ATTACHMENT - 1

Final Effluent and Monitoring Requirements

NYS DEC Letter Re: Modification of Effluent pH Criteria

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning December 1, 2004 and lasting until December 31, 2008 the discharges from the treatment facility to Groundwater, Class GA , shall be limited and monitored by the operator as specified below:

Outfall Number and Parameter	Discharge Limitations		Units	Minimum Monitoring Requirements	
	Daily Avg.	Daily Max		Measurement Frequency	Sample Type
Outfall 001 - Treated Groundwater Remediation Discharge, at treatment plant effluent:					
Flow	Monitor	Monitor	GPD	Continuous	Meter
pH (range)	5.5 to 8.5		SU	Monthly	Grab
Tetrachloroethylene	NA	5	:g/l	Monthly	Grab
Trichloroethylene	NA	5	:g/l	Monthly	Grab
1,2 -(cis)-Dichloroethylene	NA	5	:g/l	Monthly	Grab
1,2-(trans)-Dichloroethylene	NA	5	:g/l	Monthly	Grab
Methylene Chloride	NA	5	:g/l	Monthly	Grab
1,1-Dichloroethylene	NA	5	:g/l	Monthly	Grab
1,1-Dichloroethane	NA	5	:g/l	Monthly	Grab
Chloroform	NA	7	:g/l	Monthly	Grab
1,1,1-Trichloroethane	NA	5	:g/l	Monthly	Grab
Benzene	NA	0.7	:g/l	Monthly	Grab
Toluene	NA	5	:g/l	Monthly	Grab
Chlorobenzene	NA	5	:g/l	Monthly	Grab
Ethylbenzene	NA	5	:g/l	Monthly	Grab
Bis(2-ethylhexyl)phthalate	NA	5	:g/l	Monthly	Grab
Di-n-butylphthalate	NA	50	:g/l	Monthly	Grab
Arsenic, Total recoverable	NA	50	:g/l	Quarterly	Grab
Barium, Total recoverable	NA	2000	:g/l	Quarterly	Grab
Lead, Total recoverable	NA	50	:g/l	Quarterly	Grab
Selenium, Total recoverable	NA	40	:g/l	Quarterly	Grab
Iron, Total recoverable	NA	600*	:g/l	Quarterly	Grab
Manganese, Total recoverable	NA	600*	:g/l	Quarterly	Grab

* The combined concentration of Iron, Total recoverable and Manganese, Total ecoverable shall not exceed 1000 :g/l

91-20-2a (1/89)

Site No.: 1-30-015
Part 1, Page 2 of 2

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning January 1, 2003 and lasting until December 31, 2008 Quarterly the discharges from the treatment facility to Groundwater, Class GA , shall be limited and monitored by the operator as specified below:

Outfall Number and Parameter	Discharge Limitations		Units	Minimum Monitoring Requirements	
	Daily Avg.	Daily Max		Measurement Frequency	Sample Type
Outfall 001 - Treated Groundwater Remediation Discharge, at treatment plant effluent:					
Nitrogen, Total (as N)	NA	10	mg/l	Quarterly	Grab
Solids, Total Dissolved	NA	1000	mg/l	Quarterly	Grab
Antimony, Total recoverable	NA	3	:g/l	Quarterly	Grab
Chromium, Hexavalent	NA	100	:g/l	Quarterly	Grab

Additional Conditions:

(1) The discharge rate may not exceed the effective or design treatment system capacity. All monitoring data, engineering submissions and modification requests must be submitted to:

Chief - Operation Maintenance and Support Section
NYSDEC, Division of Environmental Remediation
Bureau of Hazardous Site Control
625 Broadway
Albany, N.Y. 12233-7010

With a copy sent to:

William Spitz, Regional Water Manager
NYS SUNY, Bldg. 40
Loop Road
Stony Brook, NY 11790-2356

(2) Only site generated wastewater is authorized for treatment and discharge.

(3) Authorization to discharge is valid only for the period noted above but may be renewed if appropriate. A request for renewal must be received 6 months prior to the expiration date to allow for a review of monitoring data and reassessment of monitoring requirements.

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Permits, 4th Floor
625 Broadway, Albany, New York 12233-3505
Phone: (518) 402-8111 • FAX: (518) 402-9029
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

MEMORANDUM

TO: Jeff Trad, DER
FROM: Brian Baker, DOW, BWP
SUBJECT: Claremont Polychemical, Nassau County, Site # 1-30-015
DRAINAGE BASIN: 17-01 (Groundwater)
DATE: November 16, 2004

In response to EPA's August 25, 2004 request to Alan Fuchs to modify the above discharge authorization, attached please find effluent criteria for the above noted groundwater remediation discharge. The effluent criteria have been modified to reduce the lower pH limit from 6.5 to 5.5 based on the observed pH in the background monitoring wells in the vicinity of the site.

The DOW does not have any regulatory authority over a discharge from a State, PRP, or Federal Superfund Site. DER will be responsible for ensuring compliance with the attached effluent criteria and approval of all engineering submissions. Footnote 1 identifies the Bureau of Site Control as the place to send all effluent results, engineering submissions and modification requests. The Regional Water Engineer should be kept appraised of the status of this discharge and, in accordance with the attached criteria, receive a copy of the effluent results for informational purposes.

If you have any questions, please call me at 2-8124.

Attachments (Effluent Criteria)

cc: W. Spitz, Regional Water Manager - Region 1 (w/Effluent Criteria)
A. Fuchs, DOW (w/Effluent Criteria)

ATTACHMENT - 2

NYS DEC Equivalency Permit

General Conditions – Consent Orders

J. Trad

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Construction Services, Room 287
50 Wolf Road, Albany, New York 12233-7010
Phone: (518) 457-9280 FAX: (518) 457-7743

John P. Cahill
Commissioner

OCT 0 8 1998

Mr. Robert Bailey
Project Manager
Claremont Superfund Site
501 Winding Road
Old Bethpage, New York 11804

Dear Mr. Bailey:

RE: Claremont Polychemical Site ID No. 1-30-015
Old Bethpage, Nassau County, New York
Radian Project No. 006044-0560
SPDES and Air Permit Requirements

Please find enclosed a copy of the current effluent criteria developed by the New York State Department of Environmental Conservation (NYSDEC), Division of Water for the Claremont Polychemical site. These effluent limitations and monitoring requirements began January 1, 1998 and will last until December 31, 2002. These criteria meet the substantive requirements of a SPDES permit per 6 NYCRR Part 375-1.7. As indicated in the January 2, 1998 letter from Mr. Eaton, the Bureau of Hazardous Site Control and the Regional Water Engineer (addresses on page 2 of 2 of enclosure) must receive information as specified in the letter and the attached criteria.

As Mr. Caratura indicated via his August 17, 1998 letter to Mr. Trad, an air permit may not be necessary under CERCLA. Specifically, under 6NYCRR Part 375-1.7, no permit is required when the substantive compliance is achieved as indicated by the NYSDEC approval of the workplan. Based on the review of the information pertaining to the treatment system, Volatile Organic Chemical (VOC) air emissions from the treatment system should be negligible, therefore, substantive requirements of an air permit would be achieved and no air permit would be required.

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York, 12233-3505

John P. Cahill
Commissioner

MEMORANDUM

TO: John Grathwol
FROM: Angus Eaton
SUBJECT: Claremont Polychemical, Nassau County, Site # 1-30-015
DRAINAGE BASIN: 17-01 (Groundwater)
DATE: January 2, 1998

In response to your request dated January 2, 1998 to me, attached please find effluent criteria for the above noted groundwater remediation discharge.

The DOW does not have any regulatory authority over a discharge from a State, PRP, or Federal Superfund Site. DER will be responsible for ensuring compliance with the attached effluent criteria and approval of all engineering submissions. Footnote 1 identifies the Bureau of Site Control as the place to send all effluent results, engineering submissions and modification requests. The Regional Water Engineer should be kept appraised of the status of this discharge and, in accordance with the attached criteria, receive a copy of the effluent results for informational purposes.

If you have any questions, please call me a 7-6717.

Attachments (Effluent Criteria, General Conditions)

cc: R. Schneck, Regional Water Engineer - Region 1 (w/Effluent Criteria)
A. Eaton, DOW (w/Effluent Criteria)
Al Bromberg, DOW (w/Effluent Criteria)

If you have any concerns regarding this matter, please call Mr. Jeff Trad at (518) 457-9285.

Sincerely,

Robert C. Kniżek

Robert C. Kniżek, P.E.
Chief, Eastern Field Services Section
Bureau of Construction Services
Division of Environmental Remediation

cc: Mr. Kucera - USACOE
Ms. Jon - USEPA

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning January 1, 1998 and lasting until December 31, 2002 the discharges from the treatment facility to Groundwater, Class GA, shall be limited and monitored by the operator as specified below:

Outfall Number and Parameter	Discharge Limitations		Units	Minimum Monitoring Requirements	
	Daily Avg.	Daily Max		Measurement Frequency	Sample Type
Outfall 001 - Treated Groundwater Remediation Discharge, at treatment plant effluent					
Flow	Monitor	Monitor	GPD	Continuous	Meter
pH (range)	6.5 to 8.5		SU	Weekly	Grab
Tetrachloroethylene	NA	5	µg/l	Weekly	Grab
Trichloroethylene	NA	5	µg/l	Weekly	Grab
1,2-(cis)-Dichloroethylene	NA	5	µg/l	Weekly	Grab
1,2-(trans)-Dichloroethylene	NA	5	µg/l	Monthly	Grab
Methylene Chloride	NA	5	µg/l	Monthly	Grab
1,1-Dichloroethylene	NA	5	µg/l	Monthly	Grab
1,1-Dichloroethane	NA	5	µg/l	Monthly	Grab
Chloroform	NA	7	µg/l	Monthly	Grab
1,1,1-Trichloroethane	NA	5	µg/l	Monthly	Grab
Benzene	NA	0.7	µg/l	Monthly	Grab
Toluene	NA	5	µg/l	Monthly	Grab
Chlorobenzene	NA	5	µg/l	Monthly	Grab
Ethylbenzene	NA	5	µg/l	Monthly	Grab
Bis(2-ethylhexyl)phthalate	NA	4200	µg/l	Monthly	Grab
Di-n-butylphthalate	NA	770	µg/l	Monthly	Grab
Arsenic, Total recoverable	NA	50	µg/l	Monthly	Grab
Barium, Total recoverable	NA	2000	µg/l	Monthly	Grab
Lead, Total recoverable	NA	50	µg/l	Monthly	Grab
Selenium, Total recoverable	NA	40	µg/l	Monthly	Grab
Iron, Total recoverable	NA	600*	µg/l	Monthly	Grab
Manganese, Total recoverable	NA	600*	µg/l	Monthly	Grab

* The combined concentration of Iron, Total recoverable and Manganese, Total recoverable shall not exceed 1000 µg/l

91-20-2a (1/89)

Site No.: 1-30-015
Part 1, Page 2 of 2

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning January 1, 1998 and lasting until December 31, 2002 the discharges from the treatment facility to Groundwater, Class GA, shall be limited and monitored by the operator as specified below:

Outfall Number and Parameter	Discharge Limitations		Units	Minimum Monitoring Requirements	
	Daily Avg.	Daily Max		Measurement Frequency	Sample Type
Outfall 001 - Treated Groundwater Remediation Discharge, at treatment plant effluent.					
Nitrogen, Total (as N)	NA	10	mg/l	Quarterly	Grab
Solids, Total Dissolved	NA	1000	mg/l	Quarterly	Grab
Antimony, Total recoverable	NA	3	µg/l	Quarterly	Grab
Chromium, Hexavalent	NA	100	µg/l	Quarterly	Grab

Additional Conditions:

(1) The discharge rate may not exceed the effective or design treatment system capacity. All monitoring data, engineering submissions and modification requests must be submitted to:

Chief - Operation Maintenance and Support Section
NYSDEC, Division of Environmental Remediation
Bureau of Hazardous Site Control
625 Broadway
Albany, N.Y. 12233-7010

With a copy sent to:

Robert Schneck, Regional Water Engineer
NYS SUNY, Bldg. 40
Loop Road
Stony Brook, NY 11790-2356

(2) Only site generated wastewater is authorized for treatment and discharge.

(3) Authorization to discharge is valid only for the period noted above but may be renewed if appropriate. A request for renewal must be received 6 months prior to the expiration date to allow for a review of monitoring data and reassessment of monitoring requirements.

(4) Both concentration (mg/l or µg/l) and mass loadings (lbs/day) must be reported to the Department for all parameters except flow and pH.

(5) Any use of corrosion/scale inhibitors or biocidal-type compounds used in the treatment process must be approved by the department prior to use.

(6) This discharge and administration of this discharge must comply with the attached General Conditions.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPENDIX A
GENERAL CONDITIONS (Consent Orders)*

* This version of General Conditions is intended to be incorporated as Appendix A of all Consent Orders for site remediation projects where a State Pollutant Discharge Elimination System permit is not required but where the order authorizes the treatment and discharge of wastewaters to the surface or groundwaters of New York State.

1. GENERAL PROVISIONS

a. This order, or a true copy, shall be kept readily available for reference at the wastewater treatment facility.

b. A determination has been made on the basis of a submitted plans, or other available information, that compliance with the provisions specified in this order will reasonably protect classified water use and assure compliance with applicable water quality standards. Satisfaction of these provisions notwithstanding, if operation pursuant to the order causes or contributes to a condition in contravention of State water quality standards, or if the Department determines, on the basis of notice provided by the operator and any related investigation, inspection or sampling, that a modification of the order is necessary to prevent impairment of the best use of the waters or to assure maintenance of water quality standards or compliance with other provisions of ECL, the Department may require such a modification and may require abatement action to be taken by the operator and may also prohibit the noticed act until the order has been modified.

c. All discharges authorized by this order shall be consistent with the terms and conditions of this order. Facility expansion or other modifications, treatment and disposal system changes which will result in new or increased discharges of pollutants into the waters of the state must be reported by submission of a formal request for modification of this order. The discharge of any pollutant, not identified and authorized, or the discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this order shall constitute a violation of the terms and conditions of this order. Facility modifications which result in decreased discharges of pollutants must be reported by submission of written notice to the Department.

d. Where the operator becomes aware that he/she failed to submit any relevant facts or submitted incorrect information prior to or in pursuit of this order or in any report to the Department, the operator shall promptly submit such facts or information.

e. It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the authorized activity in order to maintain compliance with the conditions of this order, unless directed by the Department to continue the activity.

f. The filing of a request for a modification of this order, or a notification of planned changes or anticipated noncompliance, does not stay any condition of this order.

g. The operator shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, suspending, or revoking this order, or to determine compliance with this order. The operator shall also furnish to the Department, upon request, copies of records required to be kept by this order.

2. SPECIAL REPORTING REQUIREMENTS

Dischargers must notify the Department as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant (USEPA Priority Pollutants plus phenols, total) which is not specifically controlled in the order, pursuant to General Provision 1 (c) herein. For the purposes of this section, recurrent accidental or unintentional spills or releases on a frequent basis shall be considered to be a discharge.

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the order, if that discharge will exceed five times the maximum concentration value reported for that pollutant in the information submitted prior to this order; or the level established by the Department.

c. That they will begin to use any toxic pollutant which was not reported prior to this order and which is being or may be discharged to waters of the state.

3. EXCLUSIONS

a. The issuance of this order by the Department and the receipt thereof by the operator does not supersede, revoke or rescind an order or modification thereof on consent or determination by the Commissioner issued heretofore by the Department or any of the terms, conditions or requirements contained in such order or modification thereof unless specifically intended by said order.

b. The issuance of this order does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations; nor does it obviate the necessity of obtaining the assent of any other jurisdiction as required by law for the discharge authorized.

c. Unless specifically authorized in this order, the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters is not approved.

4. REPORTING NONCOMPLIANCE

a. Anticipated noncompliance. The operator shall give advance notice to the Department of any planned changes in the authorized facility or activity which may result in noncompliance with this order as soon as the operator becomes aware that non-compliance will be unavoidable.

b. Immediate and twenty-four hour reporting. The operator shall report any noncompliance which may endanger health or the environment. Any unusual situation, caused by a deviation from normal operation or experience (e.g. upsets, bypasses, inoperative treatment process units, spills or illegal chemical discharges or releases to the collection system) which create a potentially hazardous condition shall be orally reported immediately. Other information shall be provided orally within 24 hours from the time he or she becomes aware of the circumstances. A written noncompliance report shall also be provided within five (5) days of the time the operator becomes aware of the circumstances. The written noncompliance report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent the noncompliance and its reoccurrence.

(1) The following shall be included as information which must be reported within 24 hours under paragraph (b) above:

(i) any unanticipated bypass which violates any effluent limitation in the order;

(ii) any upset which violates any effluent limitation in the order;

(iii) violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the order to be reported within 24 hours.

(2) The Department may waive, at their discretion, the written report on a case-by-case basis if the oral report has been received within 24 hours.

(3) Reports required by this section shall be filed with the Department's regional office having jurisdiction over the facility. During weekends and holidays, oral noncompliance reports, required by this paragraph, may be made at (518) 457-7362.

c. Duty to mitigate. The operator shall take all reasonable steps to minimize or prevent any discharge in violation of this order which has a reasonable likelihood of adversely affecting human health or the environment.

5. INSPECTION AND ENTRY

The operator shall allow the Commissioner of the Department, the New York State Department of Health, the County Health Department, or their authorized representatives, upon the presentation of credentials and other documents as may be required by law, to:

a. enter upon the operator's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this order;

b. have access to and copy, at reasonable times, any records that must be kept under the conditions of this order, including records maintained for purposes of operation and maintenance;

c. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this order, and

d. sample or monitor at reasonable times, for the purposes of assuring compliance with this order or as otherwise authorized by the Environmental Conservation Law, any substances or parameters at any location.

6. SPECIAL PROVISIONS - NEW OR MODIFIED DISPOSAL SYSTEMS

a. Prior to construction of any new or modified waste disposal system or modification of a facility generating wastewater which could alter the design volume of, or the method or effect of treatment or disposing of the wastes from an existing waste disposal system, the operator shall submit to the Department or its designated field office for review, an approvable engineering report, plans, and specifications which have been prepared by a person or firm licensed to practice Professional Engineering in the State of New York.

b. The construction of the above new or modified disposal system shall not start until the operator receives written approval of the system from the Department or its designated field office.

c. The construction of the above new or modified disposal system shall be under the general supervision of a person or firm licensed to practice Professional Engineering in New York State. Upon completion of construction, that person or firm shall certify to the Department or its designated field office that the system has been fully completed in accordance with the approved engineering report, plans and specifications and letter of approval; and the operator shall receive written acceptance of such certificate from the Department or designated field agency prior to commencing discharge.

d. The Department and its designated field offices review wastewater disposal system reports, plans, and specifications for treatment process capability only, and approval by either office does not constitute approval of the system's structural integrity.

7. MONITORING, RECORDING, AND REPORTING

7.1 GENERAL

a. The operator shall comply with all recording, reporting, monitoring and sampling requirements specified in this order and such other additional terms, provisions, requirements or conditions that the Department may deem to be reasonably necessary to achieve the purposes of the Environmental Conservation Law, or rules and regulations adopted pursuant thereto.

b. Samples and measurements taken to meet the monitoring requirements specified in this order shall be representative of the quantity and character of the monitored discharges. Composite samples shall be composed of a minimum of 8 grab samples, collected over the specified collection period, either at a constant sample volume for a constant flow interval or at a flow-proportioned sample volume for a constant time interval, unless otherwise specified in this order. For GC/MS Volatile Organic Analysis (VOA), aliquots must be combined in the laboratory immediately before analysis. At least 4 (rather than 8) aliquots or grab samples should be collected over the specified collection period. Grab sample means a single sample, taken over a period not exceeding 15 minutes.

c. Accessible sampling locations must be provided, maintained and identified by the operator. New sampling locations shall be provided if proposed or existing locations are deemed unsuitable by the Department or its designated field agency.

d. Actual measured values of all positive analytical results obtained above the Practical Quantitation Limit (PQL)[1] for all monitored parameters shall be recorded and reported, as required by this order; except, for parameters which are limited in this order to values below the PQL, actual measured values for all positive analytical results above the Method Detection Limit (MDL)[2] shall be reported.

e. The operator shall periodically calibrate and perform manufacturer's recommended maintenance procedures on all monitoring and analytical instrumentation to insure accuracy of measurements. Verification of maintenance shall be logged into the daily record book(s) of the facility. The operator shall notify the Department's regional office immediately if any required instrumentation becomes inoperable. In addition, the operator shall verify the accuracy of their measuring equipment to the Department's Regional Office annually.

---

1 Practical Quantitation Limit (PQL) is the lowest level that can be measured within specified limits of precision and accuracy during routine laboratory operations on most effluent matrices.

2 Method Detection Limit (MDL) is the level at which the analytical procedure referenced is capable of determining with a 99% probability that the substance is present. This value is determined in distilled water with no interfering substances present. The precision at this level is +/- 100%.

7.2 SIGNATORIES AND CERTIFICATION

a. All reports required by this order shall be signed as follows:

(1) for a corporation: by a responsible corporate officer. For the purposes of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or a vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making function for the corporation, or

(ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) for a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) for a municipality, state, federal, or other public agency: by either a principal or executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency; or

(4) a duly authorized representative of the person described in items (1), (2), or (3). A person is a duly authorized representative only if:

(i) the authorization is made in writing by a person described in paragraph (a)(1), (2), or (3) of this section;

(ii) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(iii) the written authorization is submitted to the Department.

b. Changes to authorization: If an authorization under subparagraph (a)(4) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of subparagraph (a)(4) of this section must be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

c. Certification: Any person signing a report shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision, in accordance with a system, designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the order or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

7.3 RECORDING OF MONITORING ACTIVITIES AND RESULTS

a. The operator shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this order, and records of all data used to complete the application for this order, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

b. Records of monitoring information shall include:

(1) the date, exact place, and time of sampling or measurements;

(2) the individual(s) who performed the sampling or measurements;

(3) the date(s) analyses were performed;

(4) the individual(s) who performed the analyses;

(5) the analytical techniques or methods used; and

(6) the results of such analyses.

7.4 TEST AND ANALYTICAL PROCEDURES

a. Monitoring and analysis must be conducted using test procedures promulgated, pursuant to 40 CFR Part 136, except:

(1) should the Department require the use of a particular test procedure, such test procedure will be specified in this order.

(2) should the operator desire to use a test method not approved herein, prior Department approval is required, pursuant to paragraph (b) of this section.

b. Application for approval of test procedures shall be made to the Director of DEC's Division of Water, and shall contain:

(1) the name and address of the applicant or the responsible person making the discharge, identification of this particular order and the telephone number of applicant's contact person;

(2) the names of the pollutants or parameters for which an alternate testing procedure is being requested, and the monitoring location(s) at which each testing procedure will be utilized;

(3) justification for using test procedures, other than those approved in paragraph (a) of this section; and

(4) a detailed description of the alternate procedure, together with:

(i) references to published studies, if any, of the applicability of the alternate test procedure to the effluent in question;

(ii) information on known interferences, if any; and

(5) a comparability study, using both approved and proposed methods. The study shall consist of 8 replicates of 3 samples from a well mixed waste stream for each outfall if less than 5 outfalls are involved, or from 5 outfalls if 5 or more outfalls are involved. Four (4) replicates from each of the samples must be analyzed using a method approved in paragraph (a) of this section, and four replicates of each sample must be analyzed using the proposed method. This results in 24 analyses per outfall up to a maximum of 120 analyses. A statistical analysis of the data must be submitted that shall include, as a minimum:

(i) calculated statistical mean and standard deviation;

(ii) a test for outliers at the mean ±3 standard deviations level. Where an outlier is detected, an additional sample must be collected and 8 replicates of the sample must be analyzed as specified above;

(iii) a plot distribution with frequency counts and histogram;

(iv) a test for equality among with-in sample standard deviation;

(v) a check for equality of pooled with-in sample variance with an F-Test;

(vi) a t-Test to determine equality of method means; and

copies of all data generated in the study.

Additional information can be obtained by contacting the Bureau of Technical Services & Research (NYSDEC, 50 Wolf Road, Albany, New York 12233 - 3502).

6. DISPOSAL SYSTEM OPERATION AND QUALITY CONTROL

6.1 GENERAL

a. The disposal system shall not receive or be committed to receive wastes from unapproved sources, nor wastes beyond its design capacity as to volume and character of wastes treated, nor shall the system be materially altered as to type, degree, or capacity of treatment provided; disposal of treated effluent; or treatment and disposal of separated scum, liquids, solids or combination thereof resulting from the treatment process without written approval of the Department of Environmental Conservation or its designated field office.

b. The operator shall, at all times, properly operate and maintain all facilities and systems of treatment and control (or related appurtenances) which are installed or used by the operator to achieve compliance with the conditions of this order. Proper operation and maintenance also includes as a minimum, the following: 1) A preventive/corrective maintenance program, 2) A site specific action orientated operation and maintenance manual for routine use, training new operators, adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of installed backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the order.

c. The operator shall not discharge floating solids or visible foam.

6.2 BYPASS

a. Definitions:

(1) "Bypass" means the intentional or unintentional diversion of waste stream(s) around any portion of a treatment facility for the purpose or having the effect of reducing the degree of treatment intended for the bypassed portion of the treatment facility.

(2) "Severe property damage" means substantial damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which would not reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations:

The operator may allow any bypass to occur which does not cause effluent limitations to be violated, but only if it also is for essential maintenance, repair or replacement to assure efficient and proper operation. These bypasses are not subject to the provisions of paragraph (c) and (d) of this section, provided that written notice is submitted prior to bypass (if anticipated) or as soon as possible after bypass (if unanticipated), and no public health hazard is created by the bypass.

c. Notice:

(1) Anticipated bypass - If the operator knows in advance of the need for a bypass, it shall submit prior written notice, at least forty five (45) days before the date of the bypass.

(2) Unanticipated bypass - The operator shall submit notice of an unanticipated bypass as required in Section 4, paragraph b. of this Part (24 hour notice).

d. Prohibition of bypass:

(1) Bypass is prohibited, and the Department may take enforcement action against a operator for bypass, unless:

(i) bypass was unavoidable to prevent loss of life, personal injury, public health hazard, or severe property damage;

(ii) there were no feasible alternatives to the bypass such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal period of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance or if designed and installed backup equipment which could have prevented or mitigated the impact of the bypass is not operating during the bypass; and

(iii) the operator submitted notices as required under paragraph (c) of this section and, excepting emergency conditions, the proposed bypass was accepted by the Department.

8.3 UPSET

a. Definition:

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with order effluent limitations because of factors beyond the reasonable control of the operator. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. Effect of an upset:

An upset constitutes an affirmative defense to an action brought for noncompliance with such order effluent limitations if the requirements of paragraph (c) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset:

An operator who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operation logs, or other relevant evidence that:

(1) an upset occurred and that the operator can identify the cause(s) of the upset;

(2) the facility was at the time being properly operated; and

(3) the operator submitted notice of the upset as required in Section 4, paragraph b of this part (24 hour notice).

(4) the operator complied with any remedial measures required under Section 4, paragraph d of this part.

d. Burden of proof:

In any enforcement proceeding the operator seeking to establish the occurrence of an upset has the burden of proof.

8.4 SPECIAL CONDITION - DISPOSAL SYSTEMS WITH SEPTIC TANKS

If a septic tank is installed as part of the disposal system, it shall be inspected by the operator or his agent for scum and sludge accumulation at intervals not to exceed one year's duration, and such accumulation will be removed before the depth of either exceeds one-fourth (1/4) of the liquid depth so that no settleable solids or scum will leave in the septic tank effluent. Such accumulation shall be disposed of in an approved manner.

8.5 SLUDGE DISPOSAL

The storage or disposal of collected screenings, sludges, other solids, or precipitates separated from the authorized discharges and/or intake or supply water by the operator shall be done in such a manner as to prevent creation of nuisance conditions or entry of such materials into classified waters or their tributaries, and in a manner approved by the Department. Any live fish, shellfish, or other animals collected or trapped as a result of intake water screening or treatment should be returned to their water body habitat. The operator shall maintain records of disposal on all effluent screenings, sludges and other solids associated with the discharge(s) herein described. The following data shall be compiled and reported to the Department or its designated field office upon request:

a. the sources of the materials to be disposed of;

b. the approximate volumes, weights, water content and (if other than sewage sludge) chemical composition;

c. the method by which they were removed and transported, including the name and permit number of the waste transporter; and

d. their final disposal locations.

91-29-2a (1/89)

Site No.: 1-30-015
Part 1, Page 1 of 2

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning January 1, 2003 and lasting until December 31, 2008 the discharges from the treatment facility to Groundwater, Class GA, shall be limited and monitored by the operator as specified below:

Outfall Number and Parameter	Discharge Limitations		Units	Minimum Monitoring Requirements	
	Daily Avg.	Daily Max		Measurement Frequency	Sample Type
Outfall 001 - Treated Groundwater Remediation Discharge, at treatment plant effluent:					
Flow	Monitor	Monitor	GPD	Continuous	Meter
pH (range)	6.5 to 8.5		SU	Monthly	Grab
Tetrachloroethylene	NA	5	µg/l	Monthly	Grab
Trichloroethylene	NA	5	µg/l	Monthly	Grab
1,2 -(cis)-Dichloroethylene	NA	5	µg/l	Monthly	Grab
1,2-(trans)-Dichloroethylene	NA	5	µg/l	Monthly	Grab
Methylene Chloride	NA	5	µg/l	Monthly	Grab
1,1-Dichloroethylene	NA	5	µg/l	Monthly	Grab
1,1-Dichloroethane	NA	5	µg/l	Monthly	Grab
Chloroform	NA	7	µg/l	Monthly	Grab
1,1,1-Trichloroethane	NA	5	µg/l	Monthly	Grab
Benzene	NA	0.7	µg/l	Monthly	Grab
Toluene	NA	5	µg/l	Monthly	Grab
Chlorobenzene	NA	5	µg/l	Monthly	Grab
Ethylbenzene	NA	5	µg/l	Monthly	Grab
Bis(2-ethylhexyl)phthalate	NA	5	µg/l	Monthly	Grab
Di-n-butylphthalate	NA	50	µg/l	Monthly	Grab
Arsenic, Total recoverable	NA	50	µg/l	Monthly	Grab
Barium, Total recoverable	NA	2000	µg/l	Quarterly	Grab
Lead, Total recoverable	NA	50	µg/l	Quarterly	Grab
Selenium, Total recoverable	NA	40	µg/l	Quarterly	Grab
Iron, Total recoverable	NA	600*	µg/l	Quarterly	Grab
Manganese, Total recoverable	NA	600*	µg/l	Quarterly	Grab

* The combined concentration of Iron, Total recoverable and Manganese, Total recoverable shall not exceed 1000 µg/l

ATTACHMENT - 3

Treatment System Design Drawings

SAIC As Built Drawings

SAIC Drawing ID No.	PDF File Title
CPS-Dwg-000	**Drawing symbols**
CPS-Dwg-003	**Equalization System**
CPS-Dwg-004	**Influent System**
CPS-Dwg-005	**Extraction system**
CPS-Dwg-007	**Reaction System**
CPS-Dwg-009	**Clarifier system**
CPS-Dwg-010	**Sandfilter System**
CPS-Dwg-012	**ASF System**
CPS-Dwg-013	**Air Stripping System**
CPS-Dwg-014	**GACF System**
CPS-Dwg-016	**Carbon Adsorber system**
CPS-Dwg-017 F	**Compressed Air Layout**
CPS-Dwg-017 G/H	**Water Systems Layout**
CPS-Dwg-018	**Treated Water System**
CPS-Dwg-020	**Water Recycle System**
CPS-Dwg-022	**Sludge System**
CPS-Dwg-023	**Air Compressor System**
CPS-Dwg-024	**Control Systems**
CPS-Dwg-026	**Permanganate Feed System**
CPS-Dwg-027	**Caustic Feed System**
CPS-Dwg-028	**Hydrochloric Acid Feed Sys**
CPS-Dwg-029	**Polymer Feed System**
CPS-Dwg-030	**Filter Press System**
CPS-Dwg-031	**Water Supply System**
CPS-Dwg-032	**Floor Drain and Sump System**

CSK Pre-Construction Design Drawings – Available in Hard Copy Only at Claremont Site

Drawing	Location	System	Type
F-01	-	Flow Schematic	P&ID
T-02	-	Letter & Symbol ID Chart	P&ID
P-01	Skid 1A	Reaction Tank 1	P&ID
P-03	Skid 2A	Clarifier 1	P&ID
P-05	Skid 3	Sludge Tank	P&ID
P-07	Skid 5A	Filter 1	P&ID
P-08	Skid 5B	Filter 2	P&ID
P-09	Skid 6	Air Stripper Feed	P&ID
P-10	Skid 7	Carbon Adsorber Feed	P&ID
P-11	Skid 8	Carbon Adsorber	P&ID
P-12	Skid 9	Permanganate Feed	P&ID
P-13	Skid 10	Sodium Hydroxide Feed	P&ID
P-14	Skid 11	Polymer Feed	P&ID
P-15	Skid 12	Hydrochloric Acid Feed	P&ID
P-16	Skid 13	Compressor System	P&ID
P-17	Skid 14	Influent & Injection Pumps	P&ID
P-18	Skid 15	Recycle System	P&ID
M-10	Skid 9	Permanganate Feed	Piping Assembly
M-11	Skid 6	Air Stripper	Piping Assembly
M-12	Skid 7	Carbon Adsorber feed	Piping Assembly
M-14	Skid 10	Sodium Hydroxide	Piping Assembly
M-15	Skid 11	Polymer Feed	Piping Assembly
M-16	Skid 12	Hydrochloric Acid feed	Piping Assembly
M-17	Skid 13	Air Compressor	Piping Assembly
M-18	Skid 14	Influent and Injection pumps	Piping Assembly
M-19	Skid 15	Recycle System	Piping Assembly
M-20	Skid 11	Polymer system	Piping Breakout
M-21	Skid 2A	Clarifier	Piping Breakout
M-27	Skid 2B	Clarifier	Piping Breakout

RUST Construction Design Drawings – Available in Hard Copy Only at Claremont Site

Drawing	Sheet	Title	Type
09-N-2	22/62	GW Extraction and Metals Removal – Ext to Floc	P&ID
09-N-3	23/62	GW Extraction and Metals Removal – Clarifier to Sand Filter	P&ID
09-N-4	24/62	Volatiles Removal and GW Injection – Air stripping	P&ID
09-N-5	25/62	Volatiles Removal and GW Injection – Carbon Adsorber to Injection	P&ID
09-N-6	26/62	Sludge and Recycle – sludge storage to filter press	P&ID
09-N-7	27/62	HP Air System	P&ID
09-N-8	28/62	Chemical Feed Systems	P&ID

INSTRUMENTS

Misc. Element


Propeller Flow meter


Generic Flow meter

Gage


Misc. Transducer/meter


Interlock

MISC. FITTINGS


Piping Expansion/reduction

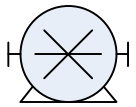

Flanges

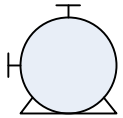

Flex Connector

Pipe union


Wye Strainer

PUMPS


Positive Displacement Pump


Centrifugal Pump

VALVES


Ball Valve


Butterfly Valves


Pressure Relief Valve


Plug Valves


Check Valve - Ball


Check Valve - Swing


Check Valve - Spring


Gate Valve


Globe Valve

Solenoid Valve


Actuator

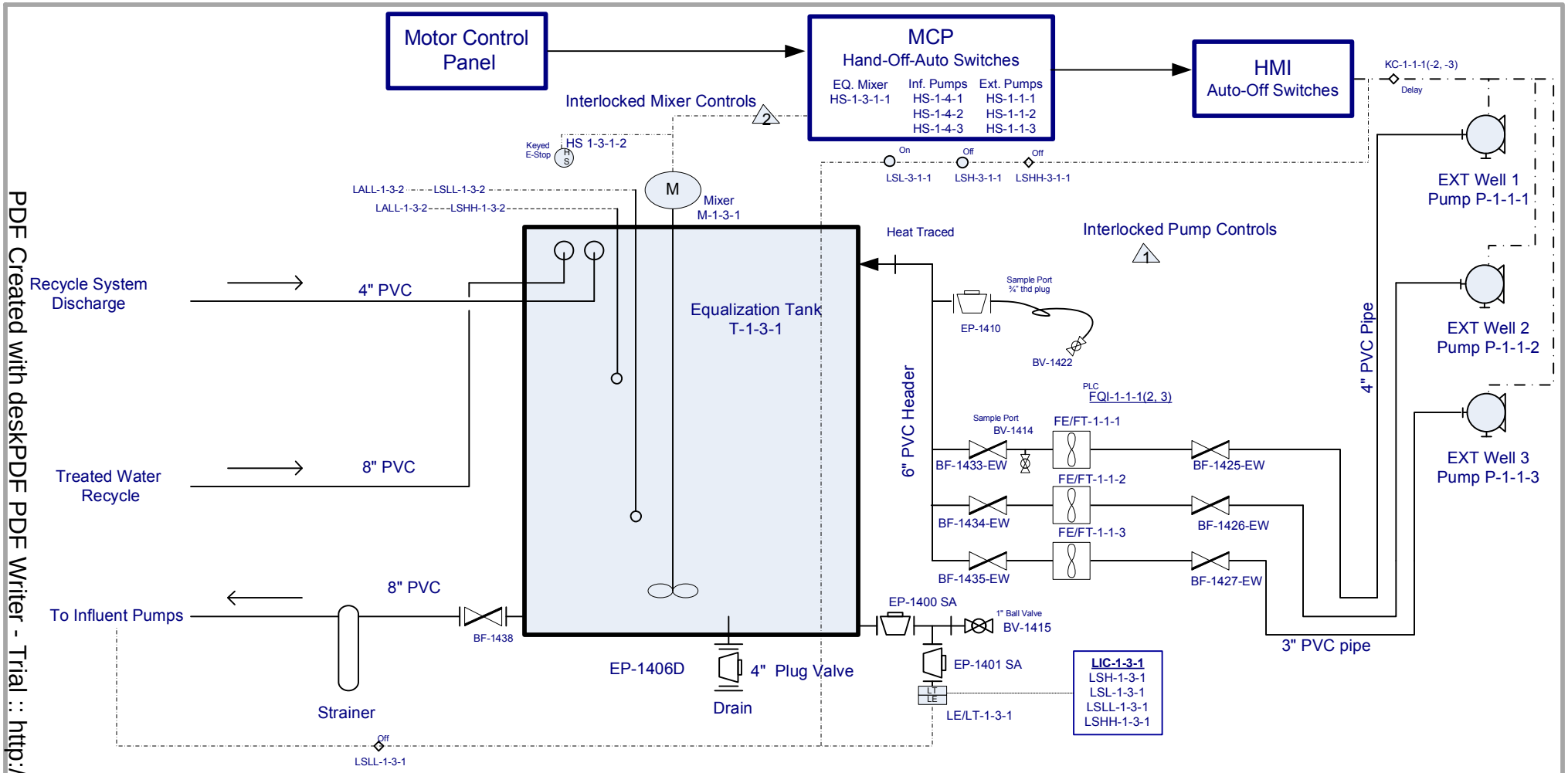

Pressure Regulator

MISC. EQUIPMENT


Mixer


Motor

SAIC – Claremont Polychemical Site	Rev. Date: Sept. 14, 2009	File Name: SOPsandInstructions/SymbolKey	
Drawing Title: Symbol Key	Rev. No.: E	Scale: none	Drawing No.: CPS-Dwg-000



PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

Basket Strainer
Hayward Simplex
8" x 1/8"

Mixer
Chemineer 2-HTD3
66" quad prop 45 rpm
Motor 3 hp, 1200 rpm
M-1-3-1

Equalization Tank
Tec Tank
21' x 22' 59700 gal
Bolted Steel tank
T-1-3-1

Level Monitor
Rosemont m/n 1151
Pressure Transducer
LE/LT 1-3-1

Level Control
Operator inputted set points
Low level LSL-1-3-1
High Level LSH-1-3-1

Extraction Well Pumps
Grundfos p/n 78955512
Steel Submersible Pumps
P-1-1-1, 2, 3

Flow Monitor
Signet Flow Transmitter 8550-1
Signet Paddle Wheel Flow Element
Installation Saddle PV 85030

Note:
1. - for EQ Tank details, see drawing CPS-Dwg-002
2. - For Ext Well Details, see drawing CPS-Dwg-005

SAIC – Claremont Polychemical Site	Rev. Date: 5-1-09	File Name: O&M Docs/EQ System/EQ PID	
Drawing Title: Equalization System PID	Rev. No.: C	Scale: none	Drawing No.: CPS-Dwg-003

Drawn By: Peter Takach

Siemens Motor Control On/Off | Main Control Panel Hand-Off-Auto | Human Machine Interface Auto-Off | Variable Frequency Drives

Note:
For EQ. System details, see drawing CPS-Dwg-003

Off LSLL-1-3-1
Off LSL-1-3-1
On LSH-1-3-1
Off LSHH-2-1-1(-2)
Delay KC-1-4-1(-2, -3)

EQ Tank
T-1-3-1

LIC-1-3-1
LSHH-1-3-1
LSH-1-3-1
LSL-1-3-1
LSLL-1-3-1

LE/LT-1-3-1

Variable Frequency Drive
DanfossDrives
c/n 178F4342

Magnetic Flow Meter
Brooks Mag 5000
m/n 500485TTF1ACBA

Magnetic Flow Transmitter
Brooks Mag 3580
m/n 358562B4D1

Pump Gauges
Winters
In- 0-30 psi
Out- 0-60 psi
Oil filled

Pump Interlocks
LSLL-1-3-1
LSHH-1-3-1
LSLL-2-1-1
LSHH-2-1-1

8" Basket Strainer

FB-1400
BF-1438
EP-1400
BV-1415
EP-1401
EP-1412
¾" Plug Valve
Sample port

4" PVC

PI-1405
SC-1402
Check Valve
BV-1405
BF-1405
PI-1404
BV-1404
Pump P-1-4-2
BF-1402
8x4 reduction

BF-1416

4"x3"
3" Plug valve
FCV-1-6-2
4"x3"

PI-1403
SC-1401
Check Valve
BV-1403
BF-1404
PI-1402
BV-1402
Pump P-1-4-3
BF-1401
8x4 reduction

BF-1417

PI-1401
SC-1400
Check Valve
BV-1401
BF-1403
PI-1400
BV-1400
Pump P-1-4-1
BF-1400
8x4 reduction

FIC-1-6-1 (-2)
FT-1-6-1
BV-1416

3" Plug valve
FCV-1-6-1
4"x3"
4"x3"
4" PVC
FT-1-6-2
BV-1417

To Process Train 1
To Process Train 2

Air Stripper Feed Tank 1
T-2-1-1
LSHH-2-1-1

Air Stripper Feed Tank 2
T-2-1-2
LSHH-2-1-2

Influent Pumps
PUMP
FlowServe 4x3x6 F
m/n D814
250 gpm at 30 ft TDH
1750 RPM
6.0/6.5 impellar
MOTOR
US Motor
Cat. No. 05P2B m/m A431
5 HP cont. duty
230/460 v 12.4/6.2 amps

Valves
Butterfly Valve
Crane, Centerline lug style
Swing Check valve
Global Anderson, m/n 250DS
Plug Valve
Milliken, 600 series eccentric
Ball Valve
Hayward TU PVC
Nibco brass, T-585-70

SAIC – Claremont Polychemical Site	Rev. Date: 5-7-09	File Name: O&M Docs/Influent System/Influent PID	
Drawing Title: Influent Pump PID	Rev. No.: D	Scale: None	Drawing No.: CPS-Dwg-004

Ball Valve
0.75" Mueller 300 ball curb valve, p/n 25209
Mueller valve handle extension, p/n H-10308

Sampling Hydrant
Kupferle Foundry Co.
M/N 903
Yard Hydrant
3" case, 2 3/16" valve

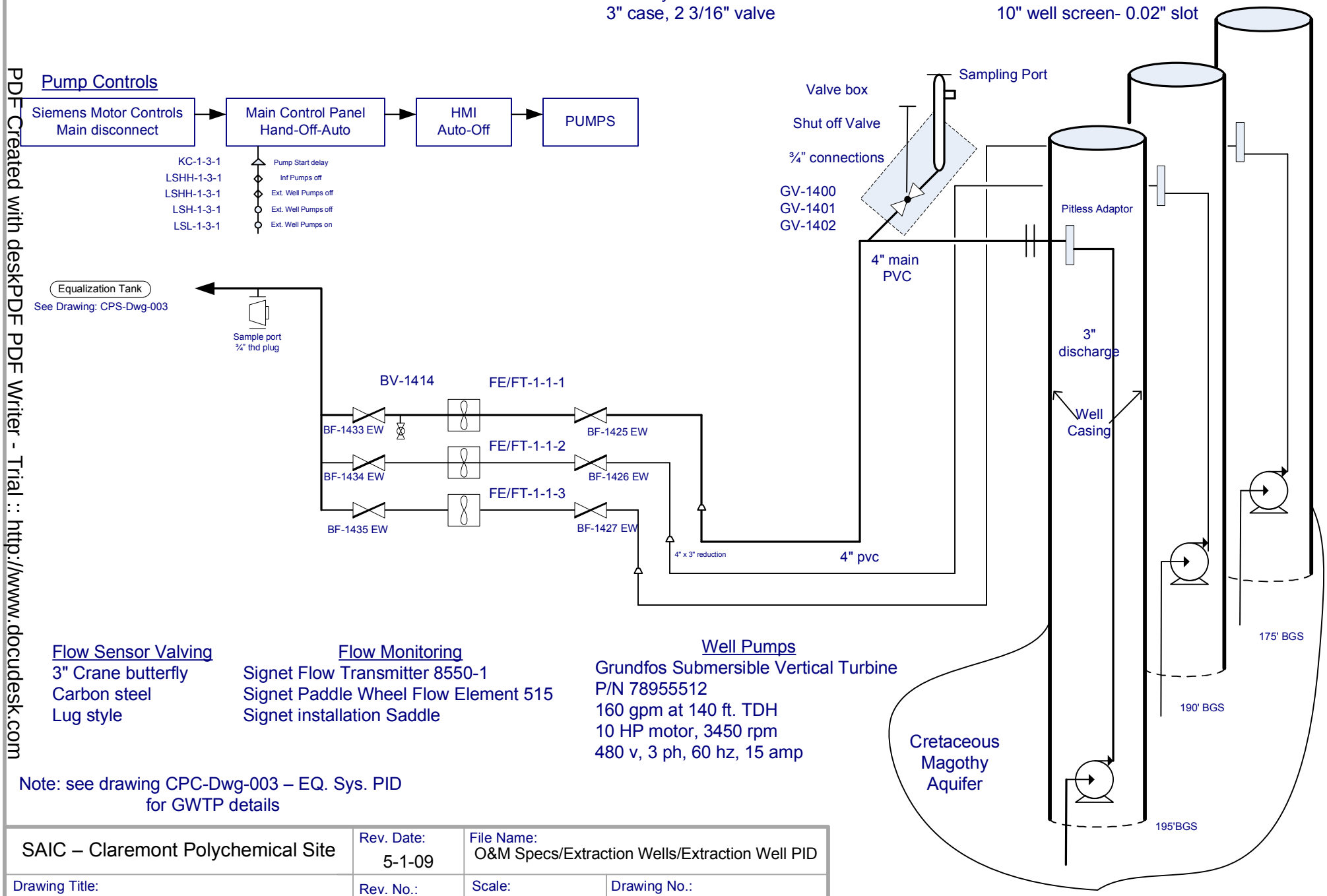
Valve box
2' x 2' x 2'
Removable cover

Extraction Wells 1, 2, 3
3" Discharge pipe
10" well column
14" Bore hole
10" well screen- 0.02" slot

Pump Controls

Siemens Motor Controls Main disconnect → Main Control Panel Hand-Off-Auto → HMI Auto-Off → PUMPS

KC-1-3-1	Pump Start delay
LSHH-1-3-1	Inf Pumps off
LSHH-1-3-1	Ext. Well Pumps off
LSH-1-3-1	Ext. Well Pumps off
LSL-1-3-1	Ext. Well Pumps on



Flow Sensor Valving
3" Crane butterfly
Carbon steel
Lug style

Flow Monitoring
Signet Flow Transmitter 8550-1
Signet Paddle Wheel Flow Element 515
Signet installation Saddle

Well Pumps
Grundfos Submersible Vertical Turbine
P/N 78955512
160 gpm at 140 ft. TDH
10 HP motor, 3450 rpm
480 v, 3 ph, 60 hz, 15 amp

Note: see drawing CPC-Dwg-003 – EQ. Sys. PID for GWTP details

SAIC – Claremont Polychemical Site	Rev. Date: 5-1-09	File Name: O&M Specs/Extraction Wells/Extraction Well PID	
Drawing Title: Extraction Well PID	Rev. No.: C	Scale: None	Drawing No.: CPS-Dwg-005

Drawn By: Peter Takach

Siemens Motor Control Panel
ON-OFF

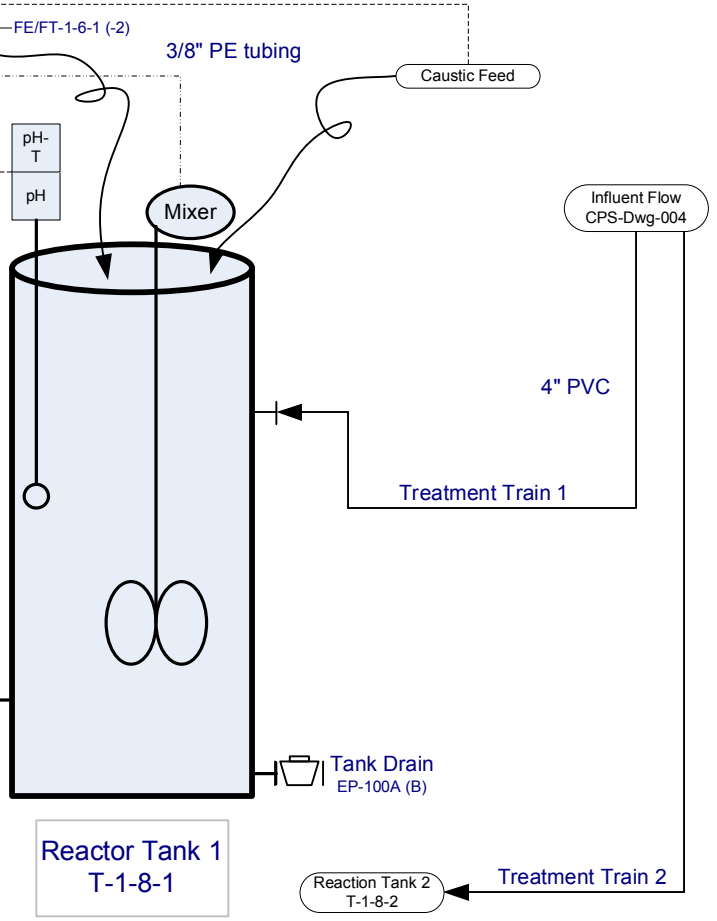
Main Control Panel
HAND-OFF
HS-1-8-1-2
HS-1-8-2-2

Emergency Stop Switch-Keyed
ON-OFF-LOCKED OFF
Local
HS-1-8-1-1B
HS-1-8-2-1B

Knife Switch
ON-OFF
Local
HS-1-8-1-1A
HS-1-8-2-1A

AIC-1-8-1 (-2)
ASHH-1-8-1 (-2)
AAHH-1-8-1 (-2)
ASH-1-8-1 (-2)
ASL-1-8-1 (-2)
ASLL-1-8-1 (-2)
AALL-1-8-1 (-2)

AIT-1-8-1,2
AE-1-8-1,2

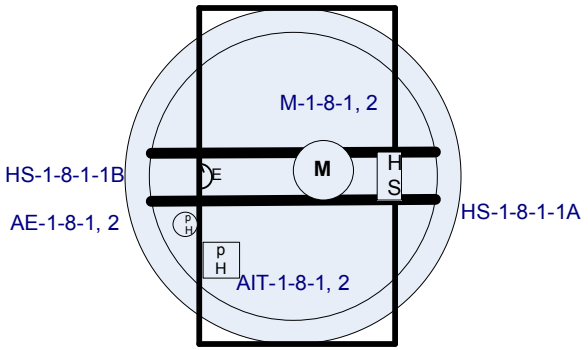


Mixers M-1-8-1, 2
Sharp 1N22-37 Mixer
Sharp SK2282V-C14T gear box
Reliance P14H3591 motor
Hyflo II impeller

pH Control
Electrode AE-1-8-1,2
Johnson Yokogawa FU-20-05-T2NPT
Transmitter AIT-1-8-1, 2
Johnson Yokogawa PH400-P-O-1-E*A/U/Q

Chemical Feed Systems
Caustic Feed – 5-2-1
Permanganate Feed – 5-1-1

Catwalk Mezzanine
Platform 59"w x 126"L
Floor- 1" fibergrate
Kickplate 4" flat steel
Rails – 1.5" sq tube at 24" and 41"
Opening - 34", chained, ladder access



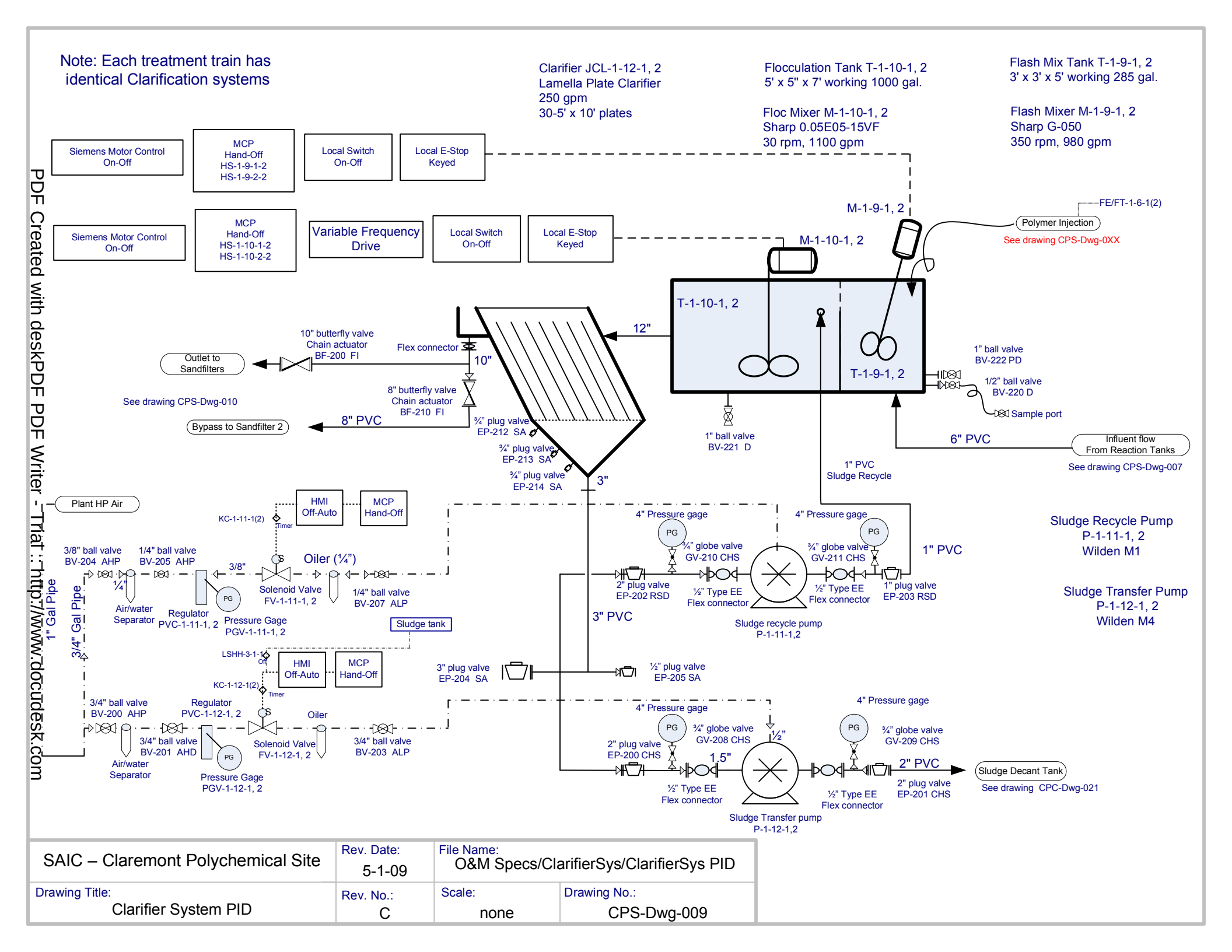
Site View

Note 1:
-The reaction tanks for Treatment Trains 1 & 2 are the same but are mirror images. They are plumbed the same and have the same features and equipment.
-As of this revision, there are no as-built drawings for the: clarifier, caustic feed or permanganate feed.

Note 2:
See drawing CPS-Dwg-004 for influent flow details
See drawing CPS-Dwg-006 for tank details
See drawing CPS-Dwg-008 for Clarifier details

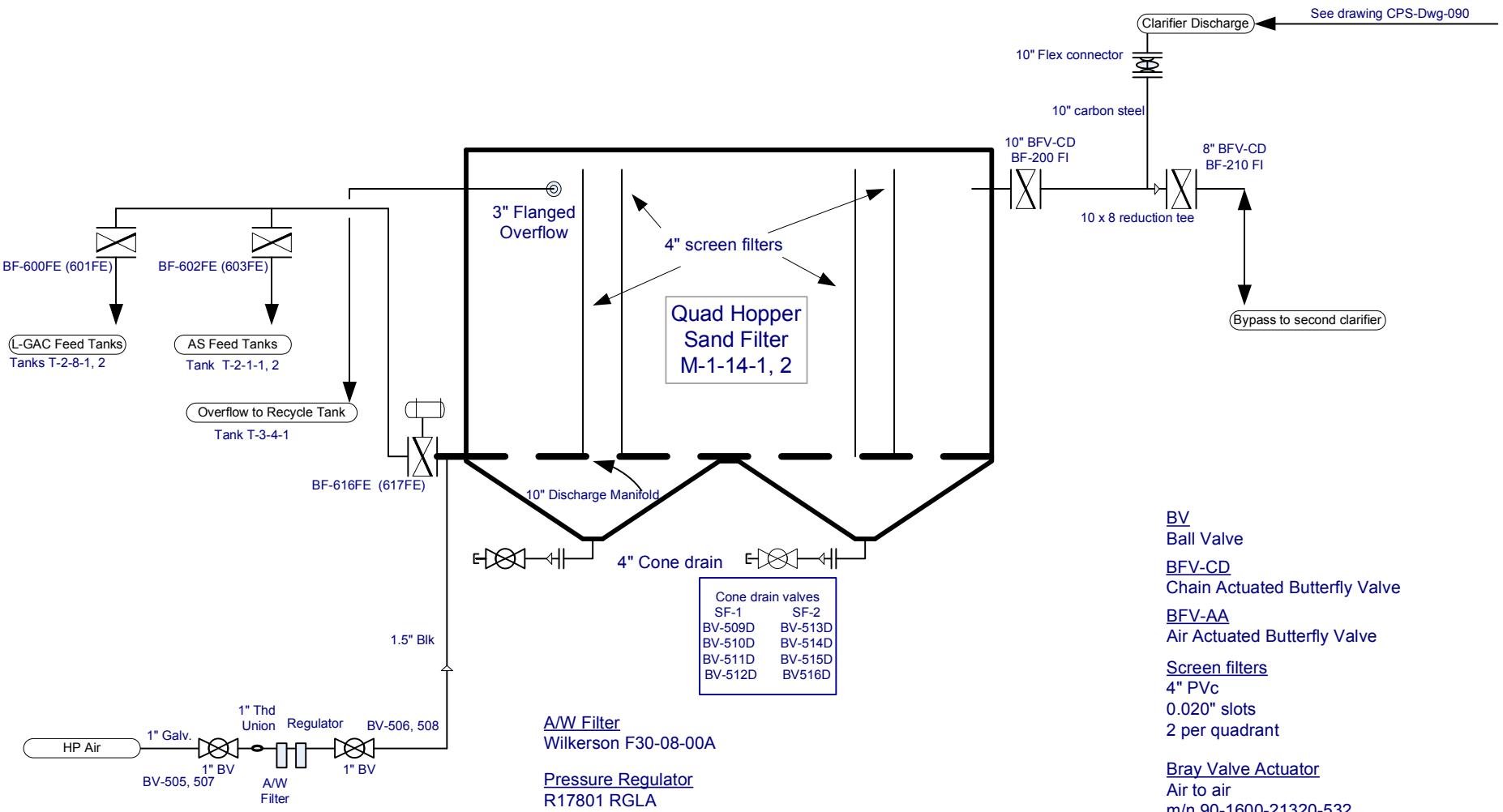
SAIC – Claremont Polychemical Site	Rev. Date: 5-7-09	File Name: O&M Specs/Reaction Tank/Reaction Tank PID	
Drawing Title: Reaction Tank PID	Rev. No.: B	Scale: none	Drawing No.: CPS-Dwg-007

Drawn By: Peter Takach



SAIC – Claremont Polychemical Site	Rev. Date: 5-1-09	File Name: O&M Specs/ClarifierSys/ClarifierSys PID	
Drawing Title: Clarifier System PID	Rev. No.: C	Scale: none	Drawing No.: CPS-Dwg-009

SAND FILTER – RETENTION TANK



A/W Filter
Wilkerson F30-08-00A

Pressure Regulator
R17801 RGLA
w/ Pressure gauge
1017081

BV
Ball Valve

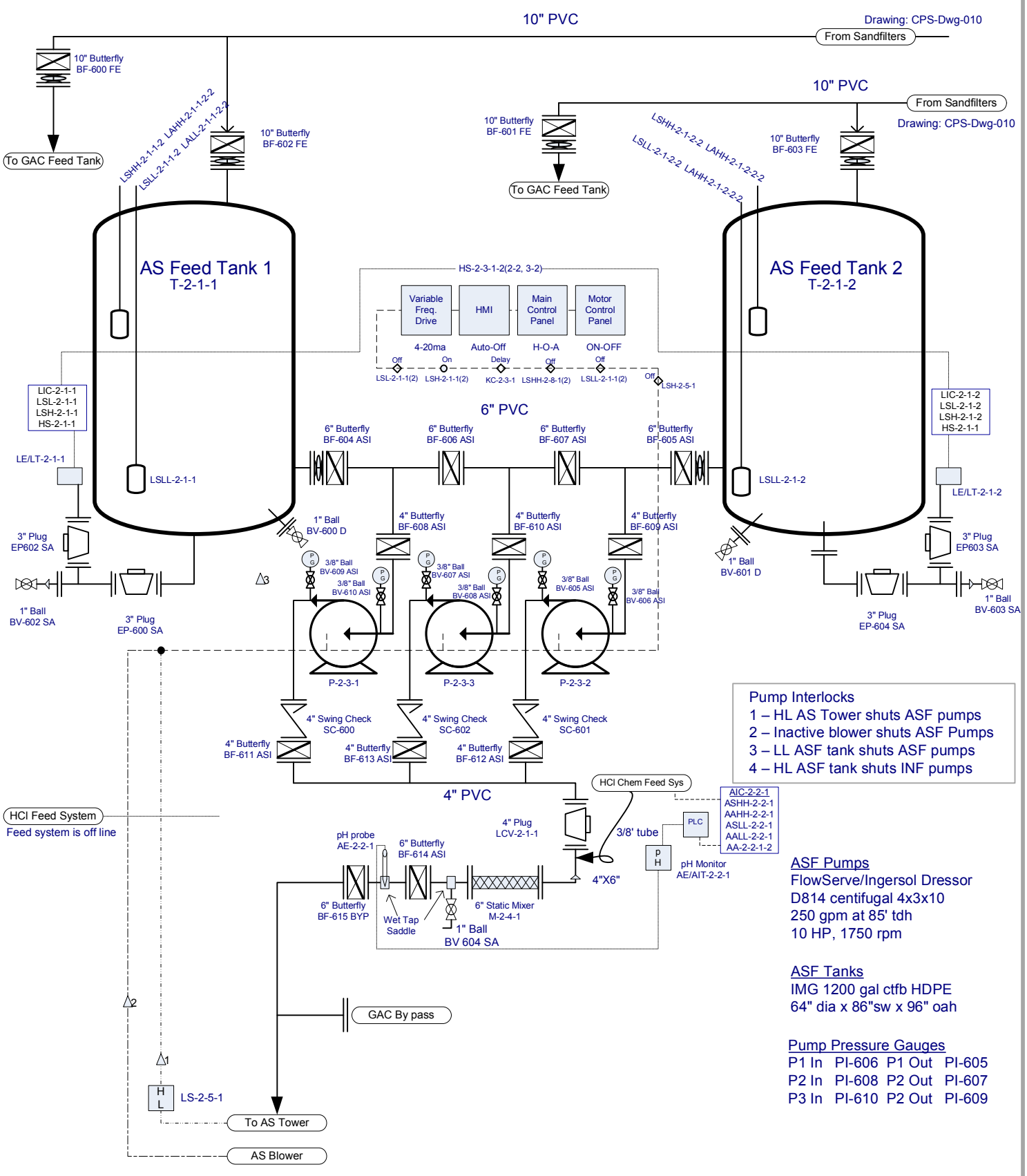
BFV-CD
Chain Actuated Butterfly Valve

BFV-AA
Air Actuated Butterfly Valve

Screen filters
4" PVc
0.020" slots
2 per quadrant

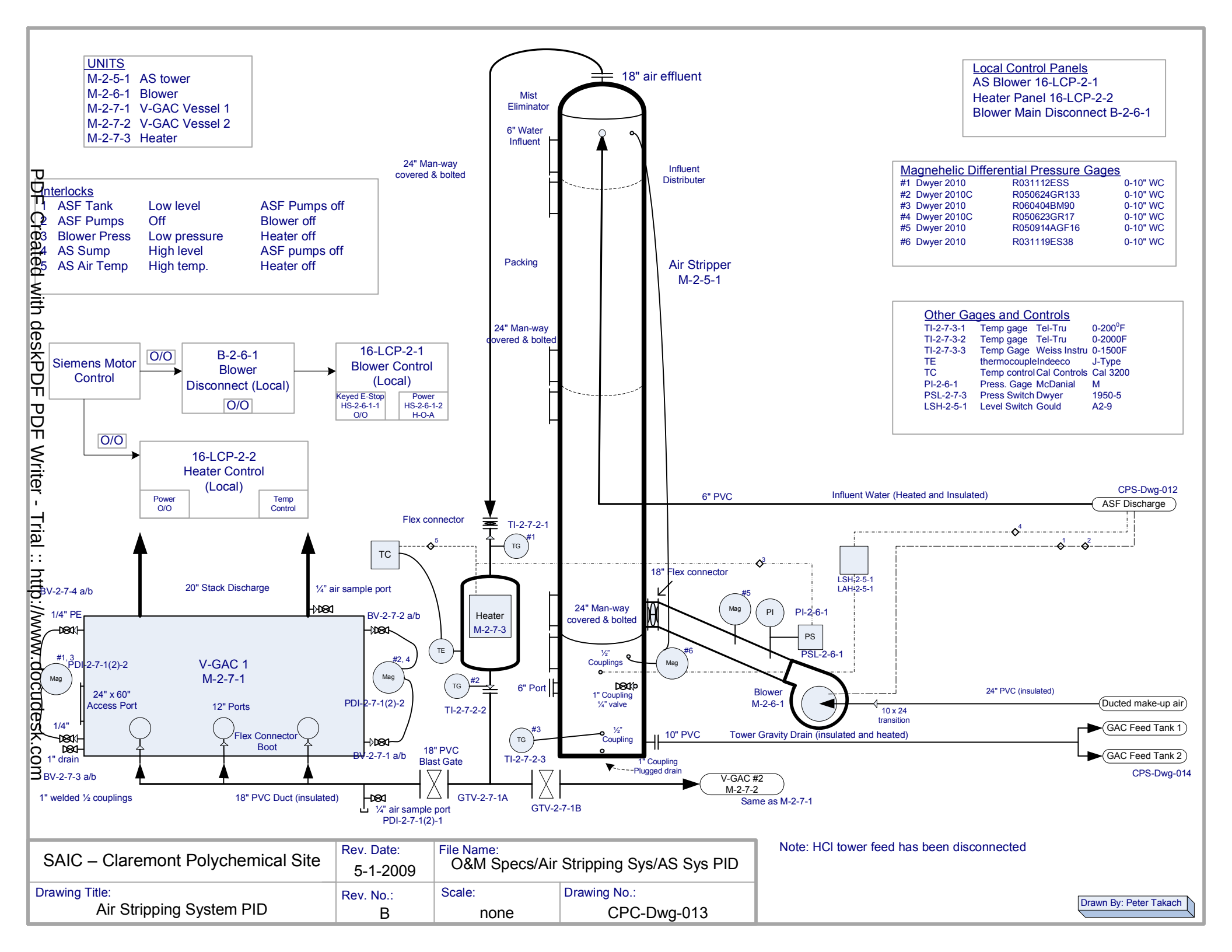
Bray Valve Actuator
Air to air
m/n 90-1600-21320-532
w/ VRC position indicator
m/n VP700

SAIC – Claremont Polychemical Site	Rev. Date: 5-7-09	File Name: O&M Specs/SandFilter/Sandfilter SysPID	
Drawing Title: Sand Filter System PID	Rev. No.: B	Scale: None	Drawing No.: CPS-Dwg-010



Note: For tank details refer to drawing CPS-Dwg-011

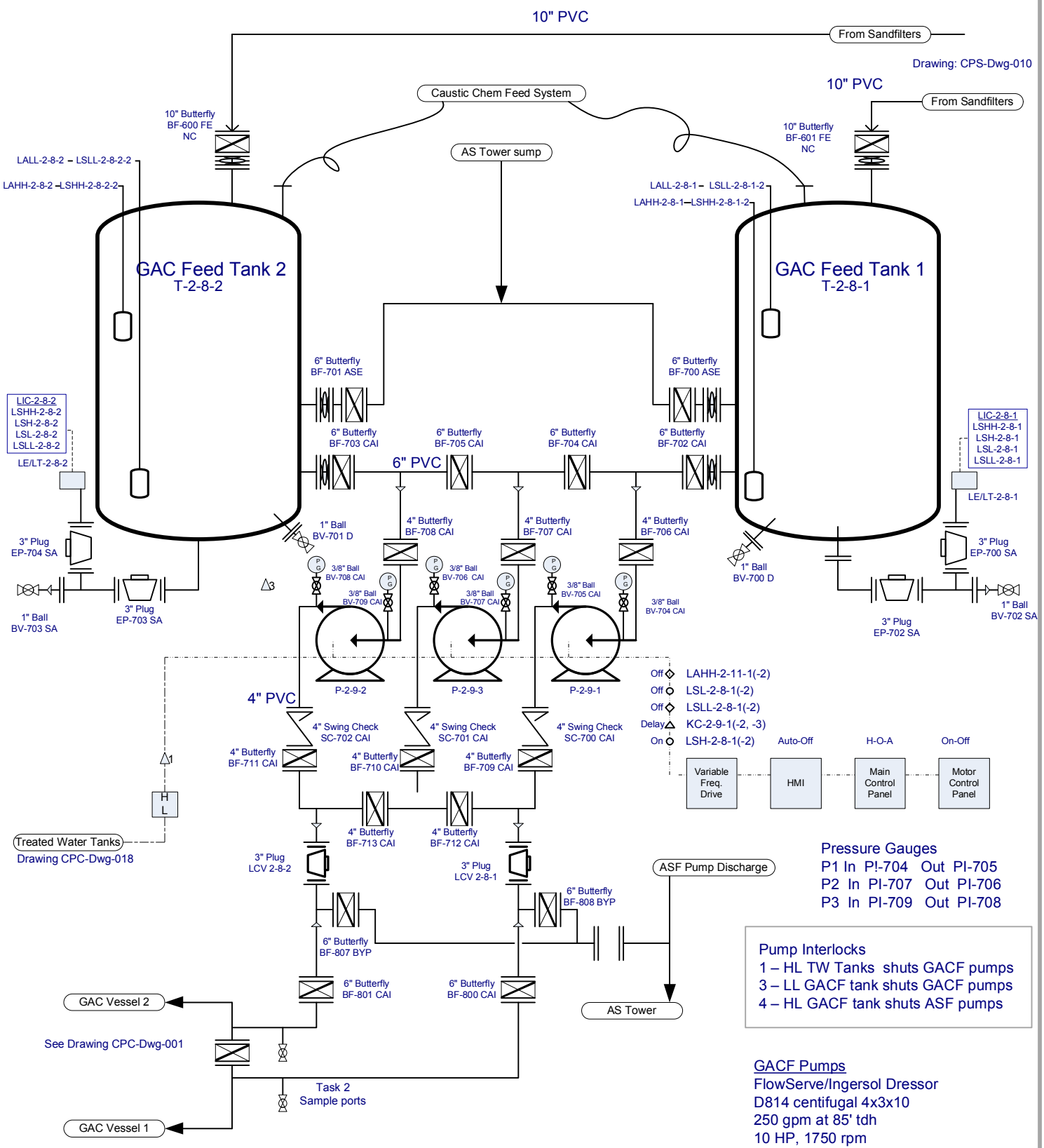
SAIC – Claremont Polychemical Site	Rev. Date: 04-30-09	File Name: O&M Specs/Air Stripper Feed Sys/ASF PID	
Drawing Title: Air Stripper Feed System PID	Rev. No.: 0	Scale: none	Drawing No.: CPS-Dwg-012



Note: HCl tower feed has been disconnected

SAIC – Claremont Polychemical Site	Rev. Date: 5-1-2009	File Name: O&M Specs/Air Stripping Sys/AS Sys PID	
Drawing Title: Air Stripping System PID	Rev. No.: B	Scale: none	Drawing No.: CPC-Dwg-013

Drawn By: Peter Takach



Pressure Gauges
P1 In PI-704 Out PI-705
P2 In PI-707 Out PI-706
P3 In PI-709 Out PI-708

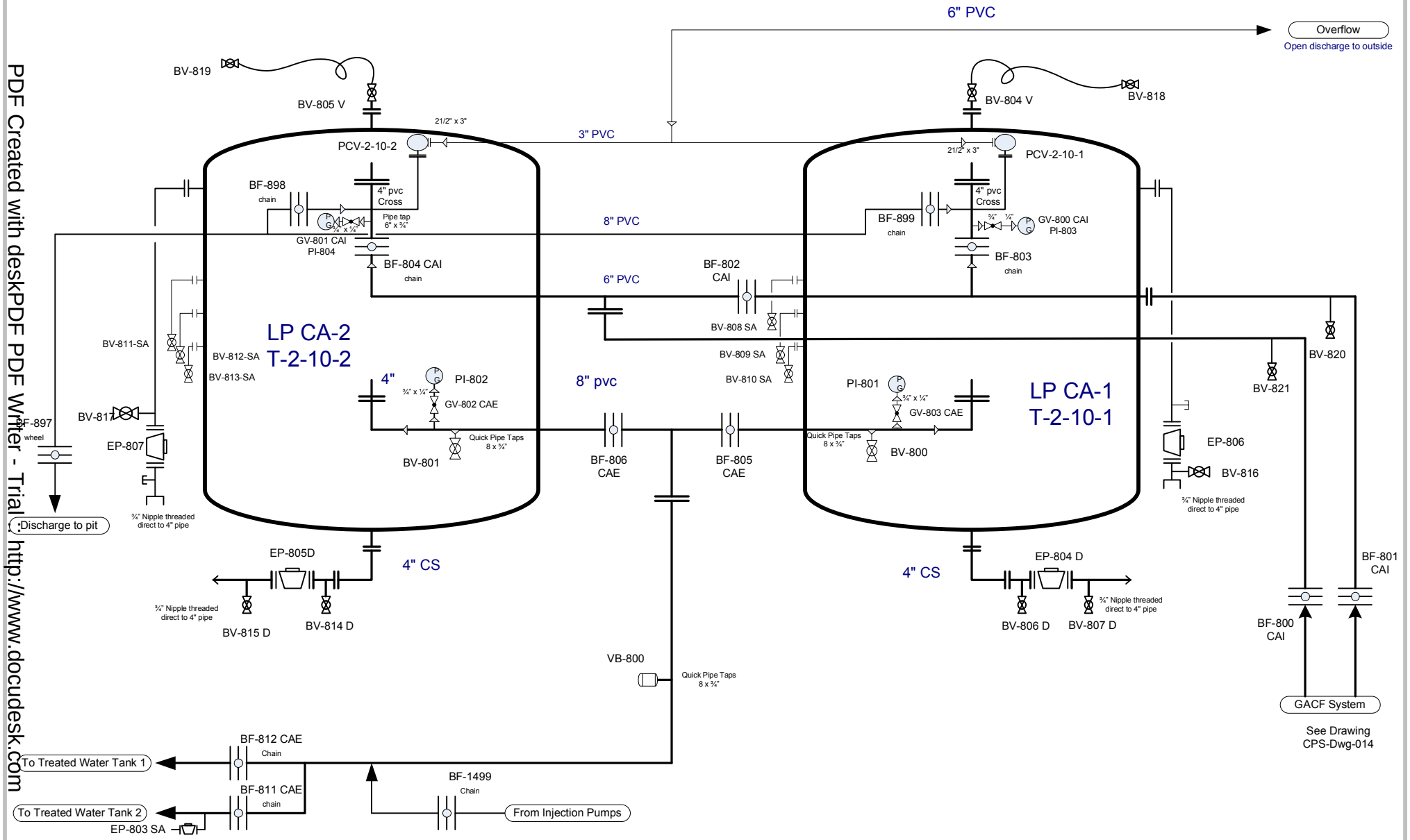
Pump Interlocks
1 – HL TW Tanks shuts GACF pumps
3 – LL GACF tank shuts GACF pumps
4 – HL GACF tank shuts ASF pumps

GACF Pumps
FlowServe/Ingersol Dressor
D814 centifugal 4x3x10
250 gpm at 85' tdh
10 HP, 1750 rpm

GACF Tanks
IMG 1200 gal ctfb HDPE
64" dia x 86"sw x 96" oah

Note: For tank details refer to drawing CPS-Dwg-015

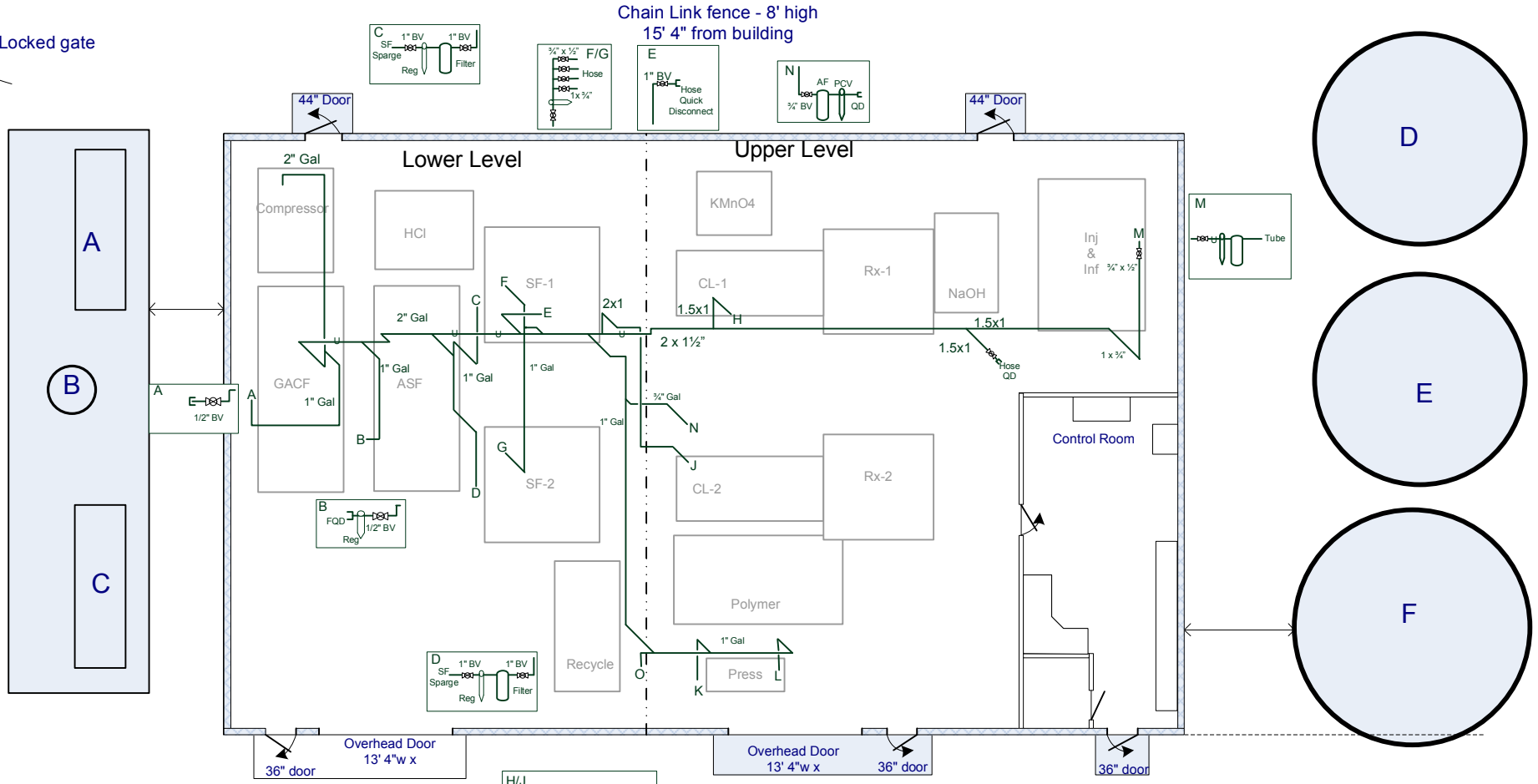
SAIC – Claremont Polychemical Site	Rev. Date: 5-7-09	File Name: O&M Specs/GAC Feed Sys/GACF-PID	
Drawing Title: Carbon Adsorber Feed System PID	Rev. No.: 0	Scale: none	Drawing No.: CPS-Dwg-014



SAIC – Claremont Polychemical Site	Rev. Date: 12-8-09	File Name: O&M Specs/CA System/CA Sys PID	
Drawing Title: Carbon Adsorber System PID	Rev. No.: C	Scale: None	Drawing No.: CPS-Dwg-016

Drawn By: Peter Takach

A	Vapor Carbon Unit 1	16'5.5"x5'x7'6"	carbon	VOCs
B	Air Stripping tower	5' dia x55' H	plastic media	groundwater
C	Vapor Carbon Unit 2	16'5.5"x5'x7'6"	carbon	VOCs
D	Treated Water Tank 2	16'5.5" dia x21'10" oah		treated water
E	Treated Water Tank 2	16'5.5" dia x21'10" oah		treated water
F	Equalization Tank	21'7" dia x 23'7" oah		groundwater

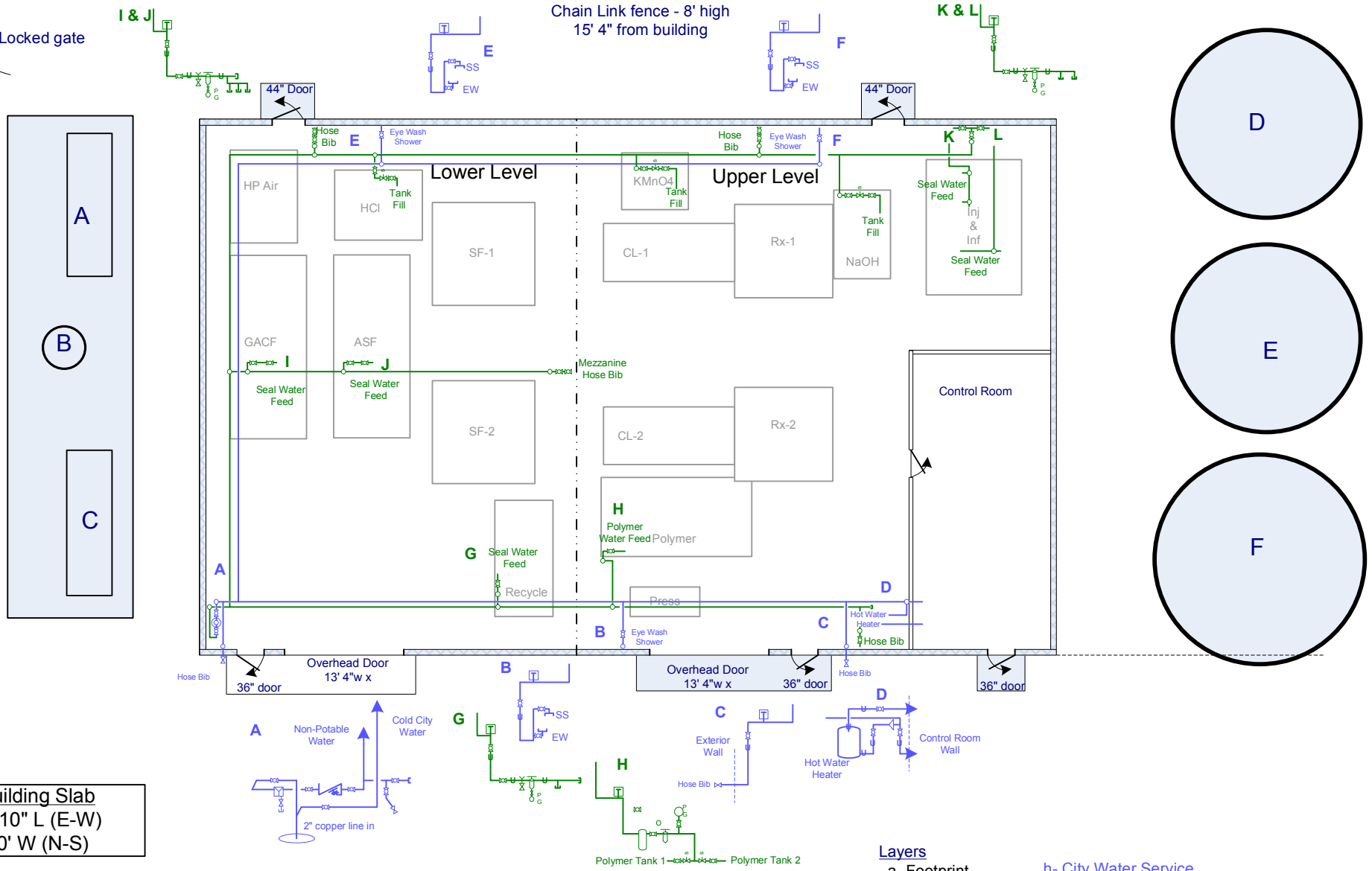


Layers
- a- Footprint
- b- Concrete Pads
- c- Tanks
- d- Elevated surfaces
- e- Utility Features
- f- HP Air System

SAIC – Claremont Polychemical Site	Rev. Date: 2-17-09	File Name: O&M Specs/Compressed Air Sys/017F HP Air	
Drawing Title: HP Air Distribution System	Rev. No.: A	Scale: 1/16" = 1'	Drawing No.: CPC-Dwg-017F

Drawn By: Peter Takach

A	Vapor Carbon Unit 1	16'5.5"x5'x7'6"	carbon	VOCs
B	Air Stripping tower	5' dia x55' H	plastic media	groundwater
C	Vapor Carbon Unit 2	16'5.5"x5'x7'6"	carbon	VOCs
D	Treated Water Tank 2	16'5.5" dia x21'10" oah		treated water
E	Treated Water Tank 2	16'5.5" dia x21'10" oah		treated water
F	Equalization Tank	21'7" dia x 23'7" oah		groundwater

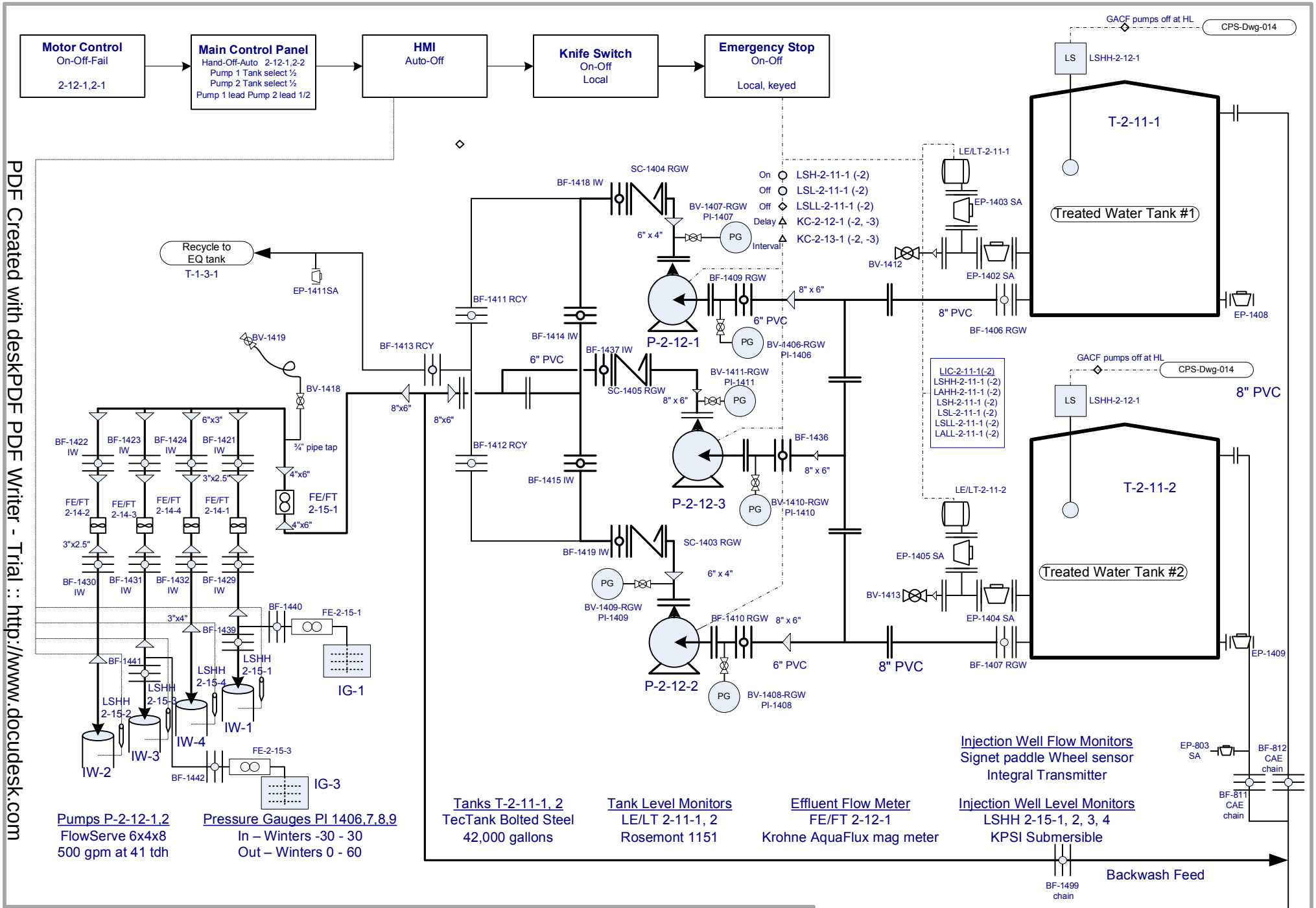


Building Slab
95'10" L (E-W)
60' W (N-S)

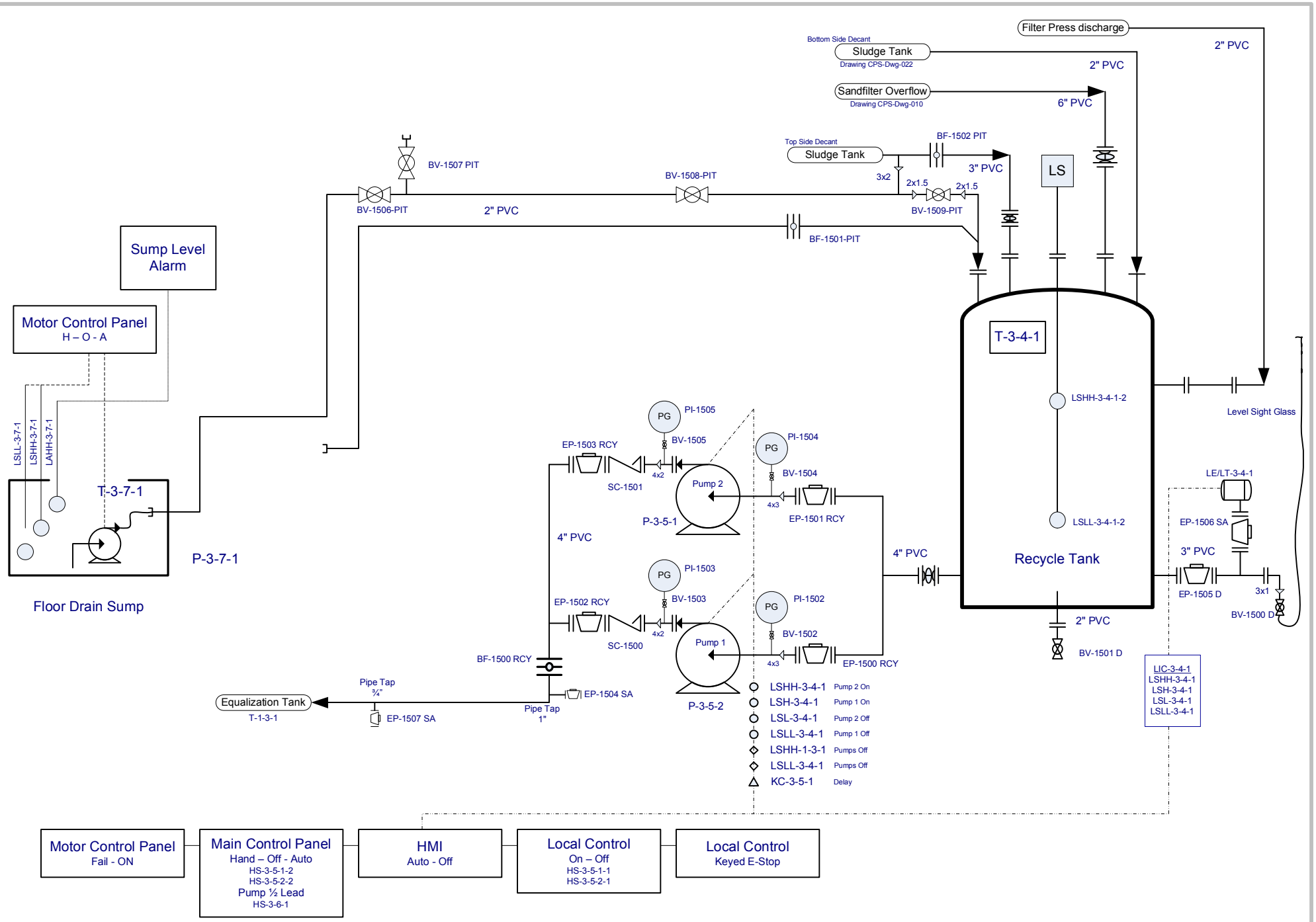
SAIC – Claremont Polychemical Site	Rev. Date: 11-16-09	File Name: O&m specs/Facility/water/Water Sys	
Drawing Title: Water Service	Rev. No.: G	Scale: 1/16" = 1'	Drawing No.: CPS-Dwg-017G,H

Layers
- a- Footprint
- b- Concrete Pads
- c- Tanks
- d- Elevated surfaces
- e- Utility Features
- f- HP Air System
- h- City Water Service

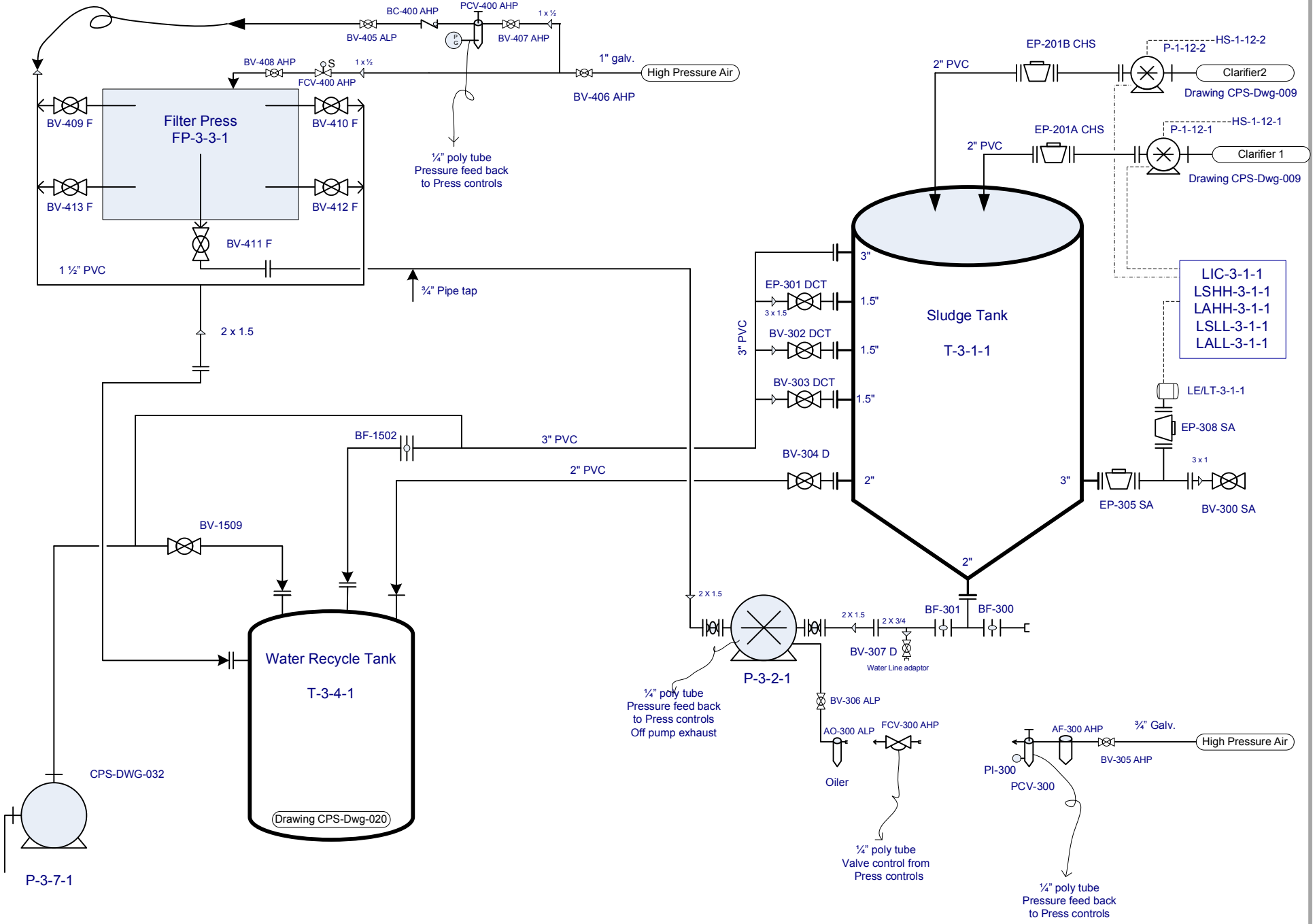
Drawn By: Peter Takach



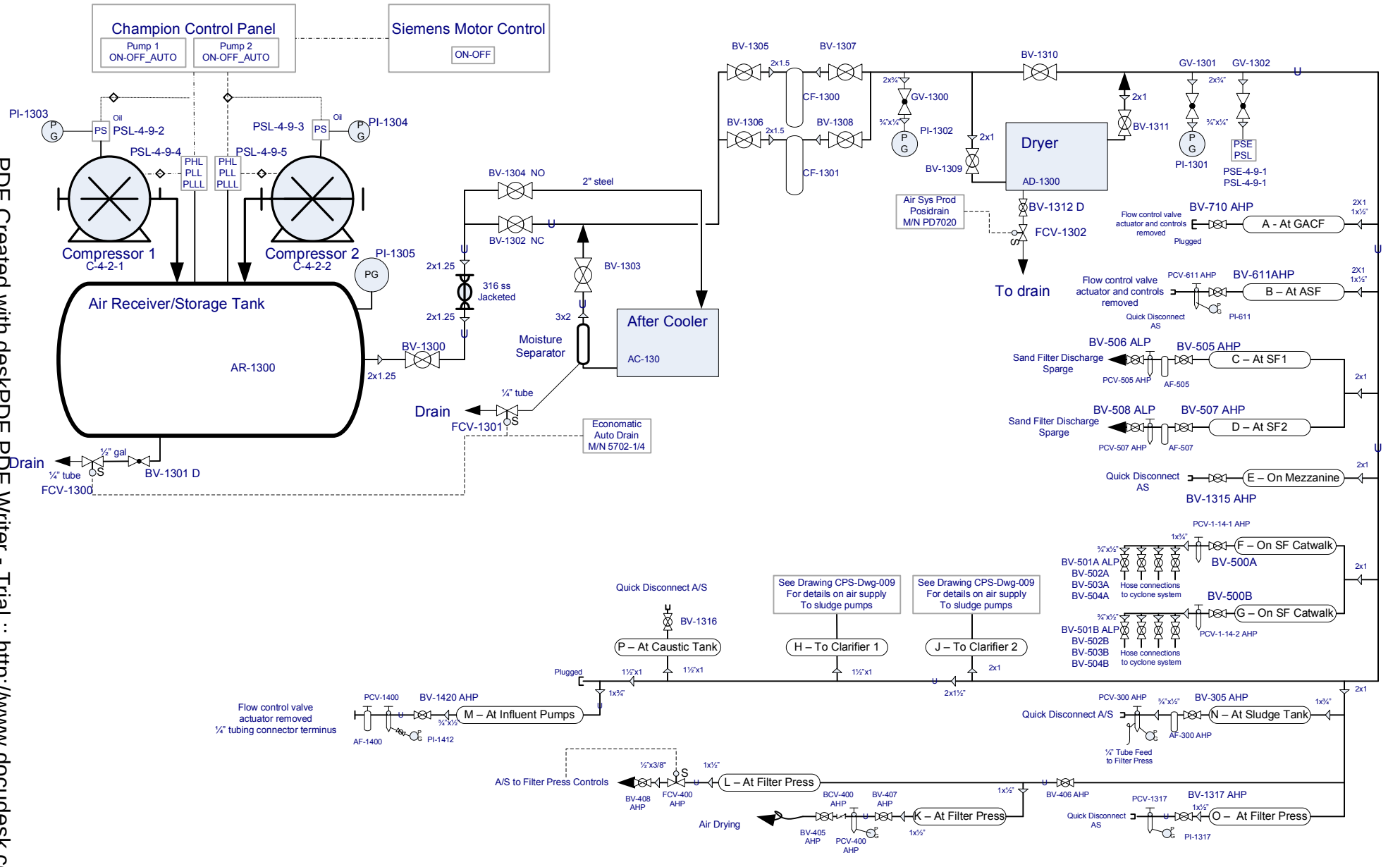
SAIC – Claremont Polychemical Site	Rev. Date: 11-18-09	File Name: O&M Specs/Treated Water System/TW-Inj system	
Drawing Title: Treated Water Injection System	Rev. No.: E	Scale: none	Drawing No.: CPS-Dwg-018



SAIC – Claremont Polychemical Site	Rev. Date: 5-7-09	File Name: O&M Specs/Water Recycle Sys/RCY Sys PID	
Drawing Title: Recycled Water System - PID	Rev. No.: C	Scale: None	Drawing No.: CPS-Dwg-020



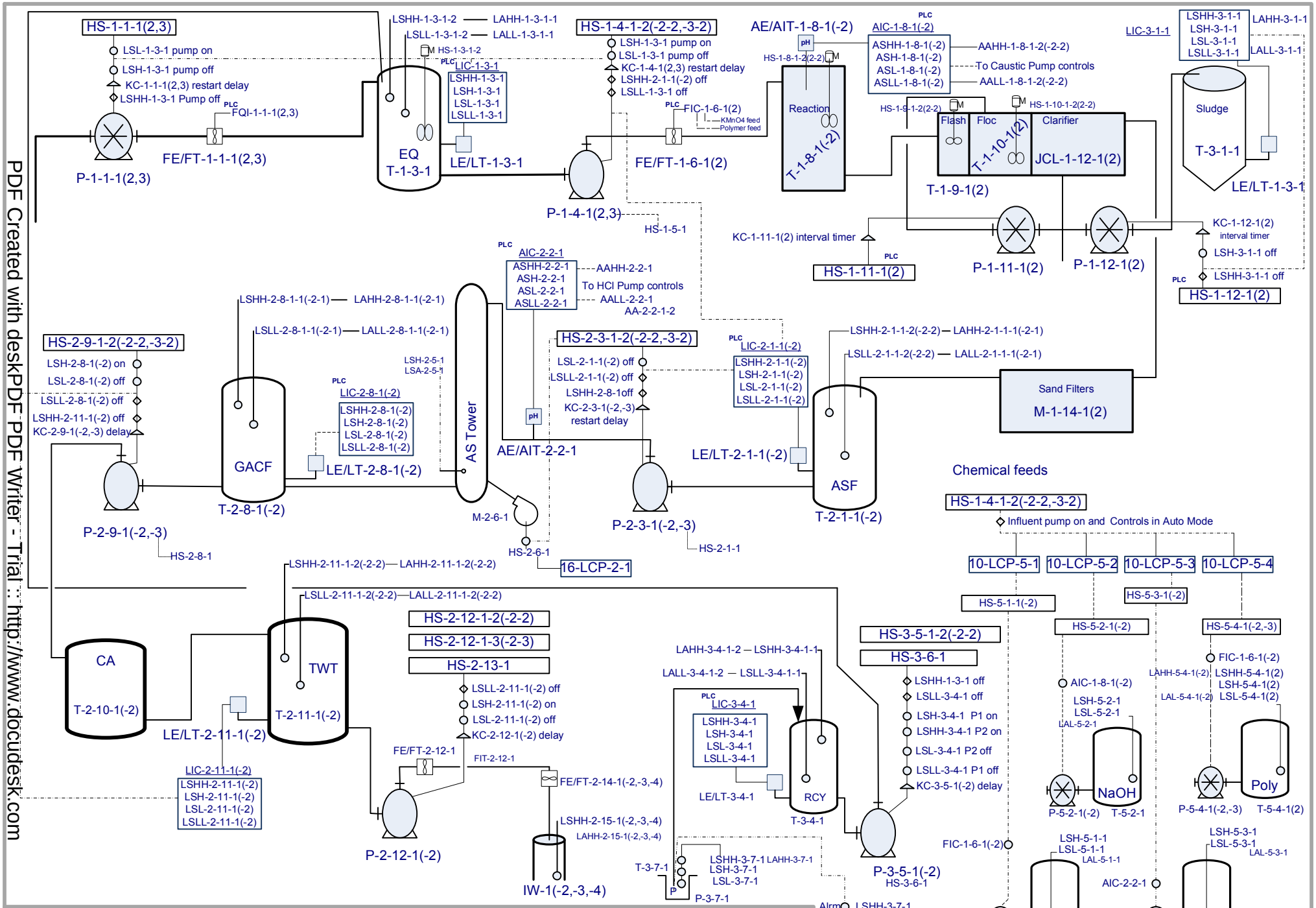
SAIC – Claremont Polychemical Site	Rev. Date: 11-10-09	File Name: O&M Specs/Sludge Sys/Sludge Sys PID	
Drawing Title: Sludge System PID	Rev. No.: C	Scale: None	Drawing No.: CPS-Dwg-022



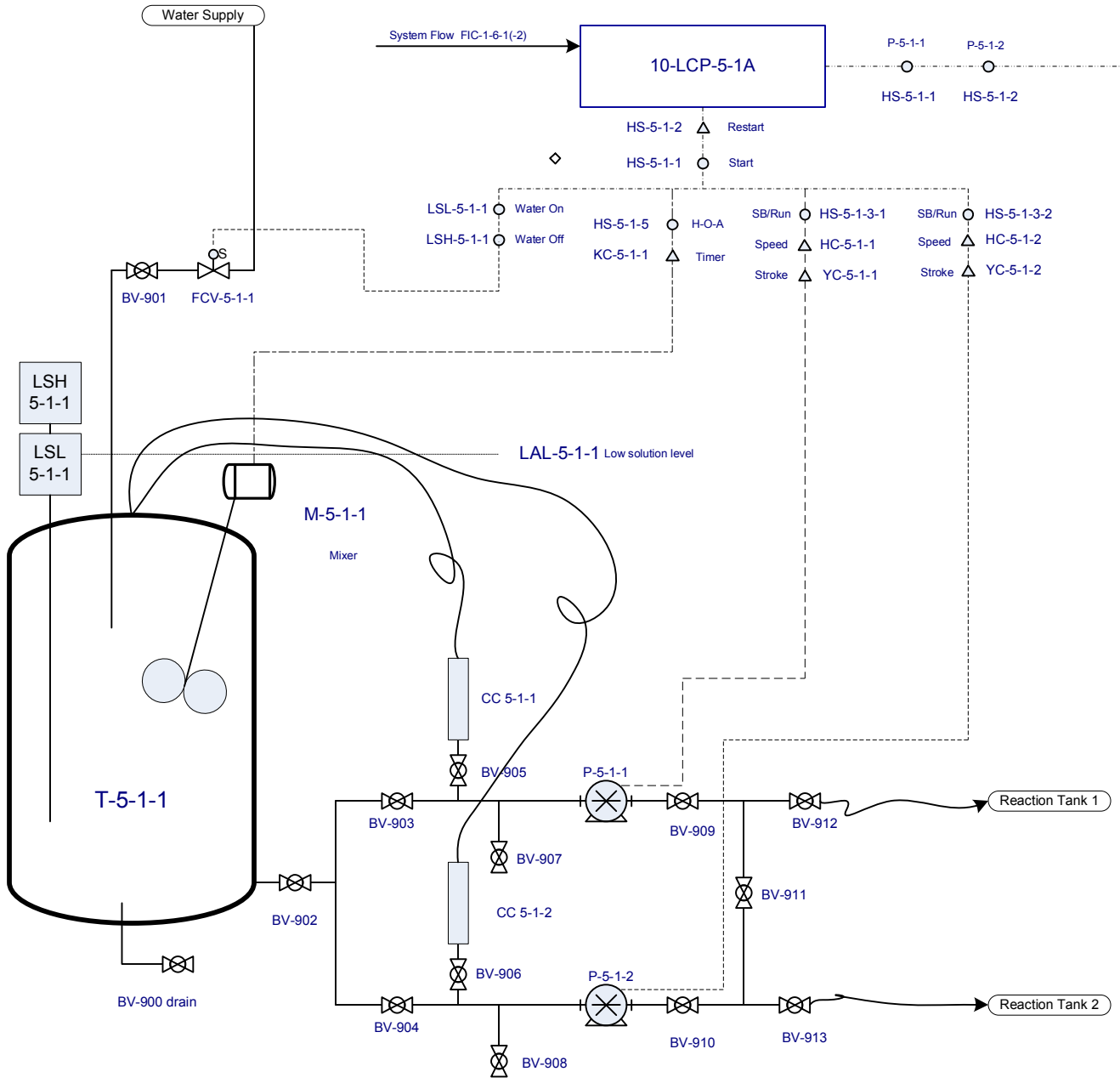
Note:
Refer to Tag List for part descriptions
File: O&M Specs/Compressed Air Sys/HP Air Tags

SAIC – Claremont Polychemical Site	Rev. Date: 11-18-09	File Name: O&M Specs/Compressor Sys/HP Air	
Drawing Title: HP Air P&ID	Rev. No.: B	Scale: None	Drawing No.: CPS-Dwg-023

Drawn By: Peter Takach



SAIC – Claremont Polychemical Site	Rev. Date: 5-1-09	File Name: O&M Specs/Facility/Control System/GWTP Controls P&ID	
Drawing Title: GWTP Controls P&ID	Rev. No.: B	Scale: none	Drawing No.: CPS-Dwg-024



T-900
IMG Tank
HDPE, DT, FB
480 Gal

P-5-1-1, P-5-1-2
LMI- Milton Roy Pump
M/N A961-168S
2 gph at 50 psi

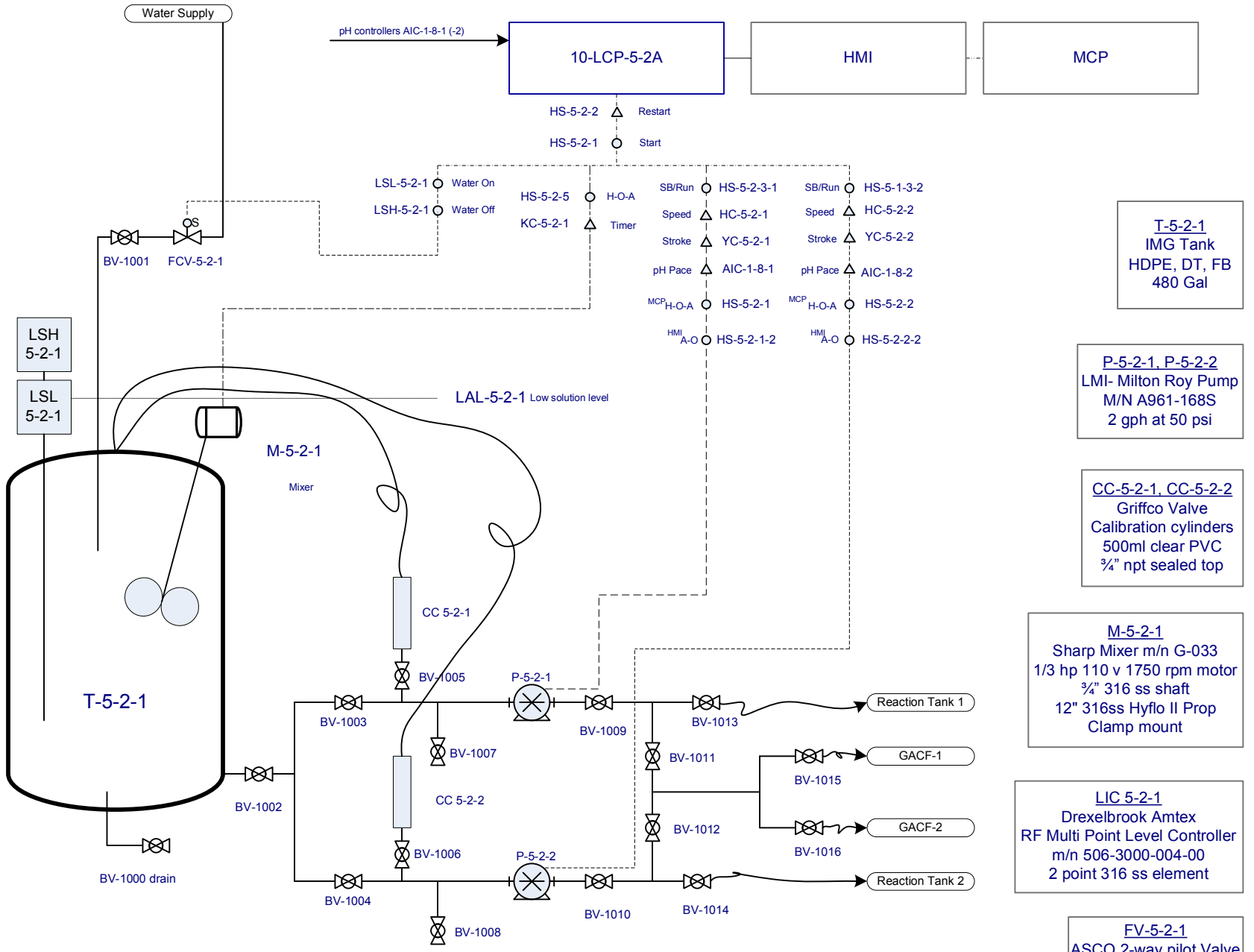
CC-900, CC-901
Griffco Valve
Calibration cylinders
500ml clear PVC
¾" npt sealed top

M-5-1-1
Sharp Mixer m/n G-033
1/3 hp 110 v 1750 rpm motor
¾" 316 ss shaft
12" 316ss Hyflo II Prop
Clamp mount

LIC 5-1-1
Drexelbrook Amtex
RF Multi Point Level Controller
m/n 506-3000-004-00
2 point 316 ss element

FCV-5-1-1
Asco 2-way Pilot Valve
p/n 8210G94
½" solenoid

SAIC – Claremont Polychemical Site	Rev. Date: 5-20-09	File Name: O&M Specs/KMnO4/KMnO4 Feed Sys	
Drawing Title: KMnO4 Chemical Feed System	Rev. No.: B	Scale: none	Drawing No.: CPS-Dwg-026



T-5-2-1
IMG Tank
HDPE, DT, FB
480 Gal

P-5-2-1, P-5-2-2
LMI- Milton Roy Pump
M/N A961-168S
2 gph at 50 psi

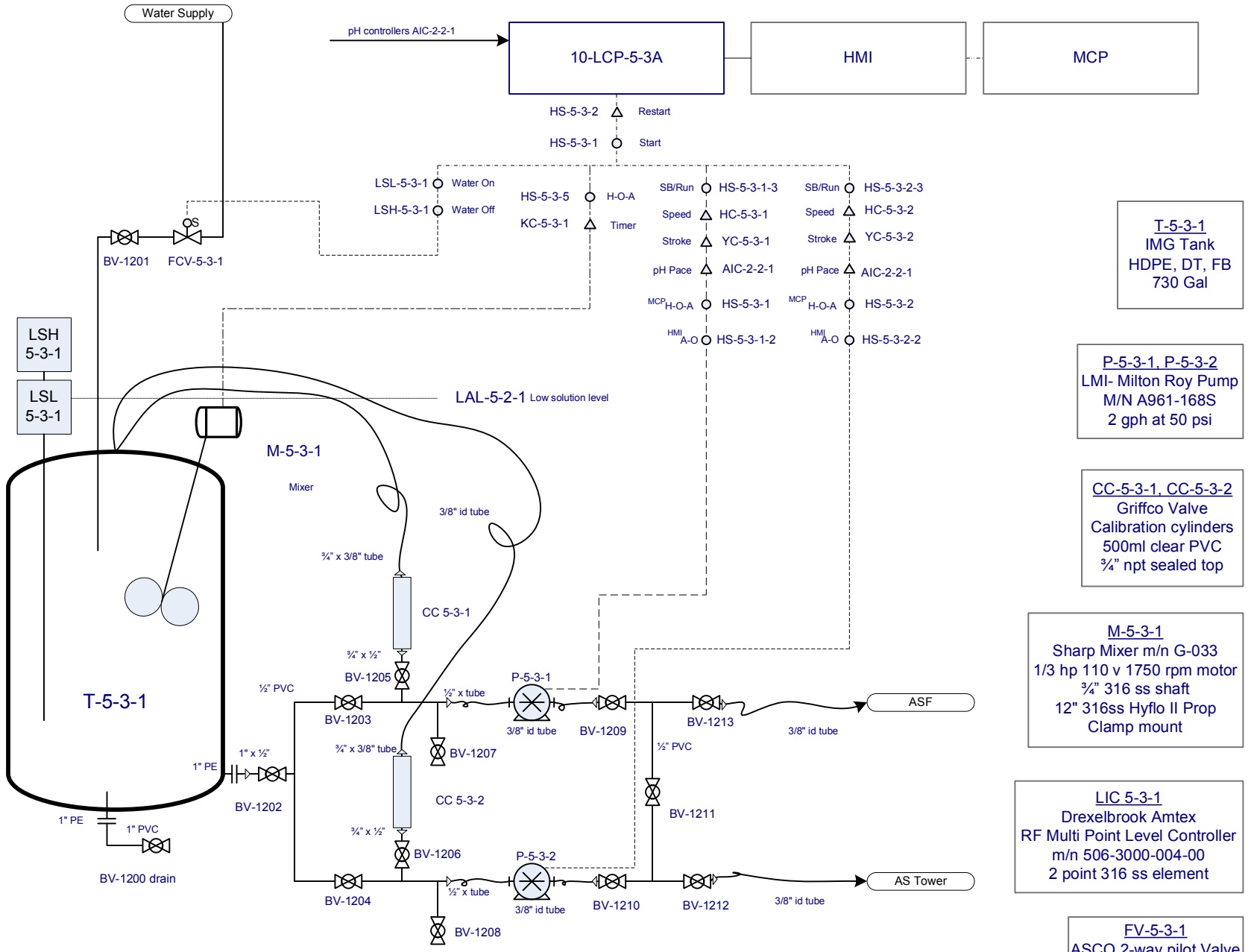
CC-5-2-1, CC-5-2-2
Griffco Valve
Calibration cylinders
500ml clear PVC
¾" npt sealed top

M-5-2-1
Sharp Mixer m/n G-033
1/3 hp 110 v 1750 rpm motor
¾" 316 ss shaft
12" 316ss Hyflo II Prop
Clamp mount

LIC 5-2-1
Drexelbrook Amtex
RF Multi Point Level Controller
m/n 506-3000-004-00
2 point 316 ss element

FV-5-2-1
ASCO 2-way pilot Valve
p/n 8210G94
½" solenoid

SAIC – Claremont Polychemical Site	Rev. Date: 5-20-09	File Name: O&M Specs/ Caustic/NaOH Chem Feed Sys	
Drawing Title: NaOH Chemical Feed System	Rev. No.: A	Scale: none	Drawing No.: CPS-Dwg-027



T-5-3-1
IMG Tank
HDPE, DT, FB
730 Gal

P-5-3-1, P-5-3-2
LMI- Milton Roy Pump
M/N A961-168S
2 gph at 50 psi

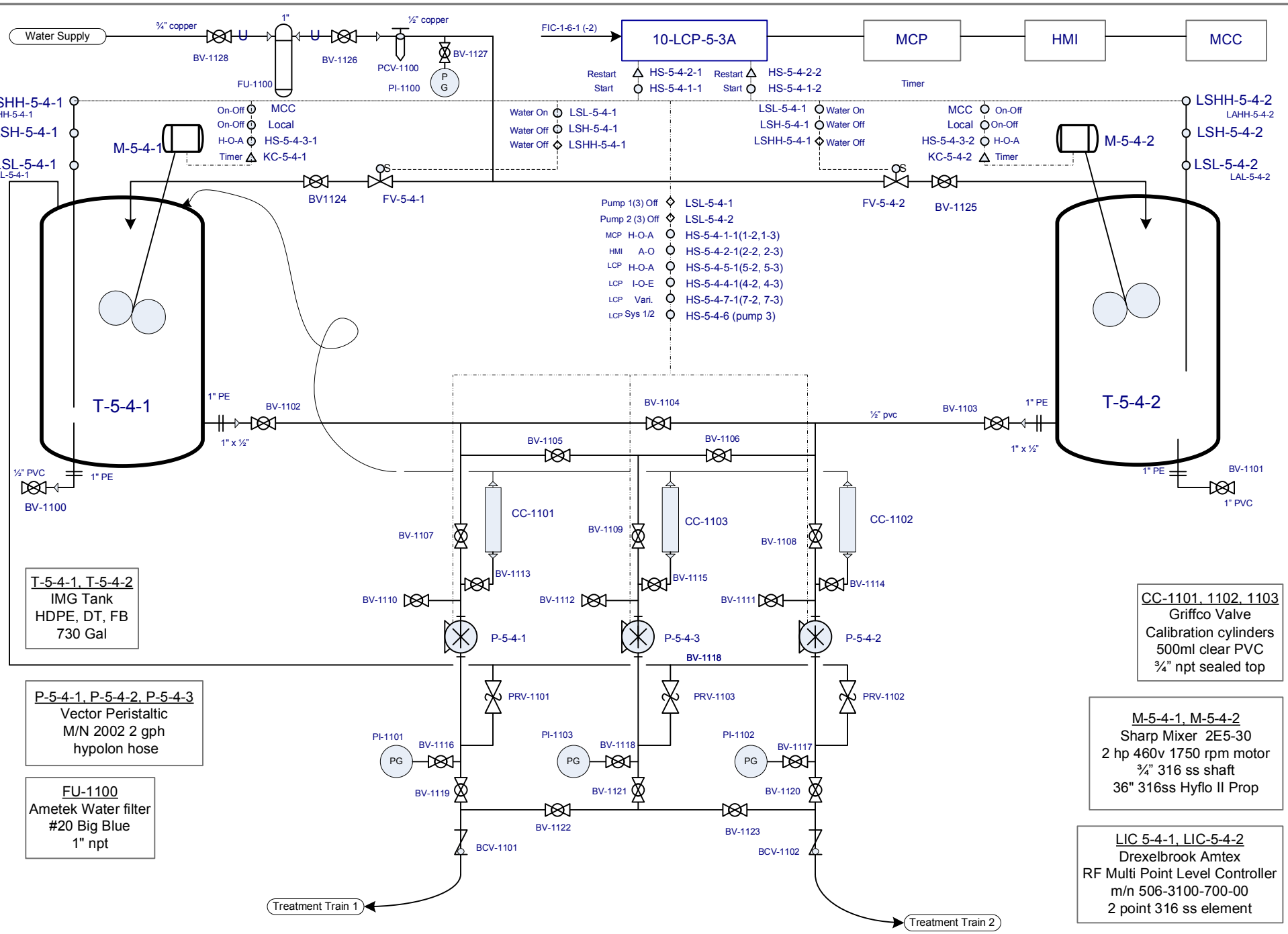
CC-5-3-1, CC-5-3-2
Griffco Valve
Calibration cylinders
500ml clear PVC
¾" npt sealed top

M-5-3-1
Sharp Mixer m/n G-033
1/3 hp 110 v 1750 rpm motor
¾" 316 ss shaft
12" 316ss Hyflo II Prop
Clamp mount

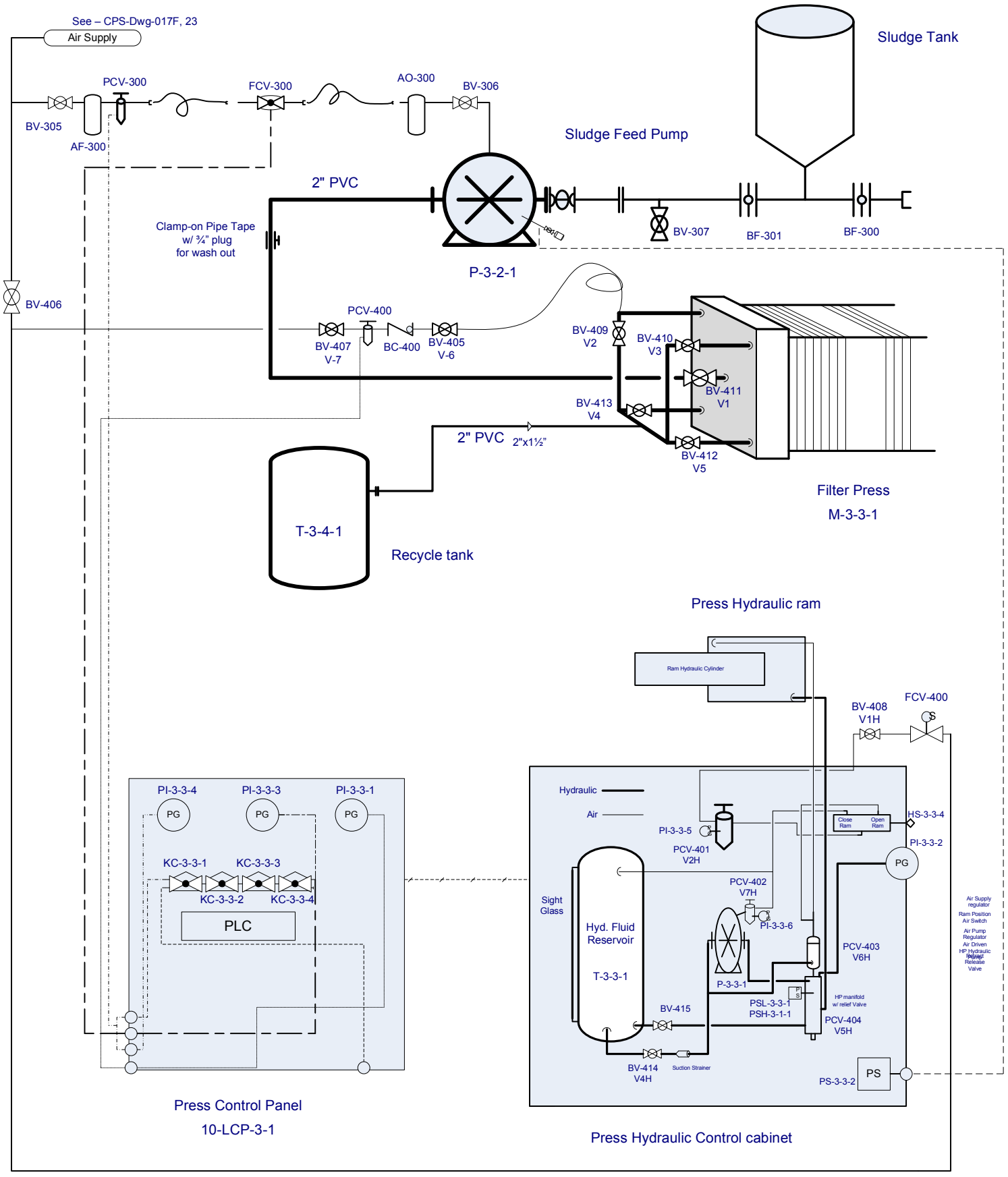
LIC 5-3-1
Drexelbrook Amtex
RF Multi Point Level Controller
m/n 506-3000-004-00
2 point 316 ss element

FV-5-3-1
ASCO 2-way pilot Valve
p/n 8210G94
½" solenoid

SAIC – Claremont Polychemical Site	Rev. Date: 5-21-09	File Name: O&M Specs/HCL/HCl Feed Sys	
Drawing Title: HCl Chemical Feed System	Rev. No.: A	Scale: none	Drawing No.: CPS-Dwg-028



SAIC – Claremont Polychemical Site	Rev. Date: 5/26/09	File Name: O&M Specs/Polymer/Polymer Feed Sys	
Drawing Title: Polymer Feed System	Rev. No.: A	Scale: none	Drawing No.: CPS-Dwg-029



SAIC – Claremont Polychemical Site	Rev. Date: 12-7-09	File Name: O&M Specs/Filter Press/Filter Press PID	
Drawing Title: Filter Press System PID	Rev. No.: A	Scale: None	Drawing No.: CPS-Dwg-030

Reference:

Sludge System CPS-Dwg-022
Recycle System CPS-Dwg-019
Air Supply System CPS-Dwg-023

Febco 2" Backflow Preventor
Series 825Y
P/N 825 HBV
Reduced Pressure Zone Assembly

Febco 2" Brass Ball Valve
Series 623 BS
P/N 0710028

Watts Brass Ball Valves
Full port, thd, 2-pc.
M/N FBV-3C

Watts Wye Pattern Strainer
Bronze Series 777

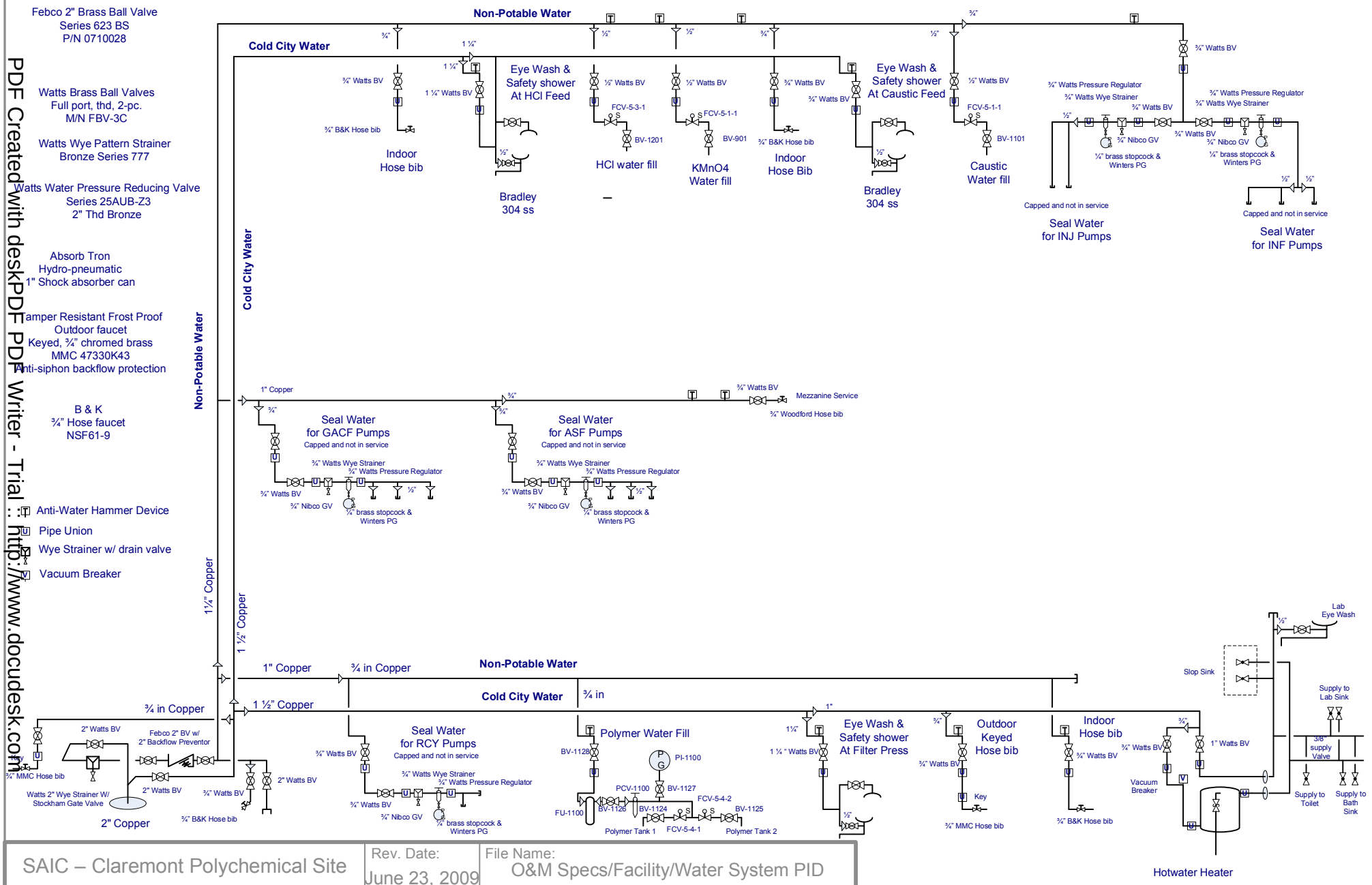
Watts Water Pressure Reducing Valve
Series 25AUB-Z3
2" Thd Bronze

Absorb Tron
Hydro-pneumatic
1" Shock absorber can

Tamper Resistant Frost Proof
Outdoor faucet
Keyed, ¾" chromed brass
MMC 47330K43
Anti-siphon backflow protection

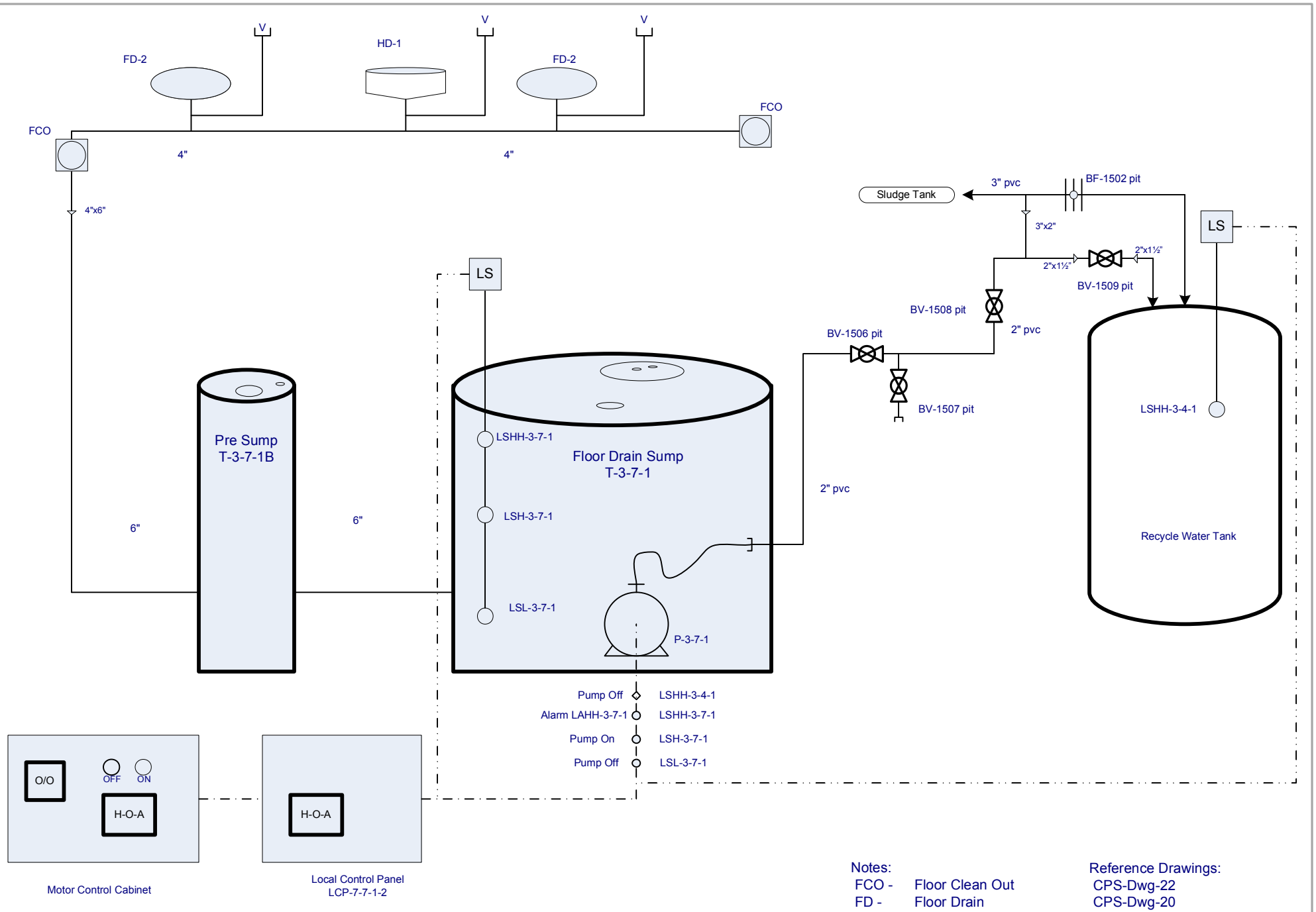
B & K
¾" Hose faucet
NSF61-9

T Anti-Water Hammer Device
U Pipe Union
Wye Strainer w/ drain valve
V Vacuum Breaker



PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

SAIC – Claremont Polychemical Site	Rev. Date: June 23, 2009	File Name: O&M Specs/Facility/Water System PID	
Drawing Title: Plant Water Service	Rev. No.: A	Scale: none	Drawing No.: CPS-Dwg-031



Notes:

FCO -	Floor Clean Out
FD -	Floor Drain
HD -	Hub Drain
V -	Vent

Reference Drawings:
CPS-Dwg-22
CPS-Dwg-20
CPS-Dwg-017 I

SAIC – Claremont Polychemical Site	Rev. Date: 09-18-09	File Name: O&M Specs/Sump and Floor Drains/Sump-Drain PID	
Drawing Title: Sump and Floor DrainSystem	Rev. No.: A	Scale: none	Drawing No.: CPC-Dwg-32

ATTACHMENT 4

System Isolation Procedure

CPS-GPO-011

Operations and Maintenance Document CPS-GPO-011

Title: Plant Process and System Isolation Procedures

Scope: These procedures cover the equipment and process systems associated Claremont Groundwater Treatment Plant (GWTP).

Purpose: This procedure provides safe and consistent instructions for the isolation of process equipment and process streams at the Claremont Groundwater Treatment Plant (GWTP).

Procedures:

1. System isolation of the Extracted Water and Equalization systems.
   Refer to drawings: CPC-Dwg-003, 004, 005, & 018

Equip. Tag No.	Description	Action	location
T-1-3-1	EQ tank Man-way	close	Outdoor, tank top
HS-1-1-1 (-2, -3)	Ext. Well Pump switches	In Off position	H-O-A switch MCP On-Off switch MCC Auto-Off switch HMI
EP-1406 D	EQ Tank Drain	Closed	Tank bottom side
EP-1400 SA	EQ tank shut off to level monitor	close	Tank bottom side
BF-1438	EQ tank discharge to influent pumps	close	Tank bottom side
BF-1413	Inj. System recycle to EQ tank isolation valve	close	Inside at pumps, east wall
EP-1411	INJ System recycle to EQ tank sample port	close	Inside at pumps, east wall
BF-1433, 1434, 1435	EXT Well pump valves	close	At flow-meter manifold
EP-1410	Ext Well discharge to EQ tank sample port	close	At wall penetration
EP-1504 D	Sample port on 4" RCY discharge line	close	At pump manifold
BF-1500 RCY	RCY discharge line	close	At pump manifold
HS-2-12-1 (-2)	INJ Pump switches	In off position	H-O-A switch MCP On-Off switch MCC Auto-Off switch HMI
HS-3-5-1 (-2)	RCY Pump switches	In off position	H-O-A switch MCP On-Off switch MCC Auto-Off switch HMI
HS-1-3-1	EQ Tank Mixer switch	In Off position	H-O switch MCP On-OFF switch MCC E-Stop on tank

2. System Isolation for Treatment Train 1 & 2.
   Refer to drawings: CPS-Dwg-004, 007, 009, 010, 012, and chemical feed drawings for Caustic, Permanganate, and Polymer.

Equip. Tag No.	Description	Action	location
BV-1416, 1417	Train influent valves	Close	Post influent flow meters
HS-1-4-1 (-2, -3)	Influent pump switches	In off position	H-O-A switch at MCP On-Off switch at MCC Auto –Off switch at HMI On-Off switch at VFD
BF-1438	EQ tank drain to influent pump manifold	close	At EQ tank
BF-1400, 1401, 1402	INF Pump suction valves	Close	Influent side of pumps
BF-1403, 1404, 1405	INF Pump discharge valves	Close	Discharge side of pumps
BV-900, 901	KMnO4 pump valves	close	At feed station
HS-5-1-1 (-2)	KMnO4 pump switches	Off position	H-O-A switch at MCP Reset switch at 10-LCP-5-1A
BV-1007, 1010	Caustic pump valves	Close	At feed station
HS-5-2-1 (-2)	Caustic pump switches	Off position	H-O-A switch at MCP Reset switch at 10-LCP-5-2A Off-On switch at HMI
T-1-8-1, 2	Reaction tank man-ways	close	Lower tank side wall
EP-100A (B)	Reaction tank drain	Close	Tank bottom side
HS-1-8-1 (-2)	Reaction tank Mixer switches	In off position	Off-On switch at MCC H-O-A switch at MCP E-Stop at tank Knife switch at mixer
HS-1-9-1 (-2)	Flash tank Mixer switches	In off position	Off-On switch at MCC H-O-A switch at MCP E-Stop at tank Knife switch at mixer
BV-220A, (B)	Flash Tank Drain valve	Close	Side wall of tank
BV-222A, (B)	Flash Tank sample port	Close	Side wall of tank
Polymer feed valves	Polymer pump discharge valves	Close	At pumps
BV-221 A (B)	Floc tank drain valve	Close	Tank bottom
HS-1-10-1 (-2)	Floc tank Mixer switches	In off position	Off-On switch at MCC H-O-A switch at MCP E-Stop at tank Knife switch at mixer
EP-204 SA A(B)	Clarifier cone drain	Close	Tank drain manifold
EP-205 SA A(B)	Clarifier cone sample port	Close	Tank drain manifold
EP-200 CHS A(B)	Clarifier drain to sludge pump	Close	Tank drain manifold
EP-202 RSD A(B)	Clarifier to sludge pump	Close	Tank drain manifold
EP-201 CHS A(B)	Sludge Pump Discharge	Close	Transfer pump discharge

EP-203 RSD A(B)	Sludge pump discharge	Close	Recycle pump discharge
EP-212, 213, 214 SA A(B)	Clarifier sample port	Close	Clarifier cone side ports
HS-1-11-1 (-2)	Sludge recycle pump switches	Off	H-O-A switch at MCP Off-On switch at HMI
HS-1-12-1 (-2)	Sludge transfer pump switches	off	H-O-A switch at MCP Off-On switch at HMI
BF-200 FI A(B)	Influent to sandfilters	Closed	Clarifier overflow weir
BF-210 FI	Sandfilter by pass	Closed	Clarifier overflow weir
BF-616 FE, 617 FE	Sandfilter discharge	Closed	Tank side wall
BV-509 D – 516 D	Sandfilter cone drains (8)	Closed	Cone bottoms
BV-517, 518 AHP	Air supply to SF discharge	closed	At discharge valve
BF-600 FE -603 FE	SF discharge manifold	Closed	To ASF and GACF tanks

3. System isolation of Volatile & Semi-Volatile Organic Compounds Removal Systems
   Refer to drawings: CPS-Dwg-012, 013, 014, 016, 018

Equip. Tag No.	Description	Action	location
T-2-1-1 (-2)	ASF tank manway	Close and bolt	Tank top
M-2-5-1	AS Tower manways (6)	Close and bolt	Tower upper and lower side
T-2-8-1 (-2)	GACF Tank manway	Close and bolt	Tank top
T-2-10-1 (-2)	CA Vessel manways (2 each)	Close and bolt	Vessel top and bottom sides
HS-2-3-1 (-2, -3)	ASF pump switches	Off position	Off-On switch at MCC H-O-A switch at MCP A-O switch at HMI On-Off switch at VFD
BF-602 FE, 603 FE	Discharge from Sandfilters	Closed	Discharge to top of tank
BV-600 D, 601 D	Tank drain	Closed	Tank bottom side
EF-600 SA, 604 SA	Tank drain to level monitor	closed	Tank bottom side
BF-604 ASI, 605 ASI	Tank feed to pump manifold	Closed	Tank side
BF-608 ASI to 613 ASI	ASF pump isolation valves	Closed	Pump suction and discharge sides
BF-615 ASI	ASF discharge manifold	Closed	Post pH probe
HS-2-6-1	Blower switch	Off	On-Off switch at MCC On-Off switch at 16-LCP-2-1 On-Off switch at B-2-6-1
BF-700 ASE, 701 ASE	Tower drain to GACF tanks	Closed	At GACF tank side.
HS-2-7-3	AST heater		On-Off switch at MCC On-Off switch at 16-LCP-2-2
GTV-2-7-1 (-2)	Pre V-GAC duct valves	Closed	Lower air discharge manifold
BV-2-7-3 A(B)	V-GAC vessel drains	Closed	Vessel bottom side
BV-2-7-4 A-H	V-GAC Magnehelic valves	Close	Vessel to gauge
device	Flex connector boots (12)	secure	Manifold at vessel bottom
Tower probes		Ensure	Various points on tower

		penetrations are secure	
BF-600 FE, 601 FE	Discharge from sandfilter	close	Top of GACF tank
BF-702 CAI, 703 CAI	Tank feed to pumps	Close	Tank side
HS-2-9-1 (-2, -3)	GACF pump switches	Off position	Off-On switch at MCC H-O-A switch at MCP A-O switch at HMI On-Off switch at VFD
EP-702 SA, 703 SA	GACF Tank discharge to level monitor	Close	Tank bottom side
BV-700 D, 701 D	GACF tank bottom drain	Close	Tank bottom side
BF-706 CAI-711 CAI	GACF pump isolation valves (6)	Close	At pumps
BF-800 CAI, 801 CAI	GACF to CA feed manifold	Close	GACF pump discharge
BF-803 CAI, 804 CAI	CA vessel influent	close	Influent manifold
BF-805 CAE, 806 CAE	CA Vessel discharge	Close	Discharge manifold
BF-897, 898, 899	Backwash discharge	Close	Backwash manifold
EP-800 SA, 801 SA	CA discharge sample ports	Close	Discharge manifold
BV-808SA – 813 SA	CA vessel sample ports	Close	Vessel side wall
EP-806, 807	Overflow shutoff	Close	Vessel overflow pipe
BV-a3	Overflow sample port CA 2	Close	Vessel overflow pipe
EP-804 D, 805 D	CA vessel bottom drain	close	Vessel bottom
BV-806 D, 814 D	CA Vessel bottom drain sample port	Close	Vessel bottom
BV-804 V, 805 V	CA vessel vent port	Close	Vessel top
BV-a7, a8	CA influent manifold sample port	Close	GACF feed manifold

4. System isolation of Treated Water Storage and Injection systems
   Refer to drawings: CPS-Dwg-018

Equip. Tag No.	Description	Action	location
T-2-11-1 (-2)	TW tank manway	Close and bolt	Tank top
BF-811 CAE, 812 CAE	Tank influent from CA units	Close	Manifold at east wall
EP-803 SA	Sample port at TW-2 influent manifold	Close	Manifold at east wall
EP-1408, 1409	TW Tank drains	Close	Tank bottom side
BF-1406 RGW, 1407 RGW	TW Tank feed to INJ pumps	Close	Tank bottom side
EP-1402 SA, 1404 SA	Tank feed to level monitor	Close	Tank bottom side
HS-2-12-1 (-2)	INJ pump switches	Off position	Off-On switch at MCC H-O-A switch at MCP A-O switch at HMI
BF-1409, 1410, 1436,	INJ pump isolation valves	Close	At pumps

1418, 1437, 1419			
BF-1411, 1412, 1414, 1415	INJ pump discharge manifold	Close	Pump discharge
BF-1421 IW – 1424 IW	IW isolation valves	Close	Well influent manifold

4. System isolation of solids removal systems
   Refer to drawings: CPS-Dwg-020, 022

Equip. Tag No.	Description	Action	location
T-3-1-1	Sludge tank cone manway	Closed	Tank cone
HS-1-12-1 (-2)	Sludge transfer pump switches	off	H-O-A switch at MCP Off-On switch at HMI
HS-1-11-1 (-2)	Sludge recycle pump switches	Off	H-O-A switch at MCP Off-On switch at HMI
EP-203 A/B	Sludge pump discharge	Closed	Post sludge recycle pump at clarifier
EP-201 A/B	Transfer pump discharge valve	closed	Post sludge transfer pump at clarifier
HS-3-7-1	Pit pump switch	off	H-O-A switch at MCC H-O-A switch at LCP
BV-1506 1507, 1508	Floor sump discharge line	Closed	At recycle pumps
BF-1502	Decant drain to RCY tank	open	At RCY tank top
BV-1509	Floor sump discharge to RCY tank	Open	At RCY tank top
EP-305	Sludge tank drain to level monitor	Closed	Sludge tank bottom side
BV-300	Sludge tank level monitor drain	Closed and capped	At level monitor
EP-306, 307	Sludge tank cone drains	Closed	Bottom cone
BV-306	Air to filter press feed pump	closed	At pump
Water flush	Water flush connector at transfer pump	Closed and capped	Sludge tank cone drain
BV-411	Filter press fill	Closed	At press
BV-301 – 304	Sludge tank decant valves	Closed	Tank side wall
BV-409-413	Filter press discharge valves	Closed	At press
BV406	Air supply to press	Closed	At press

Note: the filter press is to be opened and cleaned according to proper procedure. The removed sludge is to be properly transferred to the proper container and sealed.

5. Isolation of Utility systems

   A. Compressed Air System. Refer to drawing CPS-Dwg-023, 017F

Turn off power switches at the MCC and on the local control panel to the compressor. Close ball valves BV-1300 at the supply tank and BV-1302 to BV-1308 on the supply header.

B. Natural Gas Supply

Close the main isolation valve on the supply header outside the plant at the east wall.

C. City Water Supply

Close the supply valves on the main headers in the crypt at the Winding Road entrance.

6. Isolation of Chemical Feed Systems.

A. Potassium Permanganate Feed (KMnO4)

Equip. Tag No.	Description	Action	location
T-5-1-1	KMnO4 tank manway	Closed	Tank top
BV-900	KMnO4 tank drains	Closed	Tank bottom
BV-901	Water supply to KMnO4 tank	Closed	Tank top
BV-902 to BV-913	Pump system shut offs	closed	Tank containment
CB 21	Circuit breaker to KMnO4 controls	Open	Switch 21 in 10-LP-1
CB-1 to 7	System control circuit breakers	Open	10-LCP-5-1A
M-5-1-1	Mixer switch	Off	10-LCP-5-1A
P-5-1-1 (-2)	Pump switches	Standby	10-LCP-5-1A

Note: remove tubing from pumps to reaction tanks, drain and rinse

B. Sodium Hydroxide Feed (Caustic)

Equip. Tag No.	Description	Action	location
T-5-2-1	Caustic tank manway	Closed	Tank top
BV-1000	Caustic tank drains	Closed	Tank bottom
BV-1001	Water supply to Caustic tank	Closed	Tank top
BV-1002 to BV-1016	Pump system shut offs	closed	Tank containment
CB 20	Circuit breaker to Caustic controls	Open	Switch 20 in 10-LP-1
CB-1 to 7	System control circuit breakers	Open	10-LCP-5-2A
M-5-2-1	Mixer switch	Off	10-LCP-5-2A
P-5-2-1 (-2)	Pump switches	Standby	10-LCP-5-2A

Note: remove tubing from pumps to reaction tanks, drain and rinse

C. Hydrochloric Acid Feed (HCl)

Equip. Tag No.	Description	Action	location
T-5-3-1	HCl tank manway	Closed	Tank top
BV-1200,	HCl tank drains	Closed	Tank bottom
BV-1201	Water supply to HCl tank	Closed	Tank top
BV-1202 to BV-1213	Pump system shut offs	closed	Tank containment
CB 25	Circuit breaker to HCl controls	Open	Switch 25 in 10-LP-1
CB-1 to 7	System control circuit breakers	Open	10-LCP-5-3A
M-5-3-1	Mixer switch	Off	10-LCP-5-3A
P-5-3-1 (-2,)	Pump switches	standby	10-LCP-5-3A

Note: remove tubing from pumps to ASF and ASS Tower, drain and rinse

D. Polymer Feed

Equip. Tag No.	Description	Action	location
T-5-4-1(-2)	Polymer tank manway	Closed	Tank top
BV-1100, 1101	Polymer tank drains	Closed	Tank bottom
BV-1102, 1103	Water supply to Polymer tanks	Closed	Tank top
BV-1104 to BV-1124	Pump system shut offs	closed	Tank containment
CB 23	Circuit breaker to polymer controls	Open	Switch 23 in 10-LP-1
CB-1 to 17	System control circuit breakers	Open	10-LCP-5-4A
M-5-4-1 (-2)	Mixer switch	Off	H-O-A switch at 10-LCP-5-3A Knife switch at LCP
P-5-4-1 (-2, -3)	Pump switches	Off	H-O-A switch at 10-LCP-5-4A

Note: remove tubing from pumps to reaction tanks, drain and rinse

Related documents:

Claremont GWTP Operations and Maintenance Manual

Notes:

MCP Main Control Panel (Allan Bradley)
MCC Motor Control Center (Siemens)
HMI Human Machine Interface (Dell, Citech)
VFD Variable Frequency Drive (
LCP Local Control Panel
BV Ball valve
BF Butterfly valve
EP Plug valve
HS Hand switch

ATTACHMENT 5

(Blank)

ATTACHMENT 6

Start-Up Procedure

CPS-GPO-012

Operations and Maintenance Document CPS-GPO-012

Subject: **Groundwater Treatment Plant Start-up Procedures**

Scope: These procedures apply to the groundwater pump, treat and reinjection system at the Claremont Polychemical Superfund Site (GWTP).

Purpose: These procedures are to be followed for the consistent start-up of the GWTP. These procedures are based on the premise that all equipment is ready for operation including pumps, controllers, valves and variable frequency drives.

Procedures:

A System start-up of Extracted Water and Equalization Systems

Refer to drawings CPC-Dwg-003, 004, 005, 018, 024

1. Trace the path of flow from the wells to the EQ tank and ensure that all the valves are in the appropriate position.

2. On the HMI (setpoints page), verify or input the pump delay restart times to P-1-1-1, P-1-1-2, and P-1-1-3. Stagger times for delay at 10 sec. Intervals.
   Note: This setting delays start-up of pumps in the event of a power failure.

3. On the HMI (setpoints page) verify or input the desired EQ tank operating levels.

4. On the Motor Control Cabinet (MCC), place extraction well pump switches to the On position. On the Main Control Panel (MCP), place hand switches HS-1-1-1, HS-1-1-2, and HS-1-1-3 in the Auto position. On the Human Machine Interface (HMI), place the software switches in the Auto Position.

5. If the mixer is to be used, put the switch on the MCC into the On position and the switch on the MCP (HS-1-3-1-2) to the Hand position.

6. Verify extracted water flow at flow meters FT-1-1-1, FT-1-1-2, and FT-1-1-3 on the HMI and at meters. Verify flow into EQ tank at HMI.

B. Start-up of Treatment Trains 1 & 2

Refer to drawings CPC-Dwg-004, 007, 009, 010, 012, 024 and chemical feed drawings for caustic, permanganate and polymer.

1. Follow flow path and ensure that all valves are in the proper position.

2. On HMI (flow data page), input the desired flow rate for Treatment Trains 1 and 2.

3. On HMI, verify or input the pump delay restart times for influent pumps P-1-4-1, P-1-4-2, and P-1-4-3.

4. On the Motor Control Cabinet (MCC), place influent pump switches to the On position. On the Main Control Panel (MCP), place hand switches HS-1-4-1, HS-1-4-2, and HS-1-4-3 in the Auto position. On the Human Machine Interface (HMI), place the software switches in the Auto Position. On the MCP select the appropriate train for pump 3 if activated. This selects which flow monitor will control pump 3.

5. If pH control is required, at HMI (setpoint page) input the desired pH level for each train.

6. If the reaction tank mixers are to be used, at the MCC put the mixer switches in the On position. At the MCP put the mixer switches in the Hand position. At the mixer put the knife switches in the on position and pull out the E-Stop switches.

7. If polymer and the Flash Tank mixers are to be used, at the MCC put the mixer switches in the On position. At the MCP put the mixer switches in the Hand position. At the mixer put the knife switches in the on position and pull out the E-Stop switches.

8. If polymer and the Floc Tank mixers are to be used, at the MCC put the mixer switches in the On position. At the MCP put the mixer switches in the Hand position. At the mixer put the knife switches in the on position and pull out the E-Stop switches.

9. If potassium permanganate ($KMnO_4$) is to be used, at the MCP put hand switches HS-5-1-1 and HS-5-1-2 for the feed pumps in the Auto position (otherwise leave in Off position).

10. For polymer feed, at the MCP put pump switches HS-5-4-1, HS-5-4-2 and HS-5-4-3 in the Auto position (otherwise leave Off).

11. For pH control and caustic feed, at the HMI put the pump switches HS-5-2-1 and HS-5-2-2 in the Auto position (otherwise leave Off).

1.0 C Start-up of Volatile compounds Removal Systems

Refer to drawings: CPS-Dwg-012, 013, 014, 016, 018, 024

1. Follow path of treatment flow and ensure that all valves are in the appropriate position.

2. At HMI (setpoints page) input the desired operating levels of the Air Stripper Feed Tanks (ASF).

3. At HMI (setpoints page) input the desired operating levels of the Carbon adsorber Feed Tanks (GACF).

4. At the HMI, verify or input the pump delay restart times for the ASF and GACF pumps.

5. If pH control is required, input the desired pH setpoints for AIC-2-1-1 and at HMI place HCl feed pump switches HS-5-3-1 and HS-5-3-2 in the Auto position.

6. On the local control panel 16-LCP-2-1 at the Air Stripping Tower (AST), place HS-2-6-1 (Air Stripper Blower) 1n Auto position.

7. On the Motor Control Cabinet (MCC), place ASF pump switches to the On position. On the Main Control Panel (MCP), place hand switches HS-2-3-1, HS-2-3-2, and HS-2-3-3 in the Auto position. On the Human Machine Interface (HMI), place the software switches in the Auto Position. On the MCP select which ASF tank will control pump 3.

8. On the Motor Control Cabinet (MCC), place GACF pump switches to the On position. On the Main Control Panel (MCP), place hand switches HS-2-9-1, HS-2-9-2, and HS-2-9-3 in the Auto position. On the Human Machine Interface (HMI), place the software switches in the Auto Position. On the MCP select which GACF tank will control pump 3.

9. If sludge pumps are to be actuated, at MCP, put recycle pump switches HS-1-11-1 and HS-1-11-2 in the auto position and transfer pump switches 1-12-1 and 1-12-2 in the Auto position. At the HMI (setpoint page), set the desired control parameters for the pumps and on the support page, put the pump software switches in the Auto position.

10. At the MCC put the switch for the air compressor system in the On position. At the local control panel for the compressor, turn on the unit On. Open the air supply valves to the sludge pumps at the pumps.

D Start-up of the Treated Water Storage and Water Reinjection systems.
Refer to drawings: CPS-Dwg-018, 024

1. Trace flow pathway and ensure all valves are in the proper position.

2. At HMI input the desired operating levels for the treated water (TW) tanks.

3. On the Motor Control Cabinet (MCC), place Injection pump (INJ) switches to the On position. On the Main Control Panel (MCP), place hand switches HS-2-12-1 and HS-2-12-2 in the Auto position. On the Human Machine Interface (HMI), place the software switches in the Auto Position. On the MCP select which TW tank will control pump 1 and which tank will control pump 2. On the MCP, select which pump will be the lead pump.

4. At HMI, verify or input the pump delay restart times

2.0 E Start-up of Sludge Removal Systems
Refer to drawings: CPS-Dwg-020, 022, 024

1. Trace flow pathway and ensure all valves are in the correct position. Verify that power to the filter press is On and the controller is in the Auto mode.

2. At the MCC put the switch for the air compressor system in the On position. At the local control panel for the compressor, turn the unit On. Open the air supply valves to the sludge pumps at the pumps and to the filterpress at the filter press.

3. At the HMI, input the desired operating levels for the sludge holding tank.

4. Close filter press and verify its operation.

3.0 F Plant water Recycle System
Refer to drawings: CPS-Dwg-019, 003, 024

1. Follow the flow pathway and ensure that all valves are in the correct position.

2. At HMI, input the desired operating level for the Water Recycle Tank (RCY).

3. At the HMI, verify or input the RCY pump delay restart times.

4. On the Motor Control Cabinet (MCC), place the RCY pump switches to the On position. On the Main Control Panel (MCP), place hand switches HS-3-5-1 and HS-3-5-2 in the Auto position. On the Human Machine Interface (HMI), place the software switches in the Auto Position. On the MCP, select which pump will be the lead pump.

4.0 G Start-up of High Pressure Air System

1. At MCC put air compressor (HPA) switch in the On position. At the local control panel 10-lcp-4-1, turn on both units.

2. Make sure all valves on HPA line are in the appropriate position.

3. Ensure that auto drain valves (3) are operating. Verify compressor oil levels are appropriate and that pressure switches are operating.

G Start-up of Chemical Feed Systems

Potassium Permanganate Feed System **(Not Presently Used)**

1. On MCP put feed pump switches HS-5-1-1 and HS-5-1-2 in the Auto position.

2. Ensure that all valves are in the appropriate position

3. Verify that valve on water supply to tank is open.

4. Verify tank level is OK. System cycle will start automatically when start button is pressed at Potassium Permanganate local control panel 10-LCP-5-1.

5. At local control panel, put pump switches in Run position and mixer switch in Auto position.

6. Ensure that feed tubing is secure.

Sodium Hydroxide Feed System (currently not in use)

1. On MCP put feed pump switches HS-5-2-1 and HS-5-2-2 in the Auto position.

2. Ensure that all valves are in the appropriate position

3. Verify that valve on water supply to tank is open.

4. Verify tank level is OK. System cycle will start automatically when start button is pressed at Sodium Hydroxide local control panel 10-LCP-5-2.

5. At local control panel, put pump switches in Run position and mixer switch in Auto position.

6. Ensure that feed tubing is secure.

Hydrochloric Acid Feed System (currently not in use)

1. On MCP put feed pump switches HS-5-3-1 and HS-5-3-2 in the Auto position.

2. Ensure that all valves are in the appropriate position

3. Verify that valve on water supply to tank is open.

4. Verify tank level is OK. System cycle will start automatically when start button is pressed at local control panel 10-LCP-5-3.

5. At local control panel, put pump switches in Run position and mixer switch in Auto position.

6. Ensure that feed tubing is secure.

Polymer Feed system (Not Presently Used)

1. On MCP put feed pump switches HS-5-4-1 and HS-5-2-2 and HS-5-4-3 in the Auto position.

2. Ensure that all valves are in the appropriate position

3. Verify that valves on water supply to tanks are open.

4. Verify tank levels are OK. System cycle will start automatically when start button is pressed at the Polymer local control panel 10-LCP-5-4.

5. At local control panel, put pump switches in Run position and mixer switch in Auto position.

6. Ensure that feed tubing is secure to pumps and reaction tank.

REFERENCE DOCUMENTS

Claremont Polychemical Site Operations & Maintenance Manual
Site Process and Instrumentation Drawings as indicated

ATTACHMENT 7

Shut-Down Procedure

CPS-GPO-013

Operations and Maintenance Document CPS-GPO-013

Subject: Plant Shut down Procedures

Scope: these procedures cover the shut down of the groundwater pump, treat and reinjection system at the Claremont Polychemical Superfund Site (GWTP).

Purpose: These procedures are to be followed in shutting down the of the GWTP.

A Shut Down of the Groundwater Extraction and Water Equalization Systems

The normal shutdown of the Claremont water treatment plant is as follows:

1. Shutdown extraction well pumps P-1-1-1, P-1-1-2 and P-1-1-3 with hand switches HS--1-1-1, HS-I-1-2, and HS-1-1-3 located on the MCP.

2. Shutdown influent pumps P-1-4-1, P-1-4-2, and P-1-4-3 with hand switches HS-1-4-1, HS-1-4-2, and HS-1-4-3 located on the MCP.

3. Shut valves on the suction side and discharge sides of the influent pumps P-1-4-1, P-1-4-2, and P-1-4-3.

4. Allow gravity flow to continue from the reaction tanks T-1-8-1, and T-I-8-2.

5. Observe flow out of sand filters M-1-14-1 and M-1-14-2.

6. When the sand filters have ceased to flow out to the air stripper feed tanks, T-2-1-1, T-2-1-2, and recycle tank T-3-4-l, shutdown Air Stripper feed pumps P-2-3-1, P-2-3-2, P-2-3-3 and Recycle P-3-5-1, and P-3-5-2 at the MCP.

7. Observe levels in carbon adsorber feed tanks, T-2-8-1 and T-2-8-2. When the levels in these tanks have ceased to increase from the flow coming from the Air Stripper Tower, shutdown carbon adsorber feed pumps P-2-9-1, P-2-9-2 and P-2-9-3 at the MCP.

8. Shutdown the Air Stripper blower and heater at the Air Stripper control panel.

9. At the MCP, switch off the chemical feed pumps and the sludge pumps.

10. Shut off the Air compressor system at the local control panel.

11. At the MCP shut off the Injection pumps and close the dedicated valves to the injection wells.

At this point, the system will be at equilibrium and valves that are to be closed for maintenance purposes can be closed.

Reference Documents
Claremont GWTP Operations and Maintenance Manual
Claremont GWTP Manual of Standard Operating Procedures and System Instructions
Claremont GWTP Operating Systems Drawing Log

ATTACHMENT 8

Emergency Shut-down Procedure

CPS-GPO-014

Operations and Maintenance Document CPS-GPO-014

Subject: Emergency Shut Down of the Groundwater Treatment Plant (GWTP)

Scope: These procedures are to be followed in the emergency shutdown of the Claremont Polychemical Superfund Site GWTP.

Purpose: This instruction provides safe and consistent procedures for the Emergency Shutdown of the Claremont GWTP. These procedures are based on possible unforeseen events to facilitate an emergency shutdown of the plant. These procedures will cover the following possible emergency conditions: Electrical Power Failure, Air Supply Failure, and Ruptures of Major Process Lines, Tank Ruptures, and Fire.

Procedures:

A Shutdown procedures in case of an Electrical Power Failure
Note: In the case of an electrical failure, the lights as well as the air handling equipment will be disabled. Health and safety procedures need to be observed.

1. Try and determine if the power failure is just a "temporary bump" in the power or if it is one which will stop the operator from starting back up within a relatively short time. If it is just a "bump", the plant will automatically restart, with the electrical equipment: pumps, valves, etc. coming back on it "staggered" steps, to keep from overloading the power system.

2. If it determined that the power failure is of a type that will keep the operator from restarting the system, the following steps should be followed:

    a. If it is safe, at the HMI and MCP put the pump and mixer switches in the Off position.
    b. At the EQ tank, close the valve from the tank to the influent pumps.
    c. Close the valve from the sandfilters to the Air Stripper Feed (ASF) tanks.
    d. At the MCC put the AS blower switch in the off position
    e. Log into operator logs all events and steps taken.

B **Shutdown procedures in case of an Air Supply Failure**

1. Try and determine the nature of the failure. If the failure is such that the air supply can be reestablished, then efforts should be made to start up the compressor units.

2. If it determined that the air supply failure is of a type that will keep the operator from restarting the system, the operator needs to determine which operations will be affected.

   a. If the affected operation can be isolated without impacting the treatment of water through the system, then they are to be isolated and the operation of the plant kept on-line.
   b. If other affected operations can be isolated, then the appropriate equipment and valving is to be shut down as per procedure A above.
   c. Log into operator logs all events and steps taken.

C Shutdown procedures in case of a Process Transfer Line failure

Note: in the case of a process transfer line failure, exposure to chemicals or hazardous materials may occur. Proper personal protective equipment is to be used and proper health and safety procedures are to be observed.

1. The location and nature of the ruptured process line will determine what steps the operator will take to facilitate and safe and orderly shutdown of the system.

   a. Rupture of the EQ tank or outlet line from the EQ tank:
      1. Shutdown Extraction well pumps. Shutdown influent pumps, and close the discharge valve on the EQ tank.
      2. Take appropriate steps to repair damage and clean up of any spillage.
      3. Document the incident and actions taken

   b. Rupture of line associated with treatment train.
      1. Isolate the treatment train by closing the appropriate ball valve down stream of the train flow meter.
      2. Adjust the flow of the online pumps.
      3. Locate the leak and isolate the source by shutting the appropriate valves.
      4. Drain the isolated system. Make repairs as necessary, clean up spills to floor drains.
      5. Document the incident and actions taken.

D Shutdown procedures in case of a Tank Failure

Note: Location and type of tank which has ruptured will determine what steps the operator will have to take in order facilitate and safe and orderly shutdown of the system. If solution breaches the plants containment systems, , take a representative sample of the discharged water. Contact USACE local authority, fill out Incident report form CPS-HS-003. Contact SAIC H&S official and project manager. Exposure to chemicals or hazardous materials may occur. Proper personal protective equipment is to be used and proper health and safety procedures are to be observed.

1. EQ tank failure:
   a. Shutdown Extraction well pumps.
   b. Take appropriate steps to repair damage and clean up of any spillage.

2. Treatment Train Tank failure:
   a. Isolate the treatment train by closing the appropriate ball valve down stream of the train flow meter.
   b. Adjust the flow of the online pumps.
   c. Isolate tank system by closing the appropriate valves.
   d. Make repairs as necessary, clean up spills to floor drains.
   e. Document the incident and actions taken.

3. Air Stripper Feed Tank Failure:
   a. Isolate the treatment train by closing the appropriate ball valve down stream of the train flow meter.
   b. Adjust the flow of the online pumps.
   c. Isolate the ruptured tank from the ASF pumps by closing the tank valve.
   d. Make repairs as necessary, clean up spills to floor drains.
   e. Document the incident and actions taken

4. Carbon Adsorber Feed Tank Failure:
   a. Isolate the ruptured tank by closing the influent valve from the AS Tower and the discharge valve to the GACF pumps.
   b. Make repairs as necessary, clean up spills to floor drains.
   c. Document the incident and actions taken.

5. Treated Water Tank Failure:
   a. Isolate the ruptured tank by closing the influent valve from the CA vessel discharge. Close the tank discharge valve.
   b. If necessary, shut off the appropriate injection pump.
   c. Make repairs as necessary, clean up spills to floor drains.
   d. Document the incident and actions taken.

6. Carbon Adsorber Vessel failure:
   a. Isolate the vessel by closing the influent valve from the GACF system. Close the valve on the discharge side of the vessel.
   b. Shut off the appropriate GACF pump.
   c. Make repairs as necessary, clean up spills to floor drains.
   d. Document the incident and actions taken.

E Shutdown in case of Fire

In the event of a fire, the fire alarm system will automatically activate. The operator should take appropriate steps as outlined in the Site Health and Safety Plan.

F Shutdown Procedure in case of a Chemical Tank Rupture

Dikes surround the chemical tanks located in the GPTS and as such, leaks will be contained within the dikes. Dependant upon which tank is leaking; the operator will assess the severity, location, and type of chemical to ascertain what steps to follow. All steps taken will follow the instructions outlined in the Site Health and Safety Plan manual and also in the MSDS sheets of the chemical.

Reference Documents
Claremont GWTP Operations and Maintenance Manual
Claremont GWTP Operating Systems Drawing Log
Claremont GWTP Site safety and Health Plan
Incident Report CPC-HS-003

ATTACHMENT 9

Chemical Handling and Solution Make-up Procedures

CPS-PSP-002

Operations and Maintenance Document CPS-PSP-002

Subject: Chemical Handling and Solution Make-up

Scope: These procedures apply to handling of chemicals at the Claremont Polychemical groundwater treatment plant (GWTP).

Purpose: This instruction provides safe and consistent procedures for the Chemical handling and solution make-up at the GWTP.

Procedures:

A Safety

1. All operators at the facility will be familiar with the site's health and safety manual and with the use of personal protective equipment (PPE).
2. In the process of handling and transferring chemicals at the GWTP, the operator will follow all safety rules and regulations.
3. The operator will be familiar with the chemical to be handled through the Material Safety and Data sheets (MSDS) and other relevant information.
4. The operator will use the required PPE.
5. The operator will ensure that the proper chemicals are transferred to the proper destination.
6. The operator will ensure that all required safety equipment is ready and available in case of chemical spill or operator contact. He will be aware of where eye wash stations and water services are located.
7. The operator will make sure that a second person is on site and available during the unloading/chemical make-up operation.
8. This procedure assumes that all system components are functional and in proper operating order.
9. The operator will be familiar with the equipment and systems he will be operating.

B Potassium Permanganate (K_2MnO_4)

- The made-up K_2MnO_4 solution is 10% by weight.
- The K_2MnO_4 feed tank (T-900) has a capacity of 480 gallons (7.2 gal/inch).
- The solution make-up is 0.92 pounds of K_2MnO_4 salt per gallon of water (6.6 lbs/in.)

1. Check the tank solution level and determine what volume of solution to make up.
2. Don the proper PPE.
3. Measure out the required K_2MnO_4 salt to be added to the tank.
4. Verify that M-5-1-1 is on and that mixer blade is below solution level to reduce splash and ensure proper mixing.

5. Open ball valve BV-901 (water feed) and start water fill.
6. Slowly add the K_2MnO_4 salt to the tank through the manway.
7. Monitor the solution level in the tank. When the desired volume is reached, close ball valve BV-091.
8. Fill in the appropriate log sheets.
9. Clean area of spills etc. clean and stow the equipment used and/or staged.

C **Sodium Hydroxide** (NaOH)

- The made up solution is 25% by weight, (50% by volume).
- The NaOH feed tank T-1000 has a capacity of 378 gallons (13.93 gal/inch).
- The make-up addition is 1 gallon of NaOH plus 1 gallon of water (2 gallons)
- This procedure assumes that there is a level of solution in the tank.

1. Check the tank solution level and determine what volume of solution to make up.
2. Don the proper PPE.
3. Make sure ball valve 1001 is closed (water fill).
4. Determine the required NaOH to be added to the tank. Remember 1 drum of NaOH makes up 110 gallons of 25% solution.
5. Verify that M-5-2-1 is on and that mixer blade is below solution level to reduce splash and ensure proper mixing.
6. Move NaOH drum into place, remove bungs.
7. Place the drum pump in drum, make sure all hose connections are secure.
8. Secure pump discharge hose to the tank through the manway.
9. Make sure pump switch is in the off position. Plug pump in.
10. Start the pump and man the hose.
11. When drum is empty, stop pump. Fill drum with water.
12. As with the NaOH solution, pump the drum rinse water into the tank.
13. Fill the drum with water again and pump the rinse water into the floor drain. Repeat the rinse a second time. Mark the drum as empty and rinsed 3x.
14. if necessary open ball valve 1001 to bring solution to desired level.
15. Fill in the appropriate log sheets.
16. Clean area of spills etc. clean and stow the equipment used and/or staged.

D **Hydrochloric Acid** (HCl)

- The made up solution is 17% by weight, (50% by volume).
- The HCl feed tank T-1200 has a capacity of 728 gallons (13.93 gal/inch).
- The make-up addition is 1 gallon of HCl plus 1 gallon of water (2 gallons)
- This procedure assumes that there is a level of solution in the tank.

1. Check the tank solution level and determine what volume of solution to make up.
2. Don the proper PPE.
3. Make sure ball valve 1201 is closed (water fill).

4. Determine the required HCl to be added to the tank. Remember 1 drum of HCl makes up 110 gallons of 17% solution.
5. Verify that M-5-3-1 is on and that mixer blade is below solution level to reduce splash and ensure proper mixing.
6. Move HCl drum into place, remove bungs.
7. Place the drum pump in drum, make sure all hose connections are secure.
   Note: HCl will fume. Wrap the pump pipe with a water soaked rag and ensure the discharge hose is below the tank solution level.
8. Secure pump discharge hose to the tank through the manway and below the solution level..
9. Make sure pump switch is in the off position. Plug pump in.
10. Start the pump and man the hose.
11. When drum is empty, stop pump. Fill drum with water.
12. As with the HCl solution, pump the drum rinse water into the tank. Repeat 2 more times. Mark the drum as empty and rinsed 3x.
13. if necessary open ball valve 1201 to bring solution to desired level.
14. Fill in the appropriate log sheets.
15. Clean area of spills etc., clean and stow the equipment used and/or staged.

E **Polymer**

- The made up solution is 0.5% by weight
- Each polymer feed tank (T-1100 , T-1101) has a capacity of 728 gallons (13.93 gal/in).
- The make-up addition is 0.0416 pounds of polymer per gallon.
- The required polymer solution concentrations will be adjusted periodically through field testing. Jar testing will also be needed if different polymer is used.
- This procedure assumes that a dry powder polymer is used.

1. Check the tank solution level and determine what volume of solution to make up.
2. Don the proper PPE.
3. Make sure ball valve 1102 or 1103 is open (water fill) depending on tank for make-up.
4. Press the HS-5-4-1-1/HS-5-4-2-1 start and system will continue automatically.
   NOTE: Level alarms LSH-5-4-1/LSH-5-4-2 will close FV-5-4-1/FV-5-4-2.
5. Start unloading by using eductor/funnel with water hose attached. Slowly pour polymer thru funnel to allow mixing thru eductor to minimize clumping of polymer.
6. Monitor chemical tank level while unloading.
7. Bring tank solution level up to the desired mark.
8. Restart the system.
9. Fill in the appropriate log sheets.
10. Clean area of spills etc. clean and stow the equipment used and/or staged.

REFERENCE DOCUMENTS

Claremont GWTP Operations and Maintenance Manual
Claremont GWTP Material Safety and Data Sheets (MSDS Manual)
Claremont GWTP Site Safety and Health Plan
Claremont GWTP Log of Operating System Drawings

ATTACHMENT 10

(Blank)