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October 2, 2007

Steven Plunkett  
Department of Environmental Protection  
Environmental Protection Division  
1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor  
Alameda, California 94502

**RECEIVED**

3:01 pm, Oct 05, 2007

**Alameda County  
Environmental Health**

**RE: WORKPLAN FOR MONITORING WELL INSTALLATION**

Former Impulse Motors  
1210 Bockman Road  
San Lorenzo, California  
SECOR Project No.: 04OT.29215.69

Dear Mr. Plunkett:

SECOR International Incorporated (SECOR) is pleased to submit this work plan for the installation of three (3) groundwater monitoring wells at the Former Impulse Motors Site located at 1210 Bockman Road, in the City of San Lorenzo, California (the Site).

This workplan has been prepared in response to a request from the Alameda County Health Care Services (ACHCS), dated September 10, 2007. That request specified two specific issues that needed to be addressed prior to ACHCS issuing a no further action letter. These included the following items:

- Install and develop groundwater monitoring wells down-gradient of the suspected impacted groundwater beneath the former gasoline station.
- Conduct quarterly groundwater monitoring & sampling of the installed monitoring wells and issue a report presenting the results.

The following workplan presents the scope of work proposed to address these three requests.

## **1.0 SITE BACKGROUND**

Several subsurface investigations and a remedial excavation have been completed at the Site by SECOR and others (SECOR, 2005a,b; ACC, 2004). A detailed summary of this historic work was provided in the May 18, 2007 Soil, Vapor, and Groundwater Investigation, prepared by SECOR. Relevant assessment data obtained from those investigations is discussed below.

On December 16-17, 2004, SECOR completed a Phase II ESA at the Site that included advancing eight (8) borings at select locations throughout the Site. The results of SECOR's Phase II investigation indicated that contamination was not significant in the vicinity of the former USTs located at 1210 Bockman Road (see Figure 2). However impact was present in the soil in the vicinity of the former dispenser islands.

Based on the results of the completed investigation, SECOR concluded that petroleum impact was limited to shallow soils in the vicinity of the former fuel dispenser islands. As a result, SECOR completed two separate excavations in the area of the two former dispenser islands. The excavations resulted in the removal of approximately 500 cubic yards of impacted and non-impacted soil in the vicinity of the former fuel dispenser islands. The excavation verification samples collected from the sidewalls of both of the excavations indicated all detected impact was removed to the depth of the groundwater table, which was encountered at a depth of approximately 10 feet. Due to the presence of groundwater, further excavation was not possible to depths greater than 10 feet.

Soil samples collected from the base of the excavation at the groundwater surface indicated low concentrations of impact in soil, at concentrations below regulatory thresholds. As a result of the detections, it was requested by the ACHCS that groundwater samples be collected to determine if the impact had affected groundwater and the lateral dimensions of that impact.

In April of 2007, SECOR continued the assessment of soil and groundwater impact associated with the former USTs and dispenser islands. That assessment identified no impacts to groundwater directly down gradient from the former USTs. The assessment did, however, detect impact to groundwater down gradient from the former dispenser islands. The assessment did not define the limits of impact to groundwater from the dispenser islands, although the limits appeared to be very localized (less than 50 feet from the dispenser islands). Based on the lack of definition of the groundwater impact, the ACHCS has requested that additional groundwater assessment be completed to evaluate the limits of impact, prior to granting regulatory closure for the Site.

## **2.0 SCOPE OF WORK**

Based on the request from the ACHCS, SECOR, is proposing to drill and sample three groundwater monitoring wells, which will be located down gradient from the identified groundwater impact associated with the former dispenser islands. The proposed wells are located on Figure 2 (attached). The following text provides a discussion of the proposed work to complete this recommended assessment.

### **2.1 USA Notification and Marking**

As required by law, SECOR will visit the Site to mark the proposed boring locations and acquire a current Underground Service Alert (USA) ticket number prior to commencement of Site drilling activities.

### **2.2 Pre-Drilling Activities**

In accordance with federal OSHA regulations (29 CFR, Section 1910.120), SECOR will develop a site specific Health and Safety Plan (HASP) for the subject property. All SECOR

personnel will be required to be familiar with, and comply with, all provisions of the HASP.

### **2.3 Well Installation Permits**

As required by the Alameda County Public Works Agency, SECOR will acquire the necessary permits for the installation of three (3) groundwater monitoring wells.

### **2.4 Drilling and Soil Sampling**

The proposed groundwater monitoring wells (MW-01 through MW-03) will be drilled and installed using a drill rig equipped with 10-inch outer diameter hollow stem augers. Soil samples will be collected at five-foot intervals for the purpose of evaluating the presence of VOC vapors using a photoionization detector (PID) calibrated to isobutylene, and for logging physical properties. Soil samples will be obtained using a split-spoon sampler sleeved with three 6-inch long brass inserts. One of the sleeves (typically the bottom sleeve) will be capped on each end with a Teflon sheet followed by a tight fitting plastic cap, sealed with silicon tape, labeled and stored in an ice-filled cooler for delivery to a laboratory. A physical description of observed soil characteristics including PID readings will be recorded on boring logs in accordance with the Unified Soils Classification System (USCS). Select soil samples will be delivered under chain-of-custody to a California-certified laboratory for chemical analysis.

### **2.5 Groundwater Well Construction**

To evaluate the presence of petroleum hydrocarbons in groundwater down-gradient from the former fuel dispensers, SECOR is proposing to install three (3) groundwater monitoring wells as shown on figure 2. After installation, each of these wells will be sampled to collect groundwater for chemical analysis of total petroleum hydrocarbons (TPH) and BTEX/Fuel Oxygenates/1,2 Dichloroethane/1,2 Dibromoethane. Borings will be advanced to a depth of 5 feet below groundwater, estimated to be approximately 15 feet bgs.

The proposed groundwater monitoring wells will be constructed of 4-inch diameter; Schedule 40 polyvinyl chloride (PVC) casing screened from approximately two feet above groundwater to 5 feet below as specified in the letter from the ACHCS.

Upon reaching the target depth, the well casing will be inserted through the annular space of the auger with the screened interval consisting of 0.01-inch slotted PVC casing. The remainder of the well will be constructed of well casing consisting of blank PVC casing.

A filter sand pack will be constructed of #2/12 sand, or equivalent, tremmed between the annulus of the auger and the casing. As requested by the ACHCS, sand pack intervals will have a thickness of five feet or less. During placement of the sand pack, repeated depth soundings will be performed to monitor and prevent bridging of the sand in the borehole. The sand pack will extend approximately two feet above the top of the screen interval. Some pre-development surging will be performed to tighten the sand pack and additional

sand will be added to assure that the sand pack extends a minimum of one foot above the well screen. Once the sand pack is installed, the remaining portion of the borehole will be sealed with hydrated bentonite chips to within one foot of finished grade. The top of the well casing will be secured with a cap, and a temporary locking well box. Following installation, the groundwater monitoring wells will be developed and sampled.

Groundwater will be collect from each location using a 1.5" disposable bailer. During sampling, groundwater will be transferred directly from the disposable bailer into clean, 40mL, glass vials as well as 1 Liter glass jars with HCl preservative provided by the laboratory. Once the containers are full, threaded lids will be attached; the containers will be labeled and placed into an iced cooler pending transport, under Chain-of-Custody, to a laboratory for chemical analysis.

## **2.6 Laboratory Analysis of Soil & Groundwater Samples**

Groundwater samples will be collected from the newly installed wells following development. The collected soil and groundwater samples will be delivered under appropriate chain-of-custody to an environmental laboratory certified by the California Environmental Laboratories Accreditation Program. Collected soil and groundwater samples will be analyzed for TPH carbon chain (gasoline and diesel range) analysis by EPA Test Method 8015M and BTEX, fuel oxygenates (MTBE, TBA, DIPE, ETBE, and TAME), 1,2 dichloroethane (1,2 DCA), and ethylene dibromide (1,2 dibromoethane) in accordance with EPA Test Method 8260B.

## **2.7 Containment of Materials**

Drill cuttings, purge water and decontamination water generated during the installation and sampling of the wells will be contained in labeled, Department of Transportation (DOT) approved 55-gallon drums and temporarily stored on-site. The drummed soil and water will be removed and transported under appropriate manifest to a permitted recycling or disposal facility.

## **2.8 Reporting**

Upon completion of the scope of work and field activities described herein, SECOR will prepare a comprehensive technical report detailing the installation of the monitoring wells and sampling activities. The report will include a description of field methods and the laboratory reports. The intent of the report is to document the limits of residual groundwater impact remaining on the subject property. It is the desire of the property owner to continue development of the property and bring closure to the assessment and monitoring of the detected residual impact. Provided the assessment completes the evaluation of the assumed localized impact limits closure recommendations will be provided in the report.

## **3.0 CLOSURE**

Mr. Steven Plunkett  
October 2, 2007  
Page 5

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### 3.0 CLOSURE

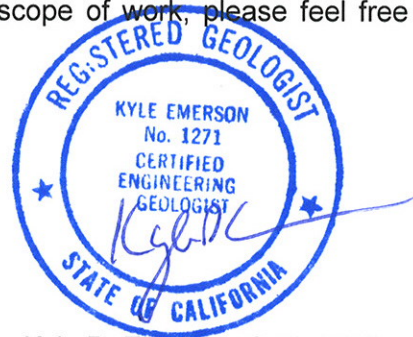
It has been SECOR's pleasure in providing this work plan for your review. Upon your authorization to proceed, SECOR will immediately obtain the appropriate boring and encroachment permits and schedule the field investigation program.

Should there be any questions regarding the proposed scope of work, please feel free to contact the undersigned at (909) 335-6116.

Respectfully submitted,  
**SECOR International Incorporated**



Jason Adelaars  
Staff Scientist



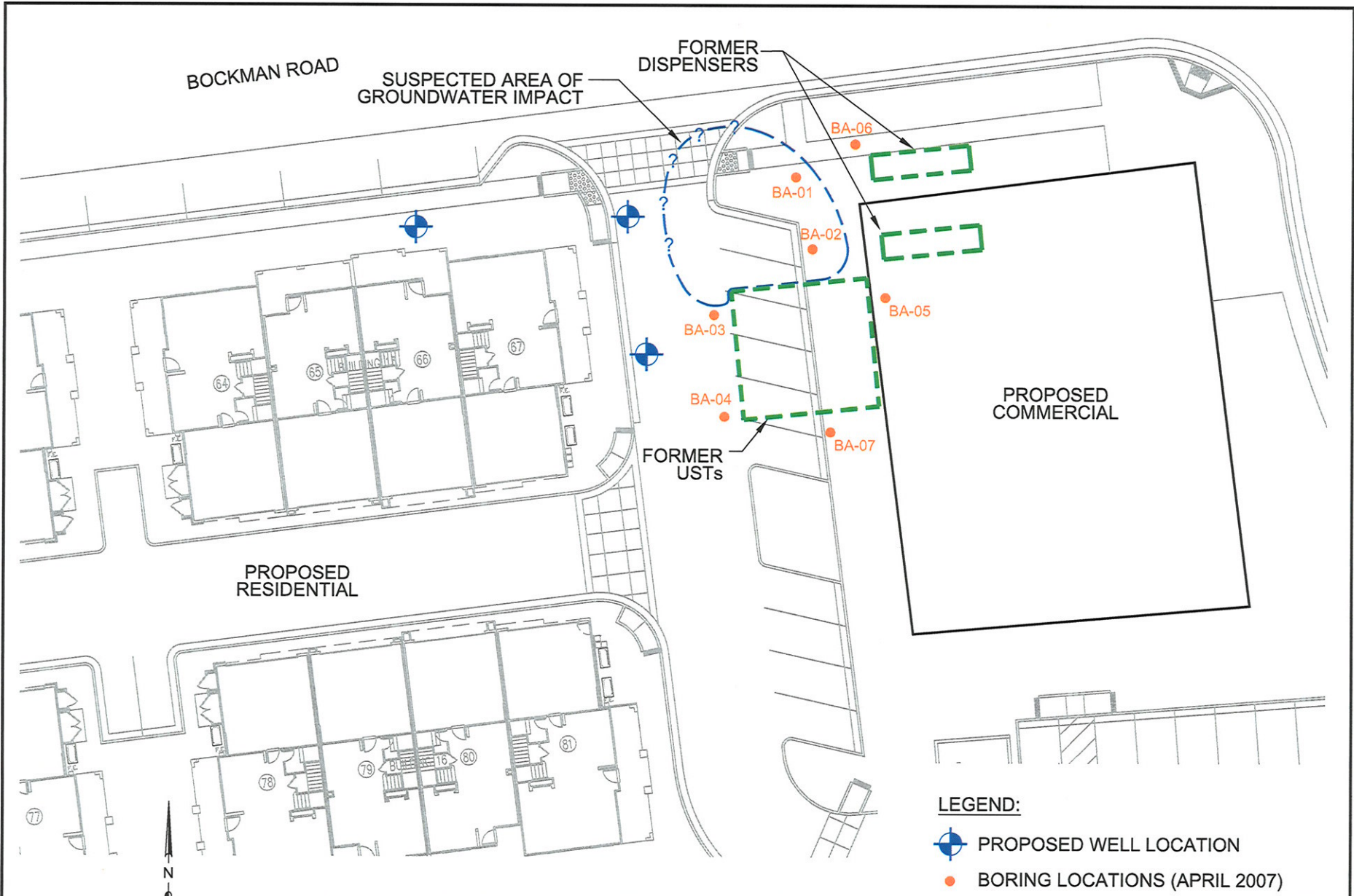
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## FIGURES



 <b>SECOR</b> 25864-F BUSINESS CENTER DRIVE REDLANDS, CA 92374 PHONE: (909) 335-6116 FAX: (909) 335-6120	FOR:		SITE PLAN WITH PROPOSED WELL LOCATIONS		FIGURE:
	VILLAGE WALK 1210 BOCKMAN ROAD SAN LORENZO, CA				<b>1</b>
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	
04OT.29215.69	GH	JA		10/01/07	