STRATUS
ENVIRONMENTAL, INC.

3330 Cameron Park Drive, Ste 550
Cameron Park, California 95682
(530) 676-6004 ~ Fax: (530) 676-6005

RECEIVED
By Alameda County Environmental Health at 10:45 am, May 28, 2013

May 23, 2013
Project No. 2115-1436-01

Mr. Mark Detterman
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Path to Closure Schedule, Former Olympic Station, 1436 Grant Avenue, San Lorenzo, California (Case #RO373)**

Dear Mr. Detterman:

Stratus Environmental, Inc. (Stratus), on behalf of Mr. Phil Jaber and the George and Frida Jaber 1989 Trust, has prepared this *Path to Closure Schedule* for the former Olympic Station located at 1436 Grant Avenue in San Lorenzo, California. In the letter dated March 5, 2013, Alameda County Environmental Health Department (ACEHD) responded to Stratus' *Corrective Action Plan* (CAP, dated September 30, 2012) that proposed implementing dual phase extraction (DPE) and installing additional groundwater monitoring wells to delineate the downgradient extent of the dissolved plume. ACEHD's letter generally concurred with the approach and scope of work proposed in the CAP. The letter did raise a few minor technical points, which were addressed in Stratus' *Revised Corrective Action Plan* (revised CAP, dated April 19, 2013). Finally, the letter included ACEHD's review of current site conditions against the Low Threat Closure Policy (LTCP), and requested a work plan to address the gaps identified by this review, and a path to closure schedule.

Identified Data Gaps

ACEHD reviewed the current site conditions for conformance with the LTCP, and concluded that the site does not meet the minimum criteria for closure consideration under the LTCP. The following conformance gaps were identified:

1. The site does not meet all the general criteria. The secondary source has not been removed to the extent practicable.

2. The site does not meet the groundwater media-specific criteria. The lateral extent of the dissolved hydrocarbon plume has not been fully characterized, and the site cannot be evaluated against the acceptable scenarios that are part of the LTCP. The maximum methyl tert-butyl ether (MTBE) concentration in groundwater (1,400 micrograms/liter [µg/L] in the first quarter 2013) exceeds the allowable threshold.

3. The site does not meet the intrusion to indoor air media-specific criteria. In soil vapor samples collected in February 2010, benzene concentrations ranged from 18,000 to 160,000 micrograms/cubic meter ($\mu g/m^3$), ethylbenzene concentrations were reported from <2,500 to <5,000 $\mu g/m^3$, naphthalene concentrations were reported from <12,000 to <24,000 $\mu g/m^3$, and oxygen concentrations ranged from 1.2% to 1.4%. Based on these data, the benzene concentrations exceed the limits outlined in the LTCP, the reporting limits for one of the ethylbenzene and all of the naphthalene results exceed the maximum allowable concentrations in the LTCP, and the oxygen concentrations are too low for an acceptable biodegradation zone. In addition, given the maximum reported dissolved benzene concentration in the groundwater (160 µg/L) and depth to water (6.63 to 7.32 feet below top of well casing) during the first quarter 2013 monitoring and sampling event, there is not adequate separation between the groundwater and the building slab to meet the LTCP criteria.

4. The site does not meet the direct contact and outdoor air exposure media-specific criteria. The benzene concentration in one of the soil samples from the former gasoline underground storage tank (UST) pit (TE-3 at 7 feet below ground surface [bgs]) exceeds the allowable limits for volatilization to outdoor air and utility worker contact.

Data Gap Work Plan

A data gap work plan does not appear to be warranted at this time. The data gaps summarized above have been addressed by the scope of work proposed in the revised CAP, as follows:

1. Remediation of the secondary source will be accomplished by implementation of DPE. We anticipate that the proposed 6 month operating period will be sufficient to remove the secondary source to the extent practicable.

2. Operation of the DPE system will reduce benzene and MTBE concentrations in the groundwater. We anticipate that the proposed 6 month operating period will be sufficient to reduce benzene and MTBE concentrations to meet the LTCP thresholds. Additional monitoring wells were proposed to further constrain the downgradient extent of the plume.

3. Operation of the DPE system will also reduce benzene concentrations in soil vapor, and should elevate oxygen concentrations in the soil vapor. Lower overall soil vapor concentrations will also yield lower laboratory reporting limits. We anticipate that the proposed 6 month operating period will be sufficient to reduce hydrocarbon concentrations, increase oxygen concentrations, and demonstrate that the site meets LTCP thresholds.

4. Operation of the DPE system will reduce sorbed concentrations in soil. We anticipate that the proposed 6 month operating period will reduce residual soil concentrations below the LTCP thresholds. Poly-aromatic hydrocarborns (PAHs) were reported in a soil sample (WO-OEX-12) collected from the base of the waste oil UST after it was excavated to 12 feet bgs. Based on the historical soil analytical data, it appears unlikely that PAHs remain in soil at depths less than 10 feet bgs.

The scope of work proposed in the revised CAP should be sufficient to address the identified data gaps. If additional work is required to address the identified data gaps after the revised CAP has been implemented, the additional work will be proposed in an addendum to the revised CAP.

Path to Closure Schedule

ACEHD requested a path to closure schedule to address data gaps and identify impediments to closure. This path to closure was to address, at a minimum, the following elements:

Preferential pathway study – Completed (*Additional Subsurface Site Investigation Report*, Conestoga-Rovers & Associates, dated June 14, 2010; *Verification of Subsurface Utilities*, Stratus Environmental, Inc., dated January 9, 2012).

Soil, groundwater, and soil vapor studies – To date, a total of nineteen exploratory soil borings (BH-A through BH-C, B-1 through B-13, B-13A, B-13B, and B-13C), four groundwater monitoring wells (MW-1 through MW-4), five remediation wells (EX-1 through EX-3 and IW-1 and IW-2), and five soil vapor sampling points (SV-1 through SV-5) have been installed at the site. At this time, it appears additional groundwater monitoring wells are required to complete the full characterization of the dissolved hydrocarbon plume. Installation of the additional groundwater monitoring wells is proposed in the revised CAP.

Initial, updated, and final/validated conceptual site models – The updated conceptual site model is presented in the revised CAP.

Interim remedial actions – Completed. Interim remedial activities were limited to excavation from the former gasoline and waste oil UST pits, and the dispenser islands (*Tank Closure Report*, Reese Construction, dated September 14, 1998; *Report of Excavation Dewatering Activities*, Foss Environmental Services, dated September 21, 1998; *Report Detailing Former Waste-Oil UST Overexcavation Activities*, Aqua Science Engineers, Inc., dated January 7, 1999).

Feasibility Study/Corrective Action Plan – Completed (*Corrective Action Plan*, Stratus Environmental, Inc., dated September 30, 2012; *Revised Corrective Action Plan*, Stratus Environmental, Inc., dated April 19, 2013).

Pilot tests – Completed (*Dual Phase Extraction Pilot Test Report*, Stratus Environmental, Inc., dated November 3, 2011; *Ozone Injection Pilot Test Report*, Stratus Environmental, Inc., dated February 21, 2012).

Remedial actions – The revised CAP proposed implementation of DPE to address the hydrocarbon impact at this site.

Soil vapor and groundwater monitoring well installation and monitoring – Soil vapor samples were collected from soil vapor points SV-1 through SV-4 in 2010 (*Additional Site Investigation Report*, Conestoga-Rovers &Associates, June 14, 2010). Monitoring and sampling of the

groundwater well network was initiated in October 1999. Twenty eight monitoring and sampling events have been performed to date. Groundwater monitoring and sampling data are summarized most recently in the *Semi-Annual Groundwater Monitoring Report – First Quarter 2013*, Stratus Environmental, Inc., dated April 23, 2013.

Public participation – ACEHD has indicated that, once the revised CAP has been approved, it will be posted for public comment. The revised CAP was submitted on April 19, 2013. ACEHD has 60 days to review the revised cap (until June 19, 2013). Allowing time for public notification, the public comment period should begin by July 1, and conclude by August 31, 2013.

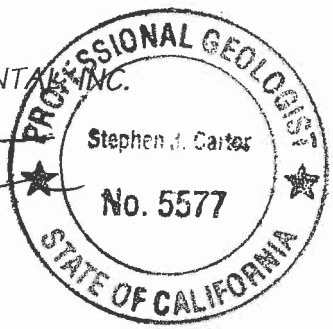
A second public review will be required once DPE operations and post-remediation monitoring have been completed, and a closure request has been submitted to ACEHD. Based on our projected schedule, this public comment period will occur during the first and second quarters of 2015.

Case closure tasks – These tasks will be implemented upon the successful completion of DPE operations and the post-remediation monitoring. Based on our projected schedule, we anticipate the case closure tasks will be completed during the second quarter of 2015.

As discussed above, identified impediments to closure have been addressed in the revised CAP that was submitted to ACEHD on April 19, 2013. The revised CAP included a tentative schedule for implementation of the proposed remediation and additional site investigation activities, including post-remediation monitoring, site closure activities, and required public participation. Remediation, site assessment, and site closure activities proposed in the revised CAP are summarized in the attached Proposed Path-to-Closure Schedule. This proposed schedule supersedes the tentative schedule outlined in the revised CAP.

If you have questions regarding the proposed implementation schedule, please contact Steve Carter by email at scarter@stratusinc.net, or by telephone at (530) 676-6008.

Sincerely,
STRATUS ENVIRONMENTAL, INC.



Stephen J. Carter, P.G.
Project Manager

Gowri S. Kowtha, P.E.
Principal Engineer

Attachment: Proposed Path to Closure Schedule

cc: Mr. Philip Jaber
Ms. Cherie McCaulou, RWQCB

Proposed Path to Closure Schedule
Former Olympic Station
1436 Grant Avenue, San Lorenzo, CA

	2nd Qtr 2013			3rd Qtr 2013			4th Qtr 2013			1st Qtr 2014			2nd Qtr 2014			3rd Qtr 2014			4th Qtr 2014			1st Qtr 2015			2nd Qtr 2015		
	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15
CAP submitted to ACEHD 4/15/13	◆																										
ACEHD review (60 days)																											
ACEHD public notification announcement																											
Submit budget change order request to USTCF			◆												◆							◆					
Public comment (60 days)																											
ACEHD compile public comments, issue approval																											
System design drawings, contractor bid package prep																											
Contractor bidding and selection																											
Building permits																											
Contractor scheduling and mobilization																											
Remediation equipment purchase/rental																											
ACPWA well permits																											
BAAQMD discharge permit																											
OLSD discharge permit																											
CSL encroachment permit																											
Moitoring well access agreement																											
Monitoring/remediaton well install/reporting																											
Natural gas and electical service requests																											
Compound, subgrade piping, and utilities install																											
Treatment equipment installed in compound																											
System shakeout and source testing																											
DPE operations (6 months)																											
Post-remediation monitoring & verification																◆			◆			◆					
Request site closure																											
Monitoring/remediation well abandonment and reporting																											

Schedule assumes that two post-remedial groundwater monitoring and sampling events will be adequate to demonstrate compliance with LTCP criteria.