned and are fully functional.
- There are two pin-hole leaks were in the EQ tank side wall.
- The three influent pumps are operational but off-line.
- There continues to be some drift in the flow control signal to influent pump-1.
- The 2 influent flow controllers are fully functional.
- Routine maintenance continues.

15.2 Flow through Aeration Process

- Both treatment trains are currently off line.
- 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 are off line.

15.3 Settling Filter Process

- The system is fully functional but offline.

15.4 Air Stripping Process

- The three ASF pumps are off line
- 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 feed tank level transducers were removed, cleaned and reinstalled.
- The blower is checked daily and is fully functional. It is also offline.
- Routine maintenance continues.

15.5 Aqueous-Phase Carbon Treatment Process

- All three feed pumps are offline.
- Several additional pin-hole leaks in the LCA tank side walls have been observed. They appear stable.
- Each carbon bed was backwashed through several 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 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 offline but fully operational.
- All three INJ pumps are functional.
- 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 IW flow elements were removed cleaned and reinstalled.
- The galleries are adequately draining.
- 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.

- The repaired plow pump was reinstalled on the truck. It was tested and is operational.

16.2 Well Field

- The extraction well pumps, pipes and fixtures were removed from the wells.
- The extraction well pumps and pitless adaptors were cleaned of accumulated sludge.
- The EX pumps and pipes were secured at the sites.

16.3 Other

- 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

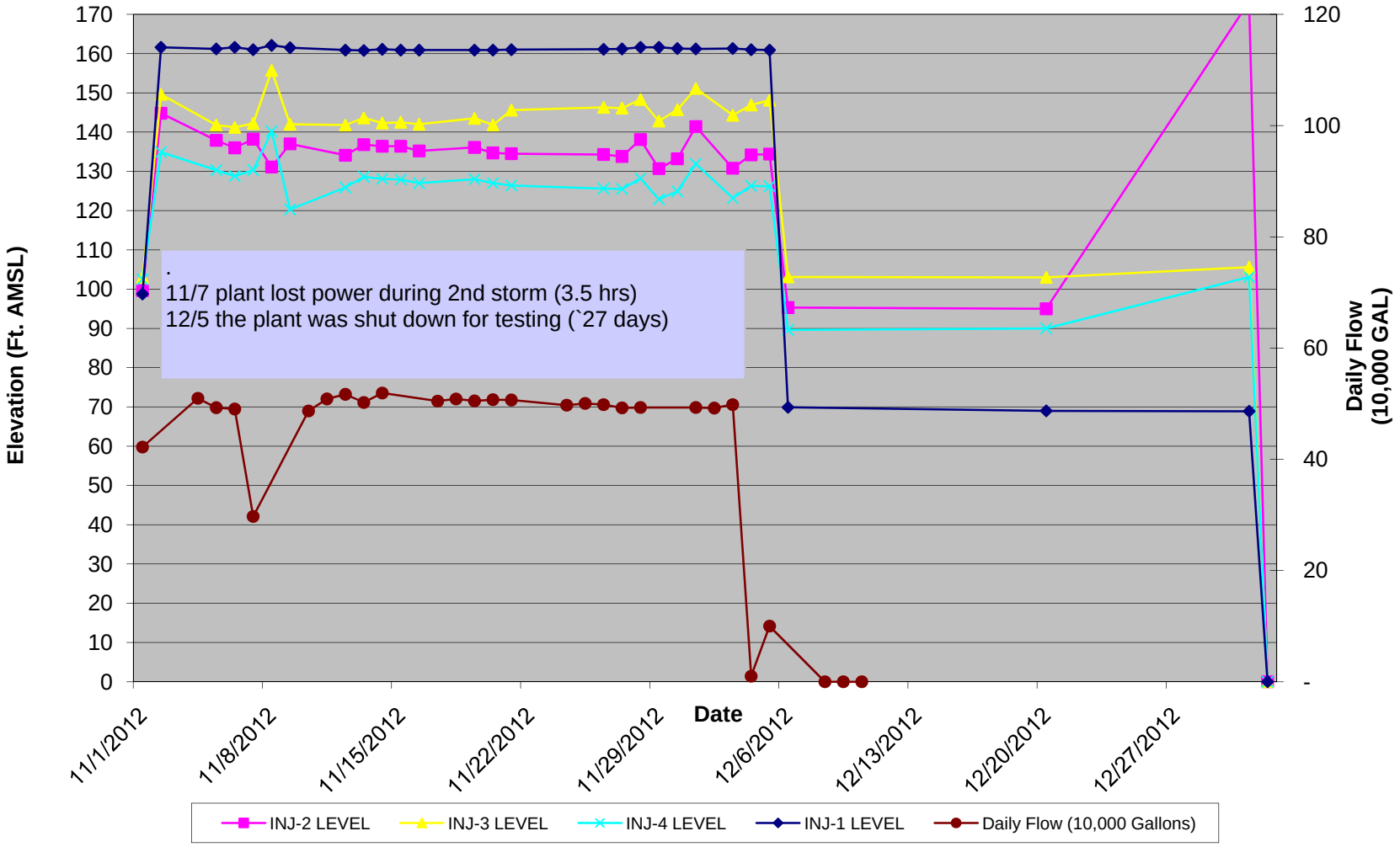


Figure 14-2 Injection Well Falling Head Test - December 19, 2012

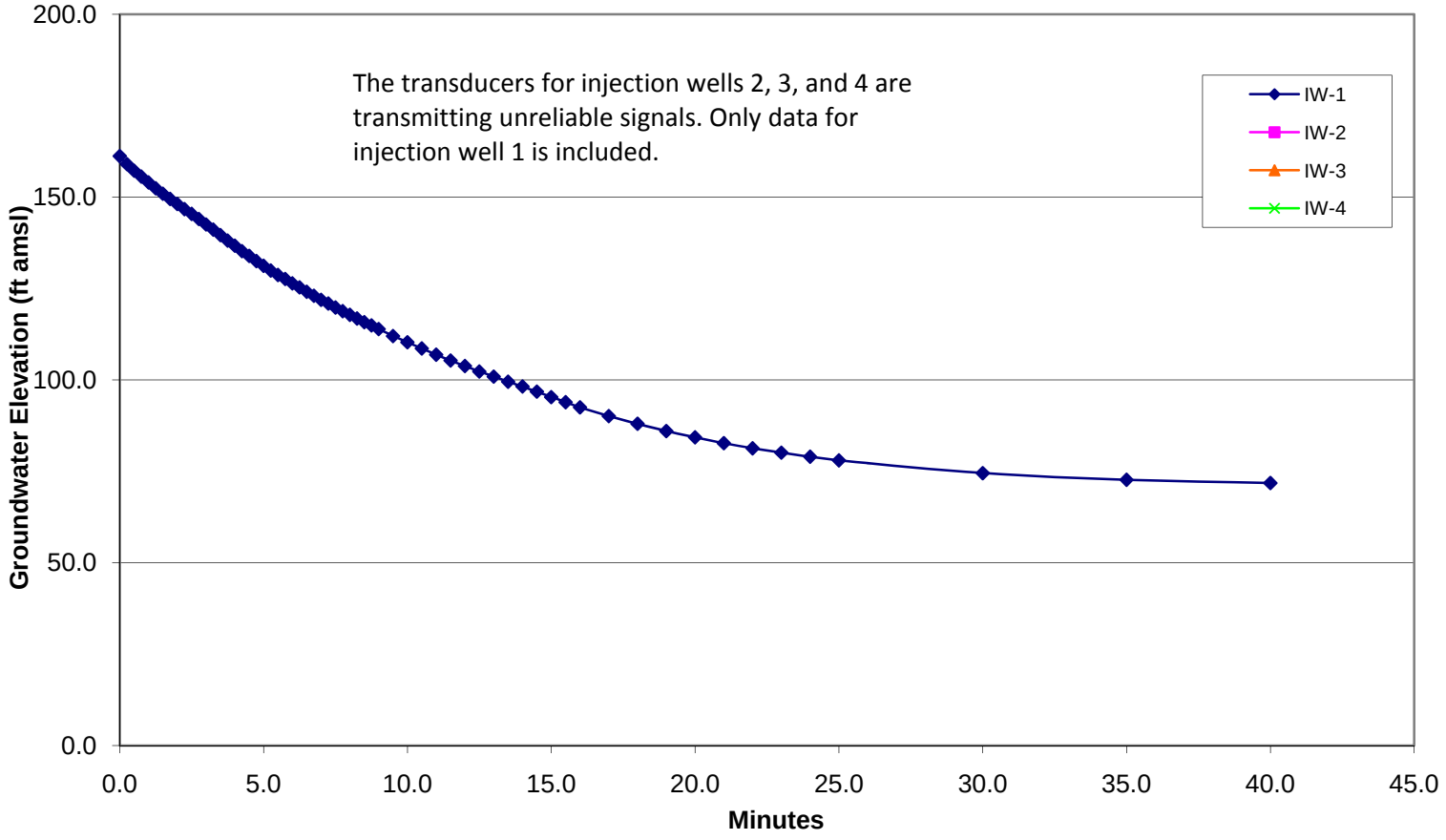
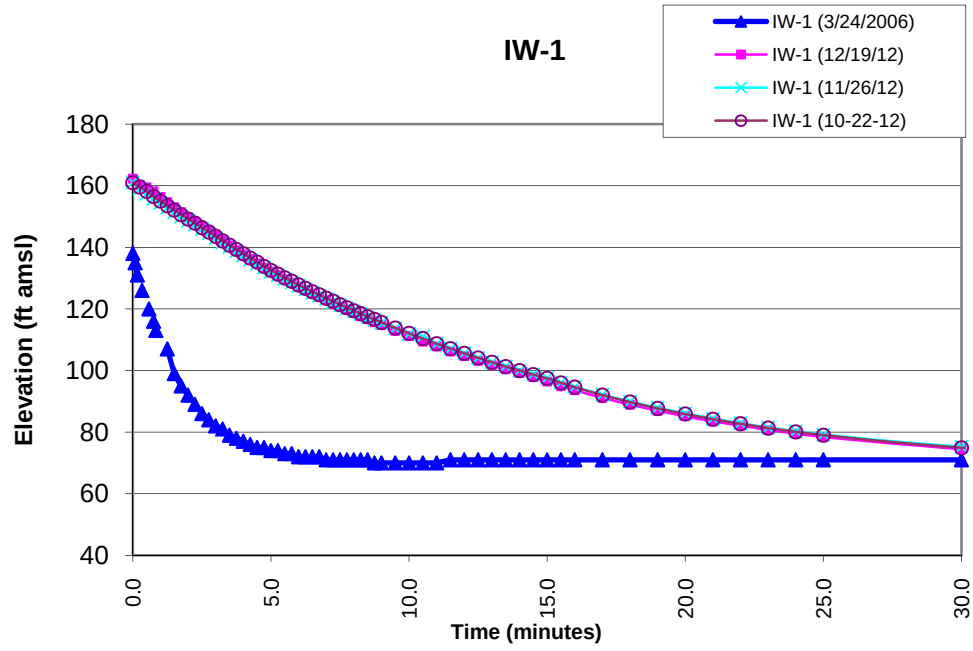
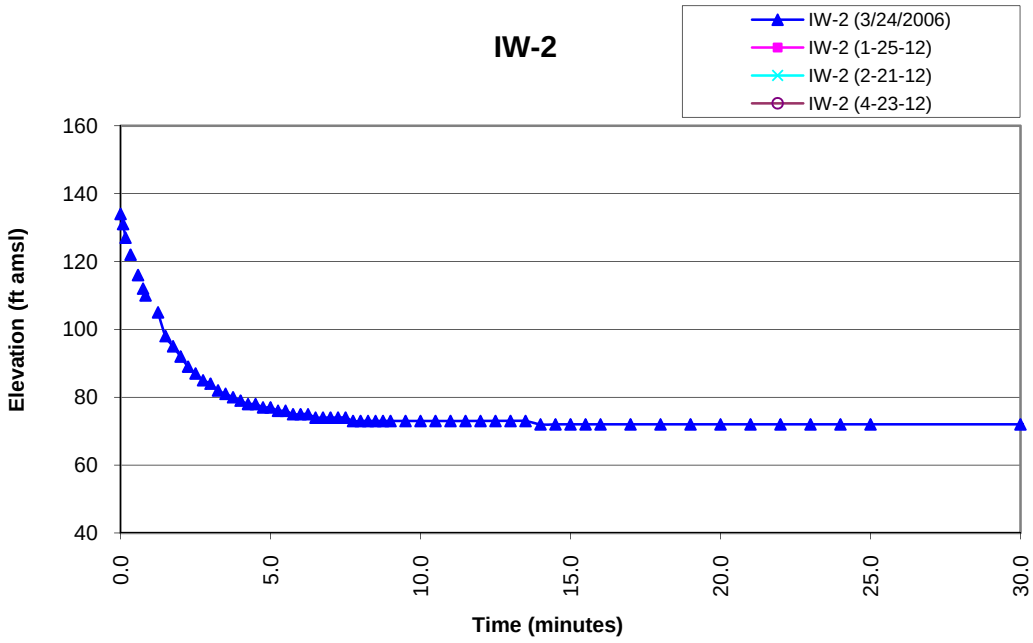
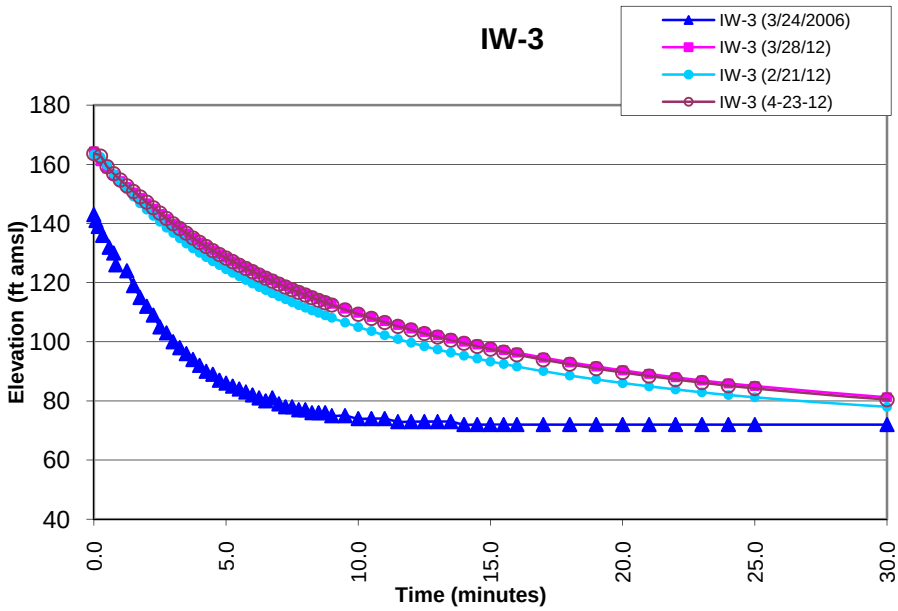
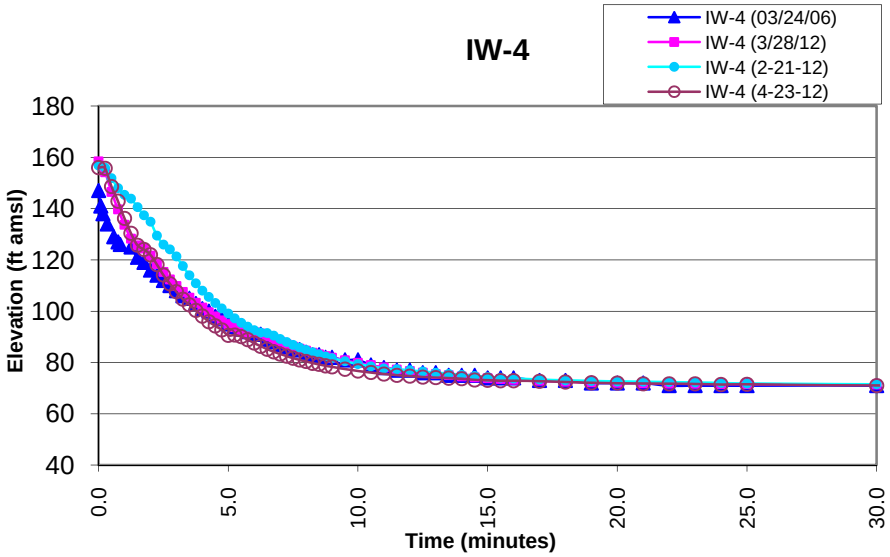


Figure 14-3 Comparison of Falling Head Tests






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

December 2012

DATE	TOTALIZER READING	GALLONS PER DAY	GALLONS PER MINUTE
12/1/2012	650282281	1017719	353
12/3/2012	651300000	490000	340
12/4/2012	651790000	500000	347
12/5/2012	652290000	10000	7
12/6/2012	652300000	100000	69
12/20/2012	652400000	0	0
12/31/2012	652400000	0	0
1/1/2013	652400000		
Dec. '12 Treated Water Volume		**2,117,719**	
Dec. '12 Avg. GPM Discharged			**47**

TABLE 12-1

Claremont Corrective Action Summary

Plant conditions and concerns (updated 1/2/13)

Date	Condition to be corrected	Status	Priority	Notes
2007	PD manifold leak	Leave as is	3	Leak is monitored and deemed to be not serious
2008	Check Valve failures	Valves are manually controlled	2	Plant wide – 13 units, this situation creates problems for any remote control of the processes.
2008	Injection Pump shut off valve failure	Leave as is	2	Minimum 4 units. Pumps cannot be isolated
Aug '08	Air Compressor overhaul	Run system on an 'as needed' basis	4	This method has been working well. A failure may be catastrophic.
2009	EQ tank shut off valve failure	Leave as is	2	The tank cannot be isolated
2009	Filter press hydraulic fluid leak	Add fluid as needed	4	The hydraulic pump system will require outside service.
2009	Sludge tank transfer piping replacement	Use existing pump and piping	4	Hoses and an M-8 are being used in place of the hard plumbed system.
Aug '10	IWs transducer replacement	Leave as is	3	3 units, only the transducer in IW-1 gives a reliable signal
Aug '10	Access stairs from plant to wellfield	Leave as is	4	Need to generate a plan with costs
May '11	pH meter failures at RX1, 2, and ASF	Leave as is	3	pH control is no longer required
June '11	ASF P2 VFD repair	Leave out of service	2	P-2 is run on off-line pump's VFD
June '11	ASF P3 motor replacement	Await failure	2	Motor removed from ASF P2 may be suitable
July '11	INF P1 VFD repair	Leave as is	2	Pump flow is controlled by throttling the P-1 discharge valve
Dec '11	LCA vessel 2 - pin hole leaks	Await failure	3	Shut down requires an outside welder and an empty tank. More leaks have been observed
Jan '12	INF P2 motor noise	Await failure	4	Replace motor at failure
Apr '12	INJ P2 leak	Leave as is	2	Shut down item – replace seal
Apr '12	Permanganate tank repair	Leave as is	4	Off line, tank is not needed
Sept '12	Optimize PD flow	Leave as is	4	-Change extraction containment flow requirements -change manifold plumbing -change out pump impellers -resize pumps
Sept '12	Emergency light failure NE door	Replace when possible	2	This unit will be replaced when time permits
Nov. '12	Clean process flow monitoring systems	Clean when possible	3	Plant shutdown items: PD, INJ, INF, EX
Nov. '12	Clean Process tanks	Clean when possible	4	Plant shutdown items: EQ, RX-SF, ASF, AST,GACF, TW
Dec '12	Plant heater failure	Leave as is	3	This will most likely require outside service.
Dec. '12	LCA vessel 1 pinhole leaks	Leave as is until failure	3	Shut down item, requires outside welder and empty tank
Dec. '12	EQ tank pin hole leaks	Leave as is until failure	2	Shut down item, requires outside welder and empty tanks

Dec. '12	AST media evaluation	Open tower when possible	4	Shut down item.
Dec. '12	Valve Actuators on Settling tanks are a potential hazard	Remove actuators	3	To be scheduled
Ongoing	Non-Hazardous Waste Accumulation	Indoor storage	3	Waste removal will be scheduled when sufficient quantity is accumulated.
Recently completed Tasks	Condition	Remedy		
12/14/12	ASF Tank Level alarm faults	Units cleaned and returned to service.		Plant is down so effectiveness of remedy has not been tested
11/15/12	Out Door Heat Trace controllers	Two units for the 3 tanks have been installed and actuated		
11/15/12	IW-2 high water level	Reduced plant flow and several shut down periods righted the problem		
11/14/12	Plant truck emission test	Truck passed		
12/6/12	PID failure	New unit purchased and in use		
12/11/12	INJ Flow meter errors	Cleaned flow elements and piping spool pieces		
12/12/12	EX flow meters	Cleaned flow elements and piping spool pieces		
12/4/12	Plow pump leaks	Unit was rebuilt		
12/20	Clean EQ strainer	Cleaned when tank was emptied		

Priority Level 1- urgent and must be done
2- not urgent but must be done
3- not urgent but should be done
4- not urgent but would like done

TABLE 14-1

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
Dec '12	6.11

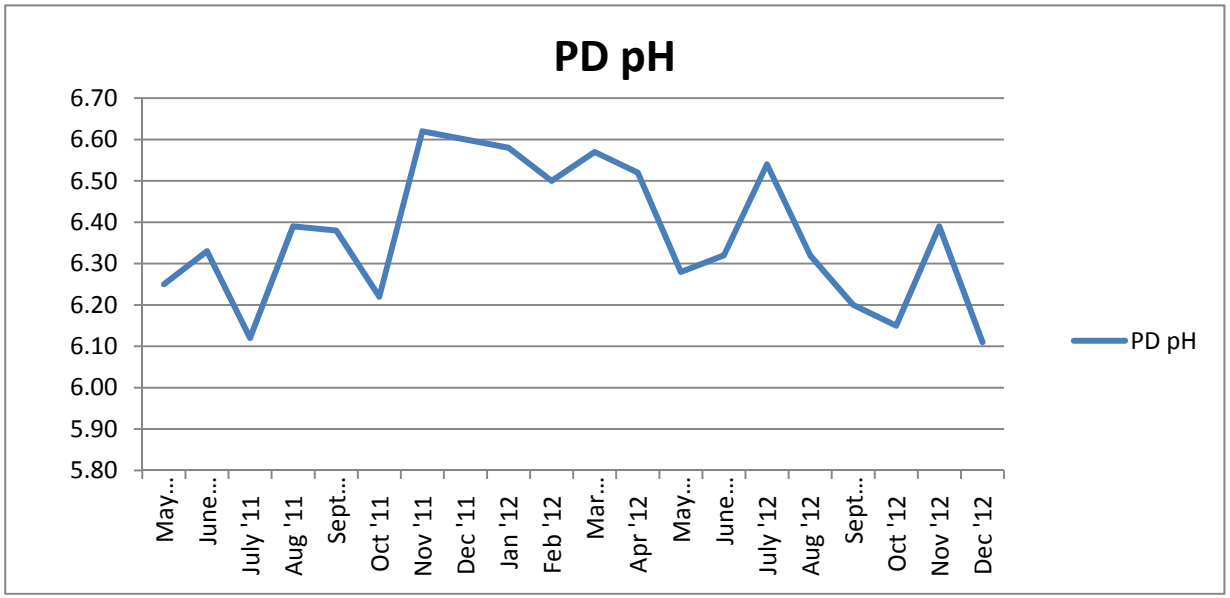


TABLE 14-2 Injection Well Soundings

	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
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
11/16/2012	144.30	-1.65	203.90	-1.25	248.15	0.15	197.00	0.00
1/2/2013	145.90	1.60	202.65	-1.25	248.10	-0.05	197.05	0.05

This table contains selected dates and data

Change From 6/17/04 to Present	**-102.60**	**-45.85**	**-5.10**	**-7.95**
Change 4/08 to present	**-76.60**	**-39.37**	**-1.50**	**-1.93**

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

<u>Items not requiring shutdown</u>:

- 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