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# Community Safety Plan

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## Firmin Street Project

### Patel 1

AUGUST 10, 2016  
DEPARTMENT OF CONSERVATION  
5816 Corporate Ave, Suite 100  
Cypress, California

### **Introduction:**

The Firmin Street Project is a hazardous, idle-deserted well abatement project under the purview of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) intended to eliminate deserted wells that pose a danger to public health, safety, and environment. This project was targeted at two wells, both of which no longer had viable operators, and were either leaking, or had the potential to leak, and posed a nuisance to the community as a result of their location in front of two residences on Firmin Street. The wells H. Rogalske 10, 323 Firmin Street, and Manley Energy Resources, LLC "Patel" 1, 324 Firmin Street, are located across the street from each other on a narrow cul-de-sac. The cement plugging and sealing of the Rogalske well began on July 15, 2016, and was completed on July 29, 2016. Work on Patel 1 began on July 30, 2016.

### **Purpose:**

The purpose of the Community Safety Plan is to identify and document protocols in place to mitigate potential impacts to residents and the surrounding community, and to provide for the safety of residents during well sealing operations. This plan includes procedures for noise, dust, and odor control, public access routes, public exclusion areas, jobsite safety, and community notification and contacts. A worksite safety manager will be onsite at all times the worksite is active. He will see to it that the worksite is properly configured at the beginning and end of each work day.

### **Days and Times of Work:**

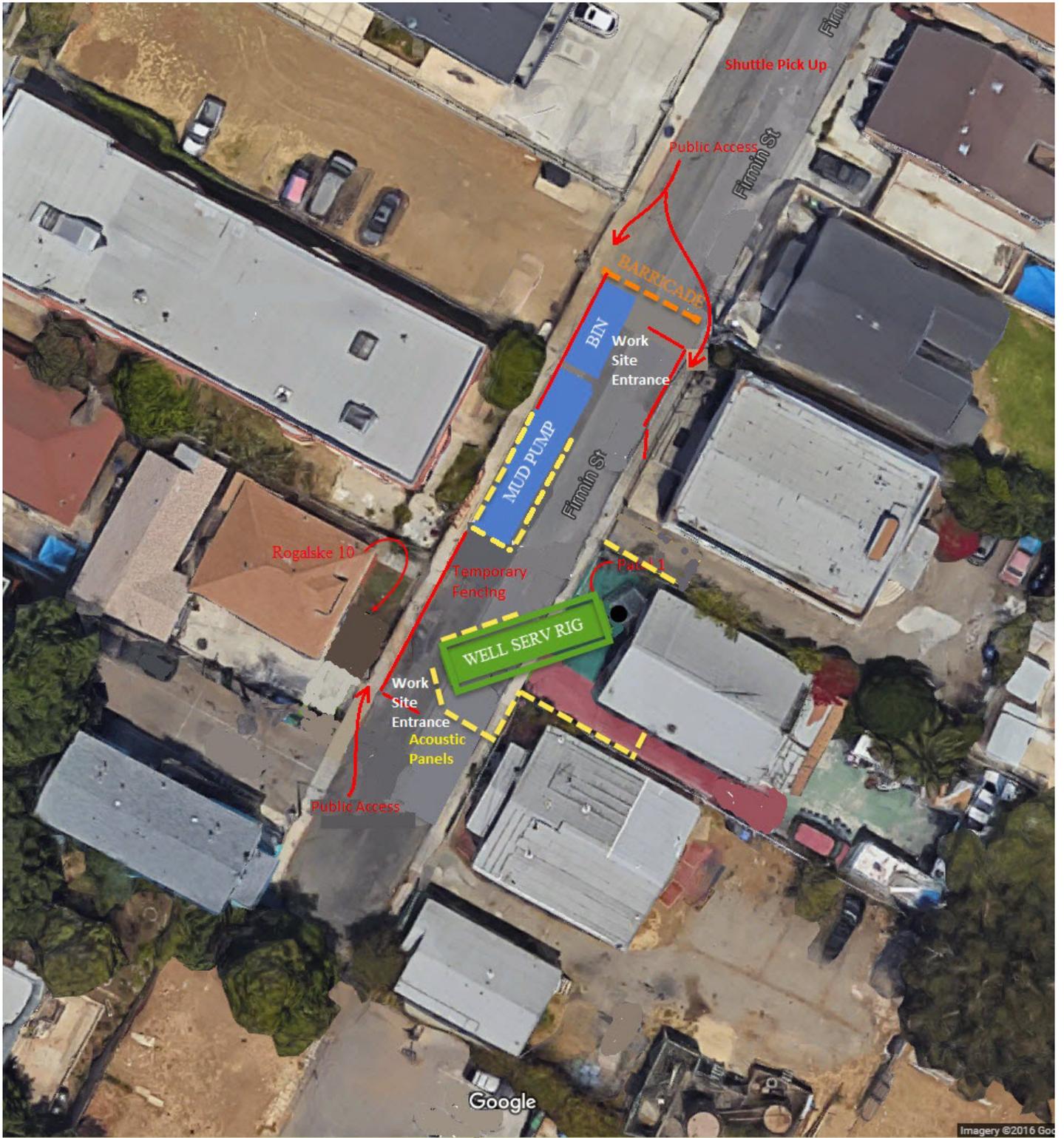
Work is generally expected to occur Monday through Sunday, beginning at 7:00 am, and ending at 6:00 pm. For protection of the community, environment, and workers, there may be extreme cases when it will be necessary to work late hours, or possibly all night. The decision to do so will be at the sole discretion of the supervising engineer, and will be preceded with as much advanced community notice as possible.

### **Reporting Concerns:**

All members of the public are encouraged to report concerns about noise, dust, odor, health, or the project in general to **(800) 209-3609**. All calls will be returned within twelve hours of initial call. Calls requiring specific agency intervention will be referred directly to that agency. DOGGR engineers are onsite during all operations, and are available to address any concerns of the community.

In case of emergency call **911** for fire, police, emergency medical service, or hazardous materials spills.

**Worksite:**



### **Public Access:**

Public access to residences and areas beyond the worksite is provided along the sidewalk on the northwest side of the street. The sidewalk is segregated from the remainder of the worksite via temporary fencing and sound absorption panels. During operational hours, the temporary fencing runs the entire length of the work site, from the driveway entrance of the 330 Bixel apartments, to the driveway entrance at 323/321 Firmin Street.

Access to the apartment building immediately northeast of the Patel well is provided by segregated sidewalk corridor. This corridor is established by temporary worksite fencing.

Because the city sidewalks do not meet ADA requirements, there may be times when a member of the public will need to access the other side of the worksite, by traversing through the site. In such cases, the person needing such access will contact the security guard, or worksite safety manager (worksite entrances will be monitored to assure unauthorized personnel do not enter). All work will cease when safe to do so, including the elimination of overhead hazards. The worksite safety manager or his designee will then escort the person needing such access through the site. Work will not resume until the person has cleared the worksite.

There will be times when equipment necessary to provide operational support of the worksite will temporarily be located beyond the established boundaries of the worksite. In such cases, this equipment will be segregated from the public through the use of temporary fencing, sound barriers, and caution tape. Anytime this is the case, personnel will be located along the extended boundary to assure members of the public do not access the equipment or attempt to enter the worksite.

After hours, the temporary fencing will be relocated to completely enclose all equipment so that police, fire, and rescue have street access to residences in the cul-de-sac area beyond the worksite. The street portion of the worksite is made available to public pedestrian access through the complete enclosure of all equipment, and materials, and the elimination of overhead, and trip/fall hazards. Public vehicle traffic is prohibited beyond the barricade, and is enforced by private 24 hour security.

### **Worksite Hazards and Monitoring Protocol**

The well, Patel 1, is more than 100 years old, with no steel casing or effective means for being sealed. The fluid in the well consist primarily of water and hydrocarbons - crude oil, and very small amounts of associated and unassociated natural gas. Initially, low volumes of hydrogen sulfide (H<sub>2</sub>S) gas was present, but it was neutralized through the introduction of a gas scavenger (cg4) into the well. The H<sub>2</sub>S accumulation was likely caused by stagnant water contact with sulfur bearing rock, in the low oxygen environment of the idle well. Although precautions are in place, a reoccurrence of H<sub>2</sub>S is not expected as long as long-term static well conditions are avoided. Permanent well sealing should eliminate future occurrences of H<sub>2</sub>S in the well.

The National Institute for Occupational Health and Safety, and Occupational Safety and Health Administration have established recommended exposure limits (REL), and permissible exposure limits (PEL) for certain compounds, including hydrocarbons. Below are the established REL and PEL for crude oil, natural gas, and H2S.

Compound	OSHA		NIOSH (REL)	
	TWA	STEL	TWA	STEL
Crude oil	(1)	--	350 mg/m <sup>3</sup>	1800 mg/m <sup>3</sup>
Natural Gas	1000 ppm	--	1000 ppm	--
Hydrogen Sulfide Gas (H2S)	10 ppm	15 ppm	--	10 ppm

(1) OSHA has no exposure limits for crude oil.

Natural gas, H2S gas, and crude oil are flammable. Ignition sources shall be eliminated or controlled. Personnel in the worksite shall be equipped with personal H2S monitors. Continuous monitoring for H2S, methane, carbon monoxide, and oxygen content shall be performed at the well or ventilation point in a closed circulation system. Continuous H2S reading of 10 ppm or greater will result in work stoppage. H2S scavenger will be added to the well. After which, the well will be circulated to demonstrate the elimination of H2S.

If uncontrolled fluid flow occurs from the well, weighted fluid will be added, and any residual gas will be circulated out of the well. During such circumstances, or whenever hydrocarbons are being circulated from the well in close proximity to public access areas, the public access points will be temporarily closed until circulation has ceased and the absents of combustible gas or H2S have been verified.

### **Noise Control Mitigation:**

Noise consist primarily of the running diesel motors at high RPM, use of larger volume pumps, and the clanging of metal pipe. While it's not possible to eliminate all noise associated with the project, the impact of that noise will be reduced through the installation of a portable noise barrier system. Noise barriers are installed between the worksite and residences immediately adjacent to 324 Firmin Street, and as practical, around the power units of stationary equipment. Portable panels will also be used as practical around power units of portable equipment, such as cementing equipment (Specifications for noise barrier system are maintained by the Worksite Safety Manager). The effectiveness of noise mitigation measures will be evaluated by the supervising engineer walking around the perimeter of the worksite during various operations, and meeting with residents.

Example of Noise barriers to be used:



### **Dust Control Mitigation:**

Earth – While the vast majority of the area is paved or covered in hardscape, there is loose dirt present in the front yard of 323 Firmin Street where the Rogalske well was recently sealed, as well as a small dirt area around the Patel well, and some dirt used to level equipment. The worksite safety manager will be responsible for assuring dirt areas are checked hourly for dryness during operational hours. Areas determined to be overly dry will be lightly watered to minimize airborne dirt particulates. The worksite safety manager will also regularly check worksite and public access areas for excessive accumulations of dirt which could lead to slip and fall injury. Crews will be directed to hand sweep these areas as necessary to prevent such accidents.

Cement Dust – All cement equipment will be equipped with dust collection devices, such as dust socks, to minimize airborne cement particulates.

Activities producing higher levels of dust will be curtailed during high wind events.

### **Odor Control Mitigation:**

The Los Angeles City field is a gas depleted, low energy oil field. While gas is present, it is in very low quantity and pressure. Hydrocarbons are generally considered to be odorless, but odor can be present during crude oil off gassing.

The most prolific odor is H<sub>2</sub>S, which is detectable by smell in very low parts per billion (ppb) by volume. At such low levels, H<sub>2</sub>S does not pose a threat but does emit a rotten egg smell. As mentioned previously, gas scavenging agents will be used for H<sub>2</sub>S levels

in excess of 10 ppm (material safety data sheets for chemicals used for gas scavenging are maintained by both the Worksite Safety Manager and Worksite Supervisor).

In order to minimize other odors present during well circulation operations, a closed fluid circulation systems shall be utilized when practical to centralize fluid collection away from the well. Crude oil circulated from the well will be skimmed off the tank and transported to offsite storage prior to disposal.

### **Worksite Emissions Monitoring:**

Worksite personnel each carry an individual continuous H<sub>2</sub>S monitor during operational hours. A continuous multi-gas meter is also maintained near the well during operational hours. South Coast Air Quality Management District (AQMD) personnel will be onsite monitoring gas and particulate emissions, including dust, during peak operations. AQMD personnel will also perform additional testing and sampling on a periodic basis.

### **Jobsite Safety:**

The Site Specific Safety Plan is a separate document maintained on site by the Worksite Safety Manager. This plan covers specific information and procedures for personnel operating inside the worksite area.

### **Community Notifications:**

Community notification and information dissemination will continue to occur through the following sources:

1. Website:  
<http://www.conservation.ca.gov/dog/FirminStreetProject/Pages/Firmin-Street-Project.aspx>
2. Informational Phone Number: **1-800-209-3609**
3. Weekly, and as needed community flyer
4. Email: [desertedwells@conservation.ca.gov](mailto:desertedwells@conservation.ca.gov)
5. Community/Town hall meetings

Community flyer, website update, and the 800 number will be updated and distributed when an anticipated change in operations is expected to occur. Changes in operation include cleaning, circulating, or retrieving debris out the well, installing casing, and pumping cement.

Non-emergency questions and reports are to be directed to 1-800-209-3609 which is operated by CALSTAD, a contractor of the Department of Conservation. Phone messages will receive responses within twelve hours. Questions and reports can also be address to email account [desertedwells@conservation.ca.gov](mailto:desertedwells@conservation.ca.gov).

**Supervising Engineer - Project Manager:**

Chris McCullough (DOGGR)	(714) 816-6847	Office
	(714) 448-2593	Cellular

**Worksite Safety Manager:**

Logan Kelsey (primary – Rival Well Services)	(661) 633-4930	Cellular
Wes Flippin (alternate – Rival Well Services)	(661) 487-6541	Cellular

**Worksite Supervisor:**

Dean Thomas (Rival Well Services)	(805) 331-2338	Cellular
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