BALDWIN HILLS CSD
COMMUNITY ADVISORY PANEL (CAP) MEETING
Minutes June 25, 2015
DRAFT

A. Call to Order - 7:00 PM
David McNeill Chair.

B. Approval of Agenda - Agenda approved.

C. Approval of Minutes –Approval of May 2015 minutes deferred till next meeting.

D. Operator Update – Lisa Paillet
Update FM O&G has no plans to drill any new wells in 2015. The field currently has one re-work rig and 2 to 3 maintenance rigs. The 2015 Abandonment Well Report has been submitted to the County and is posted online.
Culvert Replacement Project Ms. Paillet noted a culvert replacement project at La Cienega just south of the FM O&G overpass; the culvert is replacing an existing culvert and will be used for existing pipelines.

E. Regional Planning/ECC Update – Tim Stapleton
Compliance Plans Mr. Stapleton also noted that the 2015 Abandonment Well Report has been submitted to the County and is posted online. Two of the wells tested above the background level and will be required to be tested again next year. Mr. McNeill asked about whether the two wells had tested above background in prior test years, Mr. Dusette will research the previous reports and report back to the CAP.
Periodic Review The Final Draft Periodic Review has been posted on-line and will be discussed at the July CAP; the County has not finalized the date for the hearing.

F. Guest Speaker – Dr. Dan Tormey – Hydraulic Fracturing Study (Study)
Dr. Tormey made a presentation on the Study completed at the Inglewood Oil Field in 2012. Dr. Tormey's educational background includes a PhD from MIT in geology and geochemistry and bachelor's degree from Stanford in civil engineering and geology. Dr. Tormey noted that the Study is unique in that it is the only study with significant data before, during, and after an actual hydraulic fracturing activity; the Study has been used as a reference on hydraulic fracturing by other jurisdictions and projects.
Study Background – The Study was a requirement of the Settlement Agreement derived from litigation on the CSD EIR. The Study was required to be done by a third party independent consultant, be overseen by the County and the operator (PXP), and be peer reviewed. The wells in the study were selected by the operator petroleum geologists; the Study ground water wells were selected by the consultant.
Geology Dr. Tormey explained the geology in the LA basin, the basic structures that allow for the formation of oil and gas, and the rock types associated with oil and gas. Shales and shale gas were also discussed along with how hydraulic fracturing works to open paths in the shale to allow oil and gas to flow to a well. Diagrams were presented showing the relative locations of the ground water table, conventional wells, and wells that could be completed using hydraulic fracturing.

Fracturing versus Gravel Packing The two well completion techniques were discussed with gravel packing mostly associated with sandstone reservoir rock and fracking with shale. Gravel packing is intended to prevent sand from clogging a well whereas fracking uses sand or proppants to fracture and prop open the reservoir rock to allow oil and gas to flow to the well.

Dr. Tormey encouraged the CAP to look for the forthcoming release of an independent scientific assessment of well stimulation treatments, including hydraulic fracturing, by the California Council on Science and Technology (CCST). The California Natural Resources Agency commissioned the CCST to conduct the study in response to Senate Bill 4 (Pavley 2013). The report, to be released in July, will provide information and definitions on all types of well completion techniques.

Study Issue Areas The Study included before, during and after data collection on hydrology, water use, water quality, seismicity, noise, vibration, well integrity, slope stability, methane, and air emissions.

Water Use The water use/cycle in fracking was discussed in detail, the fracking fluid is pumped down the well with most frack jobs lasting around an hour. Approximately 30% of the fluid returns to the surface as "flow-back" during the fracking operation. The remaining fluid is eventually pumped back to the surface along with the formation water, oil, and gas when the well goes into production. The flow back water is transported back to the on-site water plant. The water brought up to the surface with production at the Inglewood Oil Field is processed in the water plant and pumped back down into the reservoir for reservoir balance and production enhancement.

Chemicals Approximately 98% of fracking fluid is water with the remaining being chemical additives. Many of the chemicals used in fracking fluid are also used in the drilling of any well, including water wells. Anytime a well deeper than 100 feet is drilled, oxygen is introduced to an area where there previously was very little, this causes bacteria to grow and for scaling and metals to develop. All wells may use biocide, corrosion inhibitor, iron control, and scale inhibitor.

Fracking fluids include chemicals to help carry the sand into the formation (gelling agents) and penetrate the formation (friction reducers). Chemicals are different for each type of formation which is why some chemical use is deemed proprietary by oil companies. Dr. Tormey noted that the industry is pushing toward the use of less toxic chemicals and chemicals with less potential for toxicity when combined.

Inglewood Geology Dr. Tormey provided an overview of the geology of the Inglewood Oil Field, the geologic strata, and the two wells that were used in the Study. The two fracked wells were drilled down to the Nodular shale zone, other adjacent wells were used for monitoring (seismic, etc.) in the Study. The types and locations of the area faults was discussed showing how the types of strata and faults trapped groundwater and, at deeper depths, oil and gas. "Sealing" faults were described as trapping the oil and gas from other parts of the sub-surface geology. It was noted that the groundwater at the Inglewood Oil Field is also trapped in compartments and is, therefore, not connected to other groundwater sources or aquifers. The groundwater and oil and gas sections are separated by thousands of feet of strata and are not connected either vertically or horizontally.

Seismicity The seismic monitoring for the Study was explained with sensors (geophones) placed at depth in adjacent wells. The results indicated very small events (micro-seismic), approximately 10,000 times smaller than what someone could feel on the surface. Fracking

and earthquakes were asked about and discussed; the micro seismic events caused by fracking are not near strong enough to cause an earthquake. Induced (man-made) earthquakes have been associated with long term water injection projects. Filling of reservoirs have also been associated with induced seismicity.

Study Hydraulic Fracturing The type or strength of the fracking done for the Study was asked about and Dr. Tormey explained that the Study fracturing job was very typical of California fracking and the activity was as big or intense as fracking jobs get.

Groundwater The groundwater for the LA basin is obtained from the Colorado River, the San Joaquin Delta and some (about 30%) from local sources. The groundwater at the Baldwin Hills is not connected to other sources and is not used for drinking water, but must meet drinking water standards per State law. The groundwater was monitored before, during and after the Study. Graphics were shown indicating the chemicals monitored at the Inglewood Oil Field and no significant difference was measured after the fracking. The LA basin has significant amounts of natural occurring arsenic in soil which is shown in the monitoring results. Groundwater continues to be monitored pursuant to the requirements of the CSD.

Methane The methane map of the LA basin was shown and the amount of methane naturally occurring in the basin was discussed. Methane monitoring was monitored before, during and after the Study. Three types of monitoring was completed; shallow, groundwater, and from the Study target formation. Most area methane is from the decomposition of organic matter, however, some methane from the petroleum reservoir can also reach the surface.

Barium Question about barium and oil drilling was asked and discussed. Barium is not radioactive and is part of many drilling muds used in the oil and gas industry. Barium is also naturally occurring in the LA basin. Barium has low solubility in water.

******CAP member Gary Gless to provide additional information. A request was made to him for this information on August 4, 2015.***

G. Announcements

July 23, 2015 next scheduled CAP meeting.

Adjourn 9:00.

ATTENDANCE: 6/25/15

*(*absent)*

DESIGNATED SEATS PER 22.44.142.J.1.a

Governmental Entities

1	Department of Regional Planning	Timothy Stapleton
2	City of Culver City	Sherry Jordan & Carol Schwab
3	West Los Angeles College	Nabil Abu-Ghazaleh*

Operator (per 22.44.142.C)

5	Freeport McMoran Oil & Gas	Lisa Paillet

NOMINATED SEATS PER 22.44.142.J.1.a

(Accepted first-come/first-served within each sub-group)

Landowners (per 22.44.142.C)

6	Vickers Family Trust	Roger Shockley*
7	Cone Fee Family Trust	Nancy Snowden

Neighborhood Organizations (Recognized Homeowners Association)

8	Ladera Heights Civic Assoc.	Carmen Spiva*
9	Windsor Hills HOA	Gary Gless
10	United HOA (View Park)	Charles McCaw
11	Culver Crest Neighborhood Assoc.	John Kuechle
12	Blair Hills HOA	Jon Melvin*
13	Raintree Community HOA	Keith Curtiss
14	Baldwin Hills Estates HOA	Lory Johansson

Neighborhood Organizations (No Recognized Homeowners Association)

15	Ladera Crest Homeowner	George Mallory*
16	Baldwin Vista Homeowner	Irma Munoz

School Districts

17	Los Angeles Unified	Glenn Striegler*
18	Culver City Unified	Susanne Robins*

Neighborhood Organizations (All Others)

19	Windsor Hills Block Club	Toni McDonald-Tabor*
20	Community Health Councils	Heather Davis
21	Baldwin Hills Conservancy	David McNeill
22	The City Project	Daphne Hsu*