



California Regional Water Quality Control Board

Los Angeles Region



Linda S. Adams
Agency Secretary

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

June 25, 2006

Mr. Thomas A. Larson
Briggs and Morgan, P.A.
2200 IDS Center
80 South Eighth St.
Minneapolis, Minnesota 55402-2157

TERMINATION OF COVERAGE UNDER GENERAL WASTE DISCHARGE REQUIREMENTS FOR HRC INJECTION – FORMER PNEUMO ABEX AEROSPACE FACILITY, 3151 WEST 5TH STREET, OXNARD, CALIFORNIA (CAO NO. 95-021, CI-8984, SLIC NO. 253A, SITE ID. NO. 2043000)

Dear Mr. Larson:

In our letter dated December 12, 2005, we informed you that the subject discharge is regulated under Order No. R4-2005-0030 (Series No. 030, CI-8984), which also serves as your Waste Discharge Requirements (WDR).

In recent telephone conversations, and letters dated April 27, 2007 and May 23, 2007 (copies attached), Mr. James P. Schwartz of Environmental Forensics Investigations, Incorporated, on your behalf, notified the Regional Board that groundwater remediation at this site is progressing slower than anticipated. He has proposed tests to evaluate alternative (more effective) groundwater remediation technologies. Regional Board staff has reviewed groundwater analytical data presented in monitoring reports provided to the Regional Board since early 2006. These data indicate that the injection of Hydrogen Release Compound at this site has not resulted in significant reduction in volatile organic compound concentrations. The evaluation and implementation of an alternative technology appears appropriate.

Regional Board staff concur with Mr. Schwartz that groundwater monitoring, as required by the exiting CAO, with the addition of volatile organic compound analyses of samples from monitoring wells MW-24A/B, MW-25A/B, and MW-26 A, and the other sampling locations proposed in Table 1 of the May 23, 2007 is sufficient, under current site conditions, and that the monitoring required under Order No. R4-2005-0030 (Series No. 030, CI-8984) is no longer necessary. If alternative remedial technologies incorporating the injection of materials into the aquifer are implemented a new WDR will be required. Coverage under Board Order No. R4-2002-0030, for the subject facility, is hereby terminated.

California Environmental Protection Agency



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Mr. Thomas A. Larson

- 2 -

June 25, 2007

The Regional Board requires the submittal of the results of the ongoing studies of alternative remedial technologies to the Regional Board before **October 1, 2007**.

If you have any questions, please contact Ms. Su Han at (213) 576-6735 or Mr. Peter Raftery at (213) 576-6724.

Sincerely,

for David A. Bacharowski, AED
Deborah J. Smith
Interim Executive Officer

cc: Mr. James Schwartz, Environmental Forensic Investigations, Inc., Pleasanton, CA

Attachments: April 27, 2007, letter from Environmental Forensic Investigations, Inc., to the Regional Board
May 23, 2007, letter from Environmental Forensic Investigations, Inc., to the Regional Board

California Environmental Protection Agency

 Recycled Paper

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2007 APR 27 AM 9:32
CALIFORNIA REGIONAL WATER
QUALITY CONTROL BOARD
LOS ANGELES REGION

April 27, 2007

Mr. Peter Raftery
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: **Revised Groundwater Sampling and Analyses, Temporary MRP Suspension and Groundwater Extraction and Treatment System Restart**
Former Pneumo Abex Facility
3151 West Fifth Street
Oxnard, California

Dear Mr. Raftery:

Environmental Forensic Investigations, Inc. (EnviroForensics), on behalf of Pneumo Abex LLC, has prepared this letter regarding several supplemental activities at the Former Pneumo Abex Facility located at 3151 West 5th Street in Oxnard, California (Site) (Figure 1) recommended to facilitate a better understanding of the remedial action taken at the Site. Three actions are being recommended to provide additional data on the progression of the in-situ treatment and to provide measurable control of the groundwater while these evaluations are conducted:

- Conducting additional analyses of groundwater at the Site;
- Temporarily replacing the Monitoring and Reporting Program (MRP) No. CI-8984 with the additional analyses; and
- Restarting the groundwater extraction and treatment system at the Site.

These activities are based on providing the data to allow a focused evaluation of the enhanced in-situ bioremediation measures implemented at the Site. The post-injection groundwater data collected to date indicates that we need to reassess the potential for long-term treatment and the mobility of off-Site migration of groundwater impacted with volatile organic compounds (VOCs).

Additional Groundwater Analyses

The ongoing in-situ biochemical processes are going to be more directly measured by collecting a series of samples and collecting micro-organisms from wells representative of the injection grid areas and areas immediately downgradient of the barrier walls as recommended by the supplier of the Hydrogen Release Compound (HRC) products applied at the Site. The sampling program consists of two steps, first, collection of groundwater samples from:

Environmental Forensic Investigations, Inc.
4234 Hacienda Drive, Suite 250, Pleasanton, CA 94588
Phone: 925-227-8700 • Fax 925-227-1111

- Former Source Area – MW-14A and MW-15A;
- Former Degreasing Area – MW-16A;
- Barrier Wall 1 – MW-01B;
- Barrier Wall 2 – MW-24A;
- Barrier Wall 3 – MW-04A;
- Barrier Wall 4 – MW-25A;
- Barrier Wall 5a – MW-06A; and
- Barrier Wall 5b – MW-07AR.

eliminating from MRP
at ~~26A~~ - 26A

B. zone
6B
7B
14
15
16
24 25

July

Initial 2-liter groundwater samples collected from these wells will be sent to Dr. Frank Löffler (Georgia Tech School of Civil and Environmental Engineering). Dr. Löffler's group will perform nucleic acid-based analysis of the samples to detect, monitor and quantify the activities of specific microbial populations active at the Site.

Following collection of the groundwater samples, Bio-Trap samplers will be hung in the wells for a 30-day period to allow for accumulation of microbes. After 30 days, the Bio-Trap samplers will then be sent to Microbial Insights for quantitative real-time polymerase chain reaction (qPCR) analysis to detect and quantify specific microorganisms that are active at the Site and correlate these populations with those known to be involved with bioremediation.

Following completion of two stages of the additional analyses, a report will be prepared for the RWQCB. The report will include presentation and analysis of the additional analytical data, an evaluation of the progress the microbiological colonies at the Site have made in the past year, and any recommendations to enhance the remedial program. The report will be submitted within four weeks of receipt of all analytical data, currently estimated to be late July 2007.

Temporary MRP Suspension

Groundwater monitoring under the MRP was initiated in February 2006 to monitor the migration of injected materials (HRC products) and compounds generated in situ by the bioremediation processes. The purpose of the MRP groundwater monitoring is to monitor the migration of injected materials and compounds generated by the injections. The additional analyses proposed above will provide more direct detailed information about breakdown the induced microbiological populations, biological processes, and the progress being made at the Site. The Cleanup and Abatement Order (CAO) groundwater monitoring (scheduled for July) will provide confirmation of groundwater capture and data regarding compounds of concern. As a result, the MRP program will not provide any additional data at this time, and EnviroForensics requests a temporary suspension of the MRP sampling and reporting requirements for the second and third quarters of 2007.

Groundwater Extraction and Treatment System Restart

The groundwater treatment system was shut down with the injection of the HRC to allow the compounds to migrate with the natural groundwater gradient. At this time, it is proposed that the groundwater extraction and treatment system be restarted in May 2007 to slow off-Site migration

groundwater containing VOCs and to draw some of the off-Site plume back through the treatment area. This process will include resetting and reconnecting three or four pumps, preparing the treatment system, testing components, performing initial startup, and monitoring the groundwater system response (elevations and interpreted gradient). The configuration of pumping wells and extraction rates will be selected to achieve capture of a volume of groundwater equivalent to that currently crossing the property line and potentially leaving the Site. It is anticipated that this objective will be achieved by extracting groundwater from pumping wells PW-1, PW-6 and PW-7 (Figure 1). Extraction rates and inclusion of additional wells will be adjusted in the field in order to control groundwater flux at the Site.

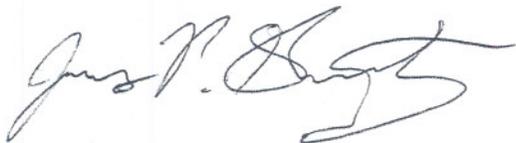
While the system is running, water and air discharge monitoring will resume in accordance with the system's National Pollutant Discharge Elimination System (NPDES) and Ventura County Air Pollution Control District (VCAPCD) permits, respectively. Annual sampling for both NPDES and VCAPCD permits will be conducted after equilibrium conditions are achieved following the restart of the system.

Closing

Thank you for reviewing our proposed Site actions. These actions will provide our client and the RWQCB with a clear understanding of how the program of HRC injections has stimulated the biological breakdown of Site-related compounds. We look forward to receiving approval to proceed at your earliest convenience. In the meanwhile, please feel free to contact us if you have any questions or need additional information.

Sincerely,

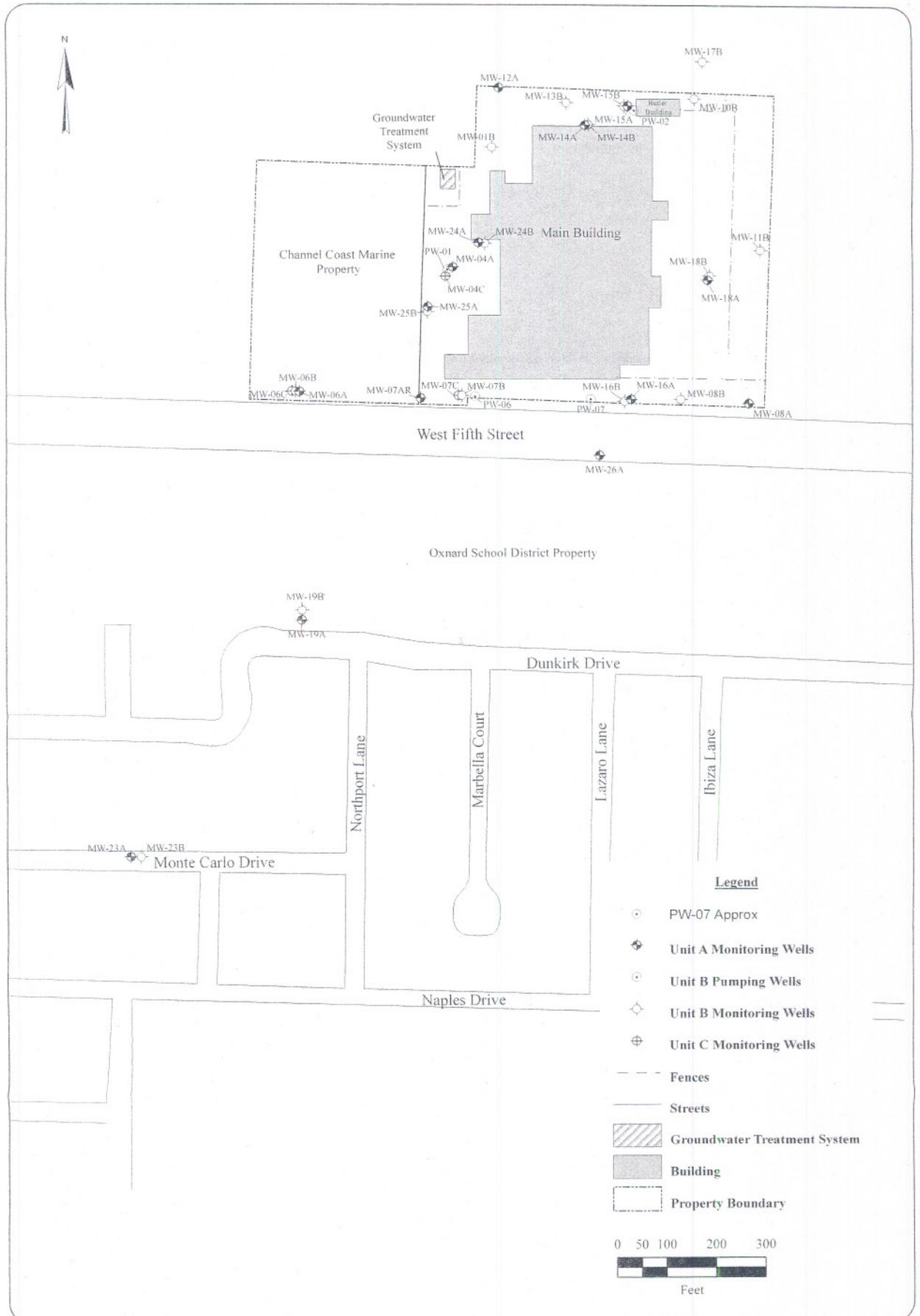
Environmental Forensic Investigations, Inc.

A handwritten signature in black ink, appearing to read "James P. Schwartz".

James P. Schwartz, P.G.
Western Region Manager

Attachments: Figure 1 – Groundwater Well Locations

Copies: Addressee
Thomas Larson, Esq., Briggs & Morgan
John Black, P.E., WSP Environmental Strategies
Stephen Henshaw, P.G., EnviroForensics
Sarla Gupta, Shiva Real Estate Enterprises



CJR ✓
29 MAY 07



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2007 MAY 24 AM 9 54
CALIFORNIA REGIONAL WATER
QUALITY CONTROL BOARD
LOS ANGELES REGION

May 23, 2007

✓
Mr. Peter Raftery
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: **Response to Request for Additional Information Regarding Proposed Temporary MRP Suspension**
Former Pneumo Abex Facility
3151 West Fifth Street
Oxnard, California

SWIC 253

Dear Mr. Raftery:

Environmental Forensic Investigations, Inc. (EnviroForensics), on behalf of Pneumo Abex LLC, has prepared this letter in response to your May 2, 2007 letter requesting additional information regarding the proposed temporary suspension of Monitoring and Reporting Program (MRP) No. CI-8984 at the Former Pneumo Abex Facility located at 3151 West 5th Street in Oxnard, California (Site). As described in the April 27, 2007 letter, EnviroForensics proposes to suspend sampling and reporting activities under the MRP for the second and third quarters of 2007. During this time, EnviroForensics instead will be:

- Conducting additional analyses of groundwater in order to further assess the effects of Hydrogen Release Compound (HRC) products injected at the Site (May 2007);
- Conducting additional analyses of groundwater in order to assess the viability of implementing permeable reactive barrier (PRB) technology at the Site (May 2007);
- Conducting standard semiannual groundwater monitoring and reporting under Cleanup and Abatement Order (CAO) 95-021 (July 2007); and
- Restarting the groundwater extraction and treatment system (May 2007).

The proposed activities listed above, while not replacing the exact scope of the MRP, will provide detailed information more pertinent to evaluating the viability of current and future remedial efforts at the Site. Additionally, restarting the groundwater extraction and treatment system will control groundwater movement while this assessment is in progress.

The scope of monitoring and analyses which will be performed under the HRC assessment program, PRB assessment program and CAO monitoring program are shown on the attached tables (Tables 1 and 2). The differences between these three programs and the MRP program requirements are discussed below.

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MRP Program Analysis

Two of the 17 MRP program wells will not be sampled at all under the three combined alternate programs: MW-24B and MW-25B (Table 1). These wells are in the lower, less affected groundwater unit. The samples from the MRP wells will not be analyzed under the other three programs for barium, bromide, nitrite, orthophosphate, sulfide, total suspended solids or turbidity. Other differences are discussed below by analytical groups included in the MRP:

- The CAO program to be conducted in July 2007 includes volatile organic compound (VOC) analysis for samples from 12 of the 17 MRP wells. Five wells (MW-24A, MW-24B, MW-25A, MW-25B and MW-26A) will not be sampled (Table 1).
- The PRB assessment program to be conducted in May 2007 includes selected metals and general minerals analyses (Table 2) for samples from four of the 17 MRP wells (Table 1).

Recommendation & Schedule

The differences in the proposed sampling regarding metals and general minerals in groundwater are negligible since these compounds are not driving remedial actions. Additional data to be generated under the HRC and PRB assessment programs will allow monitoring of the behavior of VOCs. While we believe the existing programs will allow monitoring of the Site conditions, we recommend including wells MW-24A, MW-24B, MW-25A, MW-25B and MW-26A in the July 2007 CAO sampling program (Table 1) to provide continuity in the data set.

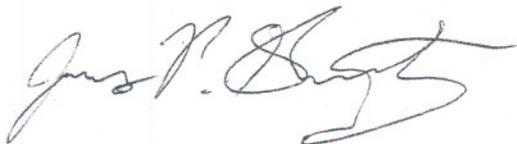
Pending final approval from the RWQCB, we anticipate implementing the HRC and PRB assessment programs, as well as the groundwater extraction and treatment system restart, during the week of May 21 through 25, 2007.

Closing

Thank you for reviewing this additional information. We look forward to receiving approval at your earliest convenience to proceed with the additional sampling described in this letter. In the meanwhile, please feel free to contact us if you have any questions or need additional information.

Sincerely,

Environmental Forensic Investigations, Inc.

A handwritten signature in black ink, appearing to read "James P. Schwartz".

James P. Schwartz, P.G.
Western Region Manager

Attachments: Table 1 – Site Monitoring Wells and Sampling Programs
Table 2 – Site Sampling Programs and Analyses

Copies: Addressee
Thomas Larson, Esq., Briggs & Morgan
John Black, P.E., WSP Environmental Strategies
Stephen Henshaw, P.G., EnviroForensics
Sarla Gupta, Shiva Real Estate Enterprises



Table 1
Site Monitoring Wells and Sampling Programs
3151 West Fifth Street
Oxnard, California

ND 2ND Q
 VOL DATA
 MRP microbial
 9 wells
 4 wells reactive
 Barrier
 #55
 Quantity

Q3 24/yr.
 ↓ ↓

Water Bearing Unit	Sampling Location	HRC Assessment - May 2007	Reactive Barrier Assessment - May 2007	CAO Program - July 2007	MRP Program - Temporarily Suspended
A	MW-04A	X		X	X
	MW-06A	X	X	X	X
	MW-07AR	X	X	X	X
	MW-08A			X	
	MW-12A			X	
	MW-14A	X		X	X
	MW-15A	X		X	X
	MW-16A	X	X	X	X
	MW-18A			X	
	MW-19A			X	
	MW-23A			X	
	MW-24A	X		recommended	X
	MW-25A	X		recommended	X
	MW-26A			X	X
B	MW-01B	X		X	
	MW-06B			X	X
	MW-07B			X	X
	MW-08B			X	
	MW-10B			X	
	MW-11B			X	
	MW-13B			X	
	MW-14B			X	X
	MW-15B			X	X
	MW-16B			X	X
	MW-17B			X	X
	MW-18B			X	
	MW-19B			X	
	MW-23B			X	
	MW-24B			recommended	X
	MW-25B			recommended	X
	PW-01			X	
PW-02			X		
PW-06			X		
C	MW-04C			X	
	MW-06C			X	
	MW-07C			X	

Notes:

recommended = MRP wells recommended for one-time inclusion in the July 2007 CAO monitoring event.



Table 2
Site Sampling Programs and Analyses
3151 West Fifth Street
Oxnard, California

Analytical Group	Analyte	HRC Assessment - May 2007	Reactive Barrier Assessment - May 2007	CAO Program - July 2007	MRP Program - Temporarily Suspended
Field Parameters	Dissolved Oxygen	X	X	X	X
	Groundwater Elevation	X		X	X
	Oxidation Reduction Potential	X	X	X	X
	pH	X	X	X	X
	Specific Conductance	X		X	X
	Temperature	X	X	X	X
	Total Dissolved Solids	X		X	X
VOCs	Volatile Organic Compounds			X	X
Metals and General Minerals	Alkalinity		X		
	Barium				X
	Bromide				X
	Calcium		X		X
	Chloride		X		X
	Dissolved Organic Carbon		X		
	Iron		X		
	Magnesium		X		X
	Nitrate		X		X
	Nitrite				X
	Orthophosphate				X
	Potassium		X		X
	Silicon		X		
	Sodium		X		X
	Sulfate		X		X
	Sulfide				X
	Total Organic Carbon		X		X
Total Suspended Solids				X	
Turbidity				X	
Microbial Analysis	Nucleic Acids	X			
	qPCR	X			
Barrier Wall Bench-Scale Test			X		