

# **Final**

**April 20, 2011**

**Review of  
Leaking Underground Storage Tank Cases  
Not in Cleanup Fund and Open Over 15 Years**

**Ventura County Local Oversight Program**

**Prepared as in-kind task as part of Cooperative Agreement LS-  
96934701-1 between U.S. EPA Region 9 and the California State  
Water Resources Control Board**

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## **Executive Summary**

The Draft version of this report was submitted on November 23, 2010, with a request for a follow-up meeting and input from Ventura County LOP into the “Next Steps for Agency” column of the case cleanup status spreadsheet.

Ventura County LOP corresponded with and provided responses to the “Next Steps for Agency” column of the case cleanup status spreadsheet to Sullivan International Group on February 14, 2011. The agency acknowledged the receipt of the Draft Final report and agreed with all of the estimated status selections for each and every case on February 14, 2011. On April 14, 2011 Ventura County LOP provided a formal response providing an update for the Fillmore Fish Hatchery (Global ID: T0611100851) case. This case is now anticipated to be closed in June 2011 once Ventura County LOP receives the final well abandonment report from the consultant. The status of this case has been revised in this Final report from “Appears to be on track” to “Appears near completion within 1-year”.

# Ventura County LOP

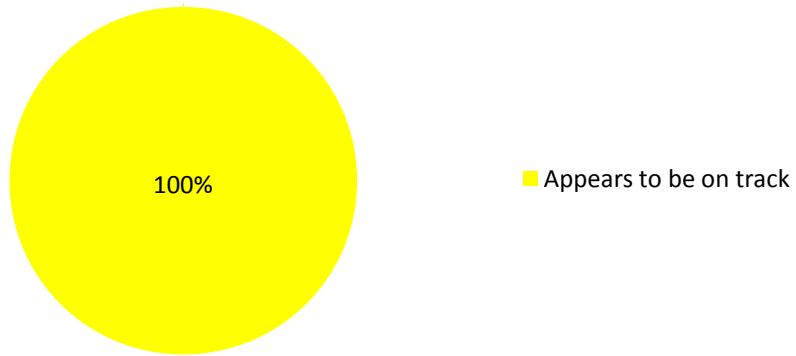
## Apparent Case Status: Initial and After

TOTAL NUMBER OF CASES REVIEWED = 5  
 NUMBER OF ACTIVE LUST CASES ON NOVEMBER 1, 2010 = 126 CASES  
 DRAFT REVIEW REPORT PREPARED AND SENT TO AGENCY ON NOVEMBER 23, 2010  
 MEETING WITH AGENCY ON February 14, 2011  
 ADDITIONAL FEEDBACK FROM AGENCY ON APRIL 14, 2011

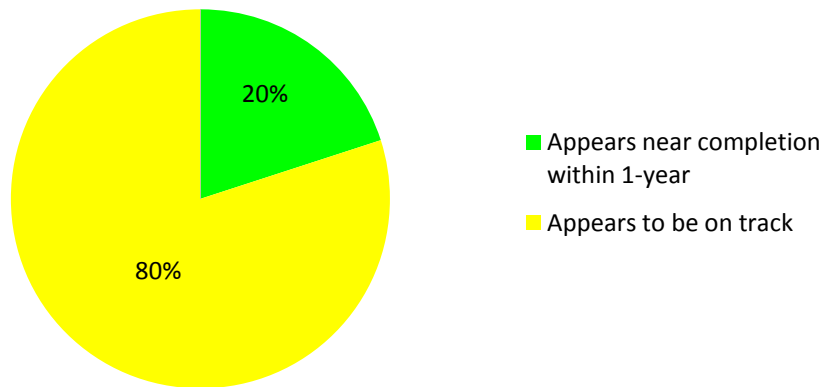
APPARENT STATUS OF CASES REVIEWED – INITIAL REVIEW AND AFTER MEETING TO DISCUSS CASES

Apparent Case Status	Initial Assessment Number of Cases (11-23-2010)	Post Meeting Assessment Number of Cases (04-14-2011)
CASE CLOSED	0	0
Appears near completion within 1-year	0	1
Appears close to completion	0	0
Appears to be on track	5	4
Appears NOT to be on track	0	0
Appears to be stuck	0	0
Unable to determine (Insufficient information in GeoTracker)	0	0
NOT FEDERAL UST CASE	0	0
OTHERS - Not Non-CUF, Older than 15-years Case	0	0

### Initial Assessment Percentage of Cases (11-23-2010)



### Post Meeting Assessment Percentage of Cases (04-14-2011)



### Aging Non-CUF Case Summary Review Table

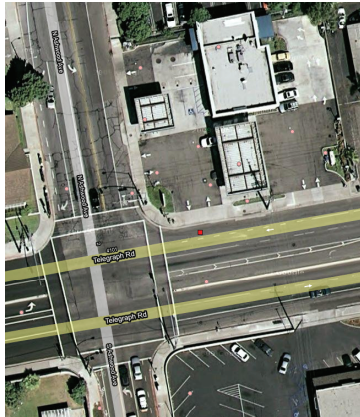
ESTIMATED STATUS IN THE CLEANUP PIPELINE? (11-13-2010)	CHANGE IN STATUS IN THE CLEANUP PIPELINE (BASED ON CORRESPONDENCES ON 02-14-2011)	SITE NAME (CASE LEAD AGENCY: VENTURA COUNTY LOP)	Global ID	CASE WORKER	PRIMARY COC (In GeoTracker)	APPARENT TYPE OF RP	RELEASE DATE	Meeting Notes	NEXT STEPS FOR AGENCY
Appears to be on track	Appears to be on track	MOBIL OIL SS #18-GYR	T0611100941	David C Salter	Gasoline	Z - Major Oil Company	10/6/1987	Ventura County representatives agreed with estimated status and the case is on track.	Continue current remediation until low-risk criteria is met
Appears to be on track	Appears to be on track	B J SERVICES (LOWER PARCEL)	T0611100964	Diane B Wahl	Gasoline	S - Small Private Business	1/4/1991	Ventura County representatives agreed with estimated status and the case is on track.	Complete closure process in 1-year (includes well decommission)
Appears to be on track	Appears to be on track	EXXON #7-2827	T0611100806	Diane B Wahl	Gasoline	Z - Major Oil Company	4/28/1992	Ventura County representatives agreed with estimated status and the case is on track.	Continue current remediation until low-risk criteria is met
Appears to be on track	Appears near completion within 1-year	FILLMORE FISH HATCHERY	T0611100851	Diane B Wahl	Gasoline	G - Government Entity (include School, Hospital, Utility)	7/1/1993	Ventura County representatives agreed with estimated status and the case is on track.	Complete closure process in 1-year (includes well decommission)
Appears to be on track	Appears to be on track	MOBIL OIL SS #14-466	T0611101086	David C Salter	Gasoline	Z - Major Oil Company	4/2/1996	Ventura County representatives agreed with estimated status and the case is on track.	Push for new/additional remedial investigation (RI)/risk assessment

Attachment 1:

**Case Review Power Point Slides from Draft Report**

The contents of this attachment are provided in electronic format only.

**MOBIL OIL SS #18-GYR (T0611100941)**  
**4111 TELEGRAPH RD, VENTURA, CA 93003**



**Case Age: 23 years**  
**Primary COC: Gasoline**  
**RP Identified by Regulator: EXXONMOBIL OIL CORPORATION**  
**Current Land Use: Gas Station**

**OPEN - REMEDIATION**

CLEANUP OVERSIGHT AGENCIES  
 VENTURA COUNTY LOP (**LEAD**) - CASE #: 95041  
 CASEWORKER: [DAVID C. SALTER](#) - SUPERVISOR: NONE SPECIFIED  
 LOS ANGELES RWQCB (REGION 4) - CASE #: C95041  
 CASEWORKER: [DANIEL PIROTTON](#) - SUPERVISOR: WEXING TONG



**Possible Reasons Why This Case Is So Old**

- Complex plume, which has had several aggressive phases of remediation applied.
- Plume does not appear to be stable or decreasing even after years of remediation.
- In April of 2010 an Air Sparge / Vapor extraction system began operation at the site, and it is believed that this will finally bring contaminant levels down to an acceptable level for low risk closure.

NOTE: Data queried from GeoTracker and reviewed in October 2010

**Activities Conducted to Date Based on GeoTracker Info (T0611100941)**

**Assessment last 5 years**

- Periodic groundwater monitoring has been ongoing since 1998.
- Periodic soil vapor sampling conducted as part of MPE events

**Remediation last 5 years**

- Seven additional periodic multiphase extraction events were conducted between 2005 and 2007
- Vapor Extraction / Air Sparge system installed November 2009, and began operation in April 2010

**Assessment older than 5 years**

- Confirmation samples taken at the time of UST replacement in 1987
- Multiple phases of assessment were conducted from 1997 to 2008. 13 soil borings were advanced and 15 groundwater monitoring wells were installed during that period

**Remediation older than 5 years**

- Four USTs replaced in 1987
- Six short duration multiphase extraction events conducted between 2001 and 2005



## IMPEDIMENTS TO CLOSURE (T0611100941)

as reported by regulatory agency

### GROUNDWATER IMPACTS

- Groundwater Impacted Above Background - Q2/09 Max TPHg, benz, MTBE, & TBA = 5500, 1400, 500, & 1000 ug/L

### BENEFITS OF ADDITIONAL WORK

- Remove / Reduce Source Mass - *In remediation - dual phase extraction*

### SENSITIVE RECEPTORS LIKELY TO BE IMPACTED AND TIME FRAME FOR IMPACT

- Groundwater Already Impacted

## Review Conclusions T0611100941

- As of May 2008, 2434 kg of TPHg and 16.54 kg of benzene were estimated to remain in the subsurface.
- While the multi-phase extraction events have succeeded in removing source mass from the vadose zone, the dissolved plume has remained stable and has not been decreasing in concentration or aerial extent.
- TPHg and Benzene are still present in groundwater at the site at up to 3400 µg/l and 510 µg/l respectively.
- Site is currently undergoing remediation via an Air Sparge / Vapor Extraction system.
- *Discussion: The site has been monitored since 1998 and has undergone remediation since 2001. Significant source mass remains and contributes to the groundwater plume. Most recent remediation began April 2010 to go through 2011.*

## B J SERVICES (LOWER PARCEL) (T0611100964)

2509 VENTURA AVE., VENTURA , CA 93001



Case Age: 19 years  
 Primary COC: Gasoline  
 RP Identified by Regulator: BJ Services Co. USA  
 Current Land Use: Vehicle Storage

**OPEN - REMEDIATION**

CLEANUP OVERSIGHT AGENCIES

VENTURA COUNTY LOP (LEAD) - CASE #: 95065  
 CASEWORKER: [DIANE B. WAHL](#) - SUPERVISOR: NONE SPECIFIED  
 LOS ANGELES RWQCB (REGION 4) - CASE #: 95065  
 CASEWORKER: [DANIEL PIROTTON](#) - SUPERVISOR: WEIXING TONG

**Possible Reasons Why This Case Is So Old**

- Three open cases are associated with this business. Two are UST Program cases and one is a Cleanup Program case. Monitoring wells for all 3 cases.
- The UST was removed from the site in 1991, investigation conducted 1997, and monitoring wells were installed in 2000.
- SVE system operated at site for 2 years, however, significant contamination remains. Latest CAP calls for excavation and disposal of impacted soil.



NOTE: Data queried from GeoTracker and reviewed in October 2010

### Activities Conducted to Date Based on GeoTracker Info (T0611100964)

**Assessment last 5 years**

- Periodic Groundwater Monitoring is ongoing since 2000
- Confirmation soil samples were taken in 2008

**Remediation last 5 years**

- A Passive skimmer was in place in MW-5 in 2005 and removed in 2007 or 2008.
- A Soil Vapor Extraction system from June 2006 to September 2008

**Assessment older than 5 years**

- Soil and groundwater investigation conducted in 1997
- Borings advanced in 2000 and 2001

**Remediation older than 5 years**

- UST removed from site in 1991. Excavated soil was aerated and placed back into the excavation.

## IMPEDIMENTS TO CLOSURE (T0611100964)

as reported by regulatory agency

### INADEQUATE SOURCE CONTROL

- Remaining Source Poses Threat to Groundwater - *further remediation required*

### PLUME INSTABILITY

- Other - *verification sampling shows diesel remains present at elevated levels in soil after active treatment was suspended.*

### GROUNDWATER IMPACTS

- Groundwater Impacted Above Background - *yes Groundwater Impacted Above Other Cleanup Goal - GW still threatened by residual soil impacts.*

### BENEFITS OF ADDITIONAL WORK

- Remove / Reduce Source Mass - *additional source removal appears warranted.*

### SENSITIVE RECEPTORS LIKELY TO BE IMPACTED AND TIME FRAME FOR IMPACT

- Groundwater Already Impacted hydrocarbons detected in groundwater

## Review Conclusions T0611100964

- Ventura River is located approximately 500 feet west of the site.
- SVE system that operated at the site from 2006 to 2008 removed an estimated 2966 pounds of petroleum hydrocarbons from the subsurface. Significant soil contamination remains at the site. A CAP for excavation and disposal of remaining impacted soil was submitted in August 2010.
- Site appears actively managed and to be moving towards cleanup/closure, on track
- *Discussion: Site appears to be on track for closure. The time frame for closure will likely be determined by confirmation samples taken during the upcoming excavate and dispose activities.*

**EXXON #7-2827 (T0611100806)**  
 305 CARMEN DR., CAMARILLO, CA 93012



**Case Age: 18 years**  
**Primary COC: Gasoline**  
**RP Identified by Regulator: EXXONMOBIL REFINING AND SUPPLY COMPANY**  
**Current Land Use: GAS STATION**

*OPEN - REMEDIATION*

**CLEANUP OVERSIGHT AGENCIES**  
 VENTURA COUNTY LOP (*LEAD*) - CASE #: 92018  
 CASEWORKER: *DIANE B. WAHL* - SUPERVISOR: NONE SPECIFIED  
 LOS ANGELES RWQCB (REGION 4) - CASE #: 92018  
 CASEWORKER: *DANIEL PIROTTON* - SUPERVISOR: *WEIXING TONG*

**Possible Reasons Why This Case Is So Old**

- Site is undergoing its fourth round of remediation.
- Site appears to now be on track, however, the RP has not responded to agency requests to upload required well location data.
- Vadose zone has been remediated, however, the groundwater plume still extends off site, and exceeds cleanup goals.



NOTE: Data queried from GeoTracker and reviewed in October 2010

**Activities Conducted to Date Based on GeoTracker Info (T0611100806)**

**Assessment last 5 years**

- Periodic groundwater monitoring conducted since 1992.
- Soil Vapor assessments conducted as part of AS/SVE shut down.

**Remediation last 5 years**

- Groundwater pump and treat system has been in operation at the site since April 2004
- AS/SVE system operated at the site from 1996 to April 2009
- Over-purging conducted on MW-21 as a supplement to GWE system.

**Assessment older than 5 years**

- Site has been assessed repeatedly since 1992, and groundwater has been monitored periodically. Additionally Soil vapor has been sampled on several occasions in relation to the AS/SVE system.

**Remediation older than 5 years**

- AS/SVE system was in operation at the site between September 1996 and April 2009

## IMPEDIMENTS TO CLOSURE (T0611100806)

as reported by regulatory agency

### **SITE ASSESSMENT INCOMPLETE**

- Extent of Contamination Has Not Been Determined - *additional GW assessment required.*

### **PLUME INSTABILITY**

- Groundwater Contamination Plume Not Stable or Decreasing - *plume has migrated a significant distance off site and remediation continues to further reduce contaminants.*

### **GROUNDWATER IMPACTS**

- Groundwater Impacted Above Background - *yes*
- Groundwater Impacted Above Other Cleanup Goal - *elevated concentrations, well above levels that may be considered for closure.*

### **BENEFITS OF ADDITIONAL WORK**

- Remove / Reduce Source Mass - *additional remediation warranted*

### **SENSITIVE RECEPTORS LIKELY TO BE IMPACTED AND TIME FRAME FOR IMPACT**

- Groundwater Already Impacted Hydrocarbons detected in monitoring wells.

## Review Conclusions T0611100806

- Extensive release. The AS/SVE system recovered 75,909 pounds of hydrocarbon vapor in the 13 years it operated.
- Site has been assessed and remediated since start date.
- Plume currently extends off site in excess of cleanup goals.
- Pump and Treat system is still operating
- *Discussion: Original release appears to have been extensive, and over 75,000 pounds of petroleum hydrocarbons have been recovered to date. Vadose zone appears to have been remediated to acceptable levels. Closure is now dependant on remediation of the groundwater plume, which currently extends off site. Site appears to be on track.*

**FILLMORE FISH HATCHERY (T0611100851)**  
 612 TELEGRAPH RD., FILLMORE, CA 93016



**Case Age: 17 years**  
**Primary COC: Gasoline**  
**RP Identified by Regulator:**  
**Department of Fish and Game**  
**Current Land Use: Fish Hatchery**

OPEN - REMEDIATION

CLEANUP OVERSIGHT AGENCIES

VENTURA COUNTY LOP (LEAD) - CASE #: C93024

CASEWORKER: DIANE B. WAHL - SUPERVISOR: NONE SPECIFIED

LOS ANGELES RWQCB (REGION 4) - CASE #: C93024

CASEWORKER: DANIEL PIROTTON - SUPERVISOR: WEXING TONG

**Possible Reasons Why This Case Is So Old**

- Government Entity Site. Is funding an issue?
- 5 year gap in site activity from 2000 to 2005
- No groundwater monitoring was conducted between December 2006 and December 2008
- Pump and dispose appears to have significantly lowered TPH and Benzene concentrations in groundwater, however, it appears that source mass remains in the vadose zone. Additional remediation may be warranted.



NOTE: Data queried from GeoTracker and reviewed in October 2010

**Activities Conducted to Date Based on GeoTracker Info (T0611100851)**

**Assessment last 5 years**

- Periodic groundwater monitoring has been ongoing since December 2008.
- Groundwater monitored between May 2005 and December 2006
- 4 additional soil borings were advanced and 3 monitoring wells were installed at the site in 2005
- An Environmental site assessment was conducted in 2006. Two soil borings were advanced.

**Remediation last 5 years**

- Groundwater Extraction Pilot test conducted between June and August 2009. The test was deemed a success and the extraction system was restarted in February 2010

**Assessment older than 5 years**

- Soil samples were taken at the time of the 1993 gasoline UST removal and the 1996 diesel UST removals
- Soil borings advanced in 1997
- 3 Monitoring wells were installed in March 1998, sampled 3 times, and then not sampled again until 2005
- 3 soil borings advanced in 2000

**Remediation older than 5 years**

- Gasoline UST removed in 1993
- 2 Diesel USTs were removed in 1996

## IMPEDIMENTS TO CLOSURE (T0611100851)

as reported by regulatory agency

### **INADEQUATE SOURCE CONTROL**

- Feasible Source Control Not Performed - *source soils continue to impair groundwater quality.*

### **GROUNDWATER IMPACTS**

- Groundwater Impacted Above Background - *yes*
- Groundwater Impacted Above Other Cleanup Goal - *Not anticipate to receive LARWQCB closure concurrence in the absence of mitigating impacted soil and gw.*

### **UNACCEPTABLE RISK**

- Unacceptable Risk from Soil Contaminants Entering Surface Runoff - *surface drainage adjacent to former tank location; drainage enters surface water within the Santa Clara Riverbed, surface flow does not reach primary river channel.*

### **BENEFITS OF ADDITIONAL WORK**

- Remove / Reduce Source Mass - *source area treatment is warranted.*

### **SENSITIVE RECEPTORS LIKELY TO BE IMPACTED AND TIME FRAME FOR IMPACT**

- Groundwater Already Impacted hydrocarbons detected in monitoring wells

## Review Conclusions T0611100851

- The pump and dispose remediation conducted at the site has lowered TPHg and benzene concentrations in ground water, However, appears significant source mass remains in the vadose zone with TPHg and Benzene being most recently detected in groundwater at up to 55,000 µg/L and 6,500 µg/L respectively.
- Additional remediation appears warranted
- *Discussion: Site appears to now be on track, assuming that no additional gaps in site activity occur. Site may need some sort of additional remedial action before it will be a candidate for closure.*

**MOBIL OIL SS #14-466 (T0611101086)**  
**3498 TELEGRAPH RD., VENTURA, CA 93003**



**Case Age: 15 years**  
**Primary COC: Gasoline**  
**RP Identified by Regulator: EXXONMOBILE OIL CORPORATION**  
**Current Land Use: BANK**

*OPEN - REMEDIATION*

CLEANUP OVERSIGHT AGENCIES  
 VENTURA COUNTY LOP (LEAD) - CASE #: 96014  
 CASEWORKER: [DAVID C. SALTER](#) - SUPERVISOR: NONE SPECIFIED  
 LOS ANGELES RWQCB (REGION 4) - CASE #: C96014  
 CASEWORKER: [DANIEL PIROTTON](#) - SUPERVISOR: [WEIXING TONG](#)



**Possible Reasons Why This Case Is So Old**

- Vapor intrusion related to ISCO appears to be a concern at this site. Additional sampling planned.
- Due to the lithology encountered at the site, oxygen diffusers appear to be ineffective at remediation. Site is now undergoing verification monitoring after ISCO event in December 2009.
- Groundwater and soil contamination remain elevated above cleanup goals by orders of magnitude

NOTE: Data queried from GeoTracker and reviewed in October 2010

**Activities Conducted to Date Based on GeoTracker Info (T0611101086)**

**Assessment last 5 years**

- Groundwater Monitoring has been ongoing since 1995
- Soil vapor sampled as part of ISCO and ISCO pilot testing in 2009. A work plan for additional soil vapor sampling was submitted 9/16/2010

**Remediation last 5 years**

- ISCO injection conducted in December 2009.

**Assessment older than 5 years**

- Multiple phases of assessment were conducted between 1994 and 2009 including multiple borings, and the installation of monitoring wells
- Groundwater Monitoring has been ongoing since 1995

**Remediation older than 5 years**

- Oxygen injection began in 2004 and has been ongoing since



## IMPEDIMENTS TO CLOSURE (T0611101086)

as reported by regulatory agency

### GROUNDWATER IMPACTS

- Groundwater Impacted Above Background - Q2/09 Max TPHg, benz, & TBA = 46000, 13000, & 170

### BENEFITS OF ADDITIONAL WORK

- Remove / Reduce Source Mass - *Waiting for WDR for ISCO*

### SENSITIVE RECEPTORS LIKELY TO BE IMPACTED AND TIME FRAME FOR IMPACT

- Groundwater Already Impacted

## Review Conclusions T0611101086

- No complete history of site activities is available in the documents present in GeoTracker
- While oxygen diffusers have been in place and operating since 2004, they have shown at best limited efficacy due to the site lithology. The site is now undergoing verification monitoring after ISCO was conducted in December 2009
- TPHg, and Benzene remain present in groundwater at the site at up to 40,000 µg/L 12,000 µg/L as of June 2010.
- *Discussion: Additional remediation is warranted at this site. Due to Site lithology remedial alternatives are limited, Oxygen injection appears to be ineffective, and ISCO appears to have had only limited effects to date. Case appears to be on track.*