

MEETING MINUTES

<p>Meeting Subject: Former Norwalk Tank Farm Restoration Advisory Board (RAB) Semiannual Meeting</p>	<p>Meeting Date: <u>August 24, 2017</u> Meeting Time: 4:00 p.m. Meeting Place: Norwalk Arts & Sports Complex</p>
<p><u>RAB, PROJECT TEAM, AND OTHER ATTENDEES</u></p>	
<p><u>RAB Community Members</u> M. McIntosh (Co-Chair, Meeting Chair) T. Winkler</p>	<p><u>Acronyms:</u> 1,2-DCA..... 1,2-dichloroethane CO₂..... carbon dioxide CFM.....cubic feet per minute DFSP Defense Fuel Support Point DF-FEE Defense Logistics Agency-Energy DTSC.....Department of Toxic Substances Control GSA..... U.S. General Services Administration HHRA.....Human Health Risk Assessment KMEP Kinder Morgan Energy Partners LNAPL light non-aqueous phase liquids MTBE methyl tertiary-butyl ether O₂ oxygen PCE tetrachloroethylene RAB Restoration Advisory Board RSLs.....Risk Screening Levels RTO.....Regenerative Thermal Oxidizer RWQCB..... Regional Water Quality Control Board SFPP.....Santa Fe Pacific Pipeline SGI The Source Group, Inc. SVE soil vapor extraction TBA tert-butyl alcohol TFE/GWE total fluids extraction/groundwater extraction TPH total petroleum hydrocarbons ug/L micrograms per liter USAF United States Air Force VOCs volatile organic compounds WRD Water Replenishment District of Southern California</p>
<p><u>Other Members</u> P. Cho (RWQCB) S. Defibaugh (KMEP) (Co-Chair) C. Devier-Heeney (DF-FEE Energy) A. Figueroa (City of Norwalk) N. Irish (SGI)</p>	
<p><u>Other Attendees</u> B. Partington (WRD) E. Davis (CH2M) V. Carino (CH2M) C. Gross (GSA) P. Parmentier (SGI/Apex) L. Graves (SGI/Apex) H. Enciso (Norwalk Youth Soccer League)</p>	

MEETING MINUTES

MEETING MINUTES

24 August 2017

BACKGROUND

DF-FEE Installation Operations Energy (DF-FEE) Restoration Branch and Kinder Morgan Energy Partners (KMEP) are conducting environmental cleanup activities at the area in and surrounding the former Defense Fuel Support Point (DFSP) Norwalk facility, formerly known as the Tank Farm, located at 15306 Norwalk Boulevard, Norwalk, California. The Restoration Advisory Board (RAB) is an advisory committee of local citizens and project members that review and comment on documents relating to the environmental cleanup. All RAB meetings are open to the public and are scheduled semiannually on the fourth Thursday at 4:00 p.m. in the months of February and August unless otherwise voted on by the RAB community membership.

INTRODUCTION Mary Jane McIntosh, RAB Co-Chair, Meeting Chair

Mary Jane McIntosh, RAB Co-Chair, Meeting Chair, called the meeting to order at 4:10 p.m.

Ms. McIntosh asked for questions and comments on the minutes from the February 23, 2017 RAB meeting. Ms. McIntosh made a motion for the minutes to be approved as written. Mr. Steve Defibaugh seconded the motion. The minutes were approved without opposition.

Attendees introduced themselves.

Eric Davis from CH2M introduced himself as the new project manager, replacing Dan Jablonski, and Vladimir Carino.

GSA Update

Chelsey Gross stated that the GSA has received the draft Report of Excess from the Air Force and expects the final version of the report by December 2017. The GSA will then accept the property. Disposal of the property will begin between February and April.

MEETING MINUTES

KMEP Update Eric Davis, CH2M

Remediation Operations Update

Mr. Eric Davis, CH2M Project Manager for the DFSP Norwalk site, provided an update on KMEP's remediation systems operation, completed remediation activities, planned remediation activities, and a summary of the 2017 semi-annual Ground Water Monitoring Report.

Mr. Davis summarized 1st and 2nd quarter data for all of KMEP's treatment systems onsite, including the SVE, GWE, and TFE systems. These systems are located in the South-Central and Southeast areas. Additionally, pilot testing of the biosparge system began in January 2016.

The SVE and biosparge systems were not operational during the 1st quarter of 2017 due to a system update. The SVE system was restarted on June 6th, 2017, and the biosparge system was restarted later in the month. During the 1st quarter, the equivalent fuel treated by the SVE was approximately 0 gallons due to the system update. During the 2nd quarter, the fuel removed was approximately 912 gallons; Mr. Davis attributed the low volume to system downtime. Since 1995, KMEP has removed approximately 527,000 gallons of fuel.

During the 1st quarter, KMEP extracted approximately 1.224 million gallons of groundwater from the South-Central and Southeastern areas. During the 2nd quarter, KMEP extracted approximately 800,000 gallons of groundwater in the South-Central and Southeastern areas. Since 1995, KMEP has extracted approximately 100 million gallons of groundwater, with 27 million gallons removed from the West Side Barrier, which was discontinued in 2008 due to diminishing returns.

Fuel treated by the TFE system in the 1st quarter was 1.5 gallons, and during the 2nd quarter was 11 gallons. The low mass removal is due to system downtime and ongoing biosparge activity.

Free-product extracted during the 1st quarter was 2 gallons, and in the 2nd quarter 0 gallons due to a decline in measurable product in extraction wells due to biosparge activities, and an increase in precipitation. Since 1995, KMEP has removed 14,426 gallons of free product.

Biosparge Pilot Testing Update

Mr. Davis provided explanation of the biosparge well layout and design.

Mr. Davis explained a schematic of soil vapor monitoring probes.

KMEP plans on installing another biosparge well in another portion of the site.

Results from the biosparge pilot test were promising, showing a radius of influence of up to 50 feet.

Potential vapor intrusion risk in shallow media was highest in onsite area closest to the biosparge screen. There is a minimal risk of offsite vapor intrusion, assuming continued operation of the SVE system.

Regarding groundwater monitoring in relation to the pilot test, there was an average reduction in thickness of product of 1-2 feet. There was a 100% reduction of product thickness in 16 of 21 wells. Significant reduction in dissolved-phase hydrocarbons in wells 50-100 feet from the biosparge screen.

It is recommended that the biosparge operations continue, and the system is expanded into the Southeast portion of the site.

Mr. Davis summarized the operation periods of the biosparge system thus far and the results of biosparging.

Ms. Winkler asked how the tracer test works, including where the gas was inserted, and when the concentrations were measured.

Mr. Davis explained the choice of gas used, how the gas was inserted into the system using the network of 16 SVE wells near the biosparge system, the length of the testing period (4-5 days).

Mr. Defibaugh explained the purpose behind the tracer gas, which is to determine the area of influence of the biosparge system.

MEETING MINUTES

MEETING MINUTES

24 August 2017

SVE System Update

Mr. Davis showed photos of the updated SVE system.

Ms. Winkler asked if the SVE system will remain onsite when the site is released for development.

Mr. Defibaugh explained that the system will have to stay in place until concentrations are low enough for removal. He added that KMEP's goal is to have the smallest footprint possible.

Mr. Davis reiterated that the SVE system was restarted in early June. The system shows 99% destruction efficiency of VOCs.

Mr. Davis summarized the thermal oxidizer operation parameters: average airflow in June and July of 2017 was 1,262 cubic feet per minute, the average temperature was 1,618 degrees Fahrenheit. The maximum airflow was over 2,200 cfm. The minimum temperature was 1,500 degrees Fahrenheit. All parameters were within permit requirements.

Mr. Davis showed a slide with the locations of soil vapor probes onsite.

Mr. Cho stated that the guidelines for evaluating human health risk will be changed.

Mr. Davis stated that soil vapor sampling conducted with the remediation system turned on may have to be resampled with the remediation system turned off due to the changing guidelines.

Planned Remediation Activities

Installation of Second Biosparge Well

The construction of the new well will be very similar to that of the first biosparge well. Mr. Davis summarized installation activities.

In the first two quarters of 2018, a larger air compressor will be installed to operate the new biosparge well, and to allow future expansion of the system to other areas.

Mr. Irish asked if the new biosparge well will require the installation of additional soil vapor extraction wells.

Mr. Carino stated that wells in the immediate area could be converted to soil vapor extraction wells, and more wells may be installed as needed.

Mr. Irish asked if the flow of vapor extracted would have to be balanced with the vapor injected.

Mr. Defibaugh stated that the system is extracting much more than it is injecting. The system is currently injecting approximately 500 cfm and extracting approximately 1500 cfm. Mr. Davis stated that evaluations will take place and Mr. Defibaugh concurred.

Reevaluating LNAPL Mobility

A reevaluation is currently taking place due to the massive amount of rainfall that likely changed subsurface mobility. Lab and field tests indicated low mobility. Precipitation data, dissolved phase trends, diagnostic gauge plots are being used to evaluate mobility.

Preliminary findings suggest water levels rose a marginal amount.

Potentially half of the wells evaluated (those with LNAPL) exhibit perched conditions which results in exaggerated in-well LNAPL thickness measurements.

There has been an overall decrease in the water table, with a small increase during the most recent winter.

The large fluctuations in LNAPL thickness is likely due to perched intervals in some wells. The distribution of LNAPL in the well may change due to fluctuations in the water table. The distribution of LNAPL in the wells may change due to water table fluctuations, but the mobility of LNAPL is unlikely to be affected.

MEETING MINUTES

MEETING MINUTES

24 August 2017

First Semi-Annual Groundwater Monitoring

Mr. Davis summarized the procedures for the semi-annual groundwater monitoring event: 167 wells are gauged; 116 wells are sampled. All remediation systems are offline for 1 week prior to sampling.

Water levels have increased site-wide due to increased rainfall, though some areas of the site showed decreased water levels.

In the uppermost aquifer, there is a lack of converging flow onsite: flow can change due to rainfall and regional pumping.

In the Exposition aquifer, groundwater elevations are lower than last April. Flow direction is similar to historical flow direction.

Mr. Davis showed a slide displaying groundwater elevations and flow for both the upper and Exposition aquifers.

Free product was measured in 18 of 167 wells gauged. Thicknesses ranged from 0.01-4.2 feet. There was a decrease in product thickness due to increased precipitation and biosparging activities.

Mr. Davis showed an animation of the LNAPL extent from 1998-2017. The footprint of the plumes has decreased significantly.

Mr. Defibaugh added that due to the drought, a resurgence in the footprint of the plumes was seen in 2013.

Ms. Winkler asked Mr. Davis to define LNAPL.

Mr. Davis explained LNAPL is Light Non-Aqueous Phase Liquid.

Ms. Winkler asked if LNAPL is what is found in the wells onsite.

Mr. Davis confirmed.

Ms. Winkler asked if the animation is based on LNAPL presence in the wells.

Mr. Davis confirmed.

Uppermost aquifer contaminants have been reduced from historical maximums, and they are consistent with recent monitoring events. Mr. Davis reiterated that this is due to increased precipitation and biosparging activity.

Continually low levels of MTBE and 1,2-DCA in monitoring wells and plume extents confirm that the West Side Barrier system should remain off.

All results from sampling Exposition aquifer wells were non-detect, except for EXP-1 which contained low levels of MTBE. Historically samples from this well have contained low levels of MTBE, and it will continue to be monitored.

Ms. McIntosh asked if the EXP wells are monitored on a semi-annual or quarterly basis.

Mr. Davis stated that EXP wells are monitored semi-annually.

Ms. McIntosh stated that she would like EXP-1, or potentially all EXP wells monitored on a quarterly basis until MTBE levels are non-detect.

Ms. McIntosh asked Mr. Cho what he thought about more frequent monitoring.

Mr. Cho stated that he thinks more frequent monitoring is a valuable suggestion.

Ms. McIntosh stated her concerns about MTBE detections.

Mr. Cho stated that he believes additional monitoring is warranted, which will be followed by a reevaluation.

Ms. McIntosh concurred.

Mr. Davis showed a slide with iso-concentration contour maps, showing TPH, Benzene, 1,2-DCA, and MTBE plumes.

Mr. Irish asked Mr. Davis to clarify the color coding on the maps.

MEETING MINUTES

MEETING MINUTES

24 August 2017

Mr. Davis explained the color coding represented overall concentrations of contaminants rising or dropping from year to year.

Mr. Partington asked Mr. Davis to define the parameters of the color coding.

Mr. Davis explained a 10% rise or fall in contaminant concentration from the previous determines the color of the plumes.

Ms. Winkler asked if residents living above an offsite plume have been informed of the plume.

Mr. Defibaugh stated that property owners have been notified in the past, and property owners with a groundwater monitoring well have access agreements.

Ms. Winkler asked if the property owners are aware of the results of sampling.

Mr. Defibaugh stated that the purpose of the RAB meeting was to inform interested parties of sampling results. He added that KMEP works with the water board to ensure there are no health risks to residents.

Ms. McIntosh stated that property owners were previously notified via town forums and notices. KMEP assisted with lender mediation during this time. Recent buyers receive the most recent health risk assessment, notices, and newsletters.

Ms. Figueroa stated that during the sale of properties in the area, there is a seller's disclosure.

Mr. Davis continued to explain the iso-concentration maps.

Mr. Davis summarized sampling results and trends from GMW-O-18. The well sometimes has product, sometimes it does not. For the last two events, the well has had product in it. Historically the well has had free product.

MEETING MINUTES

MEETING MINUTES

24 August 2017

DF-FEE Energy Update Neil Irish, SGI/Apex

General Site Activities

Mr. Neil Irish, SGI/APEX Project Manager for the DFSP Norwalk site provided an update on DF-FEE's remediation system operation, ongoing work, completed work, and planned work.

Mr. Irish began with an overview of the remediation system. During shallow soil cleanup, the operation of the SVE system was focused on above-ground soil piles. Afterward, the SVE system was reconfigured to focus on the deeper soils and high concentrations of VOCs are currently being removed from the ground. Heavy rains during the 2016/2017 rainy season reduced the thickness of LNAPL in groundwater monitoring wells and product recovery decreased. Water levels are beginning to recede, and free product is coming back into the wells.

The current remediation system uses horizontal and vertical vapor extraction vapor extraction wells. The screened portions of wells are located above the water table so that they can pull hydrocarbon vapors from the deeper soil and groundwater.

The recent expansion of the remediation system included the addition of a series of vapor extraction wells. An increase in benzene concentrations in one area was observed, so air sparging resumed to help liberate dissolved TPH and benzene, which is then collected by the vapor extraction system, decreasing concentrations.

The center of site was most affected by rising ground water. A series of Total Fluid (TF) wells in this area were collecting 100-200 gallons per week of product prior to the rain event, which dropped dramatically due to rising groundwater levels, but they are now collecting 10 gallons per day (70 gallons per week).

The treatment of shallow soil has concluded: all but 1-2 berms are gone, all excavations are filled, and all land is graded.

SGI/APEX is currently in the process of submitting the treatment of shallow soil documentation report to the RWQCB. The site-wide soil gas survey has been completed, results were low to non-detect and will be included in the closure plan. The risk model assessment shows no incremental risk due to residual concentrations either on or offsite.

The treatment of deeper soil will include LNAPL recovery or removal, soil vapor extraction, and air sparging.

In total, SGI/APEX has excavated 175,000 tons of soil, 77,000 tons of which was clean soil. 100,000 tons of soil was excavated and treated. All but 1-2% of soil excavated was treated onsite, which was less than predicted. Mr. Irish displayed a figure displaying the now back-filled excavations. Exploratory trenching has concluded.

Any remaining contaminated soil is located at the bottom of the deepest excavations and will be remediated with other technologies.

Confirmation sampling of treatment cells, required by the RWQCB, has concluded and the results are positive.

Mr. Irish described a slide showing the soil gas sampling grid: 71 locations sampled, each sampled at 2 depths. Results of the sampling were positive.

It is expected the RWQCB along with OEHA will grant the closure for the shallow soil.

Mr. Irish summarized ongoing work: reinstallation of groundwater monitoring wells. Installation of soil vapor extraction wells. Results of testing of SVE and sparge wells will be used to construct an expanded system. LNAPL recovery wells still in operation. There is remaining LNAPL near TF-18. The LNAPL in this area is very mobile which will allow for recovery.

Mr. Irish summarized upcoming work: an update to conceptual site model will be submitted, an expansion of the vapor extraction-well network will take place, and an increase in air sparge system due to the high contaminant mass removal. SGI/APEX will may elect to use clean water to enhance flushing of LNAPL, if needed; laboratory testing showed the flushing of hot water resulted in the removal of up to 70% of the residual LNAPL.

Ms. McIntosh asked Mr. Irish if SGI/APEX would inject water.

Mr. Irish confirmed that DF-FEE is evaluating the reinjection of treated groundwater.

MEETING MINUTES

MEETING MINUTES

24 August 2017

Ms. McIntosh asked how much water.

Mr. Irish stated that up to approximately 40 gallons per minute would be injected (the maximum capacity of the current groundwater treatment system) and clarified that only groundwater extracted from onsite and treated will be used.

Ms. McIntosh asked if the cost to treat the water was feasible.

Mr. Irish confirmed.

Ms. Figueroa asked if a non-consumptive agreement would be required.

Mr. Partington stated that as long as the water is not going to a beneficial aquifer, the board WRD allows recirculation cells under their new permit.

Ms. McIntosh asked about the effects of groundwater level fluctuation, specifically how the injections would affect the amount of product removed from the wells.

Mr. Irish stated that the injection of clean water would be systematic in order to keep free product onsite. He further explained the construction of the remediation system.

Ms. McIntosh asked if a remediation action plan would be required.

Mr. Irish stated that a work plan would be required.

Ms. McIntosh asked if a test prior to the beginning of the project will be performed.

Mr. Irish confirmed that there will be a pilot study prior to the beginning of the project.

Ms. McIntosh asked if there will be more stability in the volume of extraction of free product.

Mr. Irish stated that the extraction will be controllable.

Ms. McIntosh asked where on the site the pilot study would take place.

Mr. Parmentier stated that the study will take place near TF-18.

Ms. McIntosh asked if the eastern park-area boundary would benefit from flooding.

Mr. Irish stated that he believes that air sparging will benefit the eastern boundary more than flooding.

Ms. Devier-Heeney stated that nature will help clean the fringes of the plume.

Ms. Winkler asked if SGI/APEX has a water-reuse permit.

Mr. Irish stated that SGI/APEX is in the process of obtaining a water reuse permit. He expects that the permit will be in-hand by the beginning of next year.

MEETING MINUTES

MEETING MINUTES	24 August 2017
<p><u>Regulatory Agency Update</u> Paul Cho, Regional Water Quality Control Board</p> <p>Mr. Paul Cho, the Regional Water Quality Control Board (Regional Board) Project Manager for the Norwalk site, stated that the Human Health Risk Assessment report was reviewed by the state toxicologist from the office of the Environmental Health Hazard Assessment and determined satisfactory. The eastern 15-acre park portion can begin closure procedures. A similar report will be submitted for the eastern part of the site and the same procedures will be followed. The RWQCB will continue to work with DF-FEE-Energy and Kinder Morgan Energy Partners to facilitate closure of the 15-acre parcel.</p>	
<p><u>Set Date and Agenda for Next Meeting</u></p> <p>The next semiannual RAB meetings will be held on Thursday, February 22, 2018 and Thursday, August 23, 2018, at 4:00 p.m. in the Hargitt Room at the Norwalk Arts & Sports Complex. Agenda items to be included are pilot testing and remediation system updates.</p>	
<p><u>Public Comment Period</u></p> <p>Ms. Winkler asked which lab tests samples collected from the plumes.</p> <p>Mr. Irish stated that American Analytics analyzes samples from DFSP Norwalk.</p> <p>Mr. Cho stated that there is a 30-day comment period prior to the final closure procedures.</p> <p>Ms. McIntosh stated that she is relocating to Arizona, but would like to stay on the board. Ms. McIntosh asked if board members are required to live in the area.</p> <p>Ms. Winkler asked about the park.</p> <p>Ms. McIntosh stated that the park should receive closure toward the end of the year. She added the RWQCB has to accept the closure report before closure can occur.</p> <p>Mr. Defibaugh asked for clarification on the disposal timeline.</p> <p>Ms. Figueroa stated that the disposal should occur shortly after closure.</p> <p>Ms. McIntosh made a motion to adjourn the meeting. Meeting adjourned at 5:54 p.m.</p>	

ACTION ITEMS		
Item	Responsible Party	Due Date
Schedule February and August 2018 RAB Meetings in Hargitt Room	Adriana Figueroa/Lisa Moreno	12/1/17