

SFCTA Contract Number 06/07-29

SOUTH ACCESS TO THE GOLDEN GATE BRIDGE
DOYLE DRIVE

**DOYLE DRIVE REPLACEMENT PROJECT
LICENSE TO ENTER AND CONDUCT
GEOTECHNICAL INVESTIGATION**

Exhibit No. 2

Aquifer Test Work Plan

August 2008

Prepared By:

Caltrans and Arup PB Joint Venture

San Francisco County
Transportation Authority

**Doyle Drive
Replacement Project**

License to Enter and
Conduct Geotechnical
Investigation

Final

San Francisco County
Transportation Authority

**Doyle Drive
Replacement Project**

License to Enter and
Conduct Geotechnical
Investigation

Exhibit No. 2

Aquifer Test Work Plan

August 2008



Arup North America Ltd
901 Market Street, Suite 260,
San Francisco, CA 94103
Tel +1 415 957 9445 Fax +1 415 957 9096
www.arup.com

This report takes into account the
particular instructions and requirements
of our client.

It is not intended for and should not be
relied upon by any third party and no
responsibility is undertaken to any third
party

Job number 131558-00

Contents

	Page	
1	Introduction	1
2	Objectives and Work Plan Approach	1
3	Background Information	2
3.1	Doyle Drive Data	2
3.2	Presidio Data	2
3.3	Arup PB Joint Venture and Caltrans Piezometer Data	3
3.4	Arup PB Joint Venture Groundwater Analytical Test Data	3
4	Proposed Pumping Test Well Installation	3
5	Survey Monitoring of Existing Structures	4
6	Aquifer Testing Procedures	5
6.1	Slug Tests	5
6.2	Step Drawdown Test	5
6.3	Constant Rate Aquifer Test	6
6.4	Data Analysis and Reporting	6
7	Schedule	7
8	References	7

Tables

Table 1 Doyle Drive Piezometer Data

Figures

Figure 1 Locations of Piezometers and Proposed Pumping Well

Figure 2 Pumping Well Construction Details

Figure 3 Equipment Layout for Pumping Well Installation

Figure 4 Equipment Layout for Development and Baker Tank Location

Figure 5 Equipment Layout for Aquifer Testing

Appendices

Appendix A McCampbell Analytical, Inc. Analytical Test Results - Groundwater Samples from Piezometers ESB-R2S, ESB-R2I, and ESB-R2D

Appendix B Copy of San Francisco Public Utilities Commission Industrial User Class II Wastewater Permit Requirements

1 Introduction

This work plan summarizes the background information used to develop the aquifer test program, presents details of monitoring program to evaluate if the pumping impacts existing building structures, and presents installation methods and requirements for the test well and aquifer testing procedures. This work plan has been cooperatively prepared by Caltrans and the Arup PB Joint Venture.

The subsequent work plan sections present the following:

- Objectives and work plan approach;
- Background information;
- Proposed pumping test well installation;
- Survey monitoring of existing structures;
- Aquifer testing procedures; and
- Schedule.

Appendix A contains the McCampbell Analytical, Inc. (McCampbell) analytical test report results for the groundwater samples collected from existing piezometers located near the proposed pumping test well. Appendix B contains a copy of the San Francisco Public Utilities Commission (SFPUC) Industrial User Class II Wastewater Permit Requirements. The document is presented for reference and context to indicate the wastewater effluent limitation expected for a discharge permit. As described in Section 6.2, the Arup PB Joint Venture will make application and obtain a discharge permit for wastewater pumped from the test well prior to performing the Aquifer Test program.

2 Objectives and Work Plan Approach

The objectives of the aquifer test program are to determine: (1) the aquifer properties of the uppermost water-bearing zone and the deeper confined zone with artesian pressures; (2) whether the local groundwater conditions are affected by tidal fluctuations in the Bay; and (3) to further characterize the multi-layer aquifer system (e.g., defining heterogeneities, leaky aquitards). In the future, this information may be used by the facility designers to estimate the quantity of groundwater that may need to be pumped during dewatering activities associated with construction of the depressed section of Girard Road.

This work plan includes:

1. Review of existing available information presented in (i) Final Preliminary Geotechnical Report – South Access to the Golden Gate Bridge, dated October 2004, (ii) Final Hydrology and Water Resources Technical Report – South Access to the Golden Gate Bridge, dated October 2004, (iii) 2002 Baseline Environmental Consulting Aquifer Report for Doyle Drive, and (iv) Final Corrective Action Plan, Building 1065 Area, Presidio of San Francisco, prepared by MACTEC, dated January 2007.
2. Review of the development data for piezometers installed by either Caltrans or the Arup PB Joint Venture during December 2007 and January 2008 in the vicinity of the Girard Road depressed section.

3. Review of the analytical results from groundwater samples collected after the development of the standpipe piezometers ESB-R2S, ESB-R2I, and ESB-R2D.
4. Description of the methods and construction details for installation of the proposed 6-inch-diameter pumping test well.
5. Description of the procedures and equipment requirements for performing aquifer testing, and how the pumping test water will be discharged.
6. Description of how the data collected will be analyzed and reported.

3 Background Information

This section describes and summarizes existing available information that was used to develop the work plan for the aquifer testing program.

3.1 Doyle Drive Data

Based on information presented in the reports Parsons Brinckerhoff (2004) and Baseline (2004), an upward gradient (i.e., artesian condition) was noted in the vicinity of Tennessee Hollow. There appears to be three distinct aquifers in the Tennessee Hollow area, separated by thin aquitard layers. The Baseline investigation also found that groundwater wells at the site were affected by tidal fluctuations in the Bay.

On August 12, 2002, Baseline performed a pump test near Halleck Street. Groundwater was pumped from HGB3-28 using a 2-inch Grundfos submersible pump at a constant rate of 1.75 gallons per minute. The groundwater level in the pumping well quickly stabilized at a drawdown of approximately ten feet. Pumping continued at a constant rate of 1.75 gallons per minutes for about 50 hours. Approximately 5,250 gallons of water were pumped from HGB3-28, which is located about 70 feet west of Building 230. Well HGB3-28 is located about 750 feet west of the pump well proposed for the aquifer testing described in this work plan.

Prior to Baseline's 2002 aquifer testing, nested piezometers were installed at location HGB-1. Details of the three piezometers at HGB-1 are presented in Table 1. The location of HGB-1 is about 350 feet northeast of the proposed pumping well as shown on Figure 1. The three piezometers will be utilized as observation wells during the aquifer testing proposed as part of this program.

3.2 Presidio Data

The Building 1065 Area where remediation is currently underway is located about 360 feet south of the proposed pump well. Based on the Final Corrective Action Plan prepared by MACTEC (January 2007), two primary hydrogeologic units have been identified at the site: a shallow zone and an intermediate groundwater zone.

The shallow groundwater zone consists of saturated portions of the fill, and, where present, the shallow sand. Groundwater in the shallow zone is unconfined.

The intermediate groundwater zone identified by MACTEC consists of the previously identified intermediate/ shallow sand, upper intermediate sand, and lower intermediate sand. Wells screened in the intermediate sand unit indicate that it is confined to semi-confined.

Dewatering for a large excavation at the Letterman Digital Arts Building in 2003 caused groundwater levels of onsite wells in the Building 1065 Area to decline below the lowest previously measured groundwater elevations. After the cessation of construction dewatering about ¼ mile away, groundwater elevations rose.

3.3 Arup PB Joint Venture and Caltrans Piezometer Data

Between December 2007 and May 2008, the Arup PB Joint Venture and Caltrans installed standpipe piezometers, as part of the geotechnical exploration program for the Doyle Drive Replacement Project. The locations of the piezometers that have been installed and that will be used to monitor groundwater levels adjacent to the pumping well are shown on Figure 1, Locations of Piezometers and Proposed Pumping Well.

During the Doyle Drive Replacement Project explorations, shallow and intermediate groundwater zones were identified. Artesian conditions were encountered in the intermediate groundwater zone indicating a confined to semi-confined aquifer.

Between March 21 and March 28, 2008, Arup PB Joint Venture developed piezometers, and collected initial groundwater level measurement on 26 standpipe piezometers and water quality readings on 21 of the 26 piezometers. The Doyle Drive Replacement Project piezometer data are presented in Table 1. The proposed screened intervals of nested piezometers at location RW17-A1 are also presented in Table 1.

3.4 Arup PB Joint Venture Groundwater Analytical Test Data

On March 25, 2008, the nested piezometers at borehole location ESB-R2 (depressed Girard Road section) were sampled and samples were analyzed for polychlorinated biphenyls (PCBs), volatile organics, polynuclear aromatic hydrocarbons, CAM 17 metals, volatile hydrocarbons as gasoline with BTEX and MTBE, and diesel and oil range extractable hydrocarbons. The analytical testing was performed by McCampbell Analytical, Inc. A copy of the analytical report and chain-of-custody record is attached under Appendix A. The only organic compounds identified above laboratory reporting limits was diesel. The diesel concentrations ranged from 58 to 420 µg/L (parts per billion) in the three groundwater samples collected from the nested piezometers at borehole location ESB-R2. Metals were identified above laboratory reporting limits but not at levels of concern for discharge to the Presidio Sanitary Sewer (as described below).

Based on the analytical results from the nested piezometers at borehole location ESB-R2, the groundwater sampled and analyzed are below the threshold levels for industrial wastewater discharge from a Presidio facility into the City and County of San Francisco's sewerage system. The discharge limitation for hydrocarbon oil and grease is 100 mg/L (100,000 µg/L). A copy of the San Francisco Public Utilities Commission Industrial User Class II Wastewater Permit discharge limitations and requirements is presented in Appendix B.

4 Proposed Pumping Test Well Installation

Caltrans and the Arup PB Joint Venture are proposing to install a 6-inch-diameter pumping test well at the approximate location shown on Figure 1. The pumping test well will be installed by Gregg Drilling and Testing, Inc. using a rotary drilling method. Soil samples will be collected at 5-foot intervals during the advancement

of the well borehole for visual classification in the field and laboratory index testing. The 6-inch-diameter, schedule 40 PVC screened, and solid well casing will be centered in a 12-inch-diameter borehole. The well will be screened from 25 to 65 feet below the existing site grade to provide full aquifer penetration. The well head will have a locking cap and will be enclosed in an at-grade vault enclosure. Details of the proposed pumping test well are presented in Figure 2, Pumping Well Construction Details. The locations of the drill rig and support vehicles during the installation are shown on Figure 3, Equipment Layout for Pumping Well Installation.

The pumping test well will be developed by Gregg Drilling and Testing, Inc. First, the groundwater level measurement will be recorded and then sediments will be removed by bailing. Development water and sediments removed during the bailing will initially be placed in 55-gallon DOT-rated drums. After sediment settles out, the clear development water will be pumped into a storage tank. Removed sediments will remain in the drums and the drums will be moved to the temporary drum storage at the Presidio. Upon analytical profiling, the drums will be transported off site to an appropriate disposal facility. After sediment removal, the well will be surged and then pumped of at least 10 well volumes of water. Water from the pumping will be stored in the Baker Tank. During the pumping activity, water quality measurements for pH, electrical conductivity, turbidity, and temperature will be taken. Also, the pumping rate(s) and water level drawdown will be recorded. The location of the development equipment and 20,000-gallon temporary water storage tank are shown on Figure 4, Equipment Layout for Development and Baker Tank Location.

5 Survey Monitoring of Existing Structures

Prior to performing the aquifer testing, three reflective tape targets will be mounted on each of the existing Buildings No. 1158 and No. 1167. In addition, two ground settlement markers will be established in the grass area behind the Building No. 1158. The ground settlement marker will consist of a 3-foot-long piece of No. 5 reinforcement bar driven into the ground. The settlement markers will be placed 5 feet from the exterior of the Building No. 1158. The reflective targets and settlement markers will be surveyed by Chaudhary & Associates, Inc. using an existing benchmark that is located 1,000 feet or more away from the pumping test well. After the targets and markers are installed, two baseline surveys will be completed before the aquifer testing begins. Additional monitoring surveys will be performed at the following intervals:

- After the step drawdown test is completed;
- The day after the constant rate aquifer test is started;
- The day after the constant rate test is completed; and
- One week after the constant rate test is completed.

Prior to the aquifer testing, a visual assessment of the exterior and interior of Buildings No. 1158 and No. 1167 will be conducted to document and photograph existing cracks or signs of structural distress. During the aquifer testing program if the measured movement (by survey methods) of any settlement target or marker exceeds $\frac{1}{4}$ inch, then an assessment will be performed to look for new cracking or expansion of existing cracks. If any new cracking is identified, pumping will be terminated.

6 Aquifer Testing Procedures

This section describes the procedures that will be used to perform slug tests, a step drawdown test, and the constant rate aquifer test. Real time water level measurements will be obtained from pressure transducers/data recorders installed in the pumping test well and observation piezometers. Prior to field installation, the transducers/data recorders will be checked to determine that they are properly functioning.

6.1 Slug Tests

Slug tests will be conducted in each of the following piezometers: ENB-R1A-S, ENB-R1A-I, DNB-R7-S, DNB-R7-I, RW17-A1-S, RW17-A1-I, RW17-A1-D, RW18-A1-S, and RW18-A1-I. Pressure transducers/data recorders will be lowered into each piezometer and the water level in each piezometer will be allowed to stabilize. The transducers/data recorders will be connected to a laptop computer and field calibration checks will be performed. At each piezometer, a slug test will be conducted by activating the data recorder to record water level readings at a predetermined frequency. A solid "slug" consisting of PVC pipe filled with sand and capped on each end will be lowered quickly into the piezometer, which will displace a known volume of water. After the water level re-equilibrates, the slug is removed and the water level response will be monitored until the piezometer equilibrates.

6.2 Step Drawdown Test

A step drawdown test provides information on the discharge capacity of a well. This information enables selection of a sustainable pumping rate to use during a long-term constant rate pumping test. A 4-inch Grundfos submersible pump will be used to pump water from the test well.

The electricity to operate the submersible pump will be acquired from the Presidio Trust Utilities Division and a meter will be furnished to measure the power used. A calibrated flowmeter will be connected to the pump discharge line to measure the pumping rate. The discharge rate will be adjusted with a pump controller. Up to four stages will be conducted for the step drawdown test. The pumping rate at each stage will be sustained for 1 to 2 hours, unless the well is pumped dry, at which time that test would be terminated and higher pumping rate tests, if any, not conducted. The pumping rate at each stage will be as follows:

- Stage 1 – 3 gallons per minute
- Stage 2 – 5 gallons per minute
- Stage 3 – 10 gallons per minute
- Stage 4 – 20 gallons per minute

After the stages of pumping for the step drawdown test are completed, the transducers placed in the pumping well, observation piezometers, and the six (6) Presidio wells (as shown on Figure 1) will be used to record water level measurements during well recovery.

Water from the step drawdown test will be discharged into the Baker tank for temporary storage while the water is analyzed for the compounds and constituents as required by the SFPUC for discharge to the sanitary sewer system [likely to

include semi-volatiles (EPA Method 625), volatiles (624), nine heavy metals (6010), mercury (7471), dissolved sulfides, pH, total suspended solids, chemical oxygen demand, chlorides (300), total petroleum hydrocarbons (8015M), and cyanide] on a quick turn-around basis. If the analytical test results are below the SFPUC threshold limits, a package pre-treatment plant (e.g., carbon filtration) will be used to treat the water in the Baker storage tank prior to discharge to the sewer system. All discharges to the SFPUC sanitary sewer system will be conducted under an approved discharge permit issued from the SFPUC and obtained by the Arup PB Joint Venture. The volume of water discharged to the sanitary sewer will be metered.

6.3 Constant Rate Aquifer Test

Prior to start up and at the end of the pumping, water levels will be recorded in all piezometers and the pumping test well that are shown on Figure 1. Water levels will be recorded during the constant rate test using portable transducers installed in select observation piezometers. Manual water level readings will also be taken during the test from piezometers ENB-R1I, ENB-RID, ESB-R2I, ESB-R2D, and the pumping test well. During the constant rate test, a motorhome will be used for a field office and will be located as shown on Figure 5, Equipment Layout for Aquifer Testing.

The pumping tests will be conducted so that effects on nearby environmental investigations is minimized. Transducers will be installed in six (6) wells associated with nearby investigations conducted by the Presidio Trust. The locations of the six Presidio Trust wells that will be monitored are shown on Figure 1. If, during the pumping tests, water levels in the instrumented observation wells at the nearby environmental sites are lowered by more than five inches (after any tidal effects are screened out), the pumping rate will be reduced and/or the test terminated.

Based on the results from the step drawdown test, a constant aquifer pumping rate will be selected. The constant rate aquifer test will be conducted for 48 to 72 hours. Water levels will be monitored by the manual readings and the data logger readings until the test is terminated. Water pumped from the test well will be discharged into the Baker tank and then discharged to the sewer system under permit from the SFPUC at the location shown on Figure 5.

At the completion of the constant rate test, the Baker tank and any pre-treatment equipment that was used will be removed from the site.

6.4 Data Analysis and Reporting

All data collected in the field, including piezometer, tide point, and well details and locations, pumping rate and duration, and water level readings (manual and data logger readings) associated with the slug tests, step drawdown, and constant rate aquifer tests will be compiled, subject to QA/QC review, and analyzed. The pumping test data will be analyzed with the assistance of the AQTESOLV aquifer test analysis software, which will be used to determine the aquifer properties, including hydraulic conductivity and storativity.

A draft report will be prepared and will include a description of field activities, data analysis, results, and conclusions. All AQTESOLV inputs and output will be provided. Raw data will be included on a CD-ROM. The report will also include documentation of effluent management and disposal (including copies of all

laboratory reports and discharge permits, if applicable). The draft report will be submitted to Caltrans for review and comment. Based on the comments received, if any, the draft report will be edited and a final report will be prepared and submitted.

7 Schedule

We will begin activities upon receipt of authorization to enter and conduct this aquifer test. The mobilize date is dependent on the availability of the drilling equipment and crew.

The schedule for onsite activities for the aquifer test is as follows:

- Up to three work days to install the pumping test well;
- Two work days to set up the Baker tank and to develop the pumping test well;
- Up to two days to conduct the slug testing;
- Up to three days to set up the electrical power supply for the submersible pump and to perform the step drawdown test;
- If required, up to three work days to set up and test the pre-treatment plant operation; and
- Up to four days (24-hour operation) to set-up, perform the constant rate aquifer test, and demobilize.

8 References

1. Baseline Environmental Consulting, 2004. Final Hydrology and Water Resources Technical Report, South Access to the Golden Gate Bridge, SFCTA Contract Number 99/00-7, October.
2. Baseline Environmental Consulting, 2002. Data Report on Aquifer Testing at Proposed Doyle Drive Alignment near Halleck Street, Presidio, San Francisco, September.
3. MACTEC, 2007. Final Corrective Action Plan, Building 1065 Area, prepared for the Presidio Trust, Presidio, San Francisco, January.
4. Parsons Brinckeroff, 2004. Final Preliminary Geotechnical Report, South Access to the Golden Gate Bridge, SFCTA Contract Number 99/00-7, October.

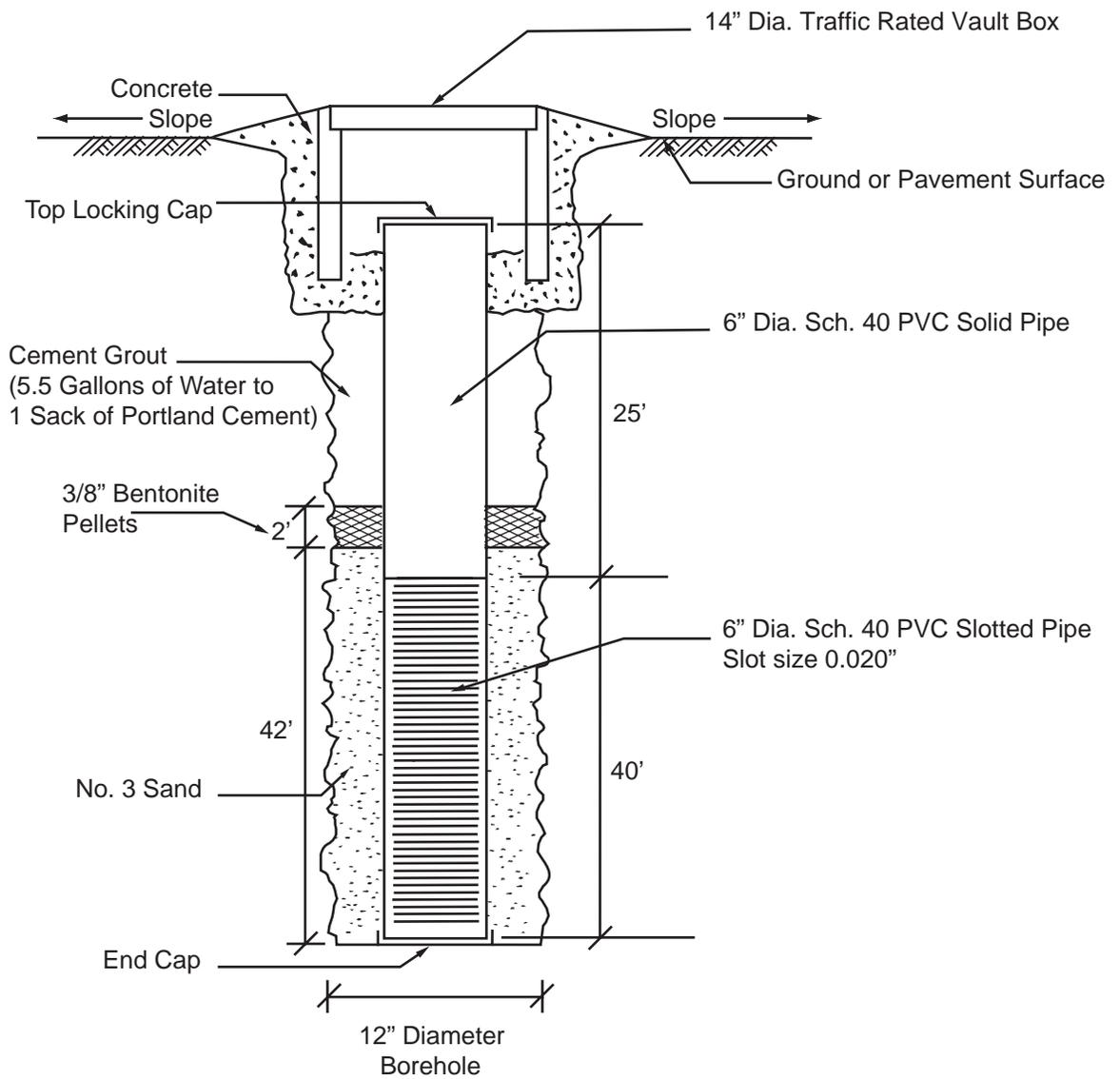
TABLES

**TABLE 1
DOYLE DRIVE PIEZOMETER DATA**

Piezometer ID	Installed By	Date of Installation	Northing (ft)	Easting (ft)	Elevation (NAVD88) (ft)	Slotted Interval Depth (ft)	Sand Interval Depth (ft)	Date of Development	Time Start	Time Completed	Duration of Development (min)	Initial Water Depth from Ground Surface (ft)	Pumped (Y/N)	Surged (Y/N)	Pumping Rate (gpm)	Water Depth from Ground Surface Measured at Time of Pumping (ft)	Water Collected (gal)	Water Quality at Last Reading				Remarks
																		pH	Electrical Conductivity (mS/cm)	Turbidity (NTU)	Temperature (°C)	
MPTSB-R3	Gregg Drilling	1/11/2008	2120717.904	5996880.759	12.835	20.0 to 30.0	18.0 to 30.0	3/21/2008	8:25	10:15	110	1.9	Y	Y	3	8.55	110	5.75	0.611	29	16.7	
MPTSB-R2	Pitcher Drilling	1/10/2008	2120688.783	5996547.940	13.326	20.0 to 30.0	18.0 to 30.0	3/21/2008	10:34	11:44	70	3.8	Y	Y	2	5.5	50	5.93	0.689	129	16.7	
MPTNB-R2	Pitcher Drilling	12/3/2007	2120765.394	5996357.147	11.476	30.0 to 45.0	26.5 to 45.0	3/21/2008	12:03	13:50	107	2	Y	Y	2	5.7	85	6.63	1.44	90	18.1	
RW14-A1	Pitcher Drilling	1/2/2008	2120671.411	5997532.381	14.710	30.0 to 40.0	27.0 to 40.0	3/21/2008	14:47	16:00	73	3.15	Y	Y	2	7.3	55	6.21	0.63	80	18.5	
RW19-A1S	Pitcher Drilling	1/4/2008	2120591.887	5997696.205	15.375	4.5 to 9.5	3.5 to 9.5	3/24/2008	9:35	10:40	65	7.2	Y	Y	0.07	NA	10	6.82	1.3	102	17	
RW19-A1I	Pitcher Drilling	1/4/2008	2120594.285	5997697.444	15.379	20.0 to 30.0	18.5 to 30.0	3/24/2008	8:15	9:30	75	1.6	Y	Y	2	15.2	55	6.71	0.647	117	17.9	
DNB-R7S	Pitcher Drilling	1/11/2008	2120969.794	5997686.549	11.895	5.0 to 10.0	?	3/28/2008	8:05	9:40	95	3.95	N	Y	NA	NA	2.5	NA	NA	NA	NA	The well recharged very slowly. The well was bailed and surged only. Therefore no water quality
DNB-R7I	Pitcher Drilling	1/11/2008	2120968.187	5997680.287	11.862	25.0 to 35.0	?	3/28/2008	9:45	11:10	85	1.5	Y	Y	2	21.6	1.5	7.7	0.701	2	16.3	
ENB-R1S	Pitcher Drilling	12/12/2007	2120883.019	5997889.970	11.807	2.0 to 7.0	?	3/24/2008	14:10	15:50	100	3.5	Y	Y	0.09	NA	6	7.48	0.672	168	20.2	
ENB-R1I	Pitcher Drilling	12/12/2007	2120886.024	5997881.121	11.833	15.0 to 25.0	?	3/24/2008	11:00	12:00	60	2.3	Y	Y	2	5	40	7.46	0.717	28	17.2	
ENB-R1D	Pitcher Drilling	12/12/2007	2120884.289	5997886.826	11.741	50.0 to 60.0	?	3/24/2008	12:05	14:05	120	1.2	Y	Y	3	26.5	120	7.27	0.644	74	17.7	
ENB-R1AS	Pitcher Drilling	12/26/2007	2120854.391	5997899.896	11.431	5.0 to 10.0	4.0 to 10.0	3/24/2008	15:55	16:35	40	3.6	Y	Y	1	4.6	12	7.33	1.17	23	17.8	
ENB-R1AI	Pitcher Drilling	12/26/2007	2120855.676	5997898.066	11.441	19.5 to 29.5	18.0 to 29.5	3/26/2008	8:10	9:30	80	0.8	Y	Y	2	3.02	55	7.44	0.688	95	17	
ESB-R2AS	Pitcher Drilling	12/26/2007	2120828.681	5997907.170	11.474	5.0 to 10.0	3.5 to 10.0	3/25/2008	14:05	15:05	60	3.33	N	Y	NA	NA	10	NA	NA	NA	NA	The well recharged very slowly. The well was bailed and surged only. Therefore no water quality
ESB-R2AI	Pitcher Drilling	12/26/2007	2120826.304	5997909.972	11.453	18.0 to 28.0	16.5 to 28.0	3/25/2008	15:10	16:20	70	0.8	Y	Y	2	2.85	55	7.57	0.713	113	18.1	
ESB-R2S	Pitcher Drilling	12/20/2007	2120791.567	5997924.073	10.974	3.0 to 8.0	2.0 to 8.0	3/25/2008	12:05	13:50	105	3	N	Y	NA	NA	3	NA	NA	NA	NA	The well recharged very slowly. The well was bailed and surged only. Therefore no water quality
ESB-R2I	Pitcher Drilling	12/18/2007	2120794.289	5997912.855	11.107	25.0 to 35.0	20.0 to 35.0	3/25/2008	10:45	12:00	75	-0.7	Y	Y	2	2	55	7.1	0.632	3	17.4	
ESB-R2D	Pitcher Drilling	12/13/2007	2120793.234	5997915.107	11.094	35.0 to 50.0	31.5 to 50.0	3/25/2008	8:15	10:40	145	-1	Y	Y	2	3.75	100	7.21	0.606	47	17.3	
RW18-A1S	Pitcher Drilling	1/3/2008	2120676.396	5997802.656	10.326	4.0 to 9.0	3.5 to 9.0	3/26/2008	10:00	11:00	60	2.7	Y	Y	0.15	NA	11	6.6	1.74	64	17.9	
RW18-A1I	Pitcher Drilling	1/3/2008	2120674.419	5997805.057	10.350	20.0 to 30.0	18.5 to 30.0	3/26/2008	11:05	13:05	120	-1.6	Y	Y	2	7.8	55	7.01	0.647	74	18.7	
DSB-R4S	Pitcher Drilling	1/2/2008	2120826.116	5997531.827	9.784	3.0 to 8.0	2.0 to 8.0	3/26/2008	15:10	16:05	55	0.8	N	Y	NA	NA	8	NA	NA	NA	NA	The well recharged very slowly. The well was bailed and surged only. Therefore no water quality
DSB-R4I	Pitcher Drilling	1/7/2008	2120825.509	5997522.142	9.936	13.0 to 18.0	11.3 to 18.0	3/26/2008	13:20	15:05	105	1	Y	Y	1.5	6.9	80	7.52	0.836	75	17.4	
DSB-R4D	Pitcher Drilling	1/7/2008	2120825.768	5997527.104	9.867	40.0 to 50.0	38.0 to 56.0	3/27/2008	8:05	10:20	135	0.3	Y	Y	2	1.8	130	7.47	0.556	245	17.6	
TS-R1S	Pitcher Drilling	12/17/2007	2121010.850	5997222.934	12.284	2.0 to 7.0	1.5 to 7.0	3/26/2008	16:20	17:05	45	4.8	N	Y	NA	NA	3	NA	NA	NA	NA	The well recharged very slowly. The well was bailed and surged only. Therefore no water quality
TS-R1I	Pitcher Drilling	12/18/2007	2121013.165	5997213.300	12.379	15.0 to 20.0	13.0 to 21.0	3/27/2008	11:50	12:50	60	4.5	Y	Y	1.5	16.7	30	7.42	0.608	7	17	
TS-R1D	Pitcher Drilling	12/20/2007	2121011.906	5997217.465	12.301	40.0 to 50.0	35.0 to 57.0	3/27/2008	10:30	11:45	75	2	Y	Y	3	7.7	90	7.97	0.598	17	16.6	
RW17-A1-S	Caltrans	June 2008	N/A	N/A	-11	3.0 to 8.0	2.0 to 8.0	6/16/2008	8:20	8:40	20	3.25	N	N	N/A	N/A	2.5	N/A	N/A	N/A	N/A	After bailing, well was dry and did not recharge
RW17-A1-I	Caltrans	June 2008	N/A	N/A	-11	15.0 to 25.0	14.0 to 25.0	6/16/2008	9:10	10:30	80	-2.24	N	Y	N/A	N/A	15	N/A	N/A	N/A	N/A	3' sand came into the well during surging. Well was re-bailed, but not pumped
RW17-A1-D	Caltrans	June 2008	N/A	N/A	-11	30.0 to 50.0	27.0 to 50.0	6/16/2008	10:40	12:40	120	-2.38	N	Y	N/A	N/A	15	N/A	N/A	N/A	N/A	10' sand came into the well during surging. Well was re-bailed, but no pumped
HGB-1(17)	Baseline	2002			12.907	12.9 to 17.9	10.8 to 18															
HGB-1(43)	Baseline	2002			12.89	38 to 43	35.3 to 48															
HGB-1(62)	Baseline	2002			12.861	54 to 64	50 to 70															
1065PZA	Presidio	4/18/1997	--	--	14.19*	6.0 to 11.0	--	--														
1065PZB	Presidio	4/18/1997	--	--	14.45*	18.0 to 22.0	--	--														
231GW06	Presidio	10/24/1990	--	--	13.86*	13.3 to 23.3	--	--														
231GW11	Presidio	10/3/1991	--	--	11.11*	4.5 to 9.5	--	--														
231GW21	Presidio	3/1/1995	--	--	13.50*	4.8 to 8.8	--	--														
231GW22	Presidio	3/18/1997	--	--	15.88*	3.7 to 9.7	--	--														

*Datum unknown

FIGURES



Not to Scale

PUMPING WELL CONSTRUCTION DETAILS

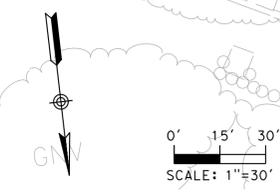
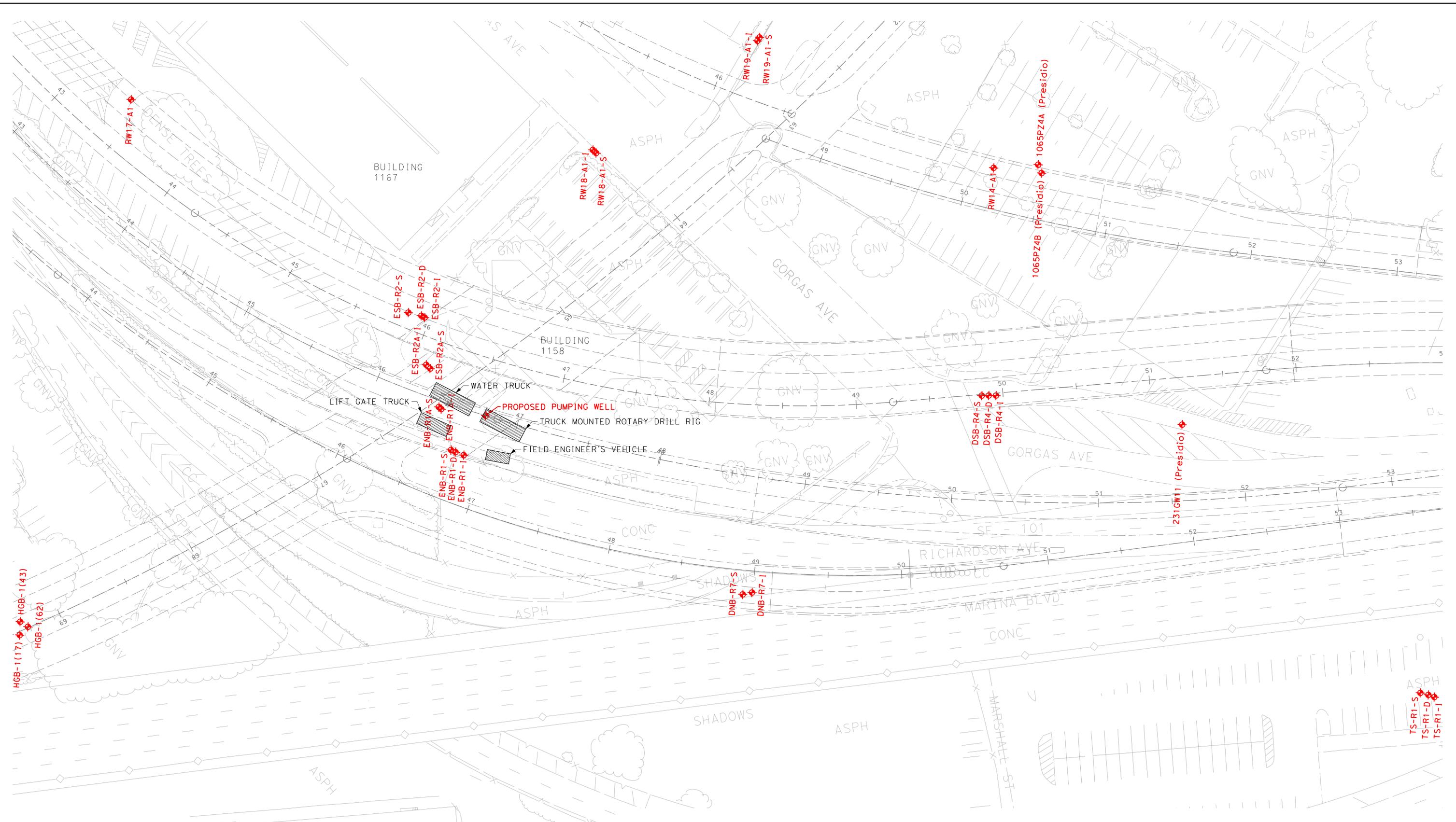
Doyle Drive Replacement Project
Pump Test Work Plan

San Francisco County Transportation Authority
San Francisco, California

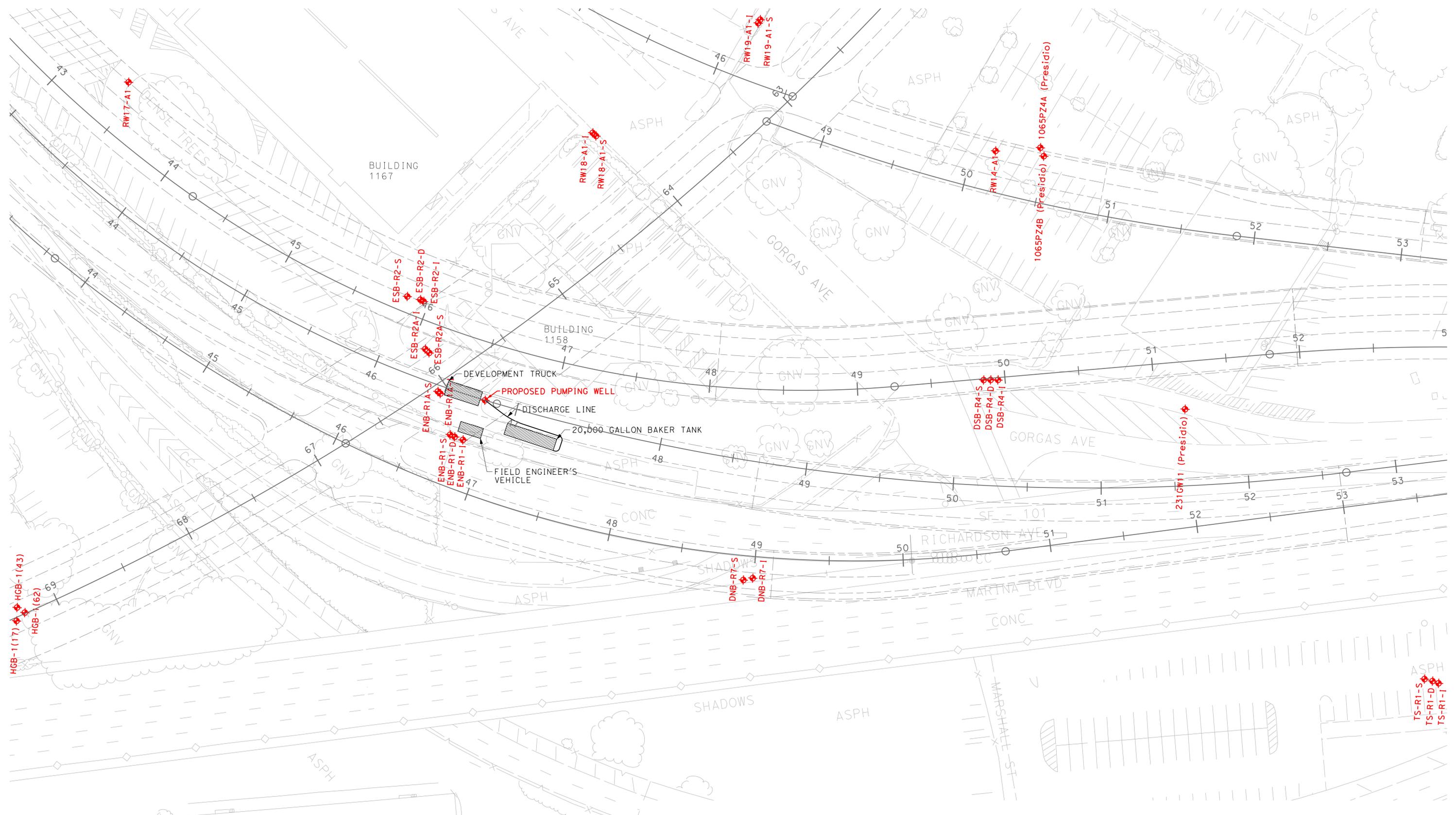
May 2008

ARUP **PB**
joint venture

FIGURE 2

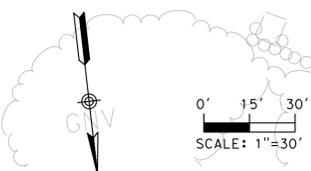


**DOYLE DRIVE
REPLACEMENT PROJECT
Equipment Layout for
Pumping Well installation
Figure 3**



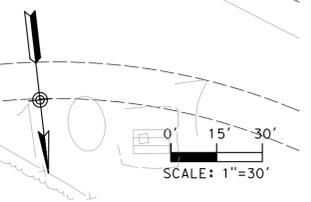
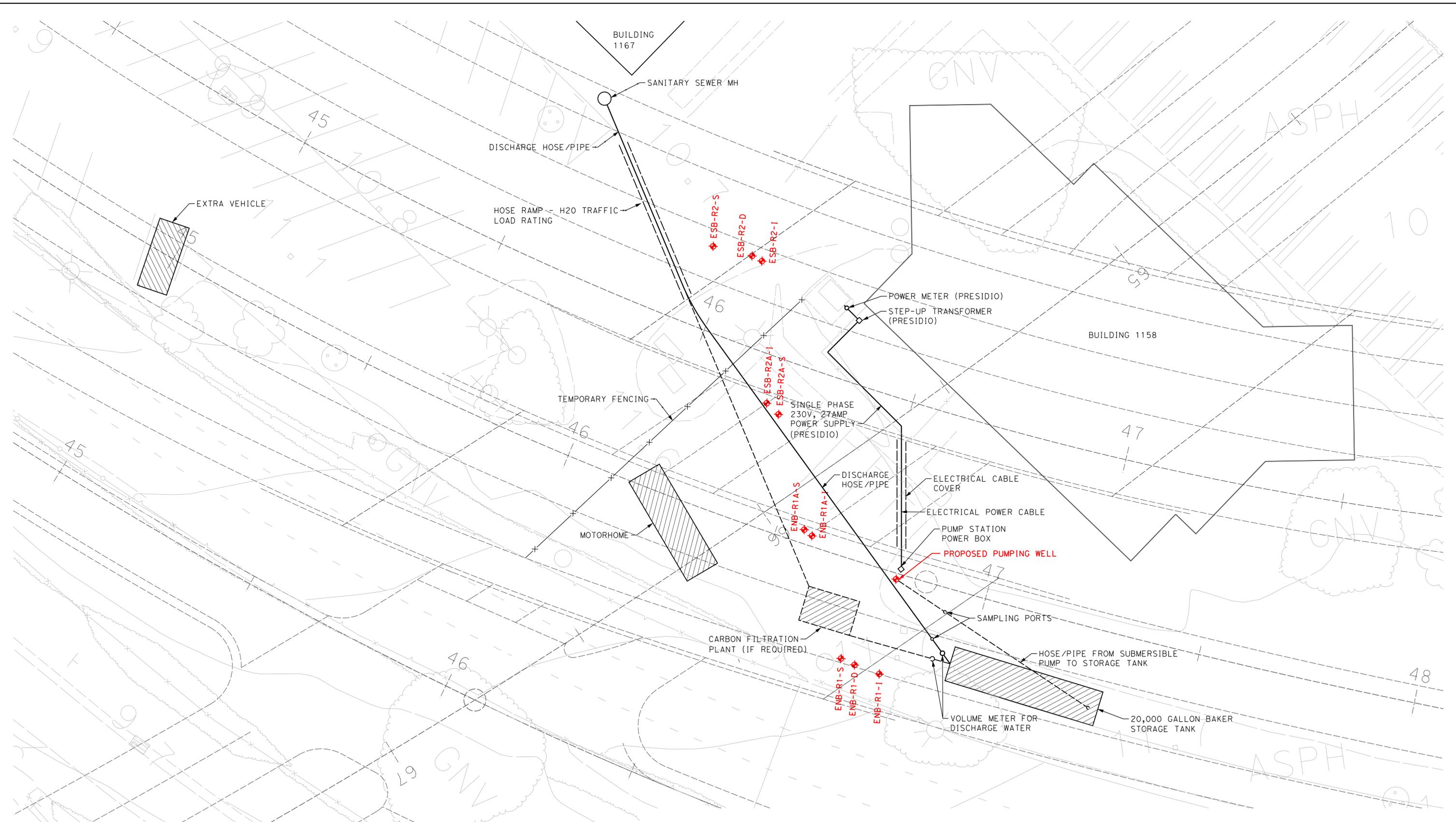
HGB-1(17)
HGB-1(43)
HGB-1(62)

TS-R1-S
TS-R1-D
TS-R1-I



ARUP **PB**
joint venture

**DOYLE DRIVE
REPLACEMENT PROJECT
Equipment Layout for
Development and Baker
Tank Location - Figure 4**



ARUP **PB**
 joint venture

**DOYLE DRIVE
 REPLACEMENT PROJECT**
**Equipment Layout of
 Aquifer Testing**
Figure 5

Appendix A

**McC Campbell Analytical,
Inc. Analytical Test
Results - Groundwater
Samples from
Piezometers ESB-R2S,
ESB-R2I, and ESB-R2D**



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

AEW Engineering, Inc. 55 New Montgomery St, Ste 507 San Francisco, CA 94105	Client Project ID: 2007-014; Doyle Drive	Date Sampled: 03/25/08
		Date Received: 03/26/08
	Client Contact: Randall Young	Date Reported: 04/02/08
	Client P.O.:	Date Completed: 04/02/08

WorkOrder: 0803661

April 02, 2008

Dear Randall:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **2007-014; Doyle Drive**,
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.

McC Campbell Analytical, Inc.

1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262



CHAIN-OF-CUSTODY RECORD

WorkOrder: 0803661 ClientCode: AEW

WriteOn EDf Excel Fax Email HardCopy ThirdParty J-flag

Requested TAT: 5 days

Bill to:
Kenneth Leung
AEW Engineering, Inc.
55 New Montgomery St, Ste 507
San Francisco, CA 94105

Email: ryoung@aewengineering.com
TEL: (415) 495-8401 FAX: (415) 358-5598
PO: ProjectNo: 2007-014; Doyle Drive

Report to:
Randall Young
AEW Engineering, Inc.
55 New Montgomery St, Ste 507
San Francisco, CA 94105

Date Received: 03/26/2008
Date Printed: 03/26/2008

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)													
					1	2	3	4	5	6	7	8	9	10	11	12		
0803661-001	ESB-R2D	Water	3/25/2008 10:30	<input type="checkbox"/>	D	F	E	C	A	B								
0803661-002	ESB-R2I	Water	3/25/2008 12:00	<input type="checkbox"/>	D	F	E	C	A	B								
0803661-003	ESB-R2S	Water	3/25/2008 15:30	<input type="checkbox"/>	D	F	E	C	A	B								

Test Legend:

1	8082A_PCB_W	2	8260B_W	3	8270D-PNA_W	4	CAM17(T)MS_W	5	G-MBTX_W
6	TPH(DMO)WSG_W	7		8		9		10	
11		12							

Prepared by: Ana Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



Sample Receipt Checklist

Client Name: **AEW Engineering, Inc.**

Date and Time Received: **3/26/2008 3:08:21 PM**

Project Name: **2007-014; Doyle Drive**

Checklist completed and reviewed by: **Ana Venegas**

WorkOrder N°: **0803661** Matrix Water

Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Sample IDs noted by Client on COC? Yes No
- Date and Time of collection noted by Client on COC? Yes No
- Sampler's name noted on COC? Yes No

Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes No NA
- Shipping container/cooler in good condition? Yes No
- Samples in proper containers/bottles? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes No
- Container/Temp Blank temperature Cooler Temp: 6°C NA
- Water - VOA vials have zero headspace / no bubbles? Yes No No VOA vials submitted
- Sample labels checked for correct preservation? Yes No
- TTLIC Metal - pH acceptable upon receipt (pH<2)? Yes No NA



Client contacted:

Date contacted:

Contacted by:

Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

AEW Engineering, Inc. 55 New Montgomery St, Ste 507 San Francisco, CA 94105	Client Project ID: 2007-014; Doyle Drive	Date Sampled: 03/25/08
		Date Received: 03/26/08
	Client Contact: Randall Young	Date Extracted: 03/26/08
	Client P.O.:	Date Analyzed 03/29/08-04/01/08

Polychlorinated Biphenyls (PCBs) Aroclors by GC-ECD*

Extraction Method: SW3510C

Analytical Method: SW8082A

Work Order: 0803661

Lab ID	0803661-001D	0803661-002D	0803661-003D		Reporting Limit for DF =1	
Client ID	ESB-R2D	ESB-R2I	ESB-R2S			
Matrix	W	W	W			
DF	1	1	10		S	W

Compound	Concentration			ug/kg	ug/L
	Aroclor1016	ND	ND	ND<5.0	NA
Aroclor1221	ND	ND	ND<5.0	NA	0.5
Aroclor1232	ND	ND	ND<5.0	NA	0.5
Aroclor1242	ND	ND	ND<5.0	NA	0.5
Aroclor1248	ND	ND	ND<5.0	NA	0.5
Aroclor1254	ND	ND	ND<5.0	NA	0.5
Aroclor1260	ND	ND	ND<5.0	NA	0.5
PCBs, total	ND	ND	ND<5.0	NA	0.5

Surrogate Recoveries (%)

%SS:	115	109	86		
Comments			j		

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

(h) a lighter than water immiscible sheen/product is present; (i) liquid sample that contains >~1 vol. % sediment; (j) sample diluted due to high organic content; (k) p,p,- is the same as 4,4,-; (l) florisil (EPA 3620) cleanup; (m) silica-gel (EPA 3630) cleanup; (n) elemental sulfur (EPA 3660) cleanup; (o) sulfuric acid permanganate (EPA 3665) cleanup; (r) results are reported on a dry weight basis; (p) see attached narrative.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

AEW Engineering, Inc. 55 New Montgomery St, Ste 507 San Francisco, CA 94105	Client Project ID: 2007-014; Doyle Drive	Date Sampled: 03/25/08
	Client Contact: Randall Young	Date Received: 03/26/08
	Client P.O.:	Date Extracted: 03/29/08
		Date Analyzed 03/29/08

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0803661

Lab ID	0803661-001F						
Client ID	ESB-R2D						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	10	Acrolein (Propenal)	ND	1.0	5.0
Acrylonitrile	ND	1.0	2.0	tert-Amyl methyl ether (TAME)	ND	1.0	0.5
Benzene	ND	1.0	0.5	Bromobenzene	ND	1.0	0.5
Bromochloromethane	ND	1.0	0.5	Bromodichloromethane	ND	1.0	0.5
Bromoform	ND	1.0	0.5	Bromomethane	ND	1.0	0.5
2-Butanone (MEK)	ND	1.0	2.0	t-Butyl alcohol (TBA)	ND	1.0	2.0
n-Butyl benzene	ND	1.0	0.5	sec-Butyl benzene	ND	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Tetrachloride	ND	1.0	0.5
Carbon Disulfide	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	2-Chloroethyl Vinyl Ether	ND	1.0	1.0
Chloroform	ND	1.0	0.5	Chloromethane	ND	1.0	0.5
2-Chlorotoluene	ND	1.0	0.5	4-Chlorotoluene	ND	1.0	0.5
Dibromochloromethane	ND	1.0	0.5	1,2-Dibromo-3-chloropropane	ND	1.0	0.2
1,2-Dibromoethane (EDB)	ND	1.0	0.5	Dibromomethane	ND	1.0	0.5
1,2-Dichlorobenzene	ND	1.0	0.5	1,3-Dichlorobenzene	ND	1.0	0.5
1,4-Dichlorobenzene	ND	1.0	0.5	Dichlorodifluoromethane	ND	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5
1,1-Dichloroethene	ND	1.0	0.5	cis-1,2-Dichloroethene	ND	1.0	0.5
trans-1,2-Dichloroethene	ND	1.0	0.5	1,2-Dichloropropane	ND	1.0	0.5
1,3-Dichloropropane	ND	1.0	0.5	2,2-Dichloropropane	ND	1.0	0.5
1,1-Dichloropropene	ND	1.0	0.5	cis-1,3-Dichloropropene	ND	1.0	0.5
trans-1,3-Dichloropropene	ND	1.0	0.5	Diisopropyl ether (DIPE)	ND	1.0	0.5
Ethylbenzene	ND	1.0	0.5	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.5
Freon 113	ND	1.0	10	Hexachlorobutadiene	ND	1.0	0.5
Hexachloroethane	ND	1.0	0.5	2-Hexanone	ND	1.0	0.5
Isopropylbenzene	ND	1.0	0.5	4-Isopropyl toluene	ND	1.0	0.5
Methyl-t-butyl ether (MTBE)	ND	1.0	0.5	Methylene chloride	ND	1.0	0.5
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5	Naphthalene	ND	1.0	0.5
Nitrobenzene	ND	1.0	10	n-Propyl benzene	ND	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	ND	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	ND	1.0	0.5	1,3,5-Trimethylbenzene	ND	1.0	0.5
Vinyl Chloride	ND	1.0	0.5	Xylenes	ND	1.0	0.5

Surrogate Recoveries (%)

%SS1:	109	%SS2:	101
%SS3:	109		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; J) analyte detected below quantitation limits; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative; q) reported in ppm.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

AEW Engineering, Inc. 55 New Montgomery St, Ste 507 San Francisco, CA 94105	Client Project ID: 2007-014; Doyle Drive	Date Sampled: 03/25/08
	Client Contact: Randall Young	Date Received: 03/26/08
	Client P.O.:	Date Extracted: 03/29/08
		Date Analyzed 03/29/08

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0803661

Lab ID	0803661-002F						
Client ID	ESB-R2I						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	10	Acrolein (Propenal)	ND	1.0	5.0
Acrylonitrile	ND	1.0	2.0	tert-Amyl methyl ether (TAME)	ND	1.0	0.5
Benzene	ND	1.0	0.5	Bromobenzene	ND	1.0	0.5
Bromochloromethane	ND	1.0	0.5	Bromodichloromethane	ND	1.0	0.5
Bromoform	ND	1.0	0.5	Bromomethane	ND	1.0	0.5
2-Butanone (MEK)	ND	1.0	2.0	t-Butyl alcohol (TBA)	ND	1.0	2.0
n-Butyl benzene	ND	1.0	0.5	sec-Butyl benzene	ND	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Tetrachloride	ND	1.0	0.5
Carbon Disulfide	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	2-Chloroethyl Vinyl Ether	ND	1.0	1.0
Chloroform	ND	1.0	0.5	Chloromethane	ND	1.0	0.5
2-Chlorotoluene	ND	1.0	0.5	4-Chlorotoluene	ND	1.0	0.5
Dibromochloromethane	ND	1.0	0.5	1,2-Dibromo-3-chloropropane	ND	1.0	0.2
1,2-Dibromoethane (EDB)	ND	1.0	0.5	Dibromomethane	ND	1.0	0.5
1,2-Dichlorobenzene	ND	1.0	0.5	1,3-Dichlorobenzene	ND	1.0	0.5
1,4-Dichlorobenzene	ND	1.0	0.5	Dichlorodifluoromethane	ND	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5
1,1-Dichloroethene	ND	1.0	0.5	cis-1,2-Dichloroethene	ND	1.0	0.5
trans-1,2-Dichloroethene	ND	1.0	0.5	1,2-Dichloropropane	ND	1.0	0.5
1,3-Dichloropropane	ND	1.0	0.5	2,2-Dichloropropane	ND	1.0	0.5
1,1-Dichloropropene	ND	1.0	0.5	cis-1,3-Dichloropropene	ND	1.0	0.5
trans-1,3-Dichloropropene	ND	1.0	0.5	Diisopropyl ether (DIPE)	ND	1.0	0.5
Ethylbenzene	ND	1.0	0.5	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.5
Freon 113	ND	1.0	10	Hexachlorobutadiene	ND	1.0	0.5
Hexachloroethane	ND	1.0	0.5	2-Hexanone	ND	1.0	0.5
Isopropylbenzene	ND	1.0	0.5	4-Isopropyl toluene	ND	1.0	0.5
Methyl-t-butyl ether (MTBE)	ND	1.0	0.5	Methylene chloride	ND	1.0	0.5
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5	Naphthalene	ND	1.0	0.5
Nitrobenzene	ND	1.0	10	n-Propyl benzene	ND	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	ND	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	ND	1.0	0.5	1,3,5-Trimethylbenzene	ND	1.0	0.5
Vinyl Chloride	ND	1.0	0.5	Xylenes	ND	1.0	0.5

Surrogate Recoveries (%)

%SS1:	107	%SS2:	100
%SS3:	107		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; J) analyte detected below quantitation limits; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative; q) reported in ppm.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

AEW Engineering, Inc. 55 New Montgomery St, Ste 507 San Francisco, CA 94105	Client Project ID: 2007-014; Doyle Drive	Date Sampled: 03/25/08
	Client Contact: Randall Young	Date Received: 03/26/08
	Client P.O.:	Date Extracted: 03/30/08
		Date Analyzed: 03/30/08

Volatile Organics by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0803661

Lab ID	0803661-003F						
Client ID	ESB-R2S						
Matrix	Water						
Compound	Concentration *	DF	Reporting Limit	Compound	Concentration *	DF	Reporting Limit
Acetone	ND	1.0	10	Acrolein (Propenal)	ND	1.0	5.0
Acrylonitrile	ND	1.0	2.0	tert-Amyl methyl ether (TAME)	ND	1.0	0.5
Benzene	ND	1.0	0.5	Bromobenzene	ND	1.0	0.5
Bromochloromethane	ND	1.0	0.5	Bromodichloromethane	ND	1.0	0.5
Bromoform	ND	1.0	0.5	Bromomethane	ND	1.0	0.5
2-Butanone (MEK)	ND	1.0	2.0	t-Butyl alcohol (TBA)	ND	1.0	2.0
n-Butyl benzene	ND	1.0	0.5	sec-Butyl benzene	ND	1.0	0.5
tert-Butyl benzene	ND	1.0	0.5	Carbon Tetrachloride	ND	1.0	0.5
Carbon Disulfide	ND	1.0	0.5	Chlorobenzene	ND	1.0	0.5
Chloroethane	ND	1.0	0.5	2-Chloroethyl Vinyl Ether	ND	1.0	1.0
Chloroform	ND	1.0	0.5	Chloromethane	ND	1.0	0.5
2-Chlorotoluene	ND	1.0	0.5	4-Chlorotoluene	ND	1.0	0.5
Dibromochloromethane	ND	1.0	0.5	1,2-Dibromo-3-chloropropane	ND	1.0	0.2
1,2-Dibromoethane (EDB)	ND	1.0	0.5	Dibromomethane	ND	1.0	0.5
1,2-Dichlorobenzene	ND	1.0	0.5	1,3-Dichlorobenzene	ND	1.0	0.5
1,4-Dichlorobenzene	ND	1.0	0.5	Dichlorodifluoromethane	ND	1.0	0.5
1,1-Dichloroethane	ND	1.0	0.5	1,2-Dichloroethane (1,2-DCA)	ND	1.0	0.5
1,1-Dichloroethene	ND	1.0	0.5	cis-1,2-Dichloroethene	ND	1.0	0.5
trans-1,2-Dichloroethene	ND	1.0	0.5	1,2-Dichloropropane	ND	1.0	0.5
1,3-Dichloropropane	ND	1.0	0.5	2,2-Dichloropropane	ND	1.0	0.5
1,1-Dichloropropene	ND	1.0	0.5	cis-1,3-Dichloropropene	ND	1.0	0.5
trans-1,3-Dichloropropene	ND	1.0	0.5	Diisopropyl ether (DIPE)	ND	1.0	0.5
Ethylbenzene	ND	1.0	0.5	Ethyl tert-butyl ether (ETBE)	ND	1.0	0.5
Freon 113	ND	1.0	10	Hexachlorobutadiene	ND	1.0	0.5
Hexachloroethane	ND	1.0	0.5	2-Hexanone	ND	1.0	0.5
Isopropylbenzene	ND	1.0	0.5	4-Isopropyl toluene	ND	1.0	0.5
Methyl-t-butyl ether (MTBE)	ND	1.0	0.5	Methylene chloride	ND	1.0	0.5
4-Methyl-2-pentanone (MIBK)	ND	1.0	0.5	Naphthalene	ND	1.0	0.5
Nitrobenzene	ND	1.0	10	n-Propyl benzene	ND	1.0	0.5
Styrene	ND	1.0	0.5	1,1,1,2-Tetrachloroethane	ND	1.0	0.5
1,1,2,2-Tetrachloroethane	ND	1.0	0.5	Tetrachloroethene	ND	1.0	0.5
Toluene	ND	1.0	0.5	1,2,3-Trichlorobenzene	ND	1.0	0.5
1,2,4-Trichlorobenzene	ND	1.0	0.5	1,1,1-Trichloroethane	ND	1.0	0.5
1,1,2-Trichloroethane	ND	1.0	0.5	Trichloroethene	ND	1.0	0.5
Trichlorofluoromethane	ND	1.0	0.5	1,2,3-Trichloropropane	ND	1.0	0.5
1,2,4-Trimethylbenzene	ND	1.0	0.5	1,3,5-Trimethylbenzene	ND	1.0	0.5
Vinyl Chloride	ND	1.0	0.5	Xylenes	ND	1.0	0.5

Surrogate Recoveries (%)

%SS1:	127	%SS2:	97
%SS3:	106		

Comments:

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPL extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; J) analyte detected below quantitation limits; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative; q) reported in ppm.

**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

AEW Engineering, Inc. 55 New Montgomery St, Ste 507 San Francisco, CA 94105	Client Project ID: 2007-014; Doyle Drive	Date Sampled: 03/25/08
		Date Received: 03/26/08
	Client Contact: Randall Young	Date Extracted: 03/26/08
	Client P.O.:	Date Analyzed 04/01/08

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode by GC/MS

Extraction Method: SW3510C

Analytical Method: SW8270C

Work Order: 0803661

Lab ID	0803661-001E	0803661-002E	0803661-003E	Reporting Limit for DF =1	S	W
Client ID	ESB-R2D	ESB-R2I	ESB-R2S			
Matrix	W	W	W			
DF	1	1	1			

Compound	Concentration			ug/kg	µg/L
Acenaphthene	ND	ND	ND	NA	0.5
Acenaphthylene	ND	ND	ND	NA	0.5
Anthracene	ND	ND	ND	NA	0.5
Benzo(a)anthracene	ND	ND	ND	NA	0.5
Benzo(a)pyrene	ND	ND	ND	NA	0.5
Benzo(b)fluoranthene	ND	ND	ND	NA	0.5
Benzo(k)fluoranthene	ND	ND	ND	NA	0.5
Benzo(g,h,i)perylene	ND	ND	ND	NA	0.5
Chrysene	ND	ND	ND	NA	0.5
Dibenzo(a,h)anthracene	ND	ND	ND	NA	0.5
Fluoranthene	ND	ND	ND	NA	0.5
Fluorene	ND	ND	ND	NA	0.5
Indeno (1,2,3-cd) pyrene	ND	ND	ND	NA	0.5
1-Methylnaphthalene	ND	ND	ND	NA	0.5
2-Methylnaphthalene	ND	ND	ND	NA	0.5
Naphthalene	ND	ND	ND	NA	0.5
Phenanthrene	ND	ND	ND	NA	0.5
Pyrene	ND	ND	ND	NA	0.5

Surrogate Recoveries (%)

%SS1	66	67	69		
%SS2	68	71	75		
Comments					

* water samples in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

#) surrogate diluted out of range; &) low or no surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; J) analyte detected below quantitation limits.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

AEW Engineering, Inc. 55 New Montgomery St, Ste 507 San Francisco, CA 94105	Client Project ID: 2007-014; Doyle Drive	Date Sampled: 03/25/08
		Date Received 03/26/08
	Client Contact: Randall Young	Date Extracted 03/26/08
	Client P.O.:	Date Analyzed 03/29/08-03/31/08

CAM / CCR 17 Metals*

Lab ID	0803661-001C	0803661-002C	0803661-003C	Reporting Limit for DF =1; ND means not detected above the reporting limit	
Client ID	ESB-R2D	ESB-R2I	ESB-R2S		
Matrix	W	W	W	S	W
Extraction Type	TOTAL	TOTAL	TOTAL	mg/kg	µg/L

ICP-MS Metals, Concentration*

Dilution Factor	1	1	1	1	1
Antimony	1.0	ND	0.68	NA	0.5
Arsenic	11	2.3	22	NA	0.5
Barium	610	57	310	NA	5.0
Beryllium	0.84	ND	ND	NA	0.5
Cadmium	0.30	ND	0.32	NA	0.25
Chromium	44	29	71	NA	0.5
Cobalt	7.1	1.1	12	NA	0.5
Copper	35	9.3	34	NA	0.5
Lead	18	1.6	41	NA	0.5
Mercury	0.12	ND	0.12	NA	0.012
Molybdenum	17	1.3	5.3	NA	0.5
Nickel	37	11	70	NA	0.5
Selenium	1.0	ND	0.93	NA	0.5
Silver	ND	ND	ND	NA	0.19
Thallium	ND	ND	ND	NA	0.5
Vanadium	46	11	58	NA	0.5
Zinc	410	1100	87	NA	5.0
%SS:	122	121	120		

Comments

*water samples are reported in µg/L, product/oil/non-aqueous liquid samples and all TCLP / STLC / DISTLC / SPLP extracts are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, filter samples in µg/filter.

means surrogate diluted out of range; ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.

TOTAL = acid digestion.

WET = Waste Extraction Test (STLC).

DI WET = Waste Extraction Test using de-ionized water.

i) aqueous sample containing greater than ~1 vol. % sediment; for DISSOLVED metals, this sample has been preserved prior to filtration; for TOTAL metals, a representative sediment-water mixture was digested; j) reporting limit raised due to insufficient sample amount; J) analyte detected below quantitation limits; k) reporting limit raised due to matrix interference; m) estimated value due to low/high surrogate recovery, caused by matrix interference; n) results are reported on a dry weight basis; p) see attached narrative.



QC SUMMARY REPORT FOR SW8082A

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0803661

EPA Method SW8082A		Extraction SW3510C			BatchID: 34544			Spiked Sample ID: N/A				
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Aroclor1260	N/A	3.75	N/A	N/A	N/A	115	116	0.847	N/A	N/A	70 - 130	20
%SS:	N/A	2.5	N/A	N/A	N/A	99	101	1.24	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 34544 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803661-001D	03/25/08 10:30 AM	03/26/08	03/30/08 5:28 AM	0803661-002D	03/25/08 12:00 PM	03/26/08	03/29/08 12:22 AM
0803661-003D	03/25/08 3:30 PM	03/26/08	04/01/08 5:56 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0803661

EPA Method SW8015C		Extraction SW3510C/3630C				BatchID: 34542			Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	N/A	1000	N/A	N/A	N/A	104	110	5.73	N/A	N/A	70 - 130	30
%SS:	N/A	2500	N/A	N/A	N/A	101	108	7.26	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 34542 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803661-001B	03/25/08 10:30 AM	03/26/08	03/28/08 9:37 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0803661

EPA Method SW8015C		Extraction SW3510C/3630C				BatchID: 34563			Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	N/A	1000	N/A	N/A	N/A	101	101	0	N/A	N/A	70 - 130	30
%SS:	N/A	2500	N/A	N/A	N/A	97	98	0.254	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 34563 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803661-002B	03/25/08 12:00 PM	03/26/08	03/27/08 10:08 PM	0803661-003B	03/25/08 3:30 PM	03/26/08	03/28/08 7:09 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0803661

EPA Method SW8260B	Extraction SW5030B			BatchID: 34596				Spiked Sample ID: 0803647-001C				
	Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	10	102	101	0.932	112	112	0	70 - 130	30	70 - 130	30
Benzene	ND	10	107	105	1.57	126	125	0.582	70 - 130	30	70 - 130	30
t-Butyl alcohol (TBA)	ND	50	101	101	0	106	101	4.51	70 - 130	30	70 - 130	30
Chlorobenzene	ND	10	98.2	96.2	2.07	109	109	0	70 - 130	30	70 - 130	30
1,2-Dibromoethane (EDB)	ND	10	102	99.4	2.91	110	109	1.20	70 - 130	30	70 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	10	102	100	1.85	105	104	1.19	70 - 130	30	70 - 130	30
1,1-Dichloroethene	ND	10	89.3	87.9	1.56	104	103	0.326	70 - 130	30	70 - 130	30
Diisopropyl ether (DIPE)	ND	10	100	99.6	0.365	114	114	0	70 - 130	30	70 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	10	103	102	1.05	113	113	0	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	ND	10	103	102	0.973	112	111	0.347	70 - 130	30	70 - 130	30
Toluene	ND	10	102	101	0.708	122	121	0.462	70 - 130	30	70 - 130	30
Trichloroethene	ND	10	88.7	88	0.742	99.1	99.2	0.113	70 - 130	30	70 - 130	30
%SS1:	125	10	98	98	0	99	99	0	70 - 130	30	70 - 130	30
%SS2:	99	10	101	102	1.06	105	105	0	70 - 130	30	70 - 130	30
%SS3:	107	10	97	97	0	97	95	1.27	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 34596 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803661-001F	03/25/08 10:30 AM	03/29/08	03/29/08 1:01 PM	0803661-002F	03/25/08 12:00 PM	03/29/08	03/29/08 1:44 PM
0803661-003F	03/25/08 3:30 PM	03/30/08	03/30/08 3:09 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



QC SUMMARY REPORT FOR E200.8

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0803661

EPA Method E200.8	Extraction E200.8			BatchID: 34598			Spiked Sample ID: 0803639-001A					
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Antimony	2.8	10	108	111	2.18	110	110	0	70 - 130	20	80 - 120	20
Arsenic	2.5	10	107	112	3.87	106	105	0.663	70 - 130	20	80 - 120	20
Barium	ND	100	106	107	0.847	106	107	0.941	70 - 130	20	80 - 120	20
Beryllium	ND	10	99	99.8	0.755	108	108	0	70 - 130	20	80 - 120	20
Cadmium	0.26	10	99.9	101	0.681	106	108	1.22	70 - 130	20	80 - 120	20
Chromium	8.5	10	102	106	1.64	106	106	0	70 - 130	20	80 - 120	20
Cobalt	ND	10	98.8	99.4	0.583	107	108	0.927	70 - 130	20	80 - 120	20
Copper	230	10	NR	NR	NR	114	112	1.59	70 - 130	20	80 - 120	20
Lead	ND	10	105	105	0	106	106	0	70 - 130	20	80 - 120	20
Mercury	0.076	0.25	117	117	0	111	108	3.29	70 - 130	20	80 - 120	20
Molybdenum	290	10	NR	NR	NR	103	104	0.581	70 - 130	20	80 - 120	20
Nickel	40	10	97.6	114	3.25	107	107	0	70 - 130	20	80 - 120	20
Selenium	ND	10	108	108	0	107	112	4.30	70 - 130	20	80 - 120	20
Silver	ND	10	94.5	96.1	1.63	104	104	0	70 - 130	20	80 - 120	20
Thallium	ND	10	106	106	0	97	98	1.06	70 - 130	20	80 - 120	20
Vanadium	24	10	104	114	2.79	106	106	0	70 - 130	20	80 - 120	20
Zinc	31	100	99.5	101	1.29	116	114	2.26	70 - 130	20	80 - 120	20
%SS:	111	750	109	109	0	106	107	0.838	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 34598 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803661-001C	03/25/08 10:30 AM	03/26/08	03/29/08 8:51 AM	0803661-002C	03/25/08 12:00 PM	03/26/08	03/29/08 9:23 AM
0803661-002C	03/25/08 12:00 PM	03/26/08	03/31/08 7:06 PM	0803661-003C	03/25/08 3:30 PM	03/26/08	03/29/08 9:40 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not applicable to this method.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0803661

EPA Method SW8021B/8015Cm	Extraction SW5030B			BatchID: 34612			Spiked Sample ID: 0803645-008A					
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) ^f	ND	60	95.9	94.4	1.55	86.4	92.3	6.61	70 - 130	20	70 - 130	20
MTBE	ND	10	105	101	3.26	104	103	0.371	70 - 130	20	70 - 130	20
Benzene	ND	10	92.9	96.8	4.18	109	96.3	11.9	70 - 130	20	70 - 130	20
Toluene	ND	10	85.7	88.9	3.69	107	94.4	12.0	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	94.5	98	3.60	107	94.8	12.3	70 - 130	20	70 - 130	20
Xylenes	ND	30	90.7	94.5	4.10	98.5	87.6	11.7	70 - 130	20	70 - 130	20
%SS:	89	10	95	98	2.61	107	106	1.62	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 34612 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803661-001A	03/25/08 10:30 AM	03/29/08	03/29/08 7:29 AM	0803661-002A	03/25/08 12:00 PM	03/29/08	03/29/08 8:04 AM
0803661-003A	03/25/08 3:30 PM	03/29/08	03/29/08 8:39 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.



QC SUMMARY REPORT FOR SW8270C

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0803661

EPA Method SW8270C	Extraction SW3510C			BatchID: 34622			Spiked Sample ID: N/A					
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Benzo(a)pyrene	N/A	10	N/A	N/A	N/A	78.9	79.3	0.582	N/A	N/A	30 - 130	30
Chrysene	N/A	10	N/A	N/A	N/A	82.2	79.3	3.57	N/A	N/A	30 - 130	30
1-Methylnaphthalene	N/A	10	N/A	N/A	N/A	103	98.4	4.26	N/A	N/A	30 - 130	30
2-Methylnaphthalene	N/A	10	N/A	N/A	N/A	98.2	94.8	3.53	N/A	N/A	30 - 130	30
Phenanthrene	N/A	10	N/A	N/A	N/A	87.5	85.7	2.05	N/A	N/A	30 - 130	30
Pyrene	N/A	10	N/A	N/A	N/A	74	71.8	3.03	N/A	N/A	30 - 130	30
%SS1:	N/A	5	N/A	N/A	N/A	79	77	2.25	N/A	N/A	30 - 130	30
%SS2:	N/A	5	N/A	N/A	N/A	87	88	0.374	N/A	N/A	30 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 34622 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0803661-001E	03/25/08 10:30 AM	03/26/08	04/01/08 12:15 AM	0803661-002E	03/25/08 12:00 PM	03/26/08	04/01/08 1:34 AM
0803661-003E	03/25/08 3:30 PM	03/26/08	04/01/08 2:55 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

Appendix B

**Copy of San Francisco
Public Utilities
Commission Industrial
User Class II
Wastewater Permit
Requirements**

Part I - WASTEWATER EFFLUENT LIMITATIONS AND PROHIBITIONS

- A. During the period of February 7, 2005 to February 6, 2010, the permittee is authorized to discharge all wastewater through the approved side sewer(s) from the facility.
- B. During the effective period of this permit, any sample representative of the permittee's **wastewater discharges to the side sewer(s)** shall not at any time exceed the following numerical limitations, which are contained in Section 123 of Article 4.1:

- 1. Based upon any grab sample¹ of the permittee's wastewater:

<u>Pollutant parameter</u>	<u>Limit</u>
pH	6.0 min.; 9.5 max.
Dissolved Sulfides	0.5 mg/L
Temperature (except where higher temperatures are required by law)	125°F (52°C)
Hydrocarbon Oil and Grease	100 mg/L

- 2. Based upon grab samples of the permittee's wastewater, flow-weighted over a production week²:

<u>Pollutant parameter</u>	<u>Limit</u>
Total Recoverable Oil and Grease	300 mg/L

- C. During the effective period of this permit, any sample representative of the permittee's **wastewater discharges to the side sewer(s)** shall not exceed the following numerical limits, which are contained in the City's Department of Public Works (DPW) Order No. 158170 (1991), which is incorporated by reference in this permit:

- 1. Based upon 24-hour composite sampling³:

¹ A "grab sample" means an individual sample of wastewater collected over a period of time not exceeding 15 minutes, as defined in federal regulations at 40 CFR Part 403.7(d)(2)(iv)(1990).

² A "production week" means the typical number of days in a calendar week when wastewater is discharged from routine operation and/or cleanup of the permittee's facility.

FINAL REPORT ON LOCAL/GENERAL DISCHARGE LIMITATION DEVELOPMENT

<u>Pollutant/Pollutant Parameter</u>	<u>Limit (mg/1)</u>
Arsenic (as Total)	4.0
Cadmium (as Total)	0.5
Chromium (as Total)	5.0
Copper (as Total)	4.0
Lead (as Total)	1.5
Mercury (as Total)	0.05
Nickel (as Total)	2.0
Silver (as Total)	0.6
Zinc (as Total)	7.0
Phenols	23.0
Cyanide (as Total)	1.0
pH	6.0 min;9.5 max
Dissolved sulfides	0.5 mg/1
Temperature	125' F (52' C)
Hydrocarbon oil and grease	100 mg/1
Total recoverable oil and grease	300 mg/1

2. The permittee is authorized to use radioactive materials by the Nuclear Regulatory Commission⁵ or other governmental agency empowered to regulate the use of radioactive materials; and
 3. The radioactive material is discharged in strict conformity with all Nuclear Regulatory Commission or other governmental agency requirements.
- E. The permittee shall not discharge, deposit, throw, cause, allow or permit to be discharged, deposited or thrown into the City's sewerage system⁶, any substance of any kind whatever, including oxygen demanding pollutants, that may or will in any manner cause "interference"⁷ or "pass through"⁸, obstruct or damage the sewerage system, cause a nuisance, interfere with the proper operation, repair or maintenance of the sewerage system, interfere with the proper operation, repair or maintenance of a reclaimed water production or distribution facility, create difficulty for any workers to repair or maintain any part of the sewerage system, or directly or indirectly cause a violation of the City's federal or state sewage discharge permits or any other requirement applicable to the City. Such substances include, but are not limited to the following:
1. Ashes, cinders, sand, gravel, dirt, bark, leaves, grass cuttings and straw, metals, glass, ceramics and plastics, or any other solid or viscous substance capable of causing obstruction to the flow in sewers, or that will not be carried freely under the flow conditions normally prevailing in the City's sewerage system;
 2. Any flammable or explosive substances;
 3. Any corrosive substances (particularly discharges with pH lower than 5.0), which will cause structural damage to the City's sewerage system;

⁵ The "Nuclear Regulatory Commission" is an agency of the federal government.

⁶ The "sewerage system" means all public facilities for collecting, transporting, treating, and disposing of stormwater and pollutants in wastewater. The sewerage system includes facilities owned and operated by public entities other than the City, where such facilities direct wastewater into the sewerage system and are subject to the jurisdiction of the City as defined by law, contract or interjurisdictional agreement.

⁷ "Interference" means an inhibition or disruption of the sewerage system, treatment processes or operations, or sludge processes, including the use or disposal of sludge, which causes or threatens to cause a violation of any requirement of the City's permits to operate sewage treatment facilities as defined by state or federal laws and regulations. Violations include, but are not limited to, an increase in the magnitude or duration of a violation and the prohibition of City use or disposal of sludge.

⁸ "Pass through" means a discharge which enters receiving waters through the sewerage system in quantities or concentrations which alone, or in combination with a discharge or discharges from other sources, causes or threatens to cause a violation of the City's NPDES permits, including an increase in the magnitude or duration of a violation.

4. Garbage, excepting properly ground garbage discharged in accordance with Article 4.1, from dwellings and restaurants or other establishments engaged in the preparation of foods and beverages;
 5. Any toxic, hazardous (as defined in the California Code of Regulations at Title 22, or in federal regulations at 40 CFR Part 261), noxious or malodorous substance which either singly or by interaction with other wastes may or will prevent maintenance of the sewerage system or create a nuisance or hazard to the safety of the public or City employees;
 6. Any bioaccumulative toxic substance⁹ that exceeds the "soluble threshold limit concentration (STLC)"¹⁰;
 7. Any wastewater, in temperature or quantity, which will cause the temperature of influent to exceed 104°F (40°C) at the point of introduction to any City wastewater treatment plant; and
 8. Any liquids, solids or gases or any discharge that may cause damage or harm to any reclaimed water facility, or that may limit or prevent any use of reclaimed water authorized by Title 22 of the California Code of Regulations.
- F. The permittee shall not discharge without a permit any pollutants, except stormwater, directly into a manhole, catch basin, or other opening in the sewerage system other than through an approved side sewer.
- G. The permittee shall not increase the use of process water or, in any other way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the requirements of Article 4.1.
- H. The permittee shall not discharge groundwater or water from sumps or dewatering facilities into the sewerage system without a permit. An application for a permit pursuant to this paragraph shall be submitted to the General Manager no later than 45 days prior to the proposed commencement of the discharge. Each permit for groundwater discharge shall contain appropriate discharge standards and any other appropriate requirements that must be achieved before discharge into the sewerage system may commence. Such discharges shall be subject to payment of sewer service charges in accordance with the

⁹ A "bioaccumulative toxic substance" means a toxic substance that concentrates in living organisms through direct assimilation or accumulation in the food chain, as defined in Title 22, California Code of Regulations and any amendments thereto.

¹⁰ The "soluble threshold limit concentration (STLC)" means the concentration of a solubilized and extractable bioaccumulative or persistent toxic substance, which, if equaled or exceeded in a waste, renders the waste hazardous as defined in Title 22, California Code of Regulations and its amendments.

provisions of applicable City laws. The General Manager may require the permittee to install and maintain meters, at the permittee's expense, to measure the volume of the discharge.

- I. The permittee shall not discharge wastewater associated with groundwater cleanup or remediation plans without first obtaining a permit. An application for a permit pursuant to this paragraph shall be submitted to the General Manager no later than 45 days prior to the proposed commencement of the discharge. A permit may be issued only if an effective pretreatment system on the process stream is maintained and operated. Each permit for such discharge shall contain appropriate discharge standards based on Article 4.1 and reports or data provided by the permittee, as well as any other appropriate requirements that must be achieved at the time the discharge commences. Such discharges shall be subject to payment of sewer service charges in accordance with the provisions of applicable City laws. The General Manager may require the permittee to install and maintain meters, at the permittee's expense, to measure the volume of the discharge. The General Manager may require that such permittees shall indemnify and hold harmless the City from any and all costs, claims, damages, fines, remediation costs, losses and other expenses arising from the discharge into the sewerage system.
- J. The permittee may discharge wastewater associated with asbestos abatement operations without a permit, provided that the wastewater has been pretreated through a system that provides for removal of waterborne asbestos.
- K. In addition to the provisions of Article 4.1, all discharges by the permittee into the City's sewerage system shall comply with all requirements set forth in federal categorical pretreatment standards, applicable state orders and water quality control regulations, sewage discharge permits and orders issued to the City by federal and state agencies, federal and state pretreatment approval conditions, local discharge limitations and regulations promulgated by the General Manager and the City, including any such regulations, limitations, orders, permits, standards, requirements, or laws which may become effective during the term of this permit.

Part II - MONITORING REQUIREMENTS AND SPECIAL CONDITIONS

- A. To determine the permittee's compliance with the limitations of Part I above, all wastewater sampling and measurements, which are representative of the nature and volume of the wastewater discharges, shall be performed at the approved side sewer(s) from the facility. The monitoring point(s) may be designated upstream from where the permittee's wastewater discharges into the City's sewerage system, if access at the discharge location(s) is not feasible, or if the permittee's wastewater merges with the discharge from another facility, before entering the City's sewerage system.
- B. The permittee may be required to construct, in accordance with current City standards and at the permittee's expense, a monitoring facility in each side sewer, or in areas further upstream on the permittee's property, for wastewater monitoring purposes.
- C. The permittee shall ensure that each designated monitoring point is safe, convenient and accessible to authorized City employees.
- D. All compliance sampling and analysis shall be performed in accordance with techniques and procedures approved by the EPA pursuant to section 304(g) of the Clean Water Act and contained in 40 CFR Part 136 and amendments thereto, or otherwise approved by the EPA.
- E. The permittee may be required to perform self-monitoring of the wastewater discharges. Such self-monitoring shall be performed at a frequency and for such pollutant parameters as required by the General Manager.
- F. The permittee may be required to install and maintain meters to continually measure and record the flow rate of the wastewater discharges.
- G. The permittee may be required to perform wastewater treatment on its own site prior to discharge into the sewerage system. Where a wastewater treatment system is employed, the permittee shall ensure that a trained operator is on duty during each operating shift of the facility.
- H. The permittee shall store all hazardous materials (e.g. corrosives, flammables etc.) and hazardous wastes within a bermed area or by using some other method of secondary containment, to prevent spills from entering the City's sewerage system.
- I. If the permittee disposes of process wastewater, spent processing solutions, cartridges, filters, residues, sludges or chemicals by offsite hauling, the following records shall be kept for periodic review and verification by authorized City inspectors:
 - 1. Receipts and/or purchase records for processing chemicals;

2. Hazardous waste manifests or other documentation for process wastewater, spent processing solutions, cartridges, filters, residues, sludges or chemicals hauled offsite; and
3. A record of the type and quantity of process wastewater, spent processing solutions, cartridges, filters, residues, sludges or chemicals generated at the facility.

Part III - REPORTING REQUIREMENTS

- A. **Within 60 days** of the effective date of this permit, the permittee shall develop and submit (unless previously submitted) to the General Manager:
1. A manual (or self-developed set of instructions) on the proper operation and maintenance of any wastewater treatment system utilized in the facility;
 2. A drawing showing a flow diagram and the components of the wastewater treatment system; and
 3. Any required information, which has not been submitted in the permittee's wastewater permit application. The permittee will be informed of the deficiency under separate cover.
- B. **Within 60 days** of the effective date of this permit, the permittee shall complete and submit (unless previously submitted) to the General Manager a checklist for a Spill Prevention Control and Countermeasures (SPCC) plan, showing facilities and operating procedures to provide protection against spills or accidental discharges of prohibited or regulated materials.
- C. **Within 60 days** of the effective date of this permit, the permittee shall complete and submit (unless previously submitted) to the General Manager a checklist for a Hazardous Waste Reduction Assessment¹¹ (HWRA) of the facility.
- Based upon the contents of the checklist submitted, the permittee may subsequently be required to submit a detailed HWRA, including an accounting of the quantities of certain critical chemicals discharged to the sewers, a plan for reducing the amount of critical chemicals discharged, and a report on previous reductions.
- D. **Within 60 days** of the effective date of this permit, the permittee shall complete and submit (unless previously submitted) to the General Manager a checklist for a Stormwater Pollution Prevention Plan¹² (SPPP) for the facility.

¹¹ A "hazardous waste reduction assessment" means a systematic planned procedure with the objective of identifying ways to reduce or eliminate hazardous waste. Waste reduction describes the reduction, to the extent feasible, of hazardous waste that is generated or subsequently treated, stored or disposed of. It includes any source reduction or recycling activity undertaken by a generator that results in either (1) the reduction of total volume or quantity of hazardous waste or (2) the reduction of toxicity of the hazardous waste, or both.

¹² A "stormwater pollution prevention plan" has as its major objectives: (a) to help identify the sources of pollution that affect the quality of stormwater discharges associated with industrial activity; and (b) to describe and ensure the implementation of practices to reduce pollutants in stormwater discharges associated with industrial activity.

- E. The permittee shall notify the General Manager, **within 24 hours**, of any violation detected during self-monitoring, of an applicable effluent limitation. Upon the detection of any such violation, the permittee shall re-sample and submit both sets of analytical results within 30 days of the initial detection.
- F. Where the permittee conducts self-monitoring or is given split wastewater samples by the City, copies of the analytical results shall be submitted to the General Manager **within 30 days** of the completion of the sampling episode.
- G. The permittee shall notify the General Manager at least **30 days prior** to the introduction of new wastewater discharges or pollutants, or any substantial change in volume (i.e. 25 percent or greater variance from the monthly average flow) or characteristics of the wastewater being introduced into the sewerage system, from its industrial activities. The permittee shall certify that the change will not result in noncompliance with the requirements of Part I above. The General Manager may require the issuance of an amended permit before the commencement of such altered discharge, or, in the case of termination of operations, details regarding closure operations.
- H. The permittee shall notify the General Manager at least **30 days prior** to the termination of operations. The notification shall include a facility closure and maintenance report, which describes the procedures to be implemented (e.g. disposal of processing baths) to prevent discharges in noncompliance with the requirements of Part I above.
- I. All reports (**which must include the certification statement contained in Part IV-N**) and correspondence to the General Manager shall be submitted to the following address:

Mr. Steven C. Medbery, Manager
SFPUC-BERM
Bayview Plaza
3801 - 3rd Street, Suite 600
San Francisco, CA 94124

Part IV - STANDARD CONDITIONS

A. Duty to Comply

The permittee must comply with all conditions of this permit. Failure to comply with the requirements of this permit may be grounds for administrative action, including suspension or revocation of this permit, or enforcement proceedings, including civil or criminal penalties, injunctive relief, and severing of the side sewer connection(s).

B. Duty to Re-apply

The permittee must request a renewal or extension of this permit by submittal of a new or revised application at least 90 days before the expiration date of this permit. The General Manager will notify the permittee about the re-application requirement; however, it is the permittee's obligation to re-apply in a timely manner.

An expired permit will continue to be effective and enforceable until the permit is re-issued if:

1. The permittee has satisfied the re-application requirements; and
2. The failure to re-issue the permit in a timely manner is not due to any act, or failure to act, on the part of the permittee.

C. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the sewerage system or the environment, resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

D. Duty to Halt or Reduce Activity

In the event of reduction of efficiency of operation, or loss or failure of all or part of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control its production or discharges (or both) until operation of the treatment facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power to the treatment facility fails or is reduced. It shall not be a defense for the permittee, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

E. Operation and Maintenance of Pollution Controls

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes, but is not limited to: effective performance, adequate funding, adequate operator training and staffing, adequate back-up or auxiliary equipment, and adequate laboratory and process controls, including appropriate quality assurance procedures. The permittee shall maintain a record of such servicing for inspection by authorized City inspectors.

F. Bypass of Treatment Facilities

1. Bypass¹³ is prohibited unless it is unavoidable to prevent loss of life, personal injury, or severe property damage, and no feasible alternatives (such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime) exist.
2. The permittee may allow bypass to occur provided it does not cause effluent limitations to be exceeded, but only if it is for essential maintenance, to ensure efficient facility operations.
3. Notification of bypass:
 - a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior written notice, at least 10 days before the date of the bypass, to the General Manager.
 - b. Unanticipated bypass. The permittee shall notify the General Manager within 24 hours of becoming aware of the bypass. This 24-hour notice must be followed within 5 days by a written description of the bypass, its cause, its duration (or, if it has not been corrected, how long it is expected to continue), and what has been done to rectify the problem.

G. Operating Upsets

Any upset¹⁴ experienced by the permittee shall be reported to the General Manager within 24 hours of becoming aware of the upset. A formal written report shall be submitted to the General Manager within 5 days. The report shall include:

¹³ A "bypass", as defined in 40 CFR Part 403.17, means the intentional diversion of wastestreams from any portion of the permittee's treatment facility.

¹⁴ An "upset", as defined in 40 CFR Part 403.16 (a), means an exceptional incident in which there is unintentional and temporary noncompliance with categorical pretreatment standards because of factors beyond the reasonable control

1. A description of the industrial discharge and cause of noncompliance;
2. The period of noncompliance, including exact date(s) and time(s), or if not corrected, the anticipated time the noncompliance is expected to continue; and
3. Steps being taken and/or planned to reduce, eliminate and prevent recurrence of the noncompliance.

If the permittee fails to report the upset within 5 days, the permittee shall have waived the right to future claim that the noncompliance was due to an upset. If the permittee wishes to establish the affirmative defense of upset to any enforcement action brought for noncompliance, the permittee shall demonstrate, through properly signed contemporaneous operating logs or other relevant evidence that:

- a. An upset occurred and the permittee can identify the cause(s) of the upset; and
- b. The facility was at the time being operated in a prudent and workman-like manner, and in compliance with applicable operation and maintenance procedures.

H. Slug Loading

The permittee shall verbally notify the General Manager immediately upon the occurrence of an accidental discharge or threatened discharge of a "slug loading"¹⁵ to the sewerage system, resulting from a spill or upset on the permittee's premises. A formal written report, addressing circumstances and remedies shall be submitted to the General Manager within 5 working days of the occurrence. The report shall specify:

1. A description of the nature and cause of the accidental discharge, spill, upset or slug loading. The description should also include location, type, concentration and volume of the discharge;
2. The duration of the discharge, including exact date(s) and time(s), and, if the discharge is continuing, the time by which cessation of the discharge is reasonably expected to occur; and

of the permittee. 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.

¹⁵ A "slug loading" means any pollutant (including oxygen demanding pollutants) released in a discharge at a flow rate and/or concentration which will cause a violation of the specific prohibitions listed in 40 CFR Part 403.5(b). (See Part I)

3. All steps taken to reduce, eliminate, and/or prevent recurrence of such a discharge, spill, upset or slug loading.

Such notification and report shall not relieve the permittee of liability for any expenses, including but not limited to, costs for countermeasures, loss or damage to the sewerage system, liability for fines imposed upon the City because of such occurrences, liability for fines or damages because of such occurrences, or for any damages incurred by a third party.

I. Proper Disposal of Sludges, Spent Chemicals etc.

The disposal of sludges, spent chemicals and hazardous wastes generated by the permittee shall be done in accordance with Section 405 of the Clean Water Act, Subtitles C and D of the Resource Conservation and Recovery Act, and Title 22 of the California Code of Regulations.

J. Hazardous Materials/Waste Storage

The permittee shall store all hazardous materials and hazardous waste within a diked or bermed area, or by using some other method of secondary containment, to prevent spills from entering the sewerage system.

K. Hazardous Waste Discharge

The permittee shall notify the General Manager, the United States Environmental Protection Agency (EPA) Regional Waste Management Division Director, and the California State hazardous waste authorities, in writing, of any discharge into the City's sewerage system of a substance, which, if otherwise disposed of, would be a hazardous waste under federal regulation at 40 CFR Part 261. (See Appendix A, "Hazardous Waste Discharge Response Addresses & Telephone Numbers".)

In the case of any notification made under this paragraph, the permittee shall certify that it has a hazardous waste management/waste minimization program in place, for reducing the volume and toxicity of hazardous wastes generated, to the degree that the permittee has determined to be economically practical.

When the permittee generates a hazardous waste discharge as cited above, it shall report the following:

1. The name of the hazardous waste as set forth in 40 CFR Part 261;
2. The EPA hazardous waste number; and
3. The type of discharge (continuous, batch or other).

If the permittee discharges more than 100 kilograms of such waste per calendar month into the City's sewerage system, the notification shall also contain the following information, to the extent such information is known and readily available to the permittee:

4. An identification of the hazardous constituents contained in the wastes;
5. An estimation of the mass and concentration of such constituents in the waste streams discharged during that calendar month; and
6. An estimation of the masses and concentrations of such constituents expected to be discharged in the wastewater during the following 12 months.

Notwithstanding any other requirement of this Part, the permittee shall provide the notification no later than 15 days after the discharge of the listed or characteristic hazardous waste. **These notification requirements do not apply to pollutants already reported in other self-monitoring reports required in Part III.**

L. Right to Enter Premises

Upon the presentation of proper credentials, employees authorized by the General Manager, when necessary for the performance of their duties, shall have the right to enter the permittee's premises. Such authorized personnel shall, at all reasonable hours, be allowed access to any facilities and records necessary for determining compliance, including, but not limited to the ability to:

1. Copy any records, inspect any monitoring equipment, and sample and monitor any wastewater subject to regulation under Article 4.1; and
2. Inspect the permittee's process areas, chemical and waste storage areas and process activities.

Reasonable hours, in the context of inspection and sampling, include any time the permittee is engaged in any activity, which results in wastewater discharge into the City's sewerage system. Notwithstanding any provisions of law, authorized personnel shall be allowed entry to the permittee's premises **at any time**, if the General Manager determines that an imminent hazard to persons or property exists on, or as a result of activities conducted on, the permittee's premises.

M. Duty to Provide Information

The permittee shall submit to the General Manager, within 15 working days, any information which the General Manager may request to determine whether cause exists for modifying, revoking and re-issuing, or terminating this permit; or to determine compliance with this permit.

N. Signatory Requirements

All applications, reports, or information submitted to the General Manager by the permittee **must** contain the following certification statement and **must** be signed by an authorized representative as described below:

"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 person 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."

1. By a responsible corporate officer, if the permittee submitting the reports is a corporation. For the purpose of this paragraph, a responsible corporate officer means:
 - a. A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or
 - b. The manager of one or more manufacturing, production, or operation 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. By a general partner or proprietor if the permittee submitting the reports is a partnership or sole proprietorship respectively.
3. By a duly authorized representative of the individual designated in paragraph 1. or 2. of this section if:
 - a. The authorization is made in writing by the individual described in paragraph 1. or 2.;
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the industrial discharge originates, such as the position of plant manager, operator of a well, or well field superintendent, or a position of equivalent

responsibility, or having overall responsibility for environmental matters for the company; and

- c. The written authorization is submitted to the General Manager.
4. If an authorization under paragraph 3. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or overall responsibility for environmental matters for the company, a new authorization satisfying the requirements of paragraph 3. of this section must be submitted to the General Manager prior to or together with any reports to be signed by an authorized representative.

O. Confidentiality of Information

1. Any records, reports, or information submitted by the permittee to the General Manager, whether made in writing or by communication incorporated in SFPUC reports, shall be available to the public, except upon a showing made by the permittee, satisfactory to the General Manager, that public disclosure of records, reports or information which the General Manager or other authorized personnel has received would divulge methods or processes entitled to protection as confidential trade secrets. All such records, reports, or information at any time may be disclosed to other authorized city personnel or any local, state or federal agency.
2. Whenever the General Manager makes a written request or orders that the permittee furnish information, the request or order shall include a notice that states that:
 - a. The permittee may assert a business confidentiality claim covering specified information; and
 - b. If no such claim accompanies the information when the General Manager receives it, it may be made available to the public without further notice to the permittee.
3. In assessing the validity of a business confidentiality claim, the General Manager shall determine whether the information is entitled by statute or judicial order to confidential treatment. In the absence of such a finding, the General Manager shall make the information available for public disclosure.
4. Notwithstanding any other provisions of the above, the permittee's wastewater data is not confidential and shall be made available to the public without restriction.

P. Retention of Records

Copies of any reports that must be submitted to the General Manager by the permittee pursuant to Part III above, shall be retained by the permittee for a minimum of 5 years and shall be made available for inspection and copying by the General Manager or any state or federal agency. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or the operation of the City's pretreatment program, or when requested by any state or federal agency.

Q. Charges for Sewerage System Impairment

The permittee shall reimburse the City for extraordinary costs, in addition to the applicable sewer service charge, for treatment, pumping, maintenance of the sewerage system, administration, incidental expenses, inspection and monitoring, and payment of penalties imposed on the City by enforcement agencies, caused by the specific characteristics of any discharge from the permittee's premises into the sewerage system. If the discharge of an industrial waste from the permittee's premises causes an obstruction, damage or other impairment to the sewerage system, the permittee shall pay to the City an amount equal to the costs, penalties and other incidental fees and expenses.

R. Permit Termination

This permit may be terminated, revoked or suspended for reasons including, but not limited to:

1. Falsifying self-monitoring reports;
2. Tampering with monitoring equipment;
3. Refusing to allow timely access to the permittee's facility premises and records;
4. Failure to meet effluent limitations, or the requirements of Article 4.1 and all applicable City, state and federal laws;
5. A discharge or a threatened discharge that may present a hazard to the public health, safety, welfare, natural environment, or sewerage system;
6. Failure to pay fines;
7. Failure to pay sewer service charges; and
8. Failure to meet compliance schedules.

S. Limitation on Permit Transfer

Re-assignment or transfer to a new owner/operator may be approved by the General Manager, provided that:

1. The original permittee gives at least 30 days advance notice to the General Manager, specifying the exact date of change of ownership/operation; and
2. The new owner/operator submits a written certification that:
 - a. States that no immediate change of the facility's operations and processes is proposed;
 - b. Confirms the exact date on which the transfer is to occur; and
 - c. Acknowledges full responsibility for complying with the existing permit.

T. Permit Modification or Re-opening

The terms and conditions of this permit may be subject to modification or re-opening by the General Manager for good causes including, but not limited to, the following:

1. Any new limitations or requirements identified in revisions or amendments to Article 4.1;
2. Additional conditions resulting from any new or revised federal or state pretreatment standards or requirements;
3. Any material or substantial alterations or additions to the permittee's operation processes, or discharge volume or character which were not considered in drafting the effective permit;
4. A change in any condition in either the permittee or the sewerage system, which requires either a temporary or permanent reduction or elimination of the authorized discharge;
5. Information indicating that the permitted discharge poses a threat to the City's sewerage system, or personnel, or the receiving waters;
6. Violations by the permittee of any terms or conditions of the permit;
7. Misrepresentation or failure to disclose fully all relevant facts in the permit application or in any required reporting;

8. Revision of or a grant of variance from such categorical standards pursuant to 40 CFR Part 403.13 of the General Pretreatment Regulations;
9. Typographical or other errors in the permit;
10. Transfer of ownership and/or operation of the permittee's facility to a new owner/operator; and
11. Upon request of the permittee, provided such request does not create a violation of any applicable requirements, standards, laws, or rules and regulations.

The filing of a request by the permittee for a permit modification or re-opening, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

U. Property Rights

The issuance of this permit 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 regulations.

V. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is for any reason held to be unconstitutional or invalid or ineffective by any court of competent jurisdiction, such decision shall not affect the validity or effectiveness of the remaining portions of this permit.

W. Penalties

1. **Criminal Penalties.** Under Section 133(a) of Article 4.1, any person who violates any provision of Article 4.1 is guilty of a misdemeanor and upon conviction shall be fined in an amount not exceeding \$1,000 or be imprisoned in County Jail for not more than six months, or both. Each day each violation is committed or permitted to continue shall constitute a separate offense.

Any person who knowingly makes any false statement or misrepresentation in any record, report plan, or other document filed with the General Manager, or tampers with or knowingly renders inaccurate any monitoring device or sampling and analysis method required under Article 4.1, shall be punished by a fine of not

more than \$25,000 or by imprisonment in County Jail for not more than six months, or both.

2. **Civil Penalties.** Under Section 133(b) of Article 4.1, any person who, without regard to intent or negligence, causes or permits any discharge of wastewater or hazardous waste, as defined in Title 22, California Code of Regulations and its amendments, into the City's sewerage system, except in accordance with all permit requirements and other provisions of Article 4.1; violates any provision of a cease and desist order or cleanup and abatement order issued by the General Manager; or violates any requirement or prohibition of Article 4.1, shall be liable civilly to the City in an amount not to exceed \$10,000 per day for each violation that occurs.

For intentional or negligent violations, the person so deemed shall be liable civilly to the City in an amount not to exceed \$25,000 per day for each violation that occurs.

3. **Administrative Civil Penalties.** Under Section 133(c) of Article 4.1, notwithstanding Section 133(b), any person who, without regard to intent or negligence, causes or permits any discharge of wastewater or hazardous waste, as defined in Title 22, California Code of Regulations and its amendments, into the City's sewerage system, except in accordance with all permit requirements and other provisions of Article 4.1; violates any provision of a cease and desist order or cleanup and abatement order issued by the General Manager; or violates any requirement or prohibition of Article 4.1, shall be liable civilly to the City in an amount not to exceed \$1,000 per day for each violation that occurs.

Notwithstanding Section 133(b), for intentional or negligent violations, the person so deemed shall be liable civilly to the City in an amount not to exceed \$2,000 per day for each violation that occurs.

APPENDIX A^c

Hazardous Waste Discharge Response Addresses & Telephone Numbers

APPENDIX A

Hazardous Waste Discharge Response Addresses & Telephone Numbers

1. Director, Hazardous Waste Management Division
Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2000

2. California Environmental Protection Agency
Department of Toxic Substances Control, Region 2
700 Heinz Avenue, Building F
Berkeley, CA 94710
(800) 698-6942

3. City and County of San Francisco
Public Utilities Commission
Bureau of Environmental Regulation
and Management
Bayview Plaza
3801 - 3rd Street, Suite 600
San Francisco, CA 94124
(415) 695-7310