

Culver CITY

MEMORANDUM

DATE: July 6, 2017

TO: Christine Halley, Director of EH&S and Regulatory Affairs, Sentinel Peak Resources

FROM: Melanie Doran Traxler, IOF Specific Plan Project Manager

SUBJECT: Request for Clarification of Information Related to Sentinel Peak Resources' Bottom-Hole Location Exhibit (dated February 10, 2017)

CC: Heather Baker, Assistant City Attorney

Sentinel Peak Resources (SPR) provided the Culver City Oil Drilling Subcommittee (the "Subcommittee"), consisting of Council Members Jim Clarke and Meghan Sahli-Wells, with a map exhibit titled "Inglewood Oil Field Active Wells within Culver City" and dated February 10, 2017 (the "Map"). In part, the purpose of the Map was to illustrate bottom-hole locations relative to the surface (top) hole locations for all wells within the City of Culver City. SPR provided the Map in response to the City's request (of previous oil field operators) for such information.

After careful review of the Map, the Subcommittee and City staff identified several points of information that appear to be inconsistent with data that the City and its technical consultants have obtained from the California Division of Oil, Gas and Geothermal Resources (DOGGR) (data dated July 2015). The City seeks clarification from SPR in order to reconcile perceived inconsistencies and/or missing data shown on the Map. This memo summarizes the points of information identified by the City as requiring clarification from SPR.

Missing Well Locations

DOGGR data indicates a total of 37 active wells within the City IOF, including 27 active oil & gas producers and 10 active water flooding injectors. In addition, the DOGGR data indicates that there are five idle wells and one new well within the City IOF. SPR's Map shows the location of 29 active wells, two of which have surface-hole locations originating outside of the City IOF (i.e., TVIC 41 and TVIC 631) and one which is listed by DOGGR as idle (i.e., TVIC 69). Hence, it appears that at least 11 active wells have not been included on SPR's Map. Possibly as many as 6 additional active wells (for a total of 17) may be missing from the Map depending on the resolution of labeling and/or well status inconsistencies noted below in this memo. The locations and status of the following 11 wells do not appear to be addressed on the Map:

Formatted API #	Lease Name	Well #	Well Status (per DOGGR)	Pool Well Types (per DOGGR)	SPR Map Comment
037-07469	Block	23	Active	OG	not shown
037-07472	Block	26	Active	OG	not shown
037-07867	Machado	1	Active	OG	not shown
037-09080	VRU	110	Active	OG	not shown
037-09084	VRU	115	Active	OG	not shown

037-09147	TVIC	72	Active	OG	not shown
037-22541	VRU	254	Active	OG	not shown
037-23170	VRU	261	Active	OG	not shown
037-25079	TVIC	268	Active	WF	not shown
037-25221	VRU	284	Active	WF	not shown
037-25222	TVIC	271	Active	WF	not shown

In addition, pending clarification of status/labels/location information, it remains uncertain whether the following six wells are accurately represented on the Map:

Formatted API #	Lease Name	Well #	Well Status (per DOGGR)	Pool Well Types (per DOGGR)	SPR Map Comment
037-09113	TVIC	25	Active	OG	possibly shown, but mislabeled ?
037-09140	TVIC	56	Active	OG	possibly shown, but mislabeled ?
037-09149	TVIC	74	Active	OG	possibly shown, but mislabeled ?
037-20462	TVIC	69	Idle	OG	shown as active, but DOGGR lists as idle
037-25256	TVIC	272	Active	WF	location shown does not match DOGGR; Map shows location as that of abandoned well
037-26595	NW Extension	920	New	OG	not shown (new well, status not known)

Inconsistent or Missing Well Labels

For several wells, the Map utilizes well number labeling that is slightly inconsistent with DOGGR well numbers. Three wells are labeled with well numbers that are similar to listed DOGGR wells, but include a single letter following the well number. Most likely the Map labels represent the similarly DOGGR numbered wells. It is unclear why SPR's well identification name/numbers differ from the official DOGGR information. SPR should confirm that the well name/numbers are consistent with the related DOGGR well number and API number indicated below. In addition, one well shown on the map is not labeled. The following four wells are assumed to be mislabeled for missing a label and require confirmation and/or clarification from SPR:

Formatted API #	Lease Name	Well #	Well Status (per DOGGR)	Pool Well Types (per DOGGR)	SPR Map Comment
037-00248	TVIC	59	Active	OG	possibly shown but not labeled ?
037-09113	TVIC	25	Active	OG	possibly shown, but mislabeled as TVIC 25A ?
037-09140	TVIC	56	Active	OG	possibly shown, but mislabeled as TVIC 56B ?
037-09149	TVIC	74	Active	OG	possibly shown, but mislabeled as TVIC 74A ?

Inconsistent or Unknown Well Status

DOGGR data indicates five idle wells within the City IOF area. SPR's Map indicates that one well indicated by DOGGR as idle (i.e., TVIC 69) is currently in active oil and gas production. In addition, DOGGR indicates one new well location (NW Extension 920), which is assumed to have been permitted by DOGGR but not yet drilled. The City requests that SPR provide information regarding the status and/or DOGGR permit information (including application/permit dates) for this new well, along with details of any intended attributes.

Formatted API #	Lease Name	Well #	Well Status (per DOGGR)	Pool Well Types (per DOGGR)	SPR Map Comment
037-20462	TVIC	69	Idle	OG	shown as active, but DOGGR lists as idle
037-26595	NW Extension	920	New	OG	not shown (new well, status not known, information needed)

Unknown Well Location/Identification

As previously noted above, one well shown on the map is not labeled (presumed possibly to be TVIC 59). In addition, the Map shows well TVIC 272 as an active injection well located at the far north extent of the exhibit. This surface-hole location does not match DOGGR data, which indicates that this well number is located toward the southwest region of the City IOF. The approximate location of well TVIC 272 as shown on the Map appears to be in the vicinity of several old wells shown by DOGGR as previously abandoned. SPR should confirm and/or clarify the location and status of the following two wells:

Formatted API #	Lease Name	Well #	Well Status (per DOGGR)	Pool Well Types (per DOGGR)	SPR Map Comment
037-00248	TVIC	59	Active	OG	possibly shown but not labeled ?
037-25256	TVIC	272	Active	WF	location shown does not match DOGGR; Map shows location as that of abandoned well

Inconsistent or Missing Well Attributes

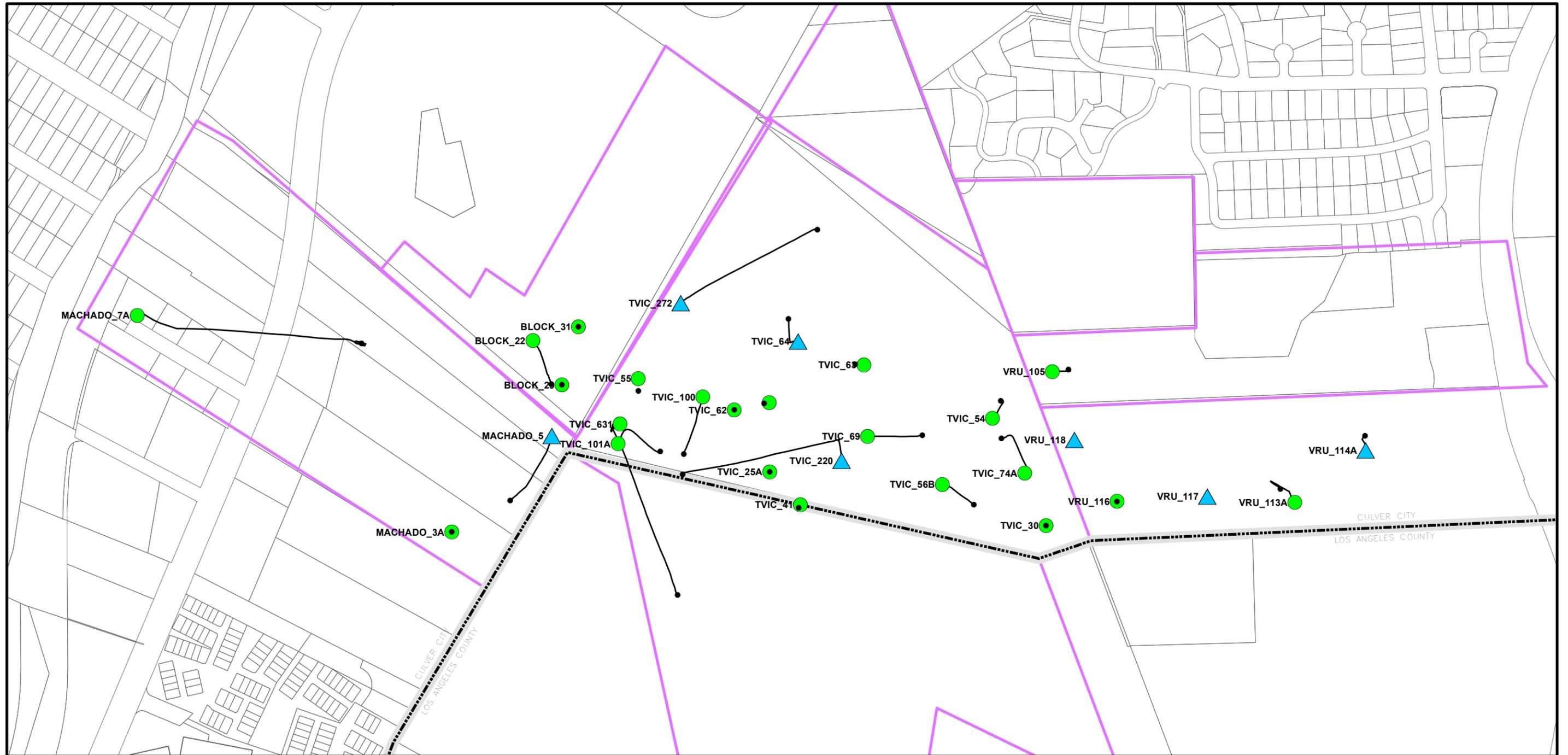
DOGGR data includes various attribute information for each well, including whether it is a directional hole or not. Because one purpose of SPR's Map was to communicate information about the top and bottom hole locations for each well, the City compared consistency of DOGGR's published information to information illustrated in SPR's Map. It is noted that two wells shown on the Map (VRU 117 and 118) indicate a bottom-hole location but do not show the corresponding surface-hole location, and thus the consistency of directional information is not known. In addition, SPR should clarify the apparent inconsistency regarding well directional orientation for the following 11 wells:

Formatted API #	Lease Name	Well #	Directional	SPR Map Comment
037-00248	TVIC	59	Yes	DOGGR data indicates as directional well, but Map indicates vertical hole
037-07468	Block	22	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-07876	Machado	5	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-07881	Machado	7-A	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-08129	VRU	105	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-09082	VRU	113-A	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-09083	VRU	114A	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-09139	TVIC	55	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-25256	TVIC	272	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-25342	TVIC	100	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-25375	TVIC	101A	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole
037-26422	TVIC	631	No	DOGGR data indicates this as a non-directional well, but Map indicates directional hole

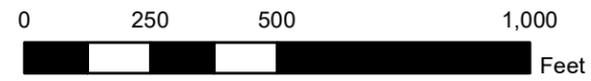
Well Information for Wells with Top or Bottom Holes within Culver City

The City desires to have a complete picture of the relationship of IOF wells to the City. Therefore, it requests that SPR provide well data for wells that either have a surface-hole location that originates within Culver City limits or a bottom-hole location that traverses or ends underneath land within the city limit boundaries. This information may be important to the City's evaluation of the cumulative effects of drilling within the IOF.

Attachment: Active Wells within Culver City, February 10, 2017 (prepared by Sentinel Peak Resources)



- Surface hole location
- ▲ Active injector bottom hole location
- Active producer bottom hole location
- Culver City / Los Angeles County Boundary
- Lease line
- Parcels





Sentinel Peak Resources

Inglewood Oil Field

Active Wells within Culver City

February 10, 2017