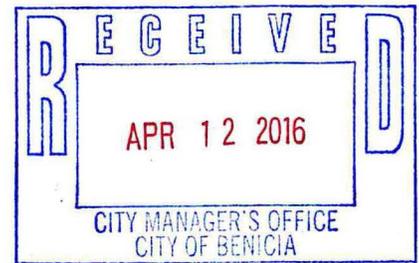


City Clerk Department



April 7, 2016

Benicia City Council
Benicia City Hall, 250 East L Street
Benicia, CA 94510

RE: Opposition to Application for a Rail Spur, by the Valero Refinery, to the City of Benicia

At its meeting of April 5, 2016, the Berkeley City Council voted to oppose the Valero Refinery's application for a rail spur -- to receive hazardous and volatile crude by rail -- to the City of Benicia, and communicate said opposition to the Benicia City Council.

Sincerely,

A handwritten signature in blue ink that reads "Mark Numainville".

Mark Numainville
City Clerk

Enclosure: Staff report

cc: Linda Maio, Councilmember, District 1
Laurie Capitelli, Councilmember, District 5
Dee Williams-Ridley, City Manager



CITY COUNCIL
Linda Maio

CONSENT CALENDAR

April 5, 2016

TO: Honorable Mayor and Members of the City Council

FROM: Councilmembers Linda Maio and Laurie Capitelli

SUBJECT: Opposition to Application for a Rail Spur, by the Valero Refinery, to the City of Benicia

RECOMMENDATION

Oppose the Valero Refinery's application for a rail spur, to receive hazardous and volatile crude by rail, to the City of Benicia, and communicate our opposition via formal letter to the Benicia City Council

BACKGROUND

As Phillips 66 has proposed in San Luis Obispo, the Valero refinery has made an application to the City of Benicia to build a rail spur to enable it to facilitate receiving crude oil products by rail. The Valero refinery is clear in its application that Bakken Crude is on their receiving list. Currently, hazardous and explosive Bakken crude, brought to market through fracking in the Dakotas, is destined to travel across the northwest and then southwest to refineries via rail. However, similar fracked crude oil products are planned to be brought to market from inland states in the south, such as Texas, where discoveries are underway. The rails are their best way of bringing product to the West Coast refineries. Once a rail spur is approved, products can travel to refineries by rail from every direction, in whatever volume is desired, without seeking approval from any community through which these "bomb trains" would travel.

The industry could, but is not, removing the dangerous volatiles before shipping. Although production by fracking has slowed due to global oil market competition, clearly the industry is readying itself for resumption of extraction. All of the towns and cities within close proximity of these rail lines would be exposed to the highly volatile products transiting through our locales, often directly adjacent to residences, businesses, community activities, and the Bay.

Given the number and seriousness of rail accidents involving hazardous crude, and on the rail lines in general, opposition is critical. Berkeley could experience an unknown

number of shipments of these hazardous materials, from whatever direction, of which we would not even be informed. The rail lines are governed at the federal level and local communities have no jurisdiction. However, a rail spur is a land use decision of the local jurisdiction, in this case, the City of Benicia. The Valero EIR, like the Phillips 66 EIR, totally ignored the exposures to hazards that local communities will experience from these shipments, which is both wrong and unacceptable. The hearings before the Benicia City Council will be taking place in early April. By passing this resolution Berkeley will join the considerable opposition to the Valero proposal.

FINANCIAL IMPLICATIONS

None.

CONTACT

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U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD

INVESTIGATION REPORT

LPG FIRE AT VALERO – MCKEE REFINERY

(Four Injured, Total Refinery Evacuation, and Extended Shutdown)

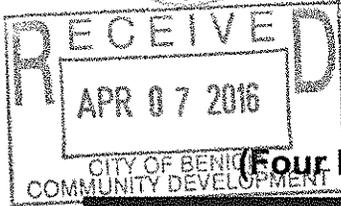


Photo: Associated Press

VALERO ENERGY CORPORATION

SUNRAY, TEXAS

FEBRUARY 16, 2007

KEY ISSUES:

- FREEZE PROTECTION OF DEAD-LEGS
- EMERGENCY ISOLATION OF EQUIPMENT
- FIREPROOFING OF SUPPORT STEEL
- FIRE PROTECTION FOR HIGH PRESSURE LPG SERVICE
- CHLORINE RELEASE

REPORT NO. 2007-05-I-TX

JULY 2008

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Acronyms and Abbreviations

AIChE	American Institute of Chemical Engineers
API	American Petroleum Institute
BPD	barrels per day (100 BPD = 2.92 gallons per minute)
CCPS	Center for Chemical Process Safety
CFR	Code of Federal Regulations
CSB	U.S. Chemical Safety and Hazard Investigation Board
DAGO	DeAsphalted Gas Oil
DCS	distributed control system
EIV	emergency isolation valve
EHS	extremely hazardous substance
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERPG	Emergency Response Planning Guideline
IChemE	Institute of Chemical Engineers (UK)
IDLH	immediately dangerous to life or health
LPG	liquefied petroleum gas
MOC	Management of Change
NPRA	National Petrochemical and Refiners Association
NWS	National Weather Service
OSHA	Occupational Safety and Health Administration
PDA	Propane DeAsphalting Unit
PEL	permissible exposure limit
PHA	Process Hazard Analysis
psi	pounds per square inch (1 psig = 6.89 kPa)
PSM	Process Safety Management (OSHA)
RMP	Risk Management Program (EPA)
ROSOV	Remotely Operable Shut-Off Valve
TCEQ	Texas Commission on Environmental Quality
UDS	Ultramar Diamond Shamrock

EXECUTIVE SUMMARY

On February 16, 2007, a liquid propane release from cracked control station piping resulted in a massive fire in the propane deasphalting (PDA)¹ unit at Valero's McKee Refinery near Sunray, Texas, injuring three employees and a contractor. The fire caused extensive equipment damage and resulted in the evacuation and total shutdown of the McKee Refinery. The refinery remained shut down for two months; the PDA unit was rebuilt and resumed operation nearly one year after the incident. Direct losses attributed to the fire were reported to exceed \$50 million.²

The following are key findings of the Chemical Safety Board's (CSB) investigation:

1. The propane release was likely caused by the freeze-related failure of high-pressure piping at a control station that had not been in service for approximately 15 years. The control station was not isolated or freeze-protected but left connected to the process, forming a dead-leg.³ Water in the propane accumulated in the low point formed by the control station and froze during cold weather prior to the incident, cracking an inlet pipe elbow. Ice sealing the failed pipe from the process melted as the air temperature rose on the day of the incident, releasing 4,500 pounds per minute of liquid propane, which ignited.
2. The refinery did not conduct a management of change⁴ review when the control station was removed from active service in the 1990s. Consequently, the freeze-related hazards of the

¹ The McKee propane PDA unit uses liquid propane as a solvent to separate gas oil from asphalt. The gas oil is fed to other units in the refinery for further processing. The asphalt is sold as paving material.

² RMP submittal, December 2007.

³ A dead-leg is a section of piping connected to the process that has no flow through it.

⁴ Management of change is a systematic method for reviewing the safety implications of modifications to process technology, facilities, equipment, chemicals, organizations, policies, and standard operating practices and procedures.

dead-leg formed by the control station were not identified or corrected when the change was made.

3. The McKee Refinery's freeze protection practices did not ensure that process units were systematically reviewed to identify and mitigate freezing hazards for dead-legs or infrequently used piping and equipment.
4. American Petroleum Institute (API)⁵-recommended safety practices for oil refineries do not provide detailed guidance on freeze protection programs, nor do they sufficiently stress freeze protection of dead-legs, or of infrequently used piping and equipment.
5. The rapidly expanding fire prevented field operators from closing manual isolation valves or reaching local pump controls to isolate the high-pressure propane being vented to the atmosphere. Control room operators were unable to shut off the flow of propane because remotely operable shut-off valves (ROSOVs)⁶ were not installed in the PDA. The lack of remote isolation significantly increased the duration and size of the fire, resulting in extensive damage to the PDA, the main pipe rack, and an adjacent process unit.
6. API provides safety guidance for the use of ROSOVs in LPG storage installations, but does not address their use in refinery process units handling large quantities of flammable materials. Valero internal standards require the use of ROSOVs in such process units, but the McKee Refinery had not retrofitted them in the PDA unit.

⁵ The API, an industry trade group, publishes recommended practices and standards widely used in the refining industry.

⁶ ROSOVs, also called emergency isolation valves (EIVs), are equipped with actuators and are configured to be quickly and reliably operated from a safe location, such as a well-sited control room.

7. Flame impingement on a non-fireproofed structural support caused a pipe rack to collapse, significantly increasing the size and duration of the fire, and led to the evacuation and extended shutdown of the refinery.
8. API-recommended practices and Valero standards for fireproofing do not provide sufficiently protective guidance for fireproofing distance for pipe racks near process units containing high-pressure flammables.
9. The exposure of three one-ton chlorine containers to radiant heating from the fire led to the release of approximately 2.5 tons of highly toxic chlorine,⁷ which was used as a biocide in an adjacent cooling tower. Biocides that are inherently safer than chlorine are available.
10. A butane storage sphere was exposed to radiant heating that blistered its paint. The manual firewater deluge valve for the butane sphere was located too close to the PDA unit and could not be opened during the fire.
11. API-recommended practices do not require the evaluation of hazards posed by adjacent process units when specifying the design, operation, or location of firewater deluge valves.
12. The McKee Refinery's Process Hazard Analysis was ineffective in identifying and addressing the
 - risk of pipe failure due to freezing,
 - need for ROSOVs in the PDA unit to rapidly isolate LPG releases, and
 - hazards posed by fire exposure to neighboring equipment, including the chlorine ton containers and the butane storage sphere.

⁷ Chlorine has a permissible exposure limit (PEL) of 1.0 ppm, and is listed by the Environmental Protection Agency (EPA) as an extremely hazardous substance (EHS).

This CSB report identifies root and contributing causes, and makes recommendations to Valero Energy Corporation, Valero–McKee Refinery, the API, the United Steelworkers Union, and Steelworkers Local 13-487.

1.0 Introduction

1.1 Background

At 2:09 p.m. on Friday, February 16, 2007, liquid propane under high pressure was released in the Propane De-Asphalting (PDA)¹ unit of Valero's McKee Refinery, 50 miles north of Amarillo in the Texas panhandle, near the town of Sunray. The resulting propane vapor cloud found an ignition source, and the subsequent fire injured workers, damaged unit piping and equipment, and collapsed a major pipe rack. The fire grew rapidly and threatened surrounding units, including a Liquefied Petroleum Gas (LPG) storage area. Fire-fighting efforts were hampered by high and shifting winds and the rapid spread of the fire. A refinery-wide evacuation was ordered approximately 15 minutes after the fire ignited.

Three of the four workers injured were seriously burned, including a contractor. The refinery was completely shut down for just under two months, and operated at reduced capacity for nearly a year.

Because of the serious nature of this incident, the U.S. Chemical Safety and Hazard Investigation Board (CSB) launched an investigation to determine root and contributing causes and to make recommendations to help prevent similar incidents.

1.2 Investigative Process

The CSB investigators arrived at the McKee Refinery the morning of Sunday, February 18, 2007. The CSB interviewed Valero and contractor personnel, reviewed company documents and data from the PDA unit's computerized control system, examined physical evidence, and tested valves and piping components. The CSB investigation team was aided by experts in metallurgical analysis and high-pressure flow testing. The investigation focused on the refinery's programs to identify and address

¹ The McKee PDA unit uses liquid propane as a solvent to separate gas oil from asphalt. The gas oil is fed to other

process hazards, and on the fire protection measures used in and around the PDA unit. Investigation activity was coordinated with the U.S. Occupational Safety and Health Administration (OSHA); the U.S. Environmental Protection Agency (EPA); and the Texas Commission on Environmental Quality (TCEQ).

2.0 Valero Energy Corporation

2.1 Company History

Valero Energy Corporation was formed in 1980 as a natural gas-gathering company² based in San Antonio, Texas. In the early 1980s, the company began expanding into the refining industry, and in 1997, separated its refining and marketing businesses into an independent company under the Valero name.

Valero Energy expanded rapidly in the late 1990s and early 2000s, as it acquired 16 U.S. refining facilities, as well as plants in Quebec, Canada; and Aruba. Valero Energy became North America's largest refiner in 2005, operating 18 refineries³ with capacity of approximately 3.3 million barrels per day (bpd). In 2006 the company had assets of approximately \$33 billion; annual revenues of \$91.8 billion; and 21,800 employees.⁴

2.2 McKee Refinery

The McKee Refinery in Sunray, Texas, was built in 1933 by Shamrock Oil and Gas Company.⁵ Major unit upgrades were made in the 1950s, 1990s, and, most recently, in 2004. The refinery became part of

units in the refinery for further processing. The asphalt is sold for use in paving materials.

² Gathering companies consolidate gas production from many natural gas wells into one or more large production pipelines for treating and distribution.

³ This number includes two separate plants (east and west) at one physical location. Since the February 2007 incident, Valero has divested its Lima, Ohio, refinery, bringing Valero's total to 17.

⁴ Dunn & Bradstreet, Directory of Corporate Affiliations, s.v. "Valero Energy Corporation," dated Dec. 11, 2007, accessed Dec. 13, 2007.

⁵ *Handbook of Texas Online*, s.v. "Diamond Shamrock." <http://www.tshaonline.org/handbook/online/articles/DD/hed6.html>, accessed Jan. 2, 2008.

Valero in late 2001 when Ultramar Diamond Shamrock (UDS), the previous owner, merged with Valero Energy.

On July 29, 1956, the McKee Refinery experienced a tragic workplace accident when a light hydrocarbon storage vessel failed catastrophically during a fire, resulting in the deaths of 19 emergency responders.

The refinery processes 170,000 barrels of crude oil per day, and distributes its products by pipeline to customers in Texas, New Mexico, Arizona, Colorado, and Oklahoma.

2.3 Propane Deasphalting (PDA) Unit

The PDA unit (Figure 1) recovered fuel feedstock and paving-grade asphalt from the heavy bottoms (pitch⁶) produced in the refinery's vacuum crude oil fractionator. In the McKee PDA process, two liquid/liquid extraction towers used liquid propane as a solvent to extract gas oil⁷ from the pitch under approximately 500 pounds per square inch (psi)(3,447 kPa) pressure. The recovered gas oil was processed into gasoline in another refinery unit. The asphalt produced was sold for use in paving materials. Figure 2 is a simplified process flow diagram for the No. 1 Extractor, including the location from which the propane was initially released.

⁶ Pitch is the heavy, viscous material discharged from the bottom of the vacuum fractionator after the lighter fractions have been removed – the heaviest hydrocarbon mixture produced from crude oil in the refinery.

⁷ Gas oil is a hydrocarbon mixture with molecular weight and viscosity somewhat higher than diesel.

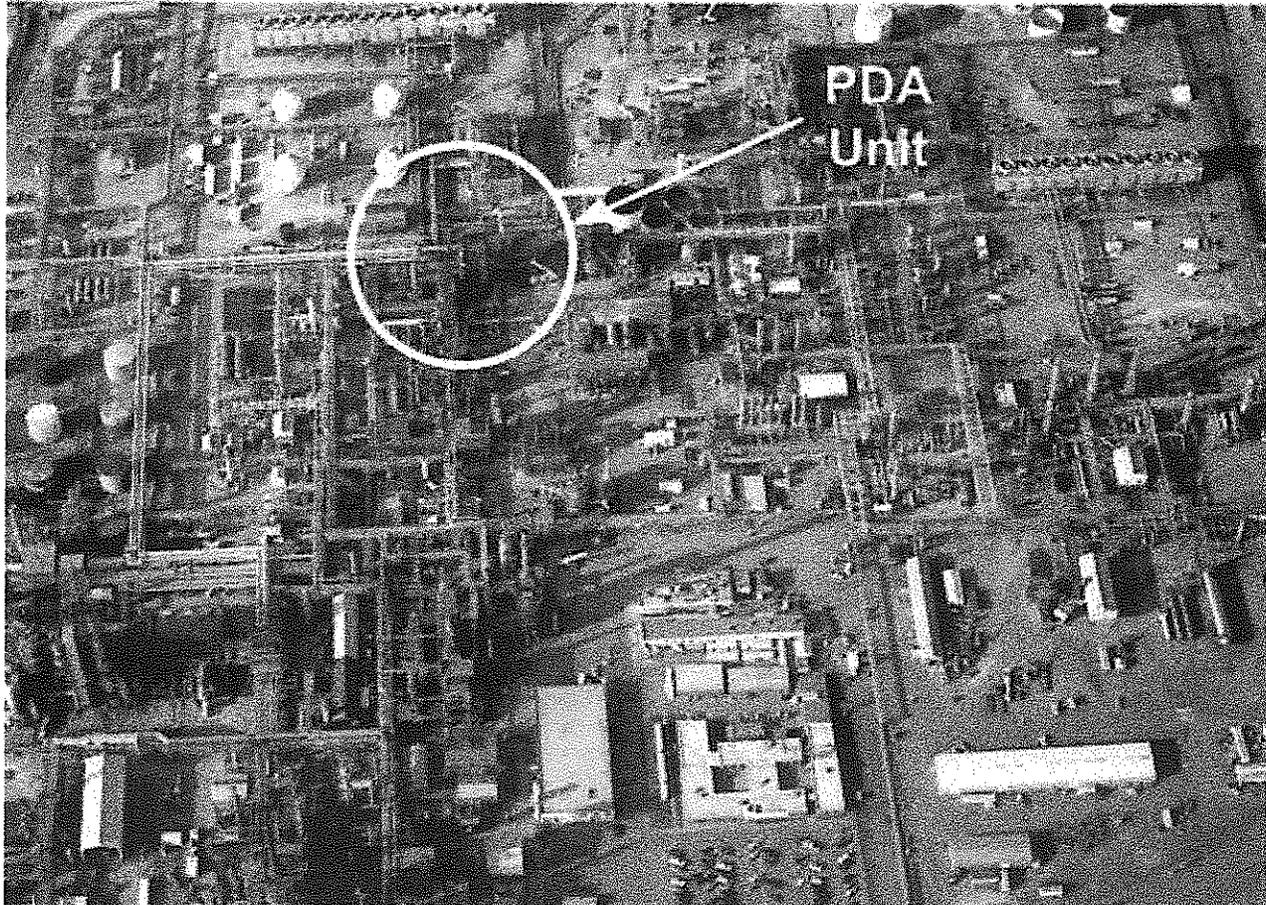


Figure 1. PDA unit location in the McKee Refinery

The relatively dense pitch entered an upper section of the extractor and flowed to the bottom of the tower. Less dense liquid “wash” propane entered a lower section and flowed to the top of the extractor. Internal structures in the tower promoted effective contact between the two streams. DeAsphalted Gas Oil (DAGO) extracted from the pitch flowed out of the top of the tower with much of the propane. This liquid flowed through a series of flash drums⁸ to remove propane from the gas oil. The DAGO was sent elsewhere in the refinery for processing.

A mixture of asphalt and propane flowed from the bottom of the extractor. This stream was also heated and flashed to remove entrained propane, and the asphalt sent to storage.

⁸ This is referred to as “flashing,” in which the pressure of a liquid mixture is suddenly reduced, causing light materials to vaporize, or “flash off,” separating them from heavier liquid components.

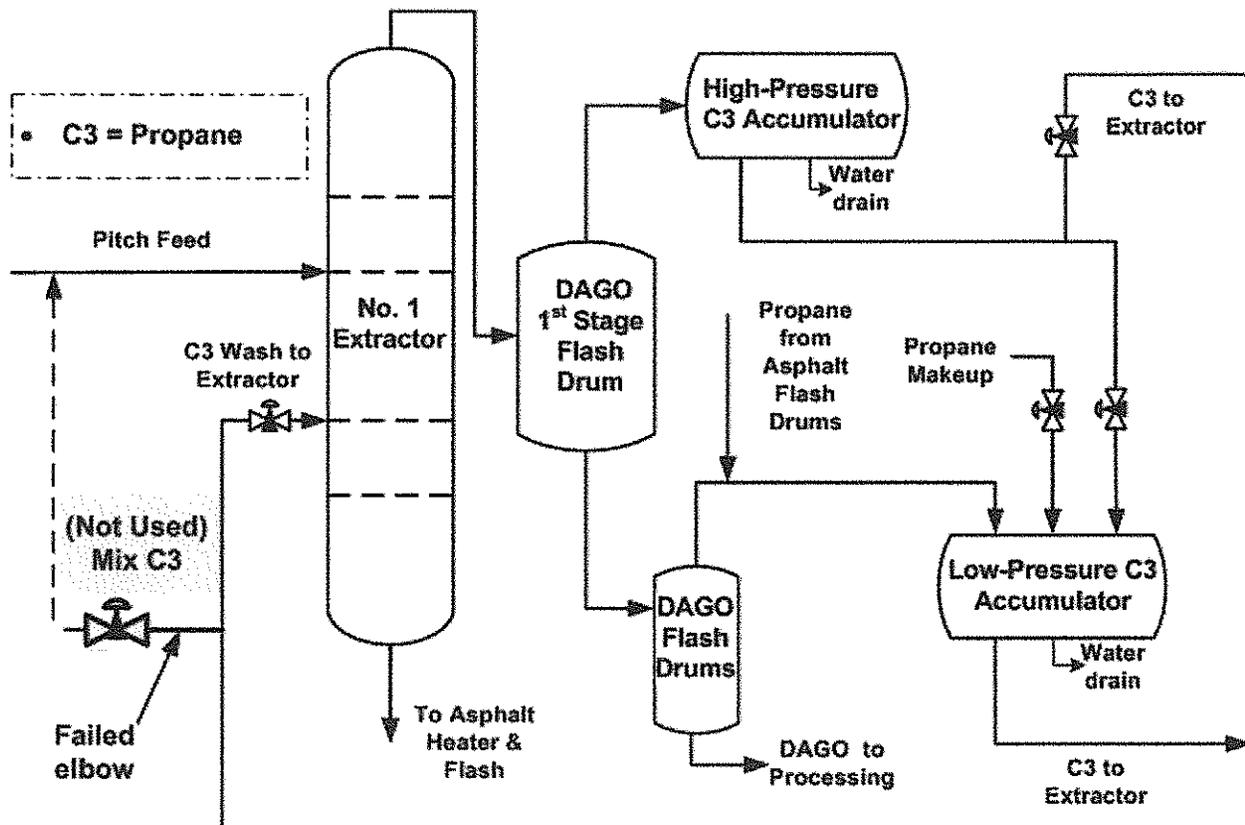


Figure 2. No. 1 Extractor simplified process flow diagram

Propane from the various flashing steps was condensed and sent to either the low- or high-pressure accumulators. Propane from both accumulators was pressurized by pumps, blended for temperature control, and recycled to the extractors. A small amount of makeup propane (about 0.5 percent of the circulating propane rate) entered the low-pressure accumulator to replace losses. Operators told the CSB investigators that the makeup propane contained a variable amount of entrained water, which was regularly drained from the low points on the accumulators.⁹ Appendix A contains a more detailed process flow diagram of the PDA unit showing the major process flows and drainage points.

⁹ Many refinery streams normally contain small amounts of water.

3.0 Incident Description

3.1 The Incident

On Friday, February 16, 2007, at approximately 2:09 p.m.,¹⁰ plant personnel and contractors working in the PDA unit heard a “pop,” and saw what appeared to be steam blowing from a control station near ground level at the No. 1 Extractor tower. Plant personnel quickly determined that the escaping cloud was propane and directed workers in the area to evacuate.

The propane escaping from the high-pressure system formed a vapor cloud that traveled downwind toward the boiler house, where it likely ignited.¹¹ The flames flashed back to the leak source.

Surveillance video (Figure 3) shows the fire developing rapidly as flames impinged on piping around the No. 1 Extractor, releasing additional propane.

A steel support column on the east/west (E-W) pipe rack was impacted by a high-pressure propane jet fire. The column, which was not protected by fireproofing insulation, buckled, collapsing the rack and causing multiple pipe failures. Liquid petroleum products discharged from the damaged pipes, contributing to the rapid spread of the fire and the damage caused to surrounding equipment, such as the No. 2 Cooling Tower and No. 4 Naphtha Column.

¹⁰ The time of 2:09 p.m. is based on control system records examined after the incident.

¹¹ Nearby fired heaters were another possible source of ignition.



Figure 3. Approximately 90 seconds after ignition (from surveillance video)

3.2 Injuries

Two Valero employees, who have since returned to work, and one contractor were seriously burned in the initial flash fire. The injured contractor continued to receive medical treatment for over a year after the incident. A member of the fire brigade received minor burn injuries while setting up fire-fighting equipment early in the response. Ten other Valero employees and contractors were treated for minor injuries and released. There were no fatalities and no reported off-site injuries.

3.3 Emergency Response and Refinery Evacuation

According to Valero's incident response records, the fire alarm was activated at 2:10 p.m., about one minute after employees heard the "pop" of the initial release. The refinery's emergency response team approached the fire, staging from the south. They attempted to activate stationary fire water monitors, but

the high and shifting winds and the rapid growth of the fire hampered their efforts.

Fifteen minutes after the fire erupted, managers at the Emergency Operations Center (EOC) ordered a total refinery evacuation. Refinery alarm records show that the evacuation alarm sounded at 2:26 p.m. The EOC tactical operations director later stated that the main concerns driving the evacuation decision were the number of pressurized pipes rupturing as the pipe rack collapsed and the proximity of the responders to the liquid propane filled extractor vessels, which were engulfed in flames and possibly at risk of failing catastrophically. This decision pulled responders and workers away from a rapidly deteriorating situation that could have endangered many lives.

The refinery was shut down by isolating main feeds and the fuel gas supply. Emergency response teams later entered to isolate fuel sources, gradually shrinking the fire. Valero planned to stage a joint entry with responders from the nearby Conoco Phillips refinery¹² to extinguish the fire the following day; however, chlorine and sulfuric acid leaks¹³ made this entry too hazardous. The fire was extinguished by Valero personnel on Sunday afternoon, February 18, 2008, approximately 54 hours after it ignited.

3.4 Aftermath

The refinery remained completely shut down for nearly two months. Media reports indicated spot shortages of reformulated gasoline in Denver, Colorado,¹⁴ in the weeks immediately following the fire. This incident occurred during a period when unplanned refinery outages kept approximately 480,000 bpd

¹² Refineries often establish mutual aid agreements to increase the resources available for responding to large emergencies.

¹³ The chlorine and sulfuric acid were used to treat water circulating in a nearby cooling tower.

¹⁴ Reformulated gasoline contains a specified content of oxygenated fuels to meet EPA requirements for automotive emissions in certain regions. Valero's McKee Refinery is located approximately 400 miles from Denver, and typically supplies, via pipeline, much of the gasoline consumed in the Denver market.

of capacity offline nationwide, of which 170,000 bpd was attributed to the McKee fire.¹⁵ Operations resumed at reduced throughput roughly two months after the fire.

The PDA unit was heavily damaged (Figure 4). Much of the piping, control wiring, and heat exchange equipment in the area of the extractors was destroyed and major equipment items, including the extractor towers, required extensive evaluation to determine if they were safe for continued use. Valero restarted the rebuilt PDA unit in January 2008, nearly one year after the fire, restoring the refinery to full production capacity.

3.5 Near-Miss Events

The Center for Chemical Process Safety^{16, 17} (CCPS) defines a near-miss as “an extraordinary event that could reasonably have been expected to result in negative consequences, but actually did not” (1992).

Two events during the February 16 fire could have resulted in serious, or even catastrophic, consequences if the wind direction had been different or if personnel had been nearby.

3.5.1 Butane Sphere Heat Exposure

At the time of the initial propane release, the wind was blowing from the west-northwest, pushing the fire in the general direction of the boiler house. Interviews, records, and security camera video footage indicate that the wind shifted several times during the fire, forcing the EOC to relocate.

Radiant heat from the intense PDA fire blistered the paint on a 10,000 barrel (420,000 gallon) capacity butane storage sphere located 270 feet northwest of the No. 1 Extractor (Figure 4). Fortunately, the wind

¹⁵<http://tonto.eia.doe.gov/oog/info/twip/twiparch/080221/twipprint.html>; accessed Feb 2008.

¹⁶ The CCPS, an industry-sponsored affiliate of the American Institute of Chemical Engineers, publishes widely recognized process safety guidelines.

¹⁷ CCPS defines process safety as a “discipline that focuses on the prevention of fires, explosions and accidental chemical releases at chemical process facilities.” Process Safety Management (PSM) applies management principles and analytical tools to prevent major accidents (CCPS, 1992).

tended to move the flames away from the sphere; strong winds from the southeast might have greatly exacerbated the sphere's thermal exposure. Even with favorable winds, heat from the fire kept responders from reaching the fire water deluge system valve for the sphere, preventing them from establishing a protective flow of water over its surface. During interviews, emergency responders indicated that they were concerned for the safety of the butane sphere, in light of a recent commemoration of the 1956 incident in which the failure of a vessel in similar service caused 19 fatalities.

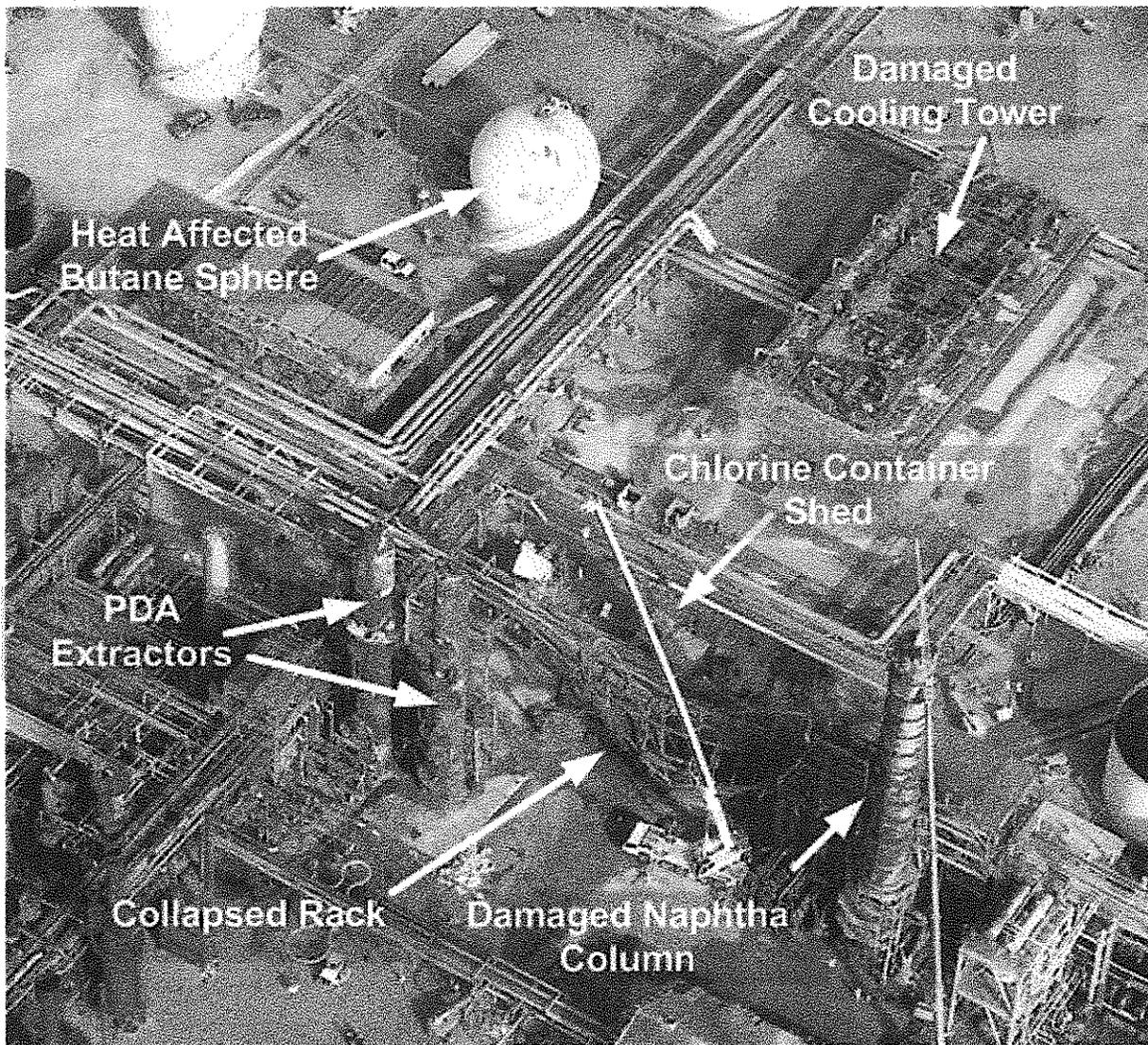


Figure 4. Aerial photograph of damage from the PDA unit fire

3.5.2 Chlorine Release

Post-incident examination revealed that three one-ton chlorine containers in a cooling tower water treatment shed were subjected to radiant heating due to their proximity to the PDA unit (100 feet to No. 2 Extractor) and pipe rack (20 feet). All three containers vented when their fusible plugs, installed to prevent container rupture, melted as designed. One container ruptured despite the operation of its fusible plugs, and another vented completely. The third developed a leak through a partially melted plug that was repaired by emergency responders using self-contained breathing equipment for protection against the toxic vapor. More than 2.5 tons of chlorine, an extremely toxic material, were released.¹⁸

Fortunately, emergency responders and other refinery personnel had pulled back from the area before the major chlorine release likely occurred.¹⁹ There is no evidence that personnel on- or off-site were exposed to hazardous levels of chlorine gas. However, if responders had been nearby when the cylinders released their contents, significant exposures could have occurred.

4.0 Incident Analysis

This section provides detailed analysis of the sequence of events and causal factors leading to the origin and spread of the February 16, 2007, fire and its impact on adjacent equipment.

¹⁸ Chlorine has an OSHA PEL of 1.0 ppm; an NFPA toxicity rating of 4, the highest possible; and is listed by the EPA as an EHS.

¹⁹ The CSB investigators could not precisely determine the time of release, but it was likely shortly after the collapse of the main E-W pipe rack, when a large pool fire burned just south of the chlorine container storage pad.

4.1 Incident Sequence

In this incident, water settling out of a propane stream likely leaked through a 10" NPS²⁰ (250 DN) inlet block valve and accumulated in the low point formed by a control station (Figure 5). The control station was connected to the process, but had not been used for approximately 15 years. A period of cold weather likely froze the water, fracturing the pipe elbow upstream of the control valve. Warmer weather then melted the ice, resulting in a release of highly pressurized liquid propane through the fractured elbow. Appendix B contains a detailed time line of the incident.

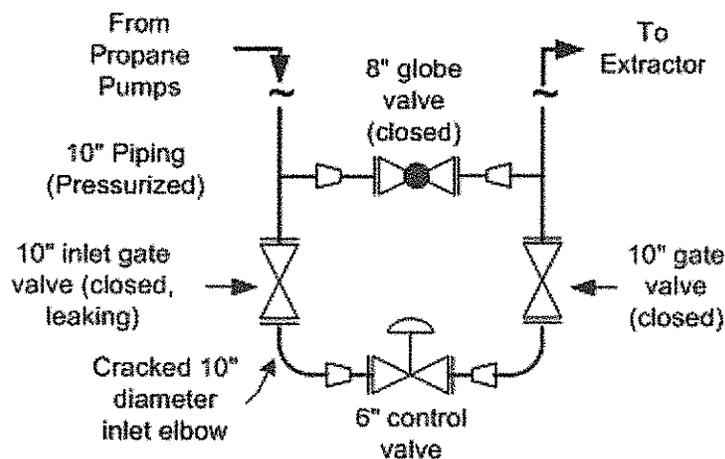


Figure 5. Propane mix control station schematic (not to scale)

4.1.1 February Cold Weather

National Weather Service records indicate that the Texas panhandle typically experiences periods of below-freezing weather during the winter, often in February. The 2007 cold snap began four days before the fire at the Valero-McKee Refinery, when temperatures dropped below 32°F and stayed below freezing for 87 hours. The average temperature in nearby Dumas, Texas, on February 14, 2007, was 26°F. A low temperature of 6°F was reached early in the morning of February 15. The temperature did not rise above

²⁰ NPS refers to U.S. Nominal Pipe Size. Dimensions of NPS pipe and fittings are specified in the American Society of Mechanical Engineers (ASME) standard B36.10. The metric equivalent is given in millimeters, nominal diameter (DN).

freezing until the morning of February 16, approximately five hours before the incident (Weather Underground, 2007).

4.1.2 Propane Mix Control Station Inlet Elbow Freezing and Failure

The 6" NPS (150 DN) propane mix control valve originally mixed liquid propane into the pitch fed into the No. 1 Extractor. Due to a change in extractor control in the 1990s, use of the control valve was discontinued; however, this subsection of the No. 1 Extractor was left connected to the process under high pressure.²¹ The block valves around the control valve were closed, but the subsection was not removed or positively isolated from the process using slip blinds.²² The refinery conducted no formal process safety management of change (MOC) review of this idled control station.²³

The station's configuration made it a dead-leg: a section of piping connected to the process with no flow through it. Water in the propane likely sank into the dead-leg, leaked by the inlet block valve, and accumulated in the control station piping.²⁴

The extended period of cold weather and the lack of freeze protection on the control station allowed the water to freeze and expand, cracking the elbow upstream of the control valve. The crack propagated along the inner radius of the elbow, the line of highest stress (Timoshenko, 1958), opening wider as it developed (Figure 6). Appendix C contains a more detailed discussion of the CSB's analysis of crack formation and propagation. The damage to the inlet elbow and the post-incident leak rate determined for the inlet block valve are consistent with the estimated initial propane release rate during the incident.

²¹ Senior operators in the PDA unit could not recall the exact time the control valve was last used. The change in extractor control occurred approximately 15 years before the incident.

²² Slip blinds are solid pieces of metal inserted between flanges to positively isolate piping or equipment.

²³ MOC requires that changes to equipment, process, or design intent be reviewed for safety implications. It is a required element of OSHA's Process Safety Management regulation, promulgated in 1992, and an element of API Recommended Practice 750, *Management of Process Hazards*, published in 1990.

²⁴ Water, which is insoluble (immiscible) in and denser than liquid propane, was known to be present in the propane. Water droplets entrained in propane can accumulate in the bottom of piping and vessels.

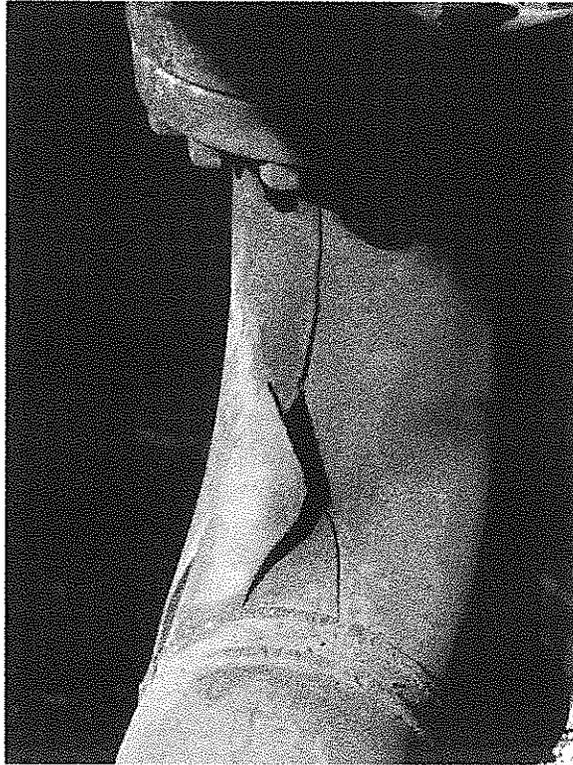


Figure 6. Crack in the 10" diameter propane mix control station inlet elbow

4.1.3 Thaw and Propane Release

On February 16, 2007, shortly after 9:00 a.m., ambient temperatures rose above freezing and the ice inside the elbow began to thaw. Post-incident examination of the control station inlet block valve (Figure 7) revealed that a foreign object was jamming the valve,²⁵ creating a leak path. When tested in a laboratory after the incident, this valve allowed over 1,025 gpm (233 m³/hour) of water to leak through at process pressure. At approximately 2:09 p.m., melting ice opened the leak path, releasing liquid propane at 500 psig (3,447 kPa) pressure through the cracked elbow. A flammable vapor cloud rapidly formed. Based on recorded data from the PDA unit's computerized control system, the CSB estimated an initial propane leak rate of 4,500 pounds (2,040 kg) per minute (Appendix D describes the propane mass balance calculations used to develop this figure).

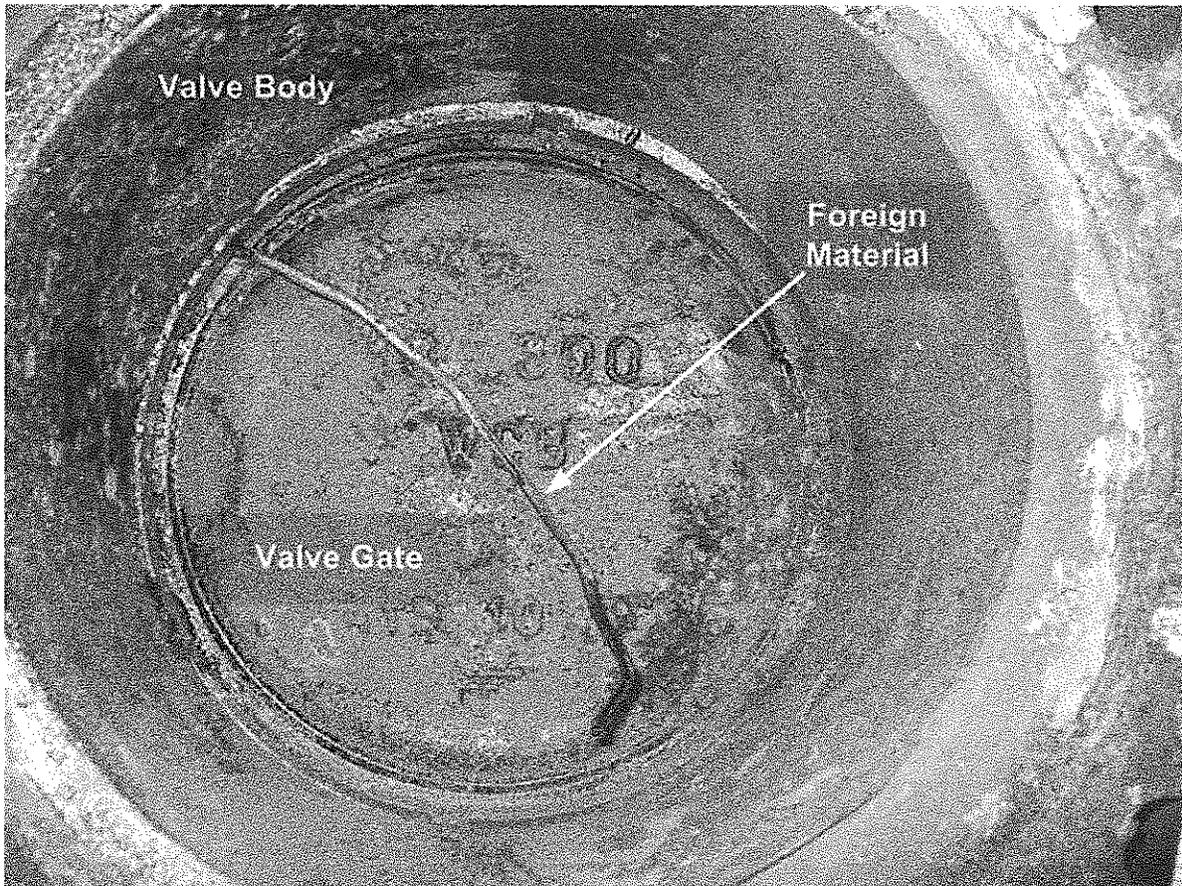


Figure 7. Downstream view of propane mix control station inlet block valve

The wind blew the propane cloud toward the boiler house, where it likely ignited.²⁶ The flames flashed back to the release point. The size and intensity of the resulting fire blocked access to manual shut-off valves and pump on-off switches that might otherwise have been used to control the propane discharge. Within minutes, the fire damaged piping and pipe rack supports, spreading the fire (Figures 4, 8, 9).

²⁵ In gate valves, a circular gate slides against metallic seat rings, providing a leak-tight seal when the valve is closed. The foreign object in the inlet gate valve prevented a tight fit between the gate and the seat rings.

²⁶ While the boiler house was the most likely source of ignition, nearby fired heaters could not be ruled out.

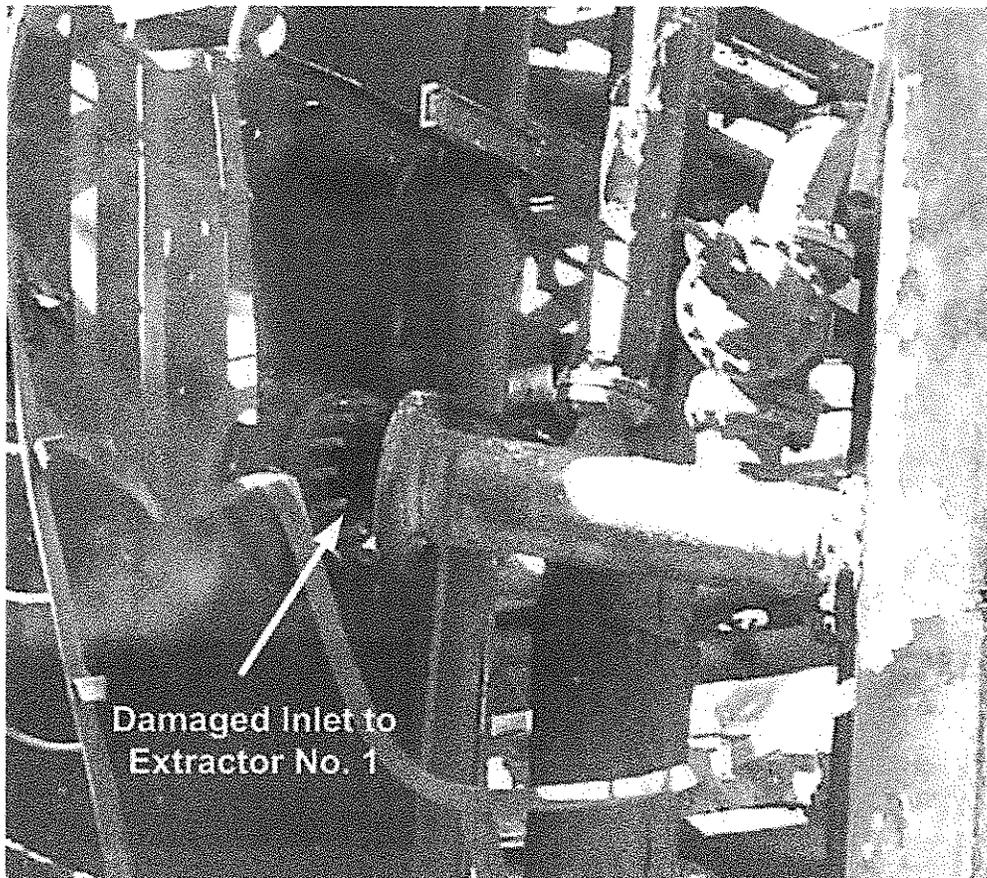


Figure 8. Damaged 10" propane inlet on Extractor No. 1

4.2 Dead-Leg Freeze Protection

The initial release of propane was due to the McKee Refinery's failure to recognize and address the freezing hazard posed by the propane mix valve control station dead-leg.

4.2.1 Dead-Leg Not Recognized or Addressed

The McKee Refinery had not identified the station as a dead-leg. A piping and instrumentation drawing (P&ID) update project for the PDA unit, completed in 2006, identified only dead-legs that were visually apparent, such as one formed when a control valve was physically removed and its flanged connections slip-blinded. However, the P&ID update did not detect the propane mix control station dead-leg, which was formed by closing block valves in the piping.

A Process Hazard Analysis (PHA)²⁷ performed on the PDA unit in 2006 did not examine freezing as a threat to piping integrity. Furthermore, the McKee Refinery's freeze protection program did not periodically survey process units for potentially freeze-prone dead-legs.

4.2.1.1 Inherently Safer Approach

According to safety guidance by the CCPS in *Inherently Safer Processes, A Life Cycle Approach* (1996), the preferred way to control hazards is to eliminate them where possible. According to *Lee's Loss Prevention* (2005), the best approach for managing dead-legs, such as the propane mix control station, is to remove them. If removing them is impractical, other approaches, in order of decreasing protective value, could include 1) positively isolating the dead-leg by installing slip blinds; 2) freeze-protecting them; or 3) procedures to regularly monitor and drain water from low points.

4.2.2 McKee Refinery Freeze Protection Program

Sunray, Texas, is in the north Texas panhandle, an area where below-freezing temperatures are common in February. Valero's McKee Refinery protected piping and equipment from freezing by insulating and "tracing" with steam-filled tubing or electric heat tape.²⁸ It was an unwritten practice to review and repair freeze protection components every fall. However, these activities focused on maintaining existing freeze protection measures, not on periodically reviewing units for dead-legs or other idle/infrequently used piping systems, or surveying process units for areas where water could collect.

The refinery's inspection program contained provisions for more frequent inspection of identified dead-legs, but these focused on identifying long-term corrosion issues, not acute freeze hazards. Freeze

²⁷ OSHA defines a PHA as a "thorough, orderly, systematic approach for identifying, evaluating, and controlling the hazards of processes involving highly hazardous chemicals." PHAs must be updated and revalidated at least every five years under the Process Safety Management regulation 29 CFR 1910.119.

²⁸ Heat tracing involves providing a source of heat along the length of a pipe, usually by attaching or wrapping steam tubing or heating tape to or around the piping, and then insulating the protected piping.

protection is both a mechanical integrity (inspection) and operational issue, and requires an integrated approach.

4.2.3 Valero Corporation Freeze Protection Survey

Following the McKee fire, Valero surveyed the freeze protection programs at its US refineries. Most of the refineries in freeze-prone areas had informal programs similar to McKee's, while several had legacy freeze protection guidelines from previous owners. Valero did not have a corporate policy for freeze protection to set minimum standards for freeze protection programs at its facilities.

4.2.4 Other Dead-Leg and Freeze-Related Incidents

In a 2002 brochure, *Understanding the Hazard: Freeze*, FM Global²⁹ cited "151 freeze incidents in industry with an average estimated gross loss of about \$115,000 per incident from 1991 to 2000." The following is a sampling of specific incidents identified by the CSB:

- January 1962, Texas City, TX: An entire refinery was crippled and major process units shut down when the area experienced temperatures below freezing for 66 hours: "Dead-end water lines and steam lines froze, causing valves to break and some pipes to split"(API Publication 758, 1983).
- March 1979, Exxon, Linden, NJ: Seven injured when butane and propane released from a dead-leg formed a large vapor cloud and exploded (Garrison, 1985).
- February 1996, Total Petroleum, Denver, CO: Abandoned pump gland oil piping under process pressure froze and then burst above a vacuum bottom pump, causing a fire (*Denver Post*, June 28, 1996).

²⁹ FM Global, a large process industry insurer, has developed widely used guidance documents.

- February 2001, Bethlehem Steel, Burns Harbor, IL: Freezing in a dead-leg condensate line near a coke oven led to two fatalities and four injuries (CSB 2001-02-I-IN, 2002).
- January 2008, Chevron, Pascagoula, MS: A freeze-related fire was reported at the refinery. This fire is an example of incidents where freezing temperatures occur occasionally, but not consistently during the winter (AP, January 3, 2008).

The IChemE³⁰ BP Process Safety Series publication, *Hazards of Water*, also lists numerous examples of process incidents related to water freezing.

4.2.5 Available Industry Guidance

FM Global's *Freeze* brochure (2002) describes the risk and provides guidance for evaluating susceptible piping systems, with particular emphasis for facilities in regions where the risk of freezing weather is intermittent. The brochure provides general guidance for mitigating the hazard, but does not describe the specifics of freeze protection programs. However, FM Global has also published a Property Loss Prevention Data Sheet, *Prevention of Freeze-Ups*, (2007, latest edition) that does give guidance for establishing and maintaining freeze protection programs.

Zurich, another major insurer, has published a cold weather checklist that tells users to “drain the vessels and piping of idle equipment”(Zurich, 2003).

The CSB reviewed available publications by the API, an industry group that publishes voluntary standards, and found no detailed guidance for refineries on establishing effective freeze protection programs.^{31 32}

³⁰ The Institute of Chemical Engineers (IChemE) is a UK engineering professional organization that publishes widely referenced process safety guidance.

³¹ API publication *Safety Digest of Lessons Learned, Section 9, Precautions Against Severe Weather Conditions*, which provided general guidance for preparing a refinery for extreme cold weather, is no longer in print.

4.3 Fireproofing

A non-fireproofed structural support for a pipe bridge³³ spanning a 90-foot wide open area north and east of the PDA unit (Figure 9) collapsed early in the incident, greatly increasing the magnitude of the fire. The support was located on a major E-W pipe rack north of the unit, outside the fireproofing distances recommended by API guidance and Valero internal standards. The collapse opened multiple lines carrying flammable and combustible materials from other areas of the refinery, contributing significantly to the damage experienced by adjacent units, and extending the time that the refinery was down for repairs. Fireproofed pipe rack support steel columns inside the PDA unit and at the No. 4 Naphtha Column all survived the fire without collapsing (Figure 10).

Fireproofing is “fire resistant insulating material applied to steel to minimize the effects of fire exposure by flame impingement, to reduce the steel’s rate of temperature rise, and to delay structural failure”(API Publication 2510A, 1996). Without fireproofing, exposed structural steel members, such as pipe rack support columns, can rapidly lose their strength and fail, possibly within minutes (API 2218, 1999; CCPS, 2003). Jet fires, such as the pressurized LPG release in this incident, can cause very rapid heating and failure of unprotected structural steel (Appendix E).

³² API 570, *Piping Inspection Code*, mentions a variety of hazards associated with dead-legs, including freezing. API Recommended Practice 2001, *Design and Construction of LPG Installations*, discusses the importance of winterization and prevention programs in verifying that out-of-service piping and dead-legs are freeze-protected. However, neither document addresses freeze protection management systems, such as requirements for a formal written program or the need for periodic inspections to identify freeze hazards, which pertain to this incident.

³³ A pipe bridge is a reinforced section of a pipe rack that carries piping over a longer than normal span.

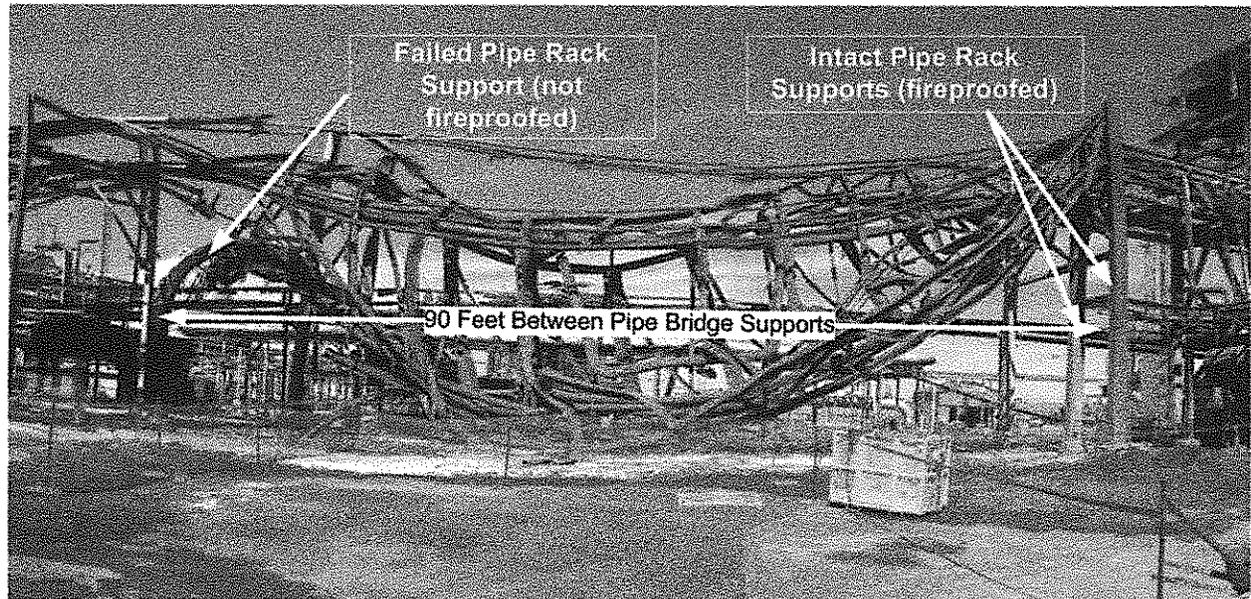


Figure 9. Pipe bridge support fireproofing

Fireproofing is a passive defense that can maintain the integrity of protected structures until a fire is controlled. According to Nolan (1996), “The primary value of fireproofing is obtained in the very early stages of a fire when efforts are primarily directed at shutting down [the] process, isolating fuel supplies to the fire...and conducting personnel evacuations.”

Key guidance for fireproofing in refineries is API Publication 2218, *Fireproofing Practices in Petroleum and Petrochemical Processing Plants*. API Publications 2510, *Design and Construction of LPG Installations*, and 2510A, *Fire-Protection Considerations for the Design and Operation of Liquefied Petroleum Gas (LPG) Storage Facilities*, provide additional information on fireproofing in LPG³⁴ storage facilities.³⁵ These publications recommend fireproofing pipe rack support steel that is 20 to 40 feet from fuel sources for general refinery service, and up to 50 feet from LPG vessels.

³⁴ LPG includes the following light hydrocarbons and mixtures: propane, propylene, normal and iso-butane, and butylenes (API Standard 2510, 2001). These materials are all commonly handled as liquefied gases under pressure.

³⁵ LPG storage facilities are commonly found in refineries, including the McKee Refinery, which had four storage spheres northwest of the PDA unit.

Valero Energy Corporation's SP-00-04, *Fire Proofing Specifications*, calls for fireproofing pipe racks within 30 feet of equipment with the potential to cause a serious fire, but makes no special provisions for processes handling LPG. A loss-prevention report produced for the McKee Refinery listed fireproofing of pipe rack support steel, including the E-W pipe rack north of the PDA unit, as a top priority for the site fireproofing program, but the rack had not been fireproofed at the time of the incident.

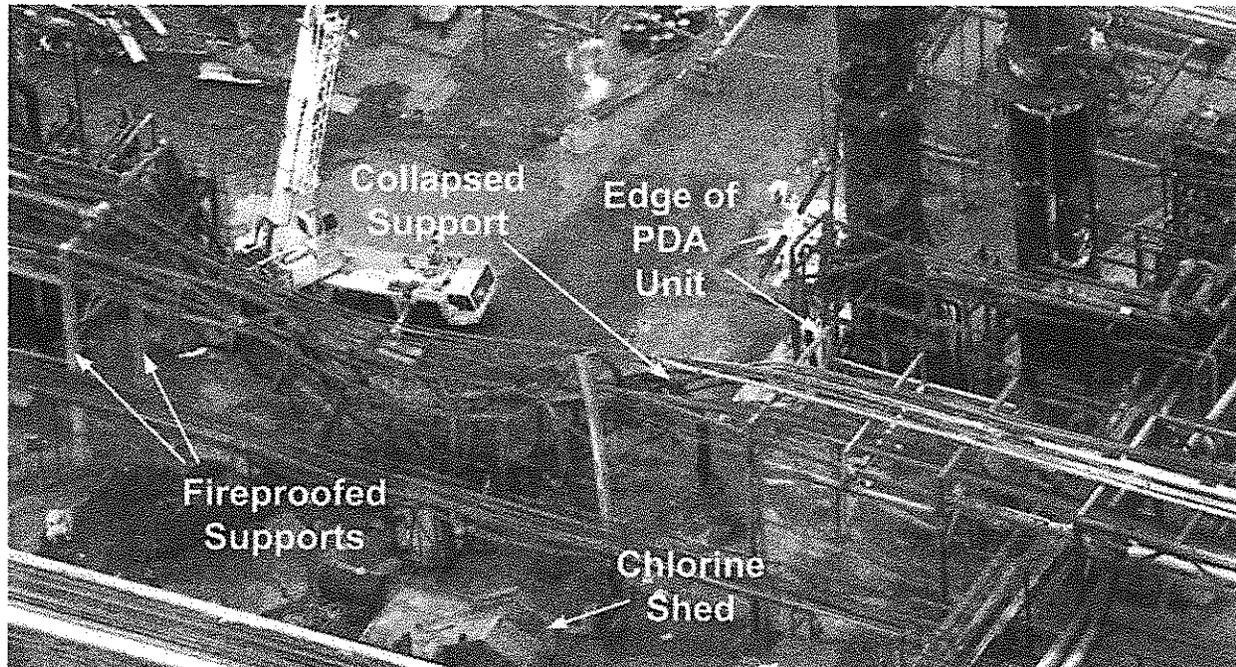


Figure 10. Extractor towers (upper right) and collapsed pipe rack

A failed inlet flange to the No.1 Extractor, located 77 feet away from the buckled pipe bridge support, was the most likely source of the jet fire that collapsed the pipe bridge (Figure 11). The closest major process vessel (the No. 2 Extractor) was 51 feet away from the support. These distances exceed both API's and Valero's recommended fireproofing distances.

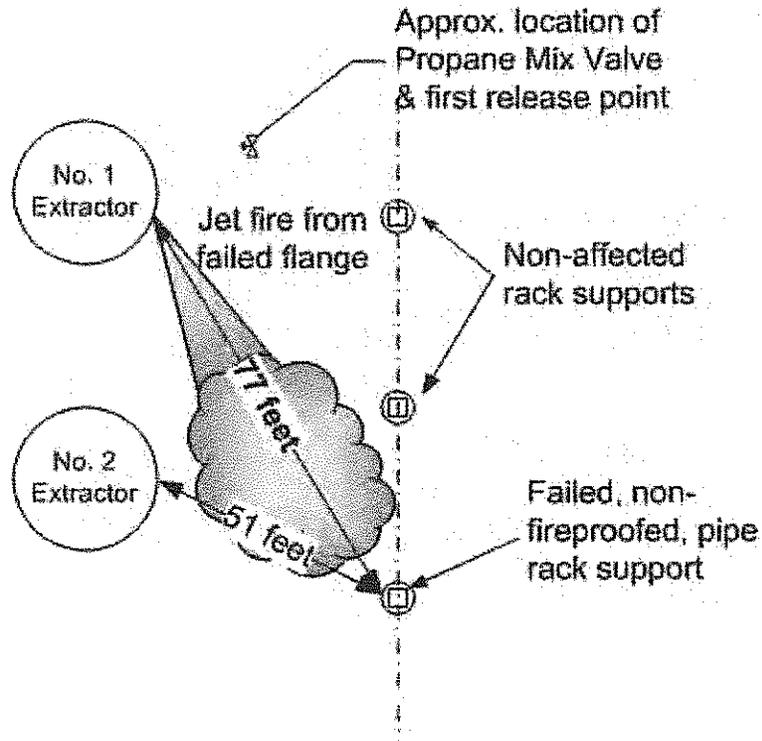


Figure 11. Distances between the E-W pipe rack supports and the extractors

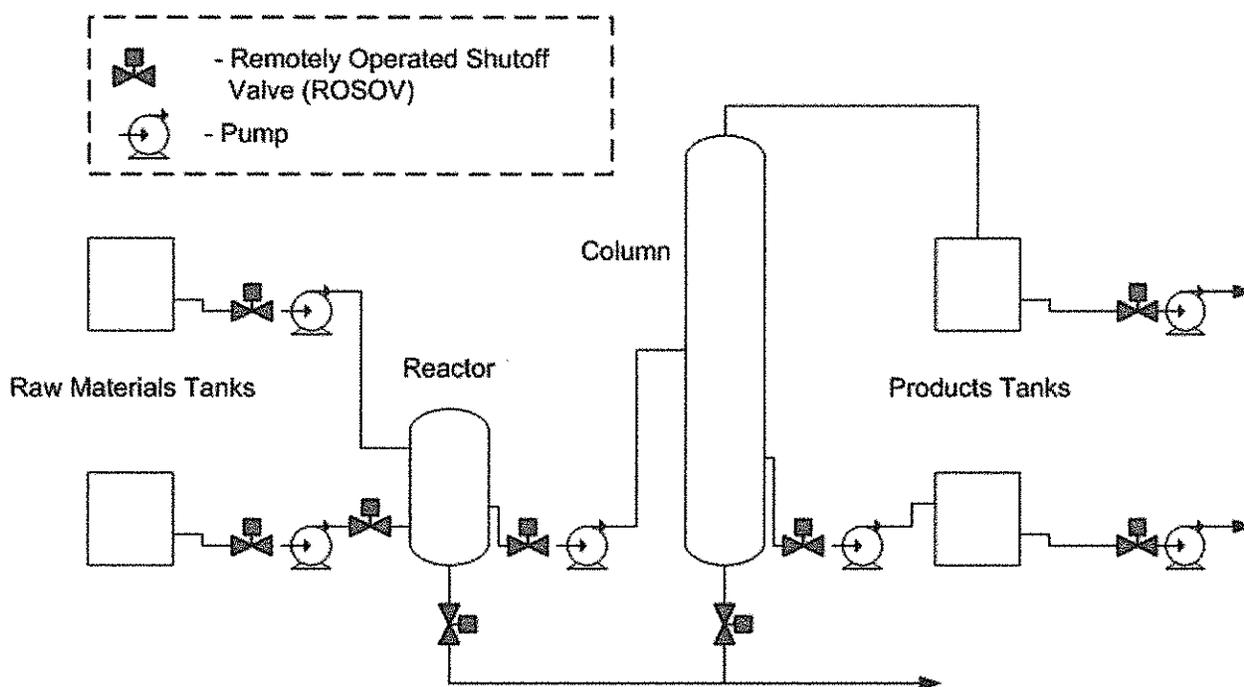
API 2218 references the API 2210/2210A LPG fireproofing distance of 50 feet, developed for pool fires in LPG storage units. Neither standard addresses fireproofing for LPG processes or jet fire scenarios, even though process unit conditions, including pressure, can be more extreme than those found in storage facilities. In this incident, the high operating pressure of the extractors (500 psig, 3,447 kPa) likely produced a jet fire with a range and intensity beyond that anticipated in the API standards for LPG storage releases.

In the Formosa–Point Comfort, Texas, propane/propylene fire in October 2005 that the CSB investigated, non-fireproofed steel columns supporting a critical structure also collapsed while adjacent fireproofed supports survived without damage (CSB 2006-01-I-TX, 2006). If the E-W pipe rack support columns in

this incident had been fireproofed, the severity and duration of the fire would likely have been greatly reduced.³⁶

4.4 Emergency Isolation and Shutdown

Although the PDA unit contained large inventories of high-pressure propane, it was not equipped with remotely operable shut-off valves (ROSOVs)³⁷ to rapidly stop propane releases. ROSOVs should be used in facilities, such as the PDA unit, where fast and effective isolation is needed to reduce the impact of major hazardous releases (HSE, 1999).



Graphic based on FM Global Property Loss Prevention Data Sheet 7-14, 2004

Figure 12. Insurer-recommended locations for ROSOVs

³⁶ Jet fire scenarios may require the use of fireproofing rated for longer fire exposure and greater resistance to erosion than might be required for protection in pool fire scenarios.

³⁷ ROSOVs, also referred to as EIVs, are equipped with actuators and configured to be quickly and reliably operated from a safe location, such as a well-sited control room.

Figure 12 shows insurer-recommended ROSOV locations for a typical process unit. ROSOVs should be installed on large inventories of highly flammable materials,³⁸ especially when downstream pumps are present that could produce pressurized releases. Such pumps should be interlocked to shut down when ROSOVs are closed.

4.4.1 American Petroleum Institute (API) Guidance

API's *Recommended Practice 2001, Fire Protection in Refineries* and API 2030, *Application of Fixed Water Spray Systems for Fire Protection in the Petroleum Industry*, discuss the use of isolation valves in emergencies, including considering access to valves during fires. However, while these recommended practices briefly reference remotely operable isolation valves, they focus on fire- and heat-actuated valves and their limitations. The 2007 release of API 521, *Pressure-relieving and Depressuring Systems*, addresses the limitations of pressure relief systems in protecting against jet fires, and states that "unlike a pool fire, a jet fire can, in essence, be 'turned off' through isolation and depressurization of the jet fire source..."³⁹ However, none of these guidance documents provide specific guidance on the design, location, and use of ROSOVs for the rapid isolation of LPG processes during emergencies.

4.4.2 Valero Corporate Emergency Isolation Valve (EIV) Standard

Valero's *Emergency Isolation Valve Standard* (SP-40-01) requires evaluation and installation of ROSOVs during new construction projects, and application of the standard during PHA revalidations in existing

³⁸ Guidance varies on appropriate threshold quantities for installing ROSOVs. Valero's corporate procedure gives highest priority to installing ROSOVs on vessels containing more than 10,000 pounds of LPG-like materials (NFPA Class 4 flammables), such as propane. One insurer recommends ROSOV use on flammable inventories greater than 4 m³ (4,225 gallons) in volume. The UK's Health and Safety Executive (HSE) recommends installing the capability to physically isolate "large" inventories of hazardous substances.

³⁹ API 521 (5th ed.) also highlights the need for an integrated approach to mitigating jet fire hazards, including fireproofing and other measures in addition to emergency isolation capability. However, it does not provide detailed guidance.

process units, such as the PDA.⁴⁰ The standard specifies giving the highest priority to installing EIVs on vessels containing 10,000 pounds or more of National Fire Protection Association⁴¹ (NFPA) Class 4 materials, such as propane.⁴² The CSB confirmed that both the high- and low-pressure accumulators (as well as the extractors) could contain well over 10,000 pounds of propane under normal operating conditions,⁴³ yet neither was equipped with ROSOVs nor was SP-40-01 applied as required during the 2006 PDA unit PHA revalidation. A UDS PHA in 1996 had identified the need for ROSOVs in the PDA unit; however, they were never installed, and the action item was incorrectly closed out as having been completed.

4.4.3 Formosa–Point Comfort, Texas, Incident

In a similar incident in 2005 involving an uncontrolled release of LPG (CSB-2006-I-TX), operators were also unable to reach locally operated valves to isolate the fuel source of the fire. The resulting fire extensively damaged Formosa Plastics Corporation's Point Comfort, Texas, Olefins 2 unit. In both the Formosa and Valero incidents, the use of ROSOVs would have enabled operators to quickly control the initial releases, prevent the rapid spread of the fires, and mitigate the serious damage that occurred.

5.0 Near-Miss Analysis

Near-misses are extraordinary events that could reasonably have been expected to result in negative consequences, but actually did not. Examples of near-misses include releases of flammable vapors that

⁴⁰ OSHA's PSM regulation requires PHAs to be periodically "updated and revalidated." CCPS (2001) states that PHAs are revalidated to "produce an updated PHA that adequately identifies, evaluates, and proposes controls for the hazards of the process, as they are currently understood."

⁴¹ The NFPA develops widely recognized consensus fire protection codes and standards.

⁴² The NFPA classifies the degree of hazard of a material on a scale of 0-4, with 4 the most hazardous or "severe." Class 4 flammable materials are defined as either gases or materials that will flash to a gas at ambient temperature, such as LPG. The 10,000 pound criterion in the Valero standard applies to either the mass of a single Class 4 material or to the Class 4 components of a mixture.

⁴³ Based on control system data and field measurements of the vessel diameters.

dissipate without igniting, activation of safety protective and shutdown systems, and process conditions that exceed predefined control limits (CCPS, 1992).

In this incident, two near-misses resulted from the exposure of nearby equipment to radiant heating by the fire. While no injuries or serious damage resulted, under slightly different circumstances the consequences could have been much more serious, even catastrophic.

5.1 Chlorine Release

5.1.1 Damage to Chlorine Containers

Three one-ton containers of highly toxic⁴⁴ liquid chlorine, used in cooling tower water treatment, were located in a shed approximately 100 feet from the PDA unit (Figure 4). The fire exposed the containers to radiant heating, rupturing one (Figure 13) despite the melting of its fusible plugs, and causing the other two to vent chlorine through their melted plugs.⁴⁵ Valero reported to the Texas Commission for Environmental Quality (TCEQ) that 5,332 pounds of chlorine were released (see Section 7.2). Fortunately, responders had pulled back from the area prior to the release and no injuries were attributed to chlorine exposure.

⁴⁴ The NFPA rates chlorine's health risk as a "4," the most hazardous rating.

⁴⁵ Fusible plugs are safety devices that use metal alloys that melt at comparatively low temperatures, in this case roughly 155°F (68°C) to vent containers exposed to excessive heating. The one-ton container that ruptured was likely exposed to an extremely high radiant heat flux, causing the container wall to weaken due to over-temperature and fail before its contents could be vented through the fusible plugs.

The cooling tower water treatment shed served the No. 2 Cooling Tower, directly to the north; however, the shed did not need to be located next to the PDA unit and pipe rack. Furthermore, the PHA for this system had not examined the hazards of locating the chlorine containers close to the PDA unit.

Following the incident the refinery rebuilt the treatment system, using bleach as the biocide, on the north side of the cooling tower.

Chlorine was used at the McKee Refinery to prevent microbial growth in cooling water; however, its toxicity made it an inherently hazardous material to work with.⁴⁶ The release of the contents of a single one-ton container of chlorine can create toxic effects up to three miles away, presenting a serious risk to workers and the public.⁴⁷

5.1.2 Inherently Safer Alternatives

In applying inherent safety principles,⁴⁸ the preferred approach to control hazards is to eliminate them. However, if elimination is not feasible, replacing hazardous materials with less dangerous ones (substitution) should be examined (CCPS, 1996). This basic principle was described by noted process safety expert Trevor Kletz, who stated that “what you don’t have can’t leak” (1998).

⁴⁶ The EPA’s toxic endpoint for chlorine release modeling (the Emergency Planning Response Guideline-2 concentration) is 3 ppm. The National Institute for Occupational Safety and Health (NIOSH)-recommended exposure limit is 0.5 ppm.

⁴⁷ Based on the CSB runs of the EPA’s “RMP Comp” software, v. 1.07, 2,000 pound release, RMP worst case, rural area (appropriate for the McKee Refinery’s location).

⁴⁸ “A chemical manufacturing process is inherently safer if it reduces or eliminates the hazards associated with materials and operations used in the process, and this reduction or elimination is permanent and inseparable” (CCPS, 1996).

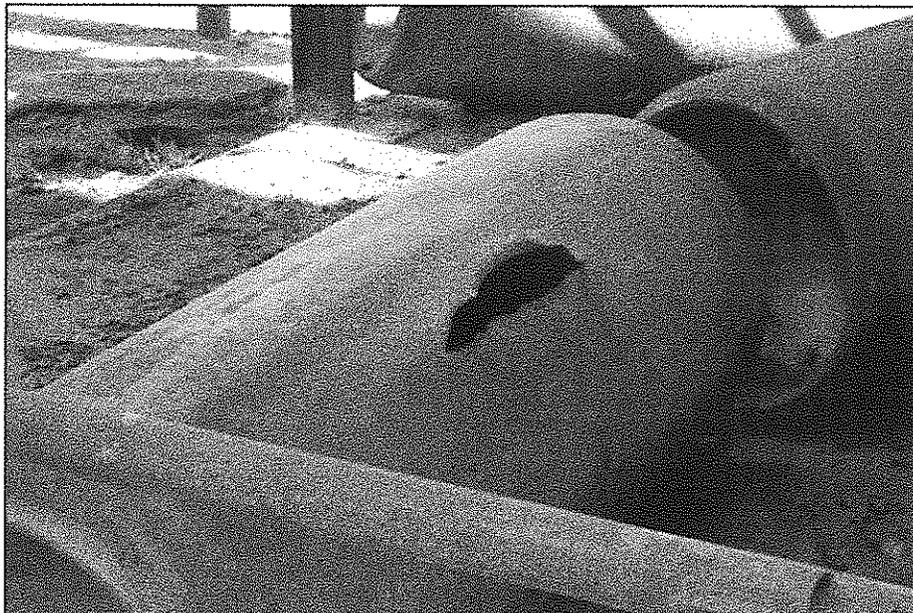


Figure 13. Ruptured one-ton chlorine container

Safer materials for controlling biological growth in cooling towers are available, and Valero has identified replacing chlorine in cooling water treatment at all its refineries as a safety goal in its 2008-2012 Strategic Plan. The plan noted that 10 of its 18 refineries (as of May 2007) used ton container quantities of gaseous chlorine as a cooling water biocide. The McKee Refinery substituted sodium hypochlorite (bleach) for chlorine in its No. 2 Cooling Tower during PDA unit reconstruction. Bleach essentially stores chlorine in a form that presents a much lower inhalation hazard, an example of the inherently safer principal of attenuation (Kletz, 1998).^{49, 50}

5.2 Butane Sphere Deluge Valves

5.2.1 Heat Damage to Butane Sphere

Four 10,000 barrel (420,000 gallon, 1590 m³) spherical tanks storing LPG were located northwest of the PDA unit (see Figure 4, page 19). At the time of the incident, the tank closest to the PDA unit contained

⁴⁹ Kletz states, "The worst that can happen with hypochlorite is far less than the worst effects of chlorine, and on balance the change seems justified."

approximately 3,600 barrels (151,000 gallons, 572 m³) of liquid butane under pressure, and was exposed to radiant heat from the fire. Figure 14 shows heat damage to the white protective coating on the tank's exterior.

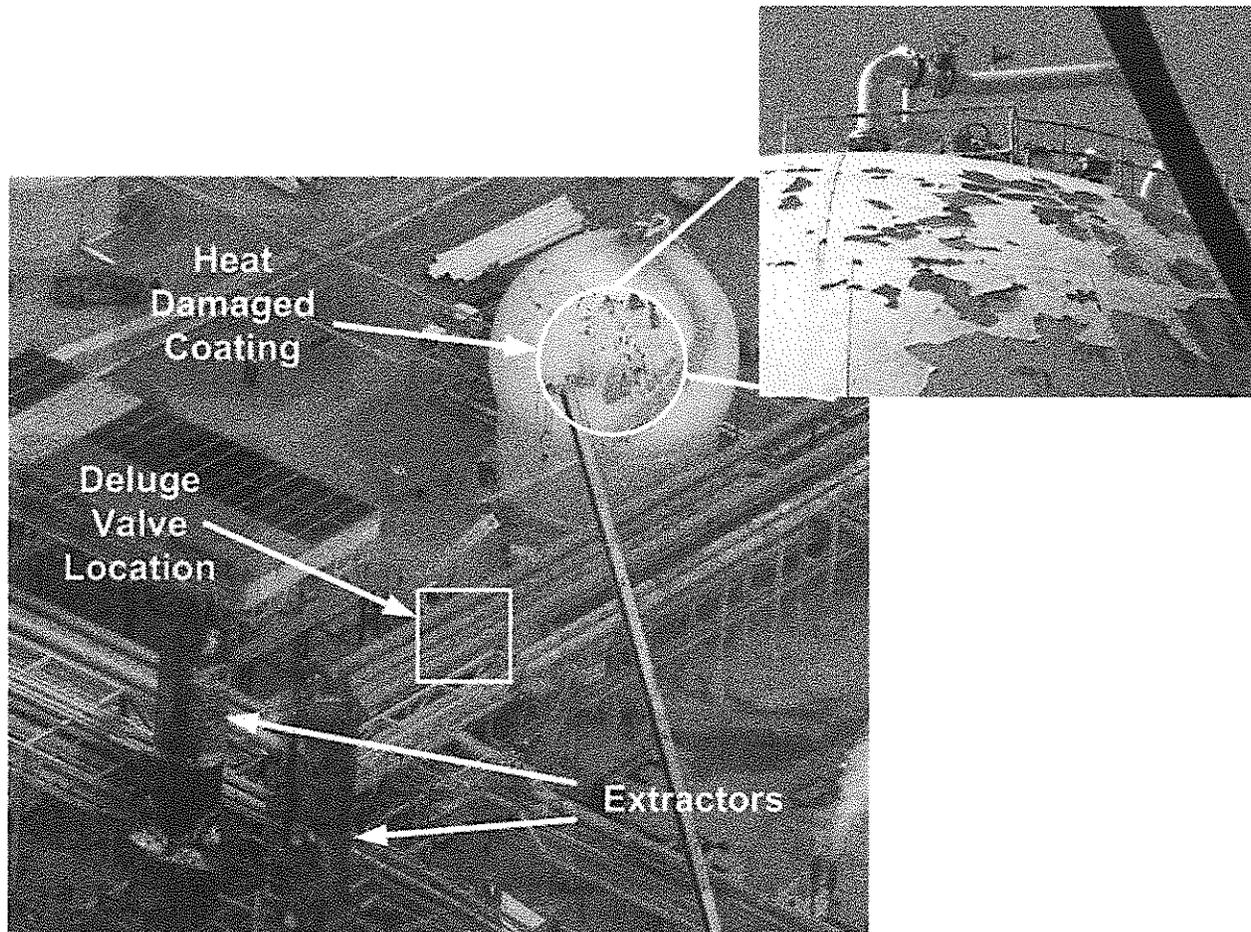


Figure 14. Heat-damaged coating on sphere and location of sphere deluge valves

Analysis of the overall effects of the fire revealed significant vessel damage as far as several hundred feet away from the PDA unit, generally downwind from the initial release, and including the insulated No. 4 Naphtha Column. Although the wind shifted several times during the fire, it never blew strongly from the southeast, which would have directed the flames toward the uninsulated butane sphere. Exposure to direct flame impingement or to significant heating over a prolonged period might have resulted in a vessel failure with potentially catastrophic consequences.

⁵⁰ Using bleach requires chlorine handling at the bleach production facility.

Emergency responders were unable to reach the fire water deluge valves intended to protect the butane sphere (Tank 195) from excessive heating due to fire exposure. These manual valves were located under a pipe rack north of the PDA unit (Figure 14), and were too close to the fire to be safely approached.

While the butane sphere was equipped with pressure relief devices, these primarily protect against the effects of pool fires on the liquid filled (wetted) portion of the sphere. In a pool fire, the liquid butane boils, cooling the wall of the sphere and generating vapor that would vent through the relief system.⁵¹ The vapor-filled section of the sphere facing the PDA fire had no liquid to provide cooling, and could be protected against excessive heating only by applying water to the external surface via the deluge system. Without deluge protection, the sphere was vulnerable to possible failure through loss of metal strength due to over-temperature. While favorable winds limited the sphere's thermal exposure during this incident, the inability of operators to reach the deluge valves to establish water flow over the sphere was nonetheless a serious failure of the butane sphere's fire protection system.

API standards do not require refineries to evaluate hazards from nearby units when locating fire water deluge valves, and Valero's PHA for the LPG spheres did not examine the possibility that a fire could block access to the valves.⁵²

5.2.2 Effective Deluge Valve Operation

API Standard 2510, *Design and Construction of LPG Installations*, provides guidance on the design of LPG storage systems, and includes details on deluge system requirements for fire protection. API 2510 specifies the use of manual deluge valves, such as the ones used for the LPG spheres, and specifically

⁵¹ API 521, *Pressure-relieving and Depressuring Systems*, describes the design and application of pressure relief systems for pool fire scenarios.

allows the use of automatic or remotely operated valves⁵³ only if the tanks are unattended or partially attended, which was not the case at the McKee Refinery.

Had the butane sphere deluge valve been remotely operable from a safe location at the time of the incident, emergency responders could have activated the water deluge system, greatly reducing the likelihood of a catastrophic vessel failure in the event of an unfavorable shift in wind direction.

6.0 Process Hazard Analysis (PHA)

PHA is a formal method for identifying process hazards. The PDA unit PHA revalidation performed in 2006 did not address hazards that were causal to the February 16, 2007, incident. Furthermore, the PHAs performed on the water treatment system and the LPG storage spheres did not rigorously examine siting issues causal to the two near-miss incidents discussed in section 5.0.

The CSB identified several areas where the McKee Refinery's 2006 PDA unit PHA was ineffective in identifying hazards that contributed to the February 16, 2007, incident:

- As documented in section 4.2.1, the process safety information developed for the PDA unit PHAs did not identify the propane mix control station as a dead-leg, which could be subject to freezing. Identifying and addressing this dead-leg could have prevented the propane release.
- The node size selected for the "HAZOP" PHA method⁵⁴ used was too large, which can lead to inadequate review of node components. In this case, the large node size likely led to the propane mix control station not being reviewed.

⁵² However, OSHA's PSM compliance directive (CPL2-2.45A, Appendix B) addresses automating deluge valves to improve protection when process units are closely spaced.

⁵³ Automatic deluge valves are opened by a control system based on sensor input, such as high temperature or the presence of flammable concentrations of LPG. Remotely operated valves can be opened by facility personnel from a safe location.

- According to CSB interviews, the 2006 PHA did not effectively engage the operators in the review process; rather, the contract facilitator performed most of the analysis. Involving the operating staff directly in the PHA process is a key to performing an effective PHA.
- As documented in section 4.4.2, the 2006 PHA did not apply Valero Emergency Isolation Valve standard SP-40-01 to identify locations requiring ROSOVs. Installing these valves on the propane accumulator vessels would likely have greatly reduced the severity of the incident.
- The PHA did not revisit recommendations from earlier PHAs to confirm that they had been properly implemented. As a result, the 1996 recommendation that ROSOVs be installed in the PDA unit was not reviewed.

Furthermore, as discussed in sections 5.1 and 5.2, the PHAs for the water treatment system and the LPG storage spheres did not address the potential for fire exposure from the adjacent PDA unit. The OSHA PSM regulation specifically requires consideration of siting issues when performing PHAs. Exposure of chlorine containers and LPG storage tanks to heating from fires is a well-recognized hazard.

PHAs are an important component of a PSM system. Guidance on performing effective PHAs is available; examples include *Guidelines for Hazard Evaluation Procedures*, (2nd ed.), and *Revalidating Process Hazard Analyses*, both from CCPS, and *HAZOP Guide to Best Practice* from the European Process Safety Center, among others.

⁵⁴ For the HAZOP (hazard and operability study) PHA methodology used in this PHA, a “node” is a section of equipment with definite boundaries (e.g., a line between two vessels) within which process parameters are investigated for deviations (CCPS, 1992).

7.0 Regulatory Analysis

The OSHA PSM (29 CFR 1910.119) and the EPA Risk Management Program (RMP - 40 CFR Part 68) regulations both aim to reduce the risk of catastrophic releases of hazardous chemicals. The PSM standard addresses employer requirements to implement effective PSM programs to protect workers. RMP incorporates the elements of PSM and adds requirements for evaluating off-site consequences, emergency response, and community outreach. These regulations apply to processes containing hazardous materials above specified threshold quantities. The PDA and LPG storage areas were covered under both regulations, as they contained more than the specified threshold quantity (10,000 pounds) of flammable propane or butane. The cooling water treatment system was also covered under both, as it contained an above threshold quantity (1,500 pounds for PSM; 2,500 pounds for RMP) of chlorine gas.

7.1 OSHA Process Safety Management

The PSM regulation is performance-based and requires companies with covered processes to implement programs addressing 12 key elements, many of which are mutually supporting. As discussed in section 4.0, the CSB investigation found causal deficiencies in several elements of the McKee Refinery's PSM program, including:

- Process safety information – the propane mix control station was not identified as no longer in use or as a dead-leg freeze hazard.
- PHA – the PDA unit piping was not reviewed for freeze rupture, Valero's ROSOV procedure was not applied, and chlorine container siting issues were not considered.

7.2 EPA Risk Management Program (RMP)

The RMP regulation requires that covered facilities implement an RMP that includes hazard assessment, prevention program, and coordinated emergency response elements. Facilities such as Valero's McKee

Refinery must prepare an RMP, submit it to the EPA, and periodically update it.

The McKee RMP included an estimate of the worst-case scenario for a toxic chemical release; a release of one ton of pressurized chlorine gas (a single one-ton container) from the water treatment facility with a toxic endpoint distance of three miles. Slightly over 2.5 tons of chlorine were estimated to have been released from the three co-located containers impacted by the fire.⁵⁵

7.3 Regulatory Enforcement History

Federal OSHA administers and enforces worker safety and health standards in Texas. OSHA had inspected the McKee Refinery twice under Valero's ownership; however, neither inspection was PSM-oriented.⁵⁶ Based on its investigation of this accident, OSHA issued three serious citations⁵⁷ to Valero for violating the PSM standard with proposed penalties of \$21,000; one citation was related to the PHA, and two to the "Mechanical Integrity" elements of the PSM regulation. An informal settlement agreement⁵⁸ between Valero and OSHA resulted in one of the "serious" citations being reclassified as "other," and a penalty reduction to \$15,000, along with a stipulation that the refinery would, "as a voluntary hazard recognition measure[,],...adopt measures to manage 'dead-legs' within piping systems."

The McKee Refinery had not been audited by the EPA prior to the February 2007 incident. While the EPA responded to the fire, it did not investigate the refinery's RMP compliance after the incident.

⁵⁵ EPA guidance requires companies to consider releases from co-located vessels. *General Guidance for Risk Management Programs* (40 CFR Part 68), Office of Solid Waste and Emergency Response, EPA-550-B-00-008, May 2000, page I-8.

⁵⁶ www.osha.gov/pls/imis.

⁵⁷ OSHA, *Citation and Notification of Penalty*, Diamond Shamrock Refining Company, L.P., dba Valero - McKee Refinery, Inspection Number 310690086, August 13, 2007.

⁵⁸ OSHA, *Informal Settlement Agreement*, Diamond Shamrock Refining Company, L.P., dba Valero - McKee Refinery, OSHA Inspection No. 310690086, September 4, 2007.

8.0 Root and Contributing Causes

The CSB's investigation determined the following root and contributing causes⁵⁹:

8.1 Root Causes

1. The McKee Refinery had no formal written program in place to identify, review, and freeze-protect dead-legs or infrequently used piping and equipment, such as the propane mix control station.
2. The McKee Refinery did not apply Valero's mandatory *Emergency Isolation Valve* procedure when evaluating risks in the PDA unit to ensure that the large quantities of flammable materials in the unit could be rapidly isolated in an emergency.
3. API guidance and Valero's corporate *Fire Proofing Specifications* standard do not specify sufficiently protective distances for fireproofing pipe rack support steel for processes handling high-pressure flammables, such as the LPG in the PDA unit.

8.2 Contributing Causes

1. API-recommended practices on locating and operating LPG firewater deluge valves do not address potential hazards from nearby processes.
2. Valero-McKee Refinery's hazard assessment process did not recognize the risk of using chlorine in close proximity to equipment handling flammable hydrocarbons.

⁵⁹ Appendix F contains an event tree used to help develop root and contributing causes.

9.0 Recommendations

American Petroleum Institute (API)

- 2007-05-I-TX-R1** Issue API-recommended practices for freeze protection in oil refinery process units that include, as a minimum:
- the establishment of a written program;
 - periodic inspections to identify freeze hazards in dead-legs or infrequently used piping and equipment where water could collect;
 - specific approaches to eliminate or protect against such freeze hazards; and
 - identification of infrequently used piping or equipment subject to freezing as a trigger for Management Of Change (MOC) reviews.
- 2007-05-I-TX-R2** Revise API 2218, *Fireproofing Practices in Petroleum and Petrochemical Processing Plants*, so that conformance with the standard addresses jet fire scenarios, and requires more protective fireproofing radii and other measures (e.g., emergency isolation valves, depressuring systems) for pipe rack support steel near process units containing highly pressurized flammables.
- 2007-05-I-TX-R3** Revise API Recommended Practice 2001, *Fire Protection in Refineries*, and API 2030, *Application of Fixed Water Spray Systems for Fire Protection in the Petroleum Industry*, so that conformance with these recommended practices includes the design, installation, and use of ROSOVs and interlocked equipment controls to enable the safe and rapid emergency isolation of process equipment containing highly pressurized flammables.
- 2007-05-I-TX-R4** Revise API Standard 2510, *Design and Construction of LPG Installations*, and API Publication 2510A, *Fire-Protection Considerations for the Design and Operation of Liquefied Petroleum Gas (LPG) Storage Facilities*, to address effective deluge system activation during emergencies originating in nearby process units.

Valero Energy Corporation

- 2007-05-I-TX-R5** Identify all processes in this and other refineries where Valero's mandatory *Emergency Isolation Valve* standard is applicable, and ensure that Remotely Operable Shut-off Valves (ROSOVs) are installed to control large accidental releases of flammable materials.
- 2007-05-I-TX-R6** Establish corporate requirements for written freeze protection programs at Valero refineries subject to freezing temperatures, including identification, mitigation, MOC, and audit requirements.
- 2007-05-I-TX-R7** Revise Valero standards, including *Fire Proofing Specifications*, to require evaluation of jet fire scenarios and, as a minimum, ensure more protective fireproofing for pipe rack support steel near process units containing highly pressurized flammables.
- 2007-05-I-TX-R8** Audit PHA performance at its refineries to ensure adherence to company standards and good practice guidelines.
- 2007-05-I-TX-R9** Implement Valero's strategic plan to replace chlorine used as a biocide in cooling water treatment with inherently safer materials, such as sodium hypochlorite, at all refineries.

Valero–McKee Refinery, United Steelworkers Union, and Local 13-487

- 2007-05-I-TX-R10** Work together to benchmark effective PHA methods and practices and implement improvements to the McKee Refinery PHA program, including:
- involving the workforce in PHA preparation, performance, and follow-up;
 - training participants;
 - conducting PHA quality control checks; and
 - following up on recommendations for timely implementation and appropriate close-out.

By the

U.S. Chemical Safety and Hazard Investigation Board

John S. Bresland
Chair

Gary L. Visscher
Member

William B. Wark
Member

William E. Wright
Member

Date of Board Approval

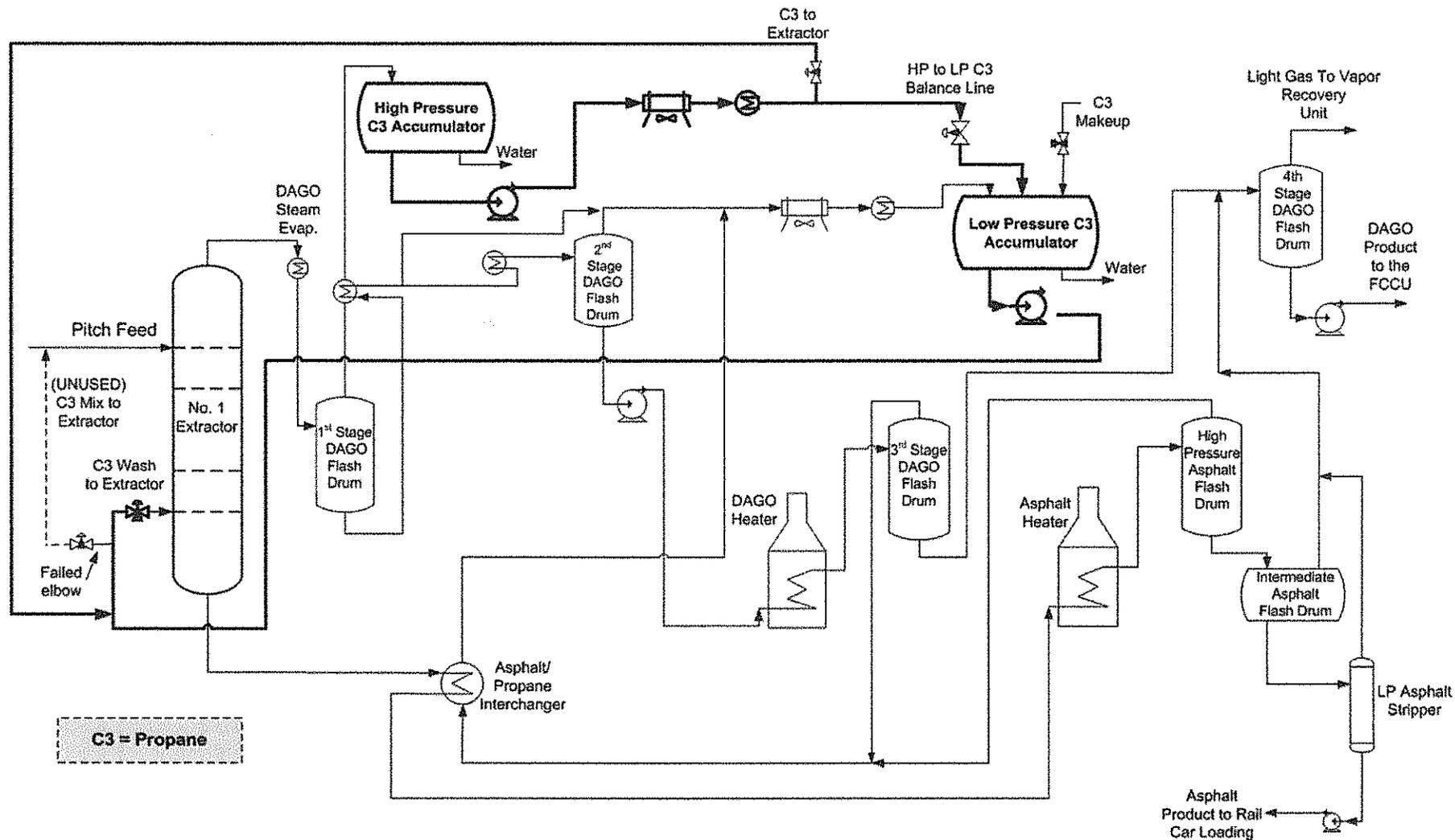
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Appendix A. Flow Diagram

Valero-McKee PDA Extractor No. 1 - Process Flow Diagram



Appendix B. Incident Timeline

Date	Time	Event
Circa 1992		Extractor control changed. Propane mixture control station idled
March 1, 1996		Initial PHA of the PDA included recommendations to install ROSOVs to shut off flow in event of pipe leak or rupture Action item inaccurately closed out as "complete"
July 13, 2001		PDA PHA revalidation did not verify actual status of recommendation to install ROSOVs
January 1, 2002		Valero takes ownership of McKee Refinery
February 23-27, 2004		PSM/RMP compliance audit identified that P&IDs had not been updated and that PHA recommendations were not being resolved in a timely manner
February 21-24, 2006		PDA HAZOP study did not identify the need for ROSOVs due to deficiencies in study methodology
February 12-15, 2007		National Weather Service winter weather advisory in effect
February 12, 2007		Sub-freezing temperatures began. Ambient temperatures drop below 32°F for 87 hrs
February 15, 2007		Minimum temperature recorded of 6°F in Dumas Texas
February 16, 2007	9:05 AM	Temperature rises above 32°F
	1:30 PM	Team personnel sign in at PDA unit Control Room
	1:35 PM	Board Operator issues work permit to Team personnel
	2:09-2:10 PM	Process flow indicators swing sharply, consistent with an initial propane release of 4,500 pounds per minute First signs of a release occurring on security camera
	2:10-2:11 PM	Ignition of propane vapor cloud: one contractor and two Valero workers burned. A fire brigade member is later burned during response activities
	2:11 PM	Fire alarm received at Dumas Fire Department
	2:12 -2:15 PM	Multiple fireballs/ruptures
	2:15 PM	First wisps of smoke visible from burning No. 2 Cooling Tower
	2:16 PM	Wind shifts from northwest to north affecting emergency response.
	2:19-2:22 PM	First water stream seen from due south Security camera captures multiple large fireballs/ruptures in or near the pipe rack Flames intensify

	2:23 PM	<ul style="list-style-type: none"> • Dumas Fire Department arrives on scene • Wind shifts slightly, coming from northwest
	~2:24-2:26 PM	Multiple fireballs/ruptures captured on camera
	2:26 PM	Total evacuation of refinery
	3:00 PM	Life Flight helicopter arrives
	3:30 PM	Emergency Operations Center (EOC) relocated outside refinery fence
	3:40 PM	EOC relocated to west of Tank 300 M3
	3:50 PM	Evacuated employees directed to the Dumas Community Center
	4:00 PM	EOC relocated SW of Tank 300 M3
	4:06 PM	EOC relocated east of the refinery due to wind shift.
	4:15 PM	EPA notified
	4:25 PM	EOC relocated to ammonia plant (north of refinery)
February 17, 2007	~1:00 PM	Fire declared out

The fracture propagated parallel to the pipe axis in both directions, with the surface exhibiting brittle fracture propagation features (Figure C-2).

Charpy V-notch (CVN) toughness tests were performed on the elbow and flange materials. Based on a 50 percent shear-area appearance, ductile to brittle transition temperatures were determined to be 95°F and 70°F (35°C and 21°C), respectively. Given that this piping was exposed to temperatures as low as 6°F (-14°C), brittle propagation behavior could be expected in these components.

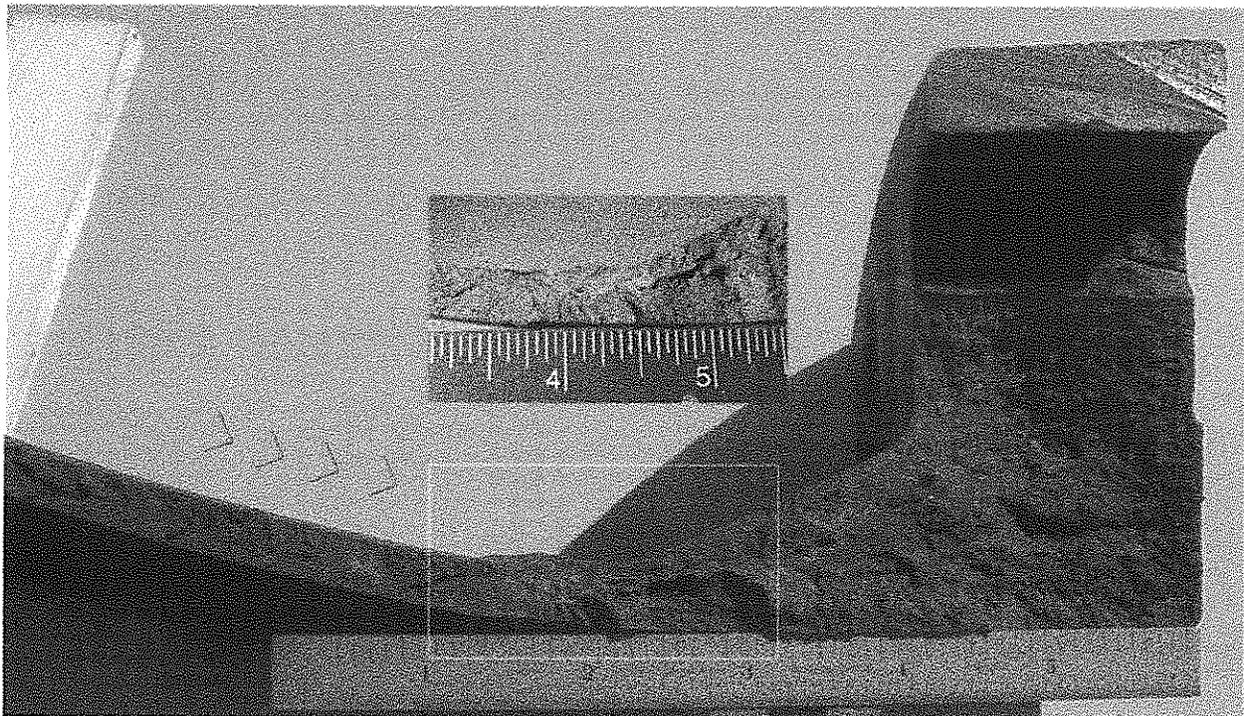


Figure C- 2. Origin and brittle propagation markers

The deposited weld metal and heat-affected zone of the girth weld were CVN-tested. However, insufficient material was available to determine the complete ductile-brittle transition. Testing at -20°F (-29°C) gave from 20 to 85 percent shear area appearance, consistent with a brittle-ductile transition temperature near -20°F (-29°C). However, based on the observed grain structure, the cap weld likely had lower toughness (higher transition temperature) than the underlying weld metal, which had likely been annealed by heat from subsequent welding passes. Because the thickness of the cap was on the order of

the depth of the CVN specimen notch, it was not possible to measure these differences with standard or subsized CVN specimens.

Correction of the weld metal and heat-affected zone samples for the difference in thickness of the specimens and the actual pipe wall, based on the method of Rosenfeld,² shifts their transition temperatures 25°F (14°C) warmer, again implying reduced toughness at low temperatures.

The probable reduced toughness of the cap weld, combined with a relatively high transition temperature, likely promoted brittle failure at a point along the line of highest stress along the intrados of the elbow. Brittle initiation could possibly have been caused by dynamic loading of the elbow (e.g., an external impact), or by high internal pressures combined with low ambient temperatures. There was no evidence of impact, nor are there records of activities in the area during the likely period of failure that might have applied such a dynamic load. However, ambient temperatures were as low as 6°F (-14°C) prior to the release, and water in the piping could easily have generated very high internal pressures as it froze and expanded.³ The CSB concluded that the failure likely resulted from water trapped in the propane mix control station dead-leg freezing due to low ambient temperatures.

² Rosenfeld, M.J., Procedure Improves Line Pipe Charpy Test Interpretation, *Oil & Gas Journal*, April 14, 1997.

³ Atypically, water expands (its density decreases) as it freezes.

Appendix D. Initial Propane Release Rate

Background

Witness statements were consistent with the initial release originating from either of two control stations. Physical examination and flow-testing of components, as described in the body of this report, demonstrated conclusively that the release was from the cracked inlet elbow on the No. 1 Extractor propane mix flow control station. Recovered control system data supported the mix control station as the location of the leak, and allowed the CSB investigators to estimate the propane release rate during the first minute of the incident. The fire damaged the instrumentation in the area of the release almost immediately after the fire ignited.

Propane Release Estimate

Data from PDA unit propane flow meters indicated a significant increase in flow upstream, and a significant decrease in flow downstream, of the No. 1 Extractor propane mix flow control station at the time of the incident.¹ This is consistent with the leak occurring at the cracked inlet elbow of the mix control station.

Figure 1 plots the sum of the upstream and downstream flow meter readings, in bpd.² The offset prior to the incident is due to an unmeasured process flow between the low- and high-pressure propane supplies upstream of the leak point. Assuming that this offset was fixed during the incident is conservative – the actual release rate was likely modestly higher than estimated here.

¹ Data recovered from the PDA unit's AspenTech IP21 datalogger, recorded at 30-second intervals.

² Refining barrels hold 42 U.S. gallons; 100 bpd equal 2.917 gpm.

$$\text{Propane release rate} = [\text{increase in upstream flow}] + [\text{decrease in downstream flow}]$$

$$[21,900] + [19,500] = 41,400 \text{ bpd.}$$

Based on a liquid propane density of 27.7 lb per cubic foot at process conditions, the CSB estimated an initial release rate of 4,500 lb/min.

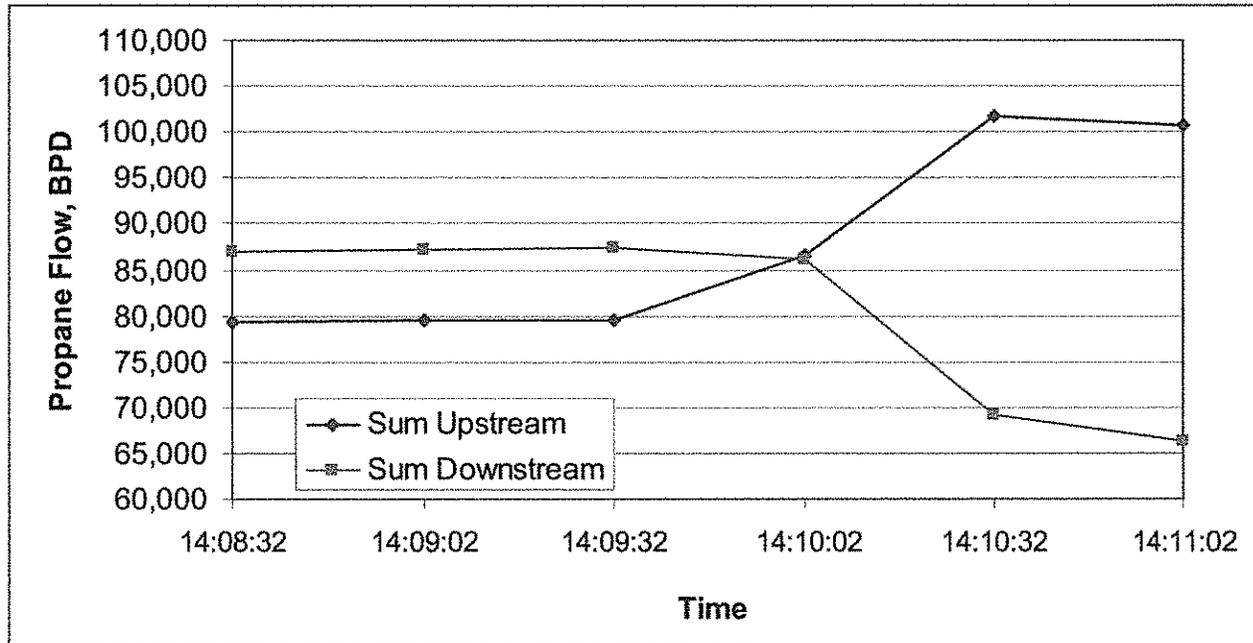


Figure D- 1. Changes in propane flows upstream and downstream of the cracked elbow

Appendix E. Response of Structural Steel to Fire Heating

CCPS' *Guidelines for Fire Protection in Chemical, Petrochemical, and Hydrocarbon Processing*

Facilities discusses the importance of fireproofing during the early stages of a fire, when "if non-fireproofed equipment and pipe supports fail due to fire related heat exposure, they could collapse and cause gasket failures, line breaks, and equipment failures, resulting in expansion of the fire." This type of knock-on damage was a significant factor in the damage caused by the PDA unit fire. As Figure E-1 illustrates, exposure to a jet fire, as can occur in pressurized LPG fires, can lead to rapid heating and the failure of exposed steel within a few minutes.¹

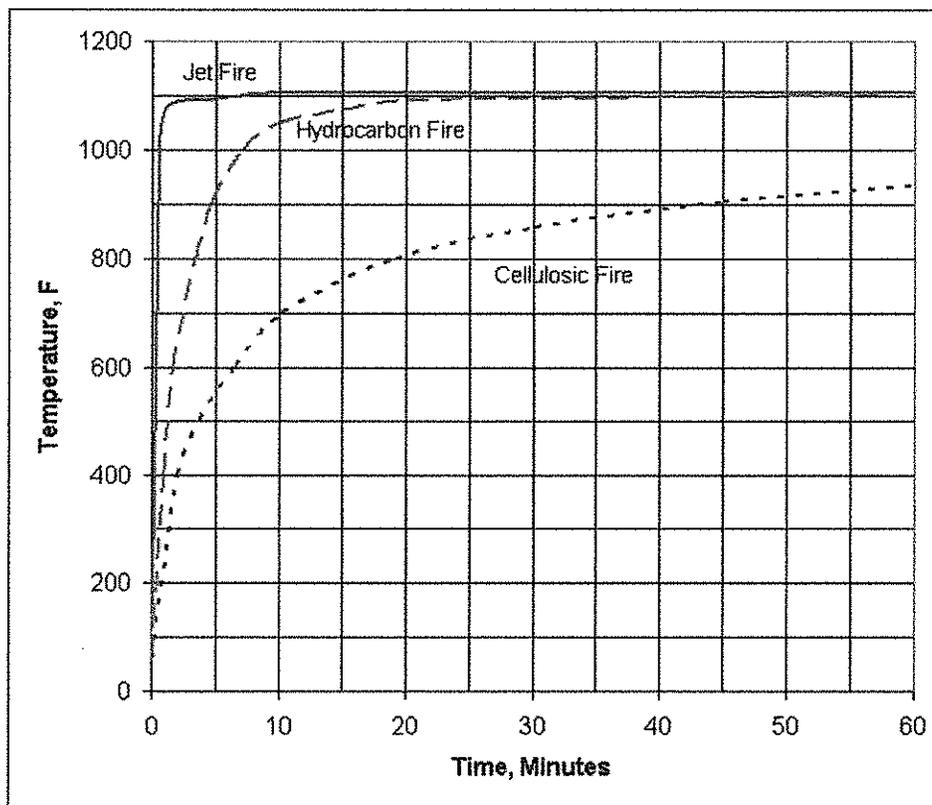


Figure E-1. Time temperature curves for fire tests (CCPS, 2003)

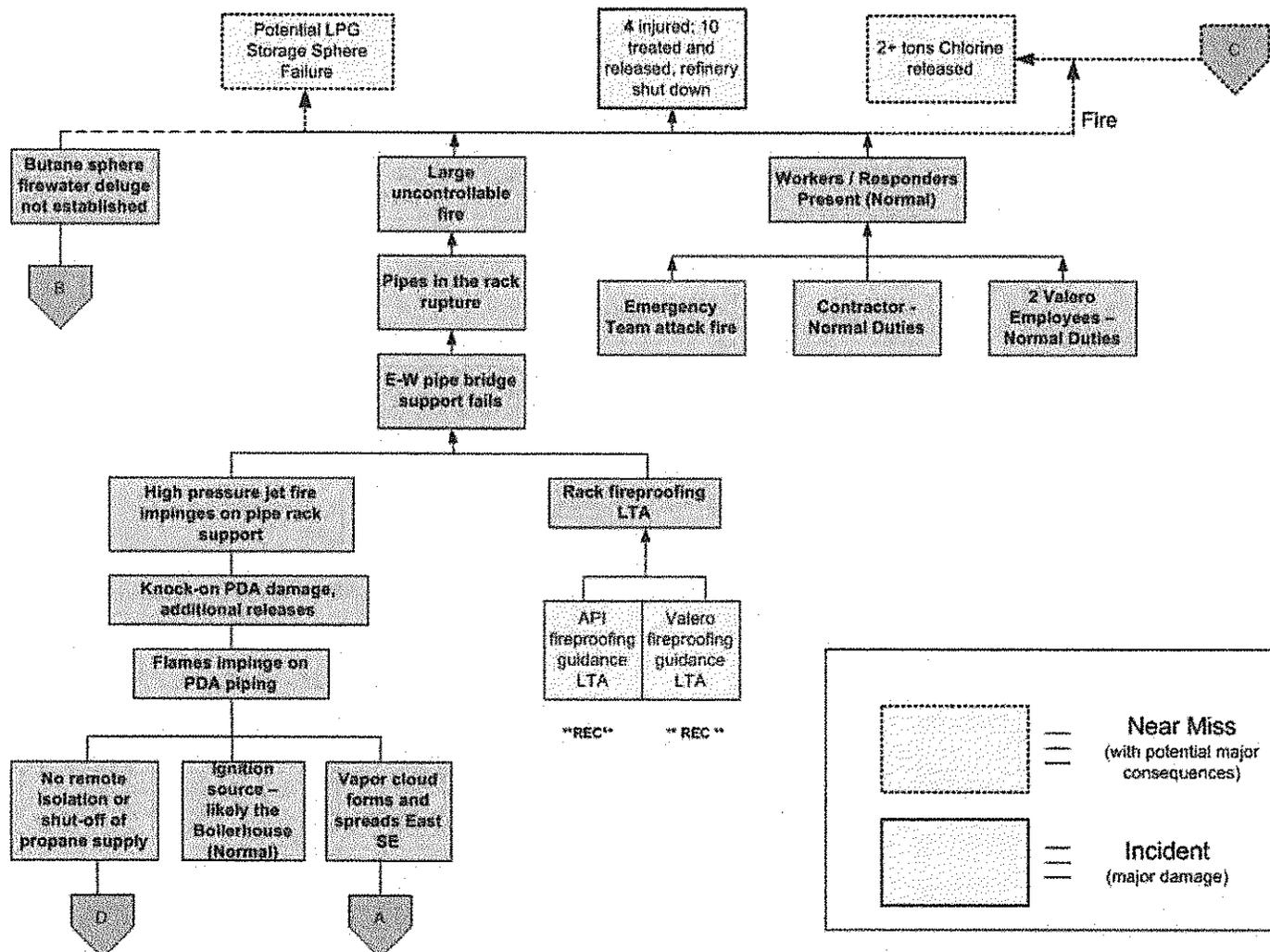
¹ The curves shown are based on standardized tests and are illustrative only.

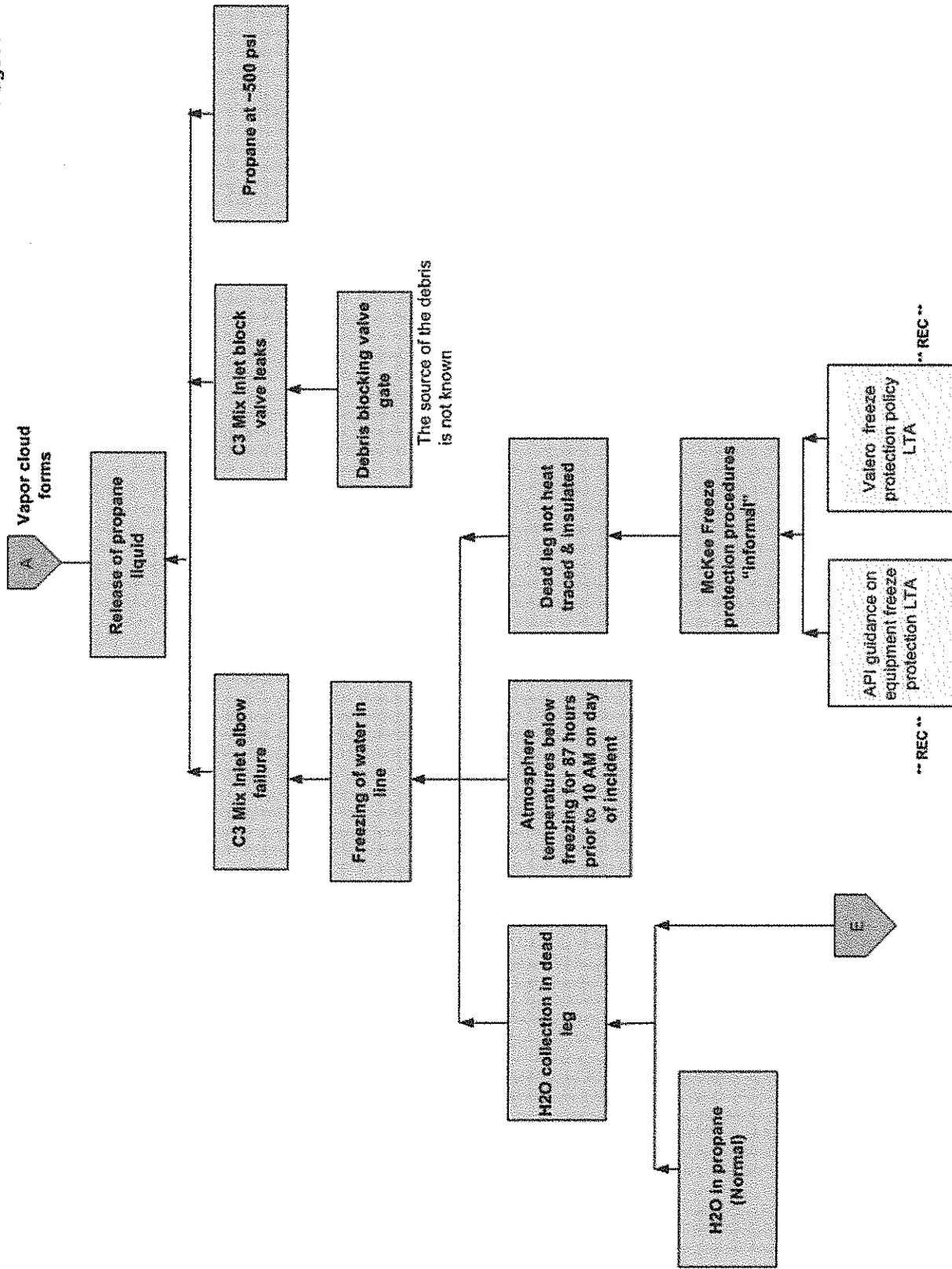
CCPS describes key factors to consider when specifying the required duration of fireproofing protection, including the

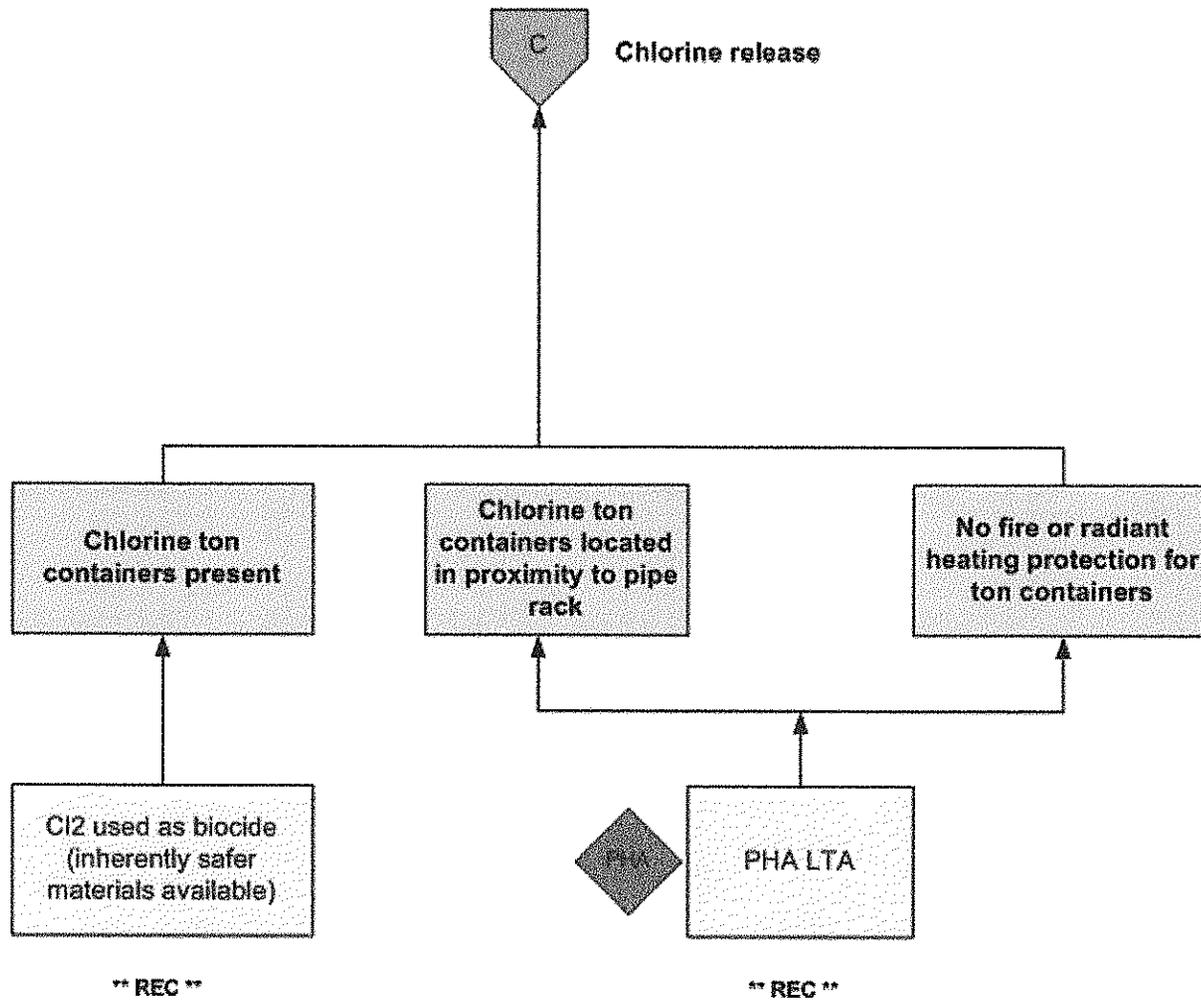
- time required to isolate fuel supplies;
- availability and capacity of fire-fighting water;
- time required to establish cooling from fixed fire monitors (as were installed at the McKee Refinery), including personnel response time; and the
- time required for drainage to remove hydrocarbon spills.

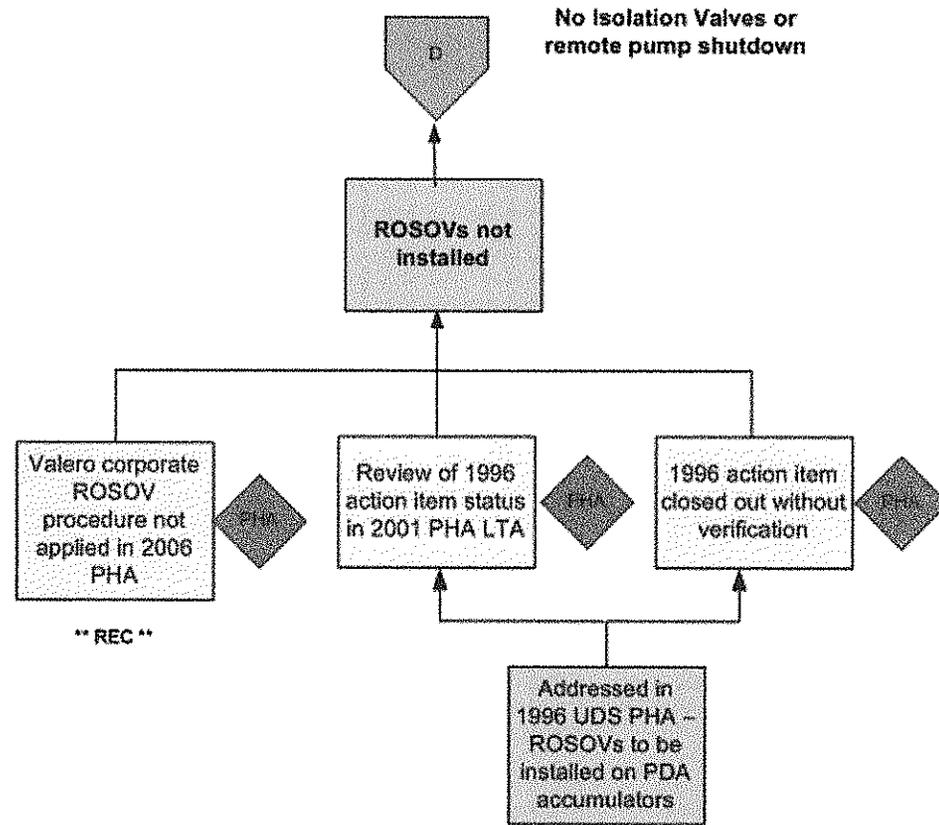
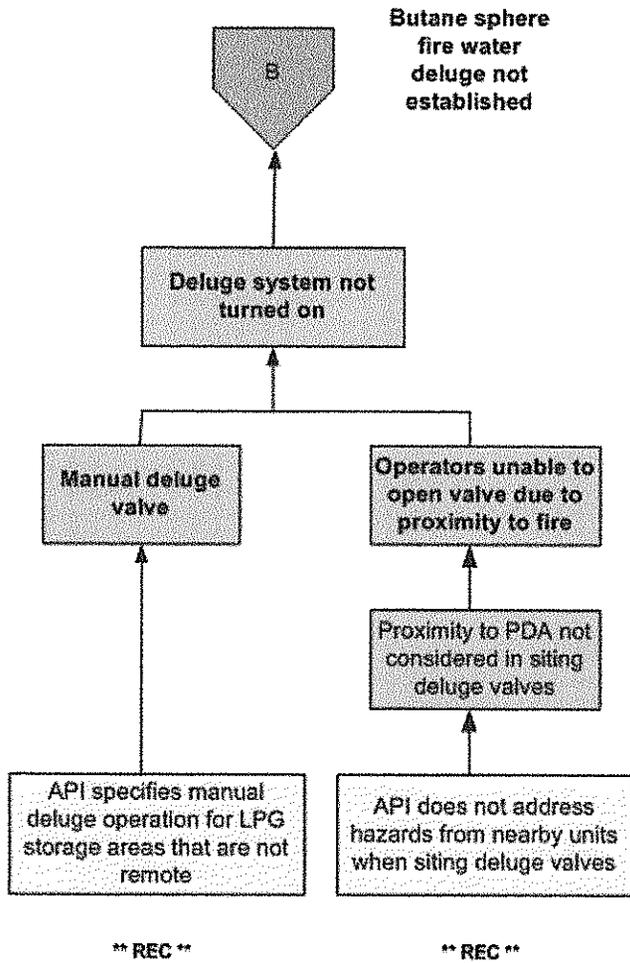
In this incident, the severity of the fire caused rapid knock-on damage before fuel supplies could be isolated or effective water sprays established. The use of ROSOVs, combined with fireproofed pipe rack supports, would likely have significantly reduced the damage caused by this fire.

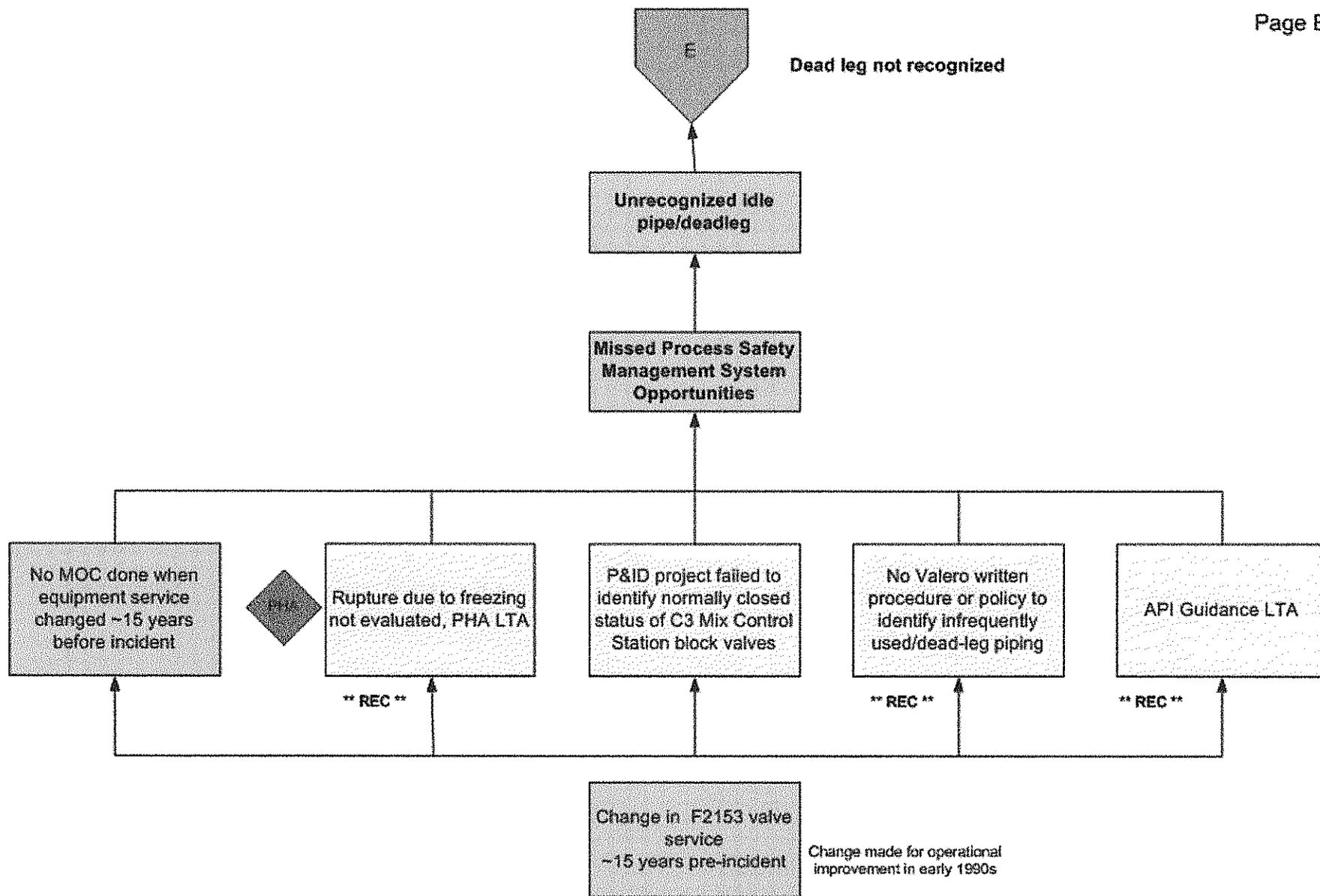
Appendix F. Event Tree







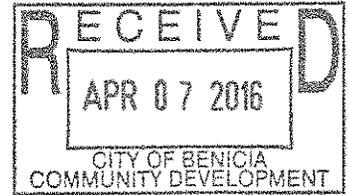






**BENICIANS FOR A SAFE AND
HEALTHY COMMUNITY**

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April 6, 2016

Christina Ratcliffe, AICP
Community Development Director
City Hall
250 East L Street,
Benicia, California 94510

Re: Submission of Petition Signatures In
Opposition to Valero's Crude by Rail Project

Dear Ms. Ratcliffe:

I am the Steering Committee Chairperson with *Benicians for a Safe and Healthy Community* ("BSHC"). On Monday, April 4, 2016, during the City Council hearing to receive public comment on Valero's proposed crude by rail project, BSHC presented petition signatures for all of the signatures we gathered during the pendency of this process. As everyone saw, we had previously taped together the pages of signatures that were handwritten, put them on a roll ("Scroll Version") and then unfurled that roll during BSHC's portion of the public comment. At the same time, we submitted a typewritten version for the record ("Typed Version").

Directly after that, not understanding that we had submitted the Typed Version for the record, City Staff presumed the Scroll Version was what we were going to submit, and attempted to physically pick-up the Scroll Version which was on the floor. Roger Straw from BSHC and City staff both attempted to retrieve it at the same time, resulting in a minor struggle for possession. Roger explained what was intended to be submitted and what wasn't. Staff argued with him but eventually gave back the Scroll Version. The City's presumption and resulting misunderstanding caused a minor disturbance during the City Council meeting which BSHC regrets.

Yesterday, the Typed Version was uploaded to the City's website. However, on the cover it included the attached memorandum from City staff which states:

A scroll of signed petitions was shown during the presentation which the representatives for Benicians for a Safe and Healthy Community refused to submit for the record. In its place, they submitted the following typed document and note for the record. Due to the fact that we could not examine the scroll, we cannot verify if the lists are the same.

BSHC considers this memo to reflect a serious prejudice by staff against BHSC and a continuing bias in favor of Valero. It misrepresents our intentions and the legitimacy of the document itself. Staff has no right to include their thoughts about the document or how we wanted it to be presented for the record as a prelude to the submitted document itself.

BSHC's submission, given to staff at the conclusion of our formal verbal presentation, included all legible and confirmed signatures from our local petition along with the extensive list of additional persons who oppose Valero Crude by Rail, gathered from four different online petition signature campaigns.

That extensive list of 4,081 names was itself carefully culled to remove duplicates and formatted for presentation to our City Council representatives. It includes 1,204 Benicia citizens, many of whom are well-known and respected leaders of our community. The Scroll Version only consisted of the handwritten signatures. It would have taken a lot longer than 15 minutes if we were to have printed out and unfurled ALL 4,081 signatures. Everything was merged into the Typed Version which we submitted.

We understand that it could have just been a misunderstanding, and once staff realized that we had another document that was easier to read, more inclusive and more concise, that should have been the end of it. A scroll is not easy to put into the record, or post on line for that matter. It was for demonstration purposes **ONLY**. Council chambers is not a courtroom. City staff has no right to choose what we want to submit and what we don't, nor to make derogatory comments such as, "...refused to submit for the record." What we submit is our choice only, and to interfere with that process impedes the democratic process of the Council hearings.

If the intent of staff's memo is to discredit the submission, that is clearly wrong and completely inappropriate. We have spent three years gathering signatures, and with a brush of a pen, the staff memo puts a shadow on the legitimacy of the entire document. It is not only inappropriate, it is insulting to BSHC and to all of the petition signors, all 4,081 of them. Valero has submitted similar typewritten lists without back-up material. Why wasn't Valero's submission given the same critique?

To remedy this matter, BSHC requests that staff's April 5, 2016 memo on top of the petition signatures be removed from the on-line version and from the record entirely, along with Roger Straw's handwritten note of explanation, as it has no bearing as to the submitted document. The Typed Version submission of 4,081 names should stand on its own, highlighting the broad opposition to Valero's proposal, with no comments regarding the scroll, the document's legitimacy or the inappropriate comments regarding our intentions, "...refusal to submit it for the record."

Please respond to me regarding this matter as soon as possible.

Thank you,



Katherine Black

Steering Committee Chair

Benicians for a Safe and Healthy Community

CC: Mayor Elizabeth Patterson
Vice Mayor Mark Hughes
Council Member Tom Campbell
Council Member Alan Schwartzman
Council Member Christina Strawbridge
City Manager Brad Kilger
City Attorney Heather McLaughlin



Community Development Department
MEMORANDUM

Date: April 5, 2016
To: Valero CBR File
From: Amy Million, Principal Planner
Re: **Benicians for a Safe and Healthy Community Petition Submitted at City Council Meeting- April 4, 2016**

A scroll of signed petitions was shown during the presentation which the representatives for Benicians for a Safe and Healthy Community refused to submit for the record. In its place, they submitted the following typed document and note for the record. Due to the fact that we could not examine the scroll, we cannot verify if the lists are the same.

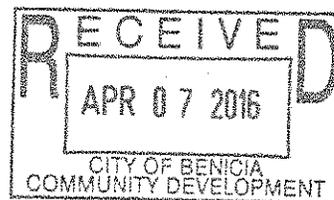
Amy + Heather -

The transcribed document turned in by Andrés Soto includes all the signatories on our "demonstration hand-signed petitions." So, the demo is not needed for the record.

Roger Straus

Amy Million

From: gofindnancy@yahoo.com
Sent: Wednesday, April 06, 2016 5:31 PM
To: Amy Million
Subject: Public comment for Valero expansion project



Amy Million
Principal Planner
Community Development Department
City of Benicia

April 6, 2016

Dear Ms. Million,

I am writing this statement on behalf of Crockett Rodeo United to Defend the Environment. We want to add our voice to the other communities in Northern California that have opposed the ill-advised and dangerous Valero crude oil expansion project before the City Council tonight.

The EIR does not meet the requirements of the California Environmental Quality Act (CEQA) because it fails to properly analyze, disclose, and mitigate the Project's significant environmental impacts.

The oil trains will snake down the Feather River Canyon and edge the Delta. Any derailment, fire and spill into those bodies of water will imperil the drinking water for millions of Californians.

The City and Valero coyly refuse to disclose the change of CRUDE slate, changes that could affect the air quality for the entire region.

Finally, it is disturbing that the City of Benicia staff and Valero continue to insist that all mitigation for this Project is federally preempted, which flies in the face of decisions made by regional planners elsewhere in the state (San Luis Obispo County) who have weighed in on similar projects.

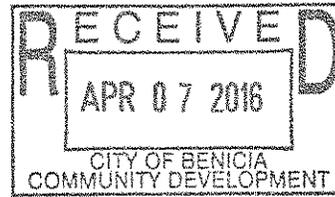
I encourage you to honor and follow the unanimous decision of the Planning Commission and deny this project.

Nancy Rieser

Co-founder

Crockett-Rodeo United to Defend the Environment

Mayor Elizabeth Patterson and
Benicia City Council
City of Benicia
250 East L Street Benicia, Ca 94510



Dear Mayor Patterson and Benicia City Council:

I am a licensed Civil and Structural engineer in California practicing engineering for the last 37 years and I have been a Benicia resident for more than 35 years. I submitted my written and verbal comments regarding this project on February 10, 2016 at the planning commission hearing. There was some discussion of my comments at the planning commission hearing of February 11, 2016 with Valero, ESA consultants and City Staff responding to some of the issues raised by me. Here is a link to the February 11 hearing video (there is no transcript of that hearing available yet): http://benicia.granicus.com/MediaPlayer.php?view_id=1&clip_id=10

Below I summarize my comments that were previously submitted, along with my paraphrasing of some of the Valero, ESA, and City Staffs' responses and my final clarifying notes to wrap up the discussion. These sections are prefixed with **R** and **RC** for clarity, and have different font color.

1. From a Land Use and City Planning point of view, we do not understand the advisability of the City Planning Department decision to permit Valero to do major work and construct permanent structures and tracks to receive railroad cars filled with hazardous material, day in day out all throughout the year, so close to the property line and the Sulfur Spring in a flood zone, on downstream of a dam (lake Herman) and in the process reducing the existing setback to the property line and top of a stream and eliminate and/or drastically degrade service road access over 3655 feet of the property (see below for detailed discussion). If you want an example of bad City Planning, this is one.

See items 3-8 for further discussion.

2. Presently, there is a 20 feet wide service road all along the interior perimeter of Valero property, specifically all along the top bank of the Sulfur Spring at the north-east side of the property. This service road not only provides easy access for inspection, security, fire suppression, and hazardous spill containment from entering the Sulfur Spring but also helps to contain flood in the Sulfur Spring from entering structures and other improvements on the Valero property. This road also increases the setback and buffer zone available for the properties to the east of Valero site across the Sulfur Spring.

See items 3-8 for further discussion.

3. The proposed CBR project eliminates this service road and builds a railroad track in its place where a 50 car train could be parked over extended period of time every day and night, 365 days a year. Valero proposes to construct a 1900 feet partial replacement service road 60 feet away and parallel to the present road on its south-east (Figure 3-3 of DEIR enclosed at the end of this letter). Along this segment (Section B-B of Figure ES-3 of DEIR) there will be a substantial degrading of emergency vehicle access to the eastern most train (departure track) and the middle train, as well as the Sulfur Spring. Along the remaining 1755 feet segment (Section A-A of Figure ES-3 of DEIR) there is actually no emergency vehicle access at all where potentially up to 5 trains could be in an emergency situation with no access to them or to the Sulfur Spring banks to contain any hazardous spill or suppress fire/explosions.

We note that both Valero proposal, and DEIR which basically cuts and pastes Valero's proposal in their DEIR, fail to mention this major change and its implications when they describe the key component of the project (see page 2-6 of DEIR). We can understand why Valero might not want to emphasize this negative point by discussing the degradation of accessibility and fire/flood protection when they apply for permit, however, we are at a loss why the City Planning department and the City consultants in charge of EIR, who are the technical parties with the responsibility of clarifying ramifications of the proposed project, failed to do so.

3R:

Benicia fire chief responded that Avenue A will be still available for vehicular access if there are no trains parked there. He also mentioned if there are trains parked there they could access the trains via alternate roads, and that works for him. He added that he might not necessarily want to drive right along any train (i.e. Avenue A) anyway. He mentioned that he will not necessarily access the refinery through Park Road entrance and he will access it through the Second Street entrance.

Regarding making upright any tanker car that is tipped over after a jolt, the fire chief said it is not done by the City Fire Department, and it is done by other specialty contractors and he was not sure how it is exactly done.

Regarding any spill into creek and using booms or other measures to stop the spill, he said he does not need vehicles to install protection measures; it can be done on foot.

3RC:

I understand that the Benicia Fire department will do its utmost in any fire, in spite of adverse site conditions and structural obstacle. However, this is not the point for us now during decision making and planning stage for the future configuration of the refinery. At this stage, our task is to give the Benicia as well as Valero fire departments the best configuration possible for ease of access, direct access, visible access, reliable access, having multiple and redundant access roads. Please be reminded that the stated reason for Valero to want to do this project is NOT that it is losing money now or that it cannot get enough crude via pipelines and marine transport. Valero's main reason is that it wants to have more OPTIONS more CHOICES. Therefore, we do not understand why City of Benicia (and consequently residents and other businesses) have to live with fewer OPTIONS and CHOICES, or with degraded and worse OPTIONS and CHOICES in the future compared to now. We should not have to rely on good luck and hard work of our fire fighters only in future fires. We should also demand to have

OPTIONS and CHOICES (to use vehicles or do it on foot when installing spill containment equipment along the creek at avenue A; whether to use Park Road or Second Street for access, etc.)

Regarding any tipped over train car that requires making it upright, we are not sure why an important scenario like this is not discussed in the EIR and the consequences, procedures, and responsibilities clearly identified.

Finally we would like to mention that we could not find in the EIR any mention that the EIR has actually checked the revised configuration of the refinery with the trains loading dock and berms and storage tanks in the new and more dense configuration and have found that the dangers of fire at any location jumping to other locations is not a concerns for this new and denser arrangement.

4. Benicia Municipal Code Section 17.70.340 Stream setbacks requires:

All development shall be set back a minimum of 25 feet from the top of the bank of streams (both seasonal and perennial) and ravines. No development shall be permitted within the setback. (Ord. 01-6 N.S., 2001).

Obviously the proposed departure track violates this along 3655 feet of its length parallel to Sulfur Spring. There is no mention in the EIR if Valero has applied for and/or received a variance from the City for this non-compliance.

4R:

Ms. Million responded that the project has to comply with all the City Ordinances, and the 25 foot setback is required and has to be complied with in the final project configuration and if it does not then the project will not be issued a permit. However, she then claimed that all the drawings in the Valero submittals are all preliminary and in her word are "architectural" [sic], and the real official drawings will be submitted for review and approval before construction.

4RC:

We find this strange that checking of the setback requirements are pushed to the final stage, more than 3 years after the beginning of the project, and after thousands of pages of documents produced and thousands of hours of staff time, consultants time, Valero's team time, and the general public' time spent on a project that might not be buildable.

City of Benicia Municipal Code's section regarding the setback is very brief. This might cause ambiguity for some as to what really constitutes a "development", and what is the meaning of "top of the bank"? That is why I have enclosed at the end of this letter similar provision for the City of Santa Rosa, where "development" is defined in detail, and "top of the bank" geometry is graphically defined in sketches. Please note that roads and walls are defined as development and are prohibited in the setback. Also please note that the top of bank definition requires drawing a 2.5 to 1 line from toe of the stream bank to the ground surface.

Also please note that the soil in this area is subject to large lateral and vertical movements, as well as the heavy weight of crude carrying train cars and subsequently the heavy pressure on the soil. This makes any ground failure that much more critical and likely. The departure track is theoretically used by empty trains and therefore lighter than train cars filled by crude. However, there is no guarantee for this to be the case all the time and no way to verify that Valero or other owners in the future will never have trains with full cargo loads on "departure" track.

Finally we note that none of the drawings that Valero has submitted includes a true sectional view of the Sulfur Spring creek in sufficient detail and extent to make it possible to establish clearly top of the bank and the setback distance on the plans. This shortcoming of the Valero documentations should have been brought up by the City Staff and ESA consultants and they should have commented on the setback requirements.

5. We do not see any berm/trench or other mechanisms that are proposed by Valero to contain potential hazardous spills from the parked railroad cars and stop them before they enter the Sulfur Spring. Please be reminded that these railroad cars will be like permanent fixtures at this location, since the process of arrival-unloading-departure will be continuous on a 24 hour basis every day of the year. The omission of berm/trench becomes more critical due to violation of the required setback from the stream banks discussed above. We also note that both Sections A-A and B-B on Figure ES-3 of DEIR show the proposed finish grade sloping down from the new tracks toward the Sulfur Spring and thus directing any contamination or spill into the Spring. This appears to be a violation of environmental regulation that has not been addressed in the Valero proposal or in the EIR.

5R:

Valero representative testified that there is a 3 foot high retaining wall at the top of creek (the east edge of the departure track road) that will stop the trains from tipping over and will also contain the spill from falling into the creek.

5RC:

We note that there are no retaining walls or barriers at this location on the drawings that we have seen. The latest drawing available (Dwg 89413, revision 01-08-16) in Sections A-A or D-D shows only an 8 inch high curb. Moreover, given the trains size and weight, we do not believe a 3 foot high wall will stop a train from tipping over. (See the attached Section A-A, where we have shown a 3 foot high wall and it is apparent even to non-engineers that this not a serious solution to prevent train tip over.

Moreover, we note as discussed above in part 4, construction of the train tracks as well as the "protective" retaining walls are not permitted in this Setback area.

Finally, we note that this area according to the EIR and geotechnical reports for the subject project will be subjected to ground failure by lateral spreading of up to 39

inches, fissures of 6 inches and settlements of several inches. The only mitigation mentioned in the EIR is to design the railroad ties to accommodate these deformations. Frankly due to lack of details of construction and detailed design criteria, we are not sure how the tacks, loading racks, underground pipes and storage for the spill will behave under stresses and deformations imposed on them by the surrounding soil. If these systems fail, the promised protections against spill after such ground failure cannot be kept.

6. DEIR Section 4.8-6 discusses flood hazard. In the middle of the paragraph it relies on the following reasoning to belittle impact of the flood since it claims that “the facility is not occupied by humans”:

Further, the Project elements are not habitable structures for human occupancy.

The author of DEIR is reminded that the Valero parking of railroad cars, unloading, and departure of the cars are done by human beings and not robots. Moreover, since these operations are done on a continuous basis, the probability of workers being at this location at all hours day and night is very high. We do not understand why the workers are not classified as occupants here.

6R:

ESA Consultant response was that this is not a habitable occupancy like a house or office, since presumably nobody sleeps in it or perhaps since it is not enclosed with walls and roof or some other reasoning.

6RC:

Again our point was and is that since there are workers in this area more or less continuously day and night every day of the year, then this area is more akin to a house in terms of continuous occupancy and human presence than a warehouse or storage room.

7. DEIR Section 4.8-7 discusses Dam safety and its effect on this project. Section 4.8-7 of DEIR relies on the following reasoning to dismiss the effect of potential dam failure:

However, all dams are routinely inspected and evaluated for seismic integrity as overseen by the California Division of Safety of Dams (DSOD). When a dam is found to have a failure potential, the water level behind the dam is reduced to allow for partial collapse without loss of water as required by DSOD (ABAG, 2013). Thus, the probability of dam failure resulting in significant loss, injury, or death is low (ABAG, 2013). Given the low risk of dam failure, and because the proposed facilities would be designed to withstand natural hazards, potential impacts related to dam failure are considered less than significant.

If the project was an existing structure and we were evaluating its risk profile, then the above reasoning has some merit. But this project does not exist yet. It is only being proposed. We do not know the state of dam safety program ten or twenty years in future and we do not know for certain all different scenarios that might result in dam failure. For example, Lake Herman fault is mentioned in the report but is dismissed as being a not active fault. But how confident are we about this issue? Therefore, it is advisable that we do not act with bravado as if daring the nature by building hazardous facilities in a flood zone downstream of a dam. We recommend practicing prudence in City and Land Use planning and change location of the project. It is not as if we are under the gun and have to approve the project in its present location no matter what.

7R:

ESA Consultant response was that CEQA guidelines prohibit considering items that were of concern and mentioned by me.

7RC:

It appears everybody is counting on other entities and agencies to take care of everything else perfectly even when one has made a very unwise and risky overall

decision to do a project a certain way. This is similar to the reasoning that train related issues are preempted, since federal government is taking care of it perfectly well; or dam safety concern is not warranted since presumably DSOD is taking care of it adequately; or building safety is not to be a concern, since CBC is taking care of it. My point is that as users and neighbors of a project that have to live with it, we should not abdicate our own responsibility to choose wisely and we should not blindly trust most decision makings to others.

8. DEIR and final EIR discussions of structural issues and building code are full of platitudes and short of substance. There are so many errors in the reports that it leads me to doubt the author's knowledge of the subject matter, which leads me to lose confidence in their discussion of other subjects such as probabilities, risks, environmental impacts, .etc. Below, I will paste some portions of reports with the errors highlighted to illustrate my point. For instance, DEIR Section 4.5-11 second paragraph from top says:

The 2013 CBC is based on the 2009 International Building Code. In addition, the CBC contains necessary California amendments that are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements...

The first sentence is erroneous, since any building official, structural/civil engineer, or even architect knows that the 2013 CBC is based on 2012 International Building Code. The second sentence is also erroneous, since again professionals with elementary knowledge of the subject matter, know that 2013 CBC is based on ASCE 7-10. This appears not to be a problem of carelessness on the part of the author due to haste in preparation of the DEIR, since the final EIR repeats the same mistake in answering comments. See for example the final EIR Section 2.7-108 item D32-18 middle of paragraph which states:

Also discussed, specific to seismic hazards in California, are the California amendments to the CBC that are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements.

Again there is repetition of the erroneous reference to ASCE 7-05 rather than the correct edition ASCE 7-10. Moreover, in the first sentence there is the incorrect and funny statement that there are California amendments to CBC, which is absurd, since CBC stands for California Building Code, and state of California does not amend its own Code.

8R:

ESA consultants agreed that the code editions used in the EIR documents were old and should have been superseded by the current one. However, they said it does not make that much difference since the current edition requirement is not that much different.

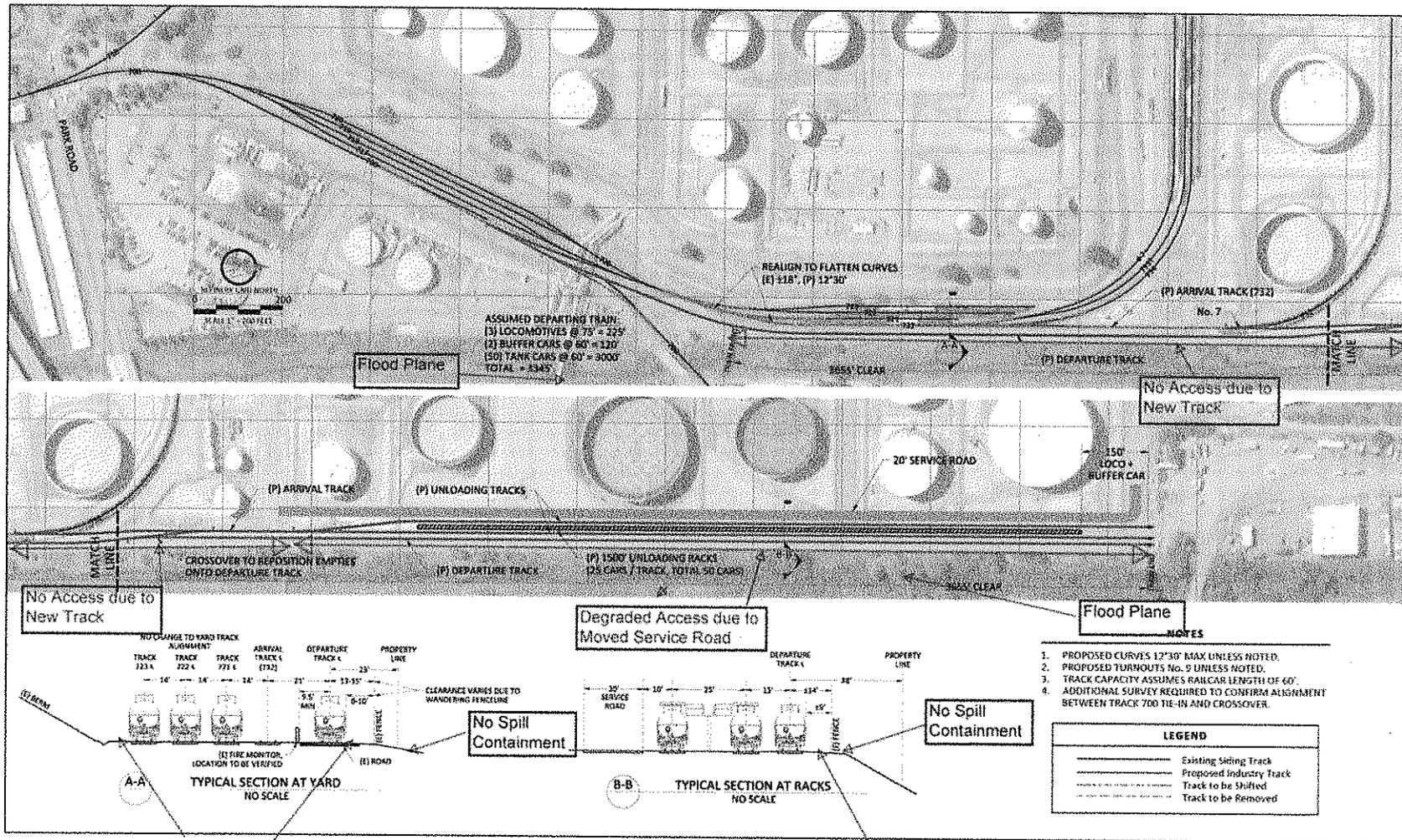
On our second comment, the ESA consultant disagreed and insisted that California Building Code indeed amends CBC.

8RC:

We disagree with the EIR authors. The correct terminology is that the California Building Code amends IBC (international Building Code) and not CBC (California Building Code). Since the authors of the EIR insist on using the incorrect terminology, even after being reminded of it, it leads us to conclusion that they are not familiar with the Code writing process and Code adoption process.

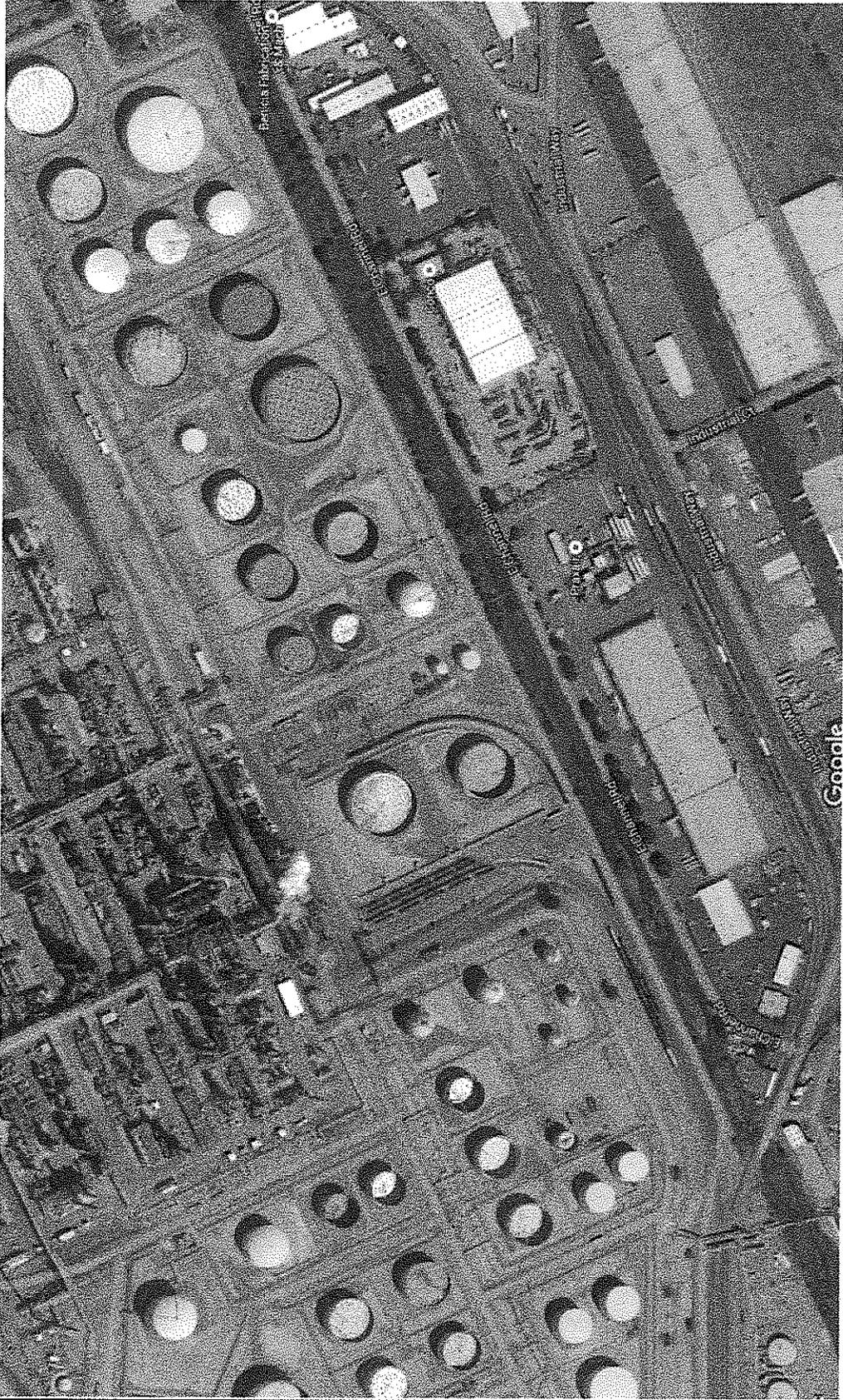
Sincerely,
Amir Firouz
Benicia, CA

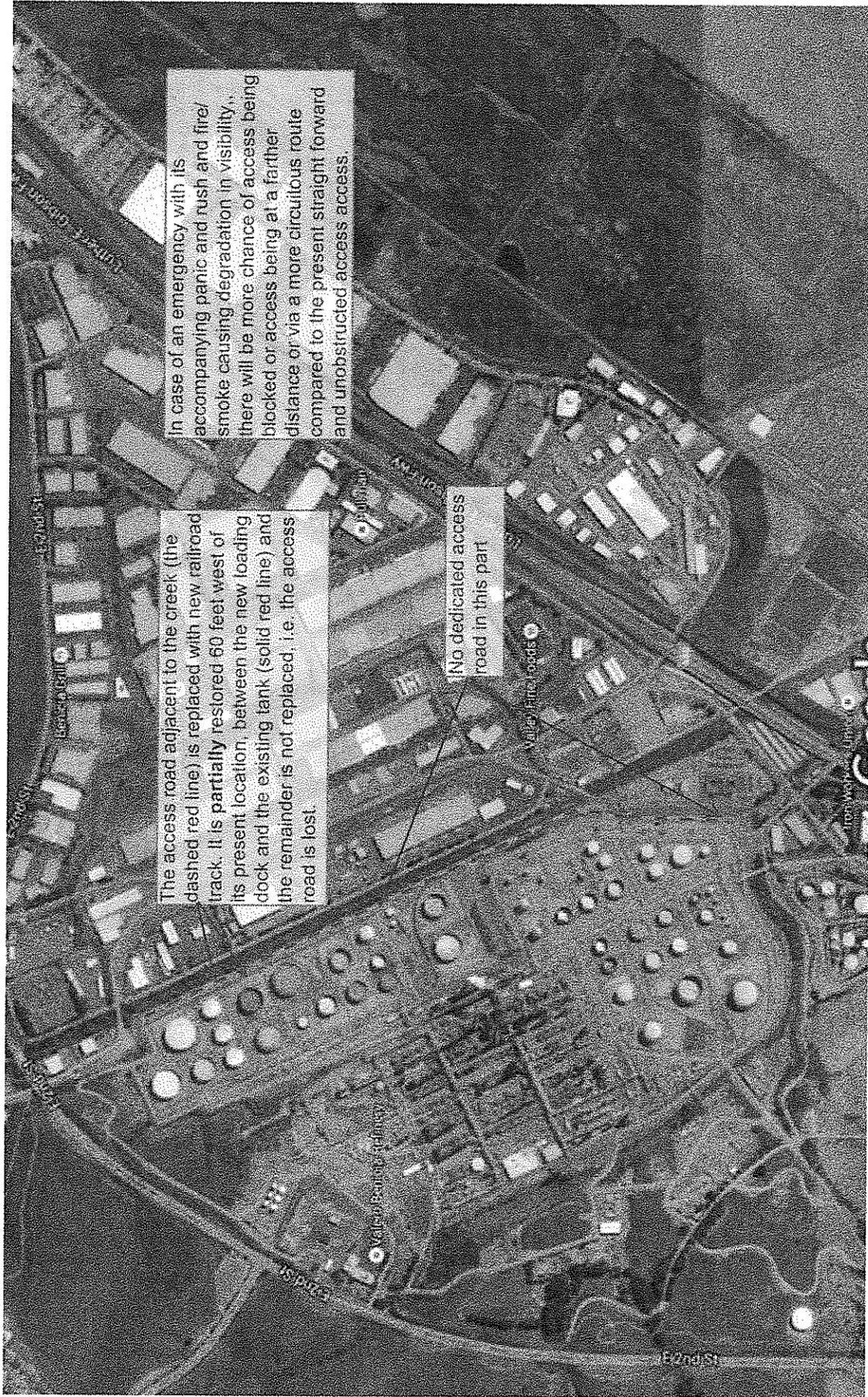
*Encl: Annotated Figure 3-3
Google Map
Google Map with Avenue A
Santa Rosa Creek Side Development Setback requirements
Section A-A*



SOURCE: Valero

Benicia Valero CBR, 202115.01
Figure 3-3
Site Plan





In case of an emergency with its accompanying panic and rush and fire/smoke causing degradation in visibility, there will be more chance of access being blocked or access being at a farther distance or via a more circuitous route compared to the present straight forward and unobstructed access access.

The access road adjacent to the creek (the dashed red line) is replaced with new railroad track. It is partially restored 60 feet west of its present location, between the new loading dock and the existing tank (solid red line) and the remainder is not replaced, i.e. the access road is lost.

No dedicated access road in this part

Santa Rosa City Code

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Title 20 ZONINGDivision 3 Site Planning and General Development RegulationsChapter 20-30 STANDARDS FOR ALL DEVELOPMENT AND LAND USES**20-30.040 Creekside development.**

- A. **Purpose.** This Section requires minimum setbacks from waterways for new structures, to provide reasonable protection to owners of riparian property and the public from the hazards of stream bank failures and flooding, while allowing owners of property near waterways reasonable use of and the opportunity to improve their properties consistent with general safety.
- B. **Applicability.** No structure, including buildings of any type, swimming pools, including prefabricated swimming pools, driveways, streets, parking areas, patios, platforms, decks, fences, liquid storage tanks, mobile homes, broken concrete rubble, earth fill or other structural debris fill, or retaining walls, shall be placed within the creekside setbacks required by this Section.
1. **Existing structures.** An existing, lawfully constructed structure that is located within a setback required by this Section is subject to the requirements for nonconforming structures in Chapter 20-61 (Nonconforming Uses, Structures, and Parcels).
 2. **Exceptions.** This Section shall not apply to:
Storm drainage, erosion control, and creekbank stability improvements that have been approved as required by law by the governmental agencies having jurisdiction over them.
 3. **Design guidelines.** See also Section 4.4 (Creeks, Riparian Corridors, and Storm Drainage) of the City's Design Guidelines.
- C. **Definitions.** Definitions of the technical terms and phrases used in this Section may be found in Division 7 (Glossary), under "Waterway."
- D. **Creekside setback requirements.**
1. **Waterway with defined bank.** The exterior boundary of the setback area on each side of a natural or modified natural waterway shall be 50 feet from the top of the highest bank on that side of the waterway, as determined by the Director. When the bank of a natural or modified natural waterway is steeper than 2.5:1, the exterior setback boundary shall be measured by the projections of a slope of 2.5:1 from the toe of the stream bank to ground level, plus 50 feet. See Figure 3-1.
 2. **Waterway without defined bank.** The exterior boundary of the setback area adjacent to the side of a natural or modified natural waterway, where the top of the stream bank is not defined, shall be 50 feet, measured horizontally, from the established 100-year storm freeboard level. See Figure 3-2.

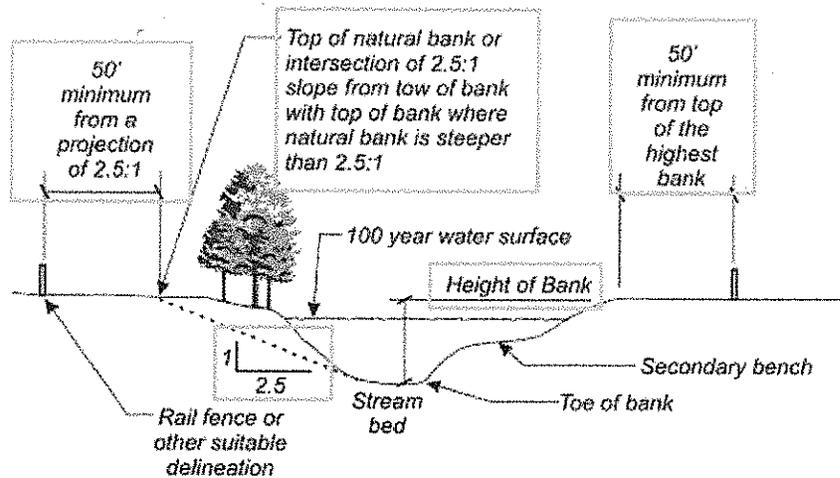


Figure 3-1 – Setback with defined bank (see exceptions Section 20-30.040.D.4.)

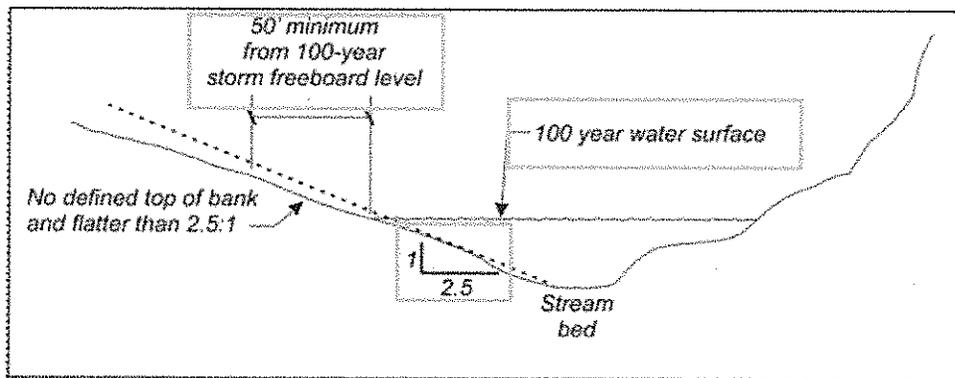


Figure 3-2 – Setback without defined bank (see exceptions Section 20-30.040.D.4.)

3. Channelized waterway. Where a fully channelized waterway exists and the channel is owned by, or under the control of the Sonoma County Water Agency, structures may be closer to the top of the bank than a distance of 2.5 times the depth of the bank plus 50 feet, provided that this encroachment into the setback area will not obstruct or impair the channel’s hydraulic functions, impede Water Agency access or maintenance of the channel, or impair the stability of the slope, bank, or maintenance of the channel, or impair the stability of the slope, bank, or creekbed fountain, all as determined by and approved by the Department, the Public Work Department, and the Sonoma County Water Agency.

4. Exceptions.

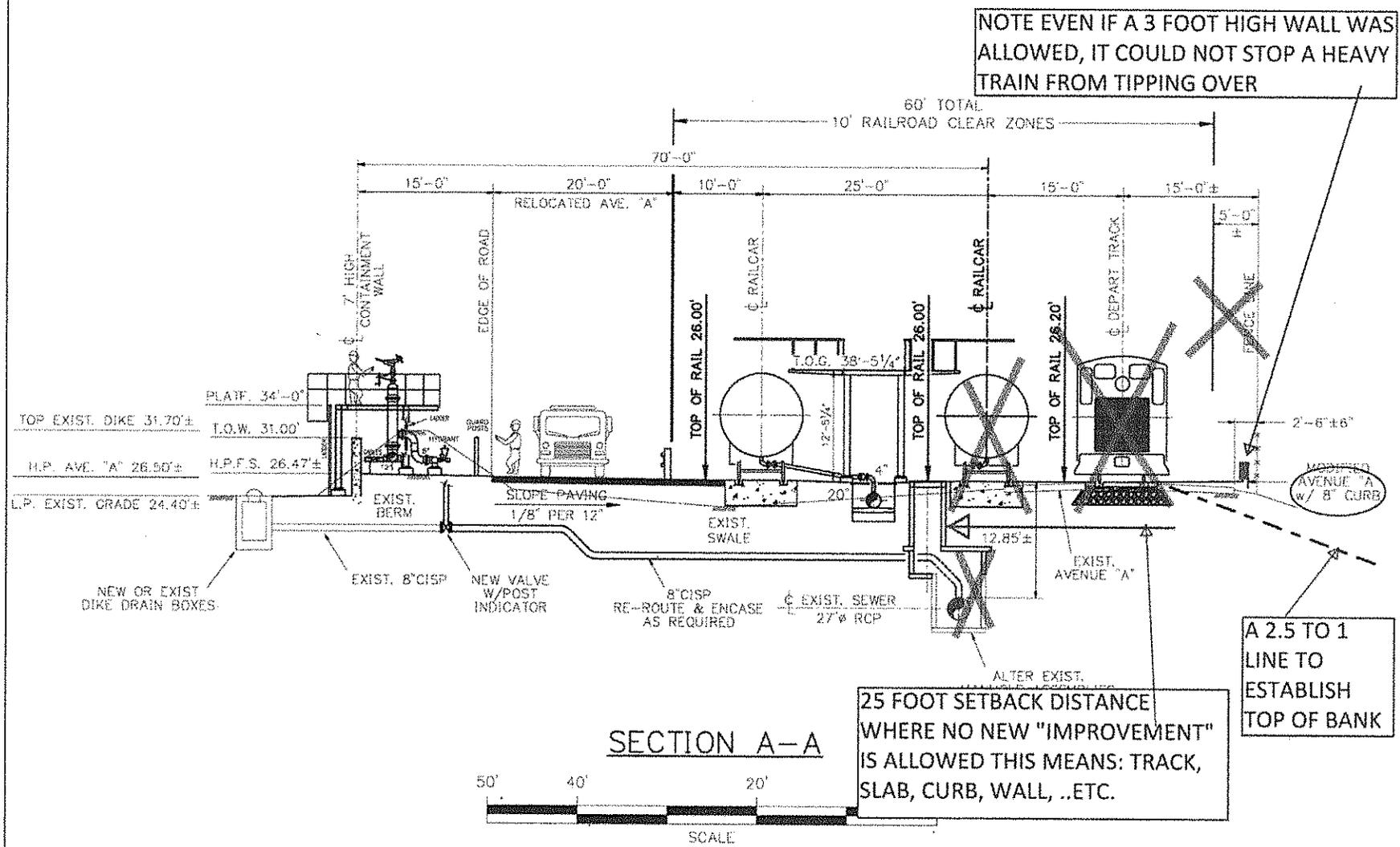
- a. The setbacks required in Section 20-30.040 shall be 30 feet for existing properties or adjacent areas within the City that were developed in compliance with applicable setback requirements in effect prior to September 3, 2004.
- b. The setbacks required in Section 20-30.040 shall be 30 feet for new development that is surrounded by existing structures that were developed in compliance with applicable setback requirements in effect prior to September 3, 2004.

E. Bridges and utilities within setback areas. Bridges for motor vehicles, pedestrians, and/or bicycles, and/or public utility infrastructure may cross through a waterway setback area and over or under its channel, provided that the installation has received all required approvals from the City. “Bridges” as used in this Subsection includes the segments of the street connecting with the ends of the bridge and the use of

box culverts to contain the waters of a waterway for a street overcrossing.
(Ord. 3711 § 1 Exh. A, 2005; Ord. 3677 § 1, 2004)

View the [mobile version](#).

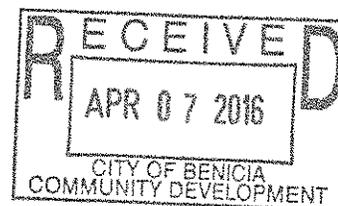
NOTE EVEN IF A 3 FOOT HIGH WALL WAS ALLOWED, IT COULD NOT STOP A HEAVY TRAIN FROM TIPPING OVER



25 FOOT SETBACK DISTANCE WHERE NO NEW "IMPROVEMENT" IS ALLOWED THIS MEANS: TRACK, SLAB, CURB, WALL, ..ETC.

A 2.5 TO 1 LINE TO ESTABLISH TOP OF BANK

April 6, 2016



Mayor Patterson, City Council Members, and Staff
City of Benicia
250 L Street
Benicia, CA

Re: Valero Crude by rail project

Dear Honorable Major Patterson, City Council Members, and Staff,
I have a few questions for you listed below. I apologize in advance for my lack of knowledge on the permitting process or what the city can require locally.

1. Why has the safer alternative of using the KLM pipeline and/or other pipelines from Kern County to deliver the crude oil not been considered?

Pipeline segments do currently exist serving Valero that run from Kern County. This alternative was never considered.

For example, in responding to this criticism in the Final EIR on P. 3.5-152, the consultant stated "**...it is possible that the Refinery could receive oil from the San Joaquin Valley, Kern County, or LA basin by rail via the project...**Accordingly, the identification of the San Joaquin Valley as a potential source **would not be an alternate** to the Project. Importation of crude by pipeline would not meet most of the basic objectives of the project." (emphasis added)

The consultant's response **does not make any sense!** Why can't Valero use this much **SAFER** and **EXISTING** methodology?

Here are some articles mentioning the pipeline network:

Chevron agrees to sell pipeline linking Kern to Bay Area refineries

"The 295-mile KLM comprises segments ranging in diameter from 16 to 18 inches. With a southern terminus in Kern, it delivers oil directly to three Bay Area fuel processing plants: Tesoro Petroleum Co.'s Golden Eagle Refinery, Valero's Benicia Refinery and Shell's Martinez Refinery."

<http://www.bakersfield.com/news/business/2015/10/01/chevron-agrees-to-sell-pipeline-linking-kern-to-bay-area-refineries.html>

PIPE LINE COMPANY – VALERO KLM INTERCONNECT PROJECT

“In late 2006 and early 2007, Pipe Line Company (PL) constructed a new, approximately two-mile long, 12-inch diameter crude oil pipeline segment in the unincorporated area east of Martinez, California. This new segment interconnects PL’s existing Kettleman to Los Medanos (KLM) pipeline to the south end of an existing Valero 20-inch diameter pipeline. The capacity of the new pipeline segment is 55,000 to 70,000 barrels per day (BPD). The project also included pig launching and receiving facilities, custody transfer metering, stationary meter prover, electrical power connections to PG&E, leak detection, and over-pressure protection.”

<http://edmsvc.com/pipe-line-company-valero-klm-interconnect-project/>

2. *Can the city charge Valero any fee, or is there is particular land use fee? For example, could the city impose a \$10 million per year fee with the proceeds being used to provide for city services, provide incentives to attract new business to Benicia, and the like?*

3. *As with other building projects, can the city impose other local safety constraints? For example:*

a. Could the city require Valero put overpasses on Lakeshore road to allow traffic to flow to and from the east side businesses? While this may be outside the refinery, could this not be part of an agreement with Valero?

b. Could the city require the trains be contained within a crude containment basin that would be setup to completely contain a 3 million gallon spill? In this case, the containment basin would be similar to a boat lock where the trains enter the basin, which is then sealed by a containment gate on the entrance once the trains are inside the lock.

c. Could the city require Valero to completely house the trains inside a building to prevent off gassing from leaking into the local environment (Here, I would suggest combining the basin with a building)?

d. Could the city impose a bond on Valero, such as a \$1 billion bond in case of an internal accident?

4. *With all due respect for the city Attorney and consulting Attorney, since the law is usually on the boundary of disputes, and there are so many other Attorney’s that advise that the federal preemption is unsettled law for companies such as Valero, that are not rail carriers, but use rail services, doesn’t it make sense to hire an Attorney who is an expert in this area that would guide the city into ways to provide local mitigation of the potential risks without running afoul of federal preemption?*

5. Why not deny the permit and EIR now and let the state court system settle the preemption issue?

There seems to be a number of legal cases that address the preemption issue which indicate that we, as other states have, may look to our state court system for help in this preemption matter. For example, I found Florida E. Coast Ry. Co. v. City of W. Palm Beach, 266 F.3d 1324, 1332 (11th Cir. 2001)

“...ICCTA preemption is circumscribed, and Congress did not intend to foreclose the ability of State and local governments to protect the health, safety, and welfare of their residents through enforcement of State and local laws...”

“State courts are authorized to decide whether ICCTA preempts state or local laws. As a general matter, state courts are always empowered to determine their own subject matter jurisdiction. See, e.g., *State ex rel. Bell v. Pfeiffer*, 131 Ohio St. 3d 114, 2012-Ohio-54, ¶ 19 (2012) (“[A] court possessed of general subject-matter jurisdiction can determine its own jurisdiction.”)

In addition I found the following information online from:

<http://www.kaplankirsch.com/portalresource/lookup/wosid/cp-base-4-6014/overrideFile.name=/EP%20LGA%20PresentationFINAL.pdf>:

“[S]tates and towns may exercise traditional police powers over the development of railroad property . . . to the extent that the regulations protect public health and safety, are settled and defined, can be obeyed with reasonable certainty, entail no extended or open-ended delays, and can be approved (or rejected) without the exercise of discretion on subjective questions.”

N.Y., Susquehanna & W. Ry., 500 F.3d at 253-54 (3d Cir. 2007).

“IF NOT DISCRIMINATORY AND NO SUBSTANTIAL IMPACT ON RAIL OPERATIONS:
Require compliance with building and fire codes...Enforce federal environmental laws where enforcement is delegated to state and local governments...Enforce environmental and similar laws, particularly where impacts are off-railroad property...Filling Wetlands...Dumping Waste
(*Emerson v. Kansas City Southern Ry. Co.*, 503 F.3d 1126 (10th Cir. 2007))

“No case law or STB decision...Above principles would seem to allow communities to require mitigation to avoid impacts on community...Fire Protection equipment...supplies & training Spill Containment...Railroads generally cooperate on these issues”

“Federal Railroad Administration (FRA)

(a) National uniformity of regulation.--(1) Laws, regulations, and orders related to railroad safety and laws, regulations, and orders related to railroad security shall be nationally uniform to the extent practicable.

(2) A State may adopt or continue in force a law, regulation, or order related to railroad safety or security until the Secretary of Transportation ..., prescribes a regulation or issues an order covering the subject matter of the State requirement. A State may adopt or continue in force an additional or more stringent law, regulation, or order related to railroad safety or security when the law, regulation, or order--
(A) is necessary to eliminate or reduce an essentially local safety or security hazard;
(B) is not incompatible with a law, regulation, or order of the United States Government; and
(C) does not unreasonably burden interstate commerce. 49 U.S.C. § 20106"

In another example I found, under *J.P. Rail, Inc. v. N.J. Pinelands Comm'n*, 404 F. Supp. 2d 636, 651-52 & n. 30 (D.N.J. 2005)

"Finally, it should be noted that manufacturing and facilities not integrally related to the provision of interstate rail service are not subject to our jurisdiction or subject to federal preemption."

"We envision that it will be the rare situation when fairly enforced fire, health, plumbing, safety, or construction regulations interfere with a railroad's operations."

"Congress did not intend to preempt federal environmental statutes such as the Clean Air Act and the Clean Water Act."

"ICCTA preempts State regulation of "transportation by rail carriers." 49 U.S.C. § 10501(b). Therefore, the Court must determine as a threshold matter: (1) whether the activities occurring at the five NYS W sites in North Bergen, New Jersey qualify as "transportation"; and (2) whether the activities occurring at the sites are being performed by a "rail carrier."

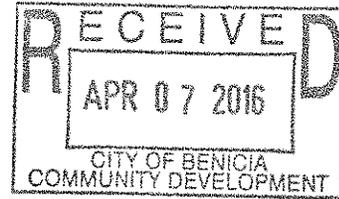
"[t]he STB stated in *Riverdale* that "facilities not integrally related to the provision of interstate rail service are not subject to [its] jurisdiction or subject to federal preemption." *Borough of Riverdale Petition for Declaratory Order*, 4 S.T.B. 380, at *23 (1999) (emphasis added). During the High Tech litigation, the STB declared that transloading activities and facilities "must be closely related to providing direct rail service," in order to constitute transportation under ICCTA. *Hi Tech Trans, LLC Petition for Declaratory Order*, No. 34192, 2003 WL 21952136, at *4 (STB Aug. 14, 2003) (emphasis added)"

Thank you for your consideration of these questions and information provided.

Sincerely,

C. Bart Sullivan
1543 Sherman Drive
Benicia, CA 94510

Dona Rose
300 E. H Street Sp 31
Benicia, Ca. 94510
707.771.1688



Subject: Crude by Rail City Council Meeting 4.6.16

Valero's appeal to bring crude by rail to Benicia should be denied. Do we want to put our town in jeopardy? The decision you make here has far reaching broad implications that affect many communities besides our own.

Proponents say Valero is a good neighbor and that the project will create jobs and bring in taxes.. They even say it's safe to transport crude by rail. If it is so safe, how is it that the towns of Lac Megantic, Aliceville, Al, Casselton ND, and Lynchburg, Va suffered such heavy losses and are still suffering from the devastation resulting from derailments which caused blasts and widespread fires?

How do you think the residents and council members of those towns would have voted if in hindsight they were given the chance? Would they have been considered hysterical if they voted no? What if they had united and said No. before the disasters that struck their cities dramatically changed their lives forever.

We can't afford to live in the denial that Valero and proponents do. We can't afford to let these trains rumble by schools, houses, businesses, and our cities. Day after day after day. Trains cars were never made to carry and transport volatile crude oil. We shouldn't have to live in fear. There's a better way, pipelines and ships. Look, people make mistakes. There was no engineer on the Lac Megantic train. Yikes!

One other point to remember is that real estate transactions will have to disclose adverse conditions which could negatively impact prospective buyers. Would you knowingly buy a house in an area where crude trains arriving daily?

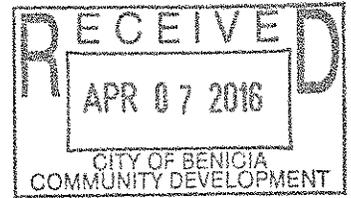
My last point is Lac Megantic looked a little like Benicia. A beautiful downtown area and a lake. Look at the before and after pictures. 47 people perished. It will never be the same. It will take years while placing a huge financial burden upon the future.

Let's not let big oil cram this project down our throats. It is indeed a bitter pill to swallow.

I respectfully request you deny Valero's appeal. That would be being a good neighbor.

Thank you for your time.
Dona Rose

Comment Before the Benicia City Council
By Katherine Black
April 4, 2016



Good evening Madam Mayor and Members of the Council. My name is Katherine Black and I am the Chairperson for Benicians for a Safe and Healthy Community.

I have spoken on many occasions against this project before the Planning Commission on various topics, so my comments are already in the record. I just wanted to read a list of organizations, public agencies and public officials that have either had major concerns or have spoken out directly against this project. This is a partial list and are in no particular order. They are:

- Benicians for a Safe and Healthy Community
- Solano County
- The Air Pollution Control and Air Quality Management Districts, which consist of
 - The Bay Area Air Quality Management District
 - The Butte County Air Quality Management District
 - The Feather River Air Quality Management District
 - The Placer County Air Pollution Control District
 - The Sacramento Metropolitan Air Quality Management District
 - The County of Shasta
 - and the Yolo-Solano Air Quality Management District

To continue with the list:

- University of California, Davis
- California Office of Spill Prevention & Response, and the California Public Utilities Commission
- Capitol Corridor Joint Powers Authority (Amtrak)
- California Department of Transportation
- San Francisco Bay Keeper
- Safe Fuel and Energy Resources - California
- Fischer Communications
- Cool Davis
- 350 Sacramento
- 350 Bay Area
- 350 Marin
- Communities for a Better Environment – both legally and technically
- Natural Resources Defense Council – both legally and technically
- Phil Serna, Sacramento County Supervisor
- Iron Workers 378 – who withheld support, which is significant because Valero had previously held their community forums on this at their venue
- Stand – formerly known as ForestEthics
- The Sierra Club
- The Center for Biological Diversity
- Sacramento Area Council of Governments (aka SACOG), and which is an association of local governments in the six-county Sacramento Region. Its members include the counties of El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba and the 22 cities within, who are:

- Auburn
- Citrus Heights
- Colfax
- Davis
- El Dorado County
- Elk Grove
- Folsom
- Galt
- Isleton
- Lincoln
- Live Oak
- Loomis
- Marysville
- Placer County
- Placerville
- Rancho Cordova
- Rocklin
- Roseville
- Sacramento
- Sacramento County
- Sutter County
- West Sacramento
- Wheatland
- Winters
- Woodland
- Yolo County
- Yuba City
- Yuba County

To continue with the list:

- Yolo County Board of Supervisors
- Martinez Environmental Group
- Richmond Progressive Alliance
- Global Community Monitor
- Expert Dr. Petra Pless, from Pless Environmental, Inc.
- Bay Localize
- The City of Albany
- The City of Briggs
- The City of Briggs Fire Department
- The City of Gridley
- The City of Gridley Fire Department
- The County of Nevada Community Development Agency
- The Town of Truckee
- The City of West Sacramento
- Shasta County Department of Resource Management
- Community Science Institute

- Crockett-Rodeo United to Defend the Environment (aka CRUDE)
- The City of Davis Foundation
- Sunflower Alliance
- Pittsburg Defense Council
- Greenaction for Health and Environmental Justice
- Asian Pacific Environmental Network
- Bay Area Refinery Corridor Collation
- Attorney General Kamala Harris
- Other attorneys from 5 different organizations – NRDC, CBE, SF Baykeeper, Center for Biological Diversity, Sierra Club
- Expert Dr. Phillis Fox
- Bay Area Air Quality Management District (aka BAAQMD) - individually
- Feather River Air Quality Management District - individually
- Sacramento Metropolitan Air Quality Management District - individually
- The Placer County Air Pollution Control District - individually
- Yolo-Solano County Air Quality Management District - individually
- The Goodman Group
- Yolo Climate Action

We just heard from Jessie Arreguin, Berkeley City Council member

- Alejandro Soto-Vigil, City of Berkeley
- A representative from State Sen. Lois Wolk's office
- Vice Mayor Linda Maio, Berkeley
- Ellen Cockerin, Sacramento School District Board
- And lastly – our own Benicia Planning Commission

To add to that, there are thousands and thousands of letters from individuals opposing the project that have been submitted as part of the record, which come from Benicians, neighboring cities, Californians, Americans and even those concerned literally around the world. Now, we also have 4,081 petition signatures of which 1,204 are Benicians.

Are all of these people, organizations, public agencies and public officials wrong? The world is watching Benicia. Think about what this city will look like to your public official colleagues and the others I have mentioned. This city is at a precipice. We can either be the city that is part of the problem by going forward the way the world has been going, which has produced global warming. Or we can be the city that says no – not now, not on my watch, and be part of the solution to it all.

Please do not grant Valero a delay and please uphold the Planning Commission's decision to deny this project.

Note: These were received after I spoke

- League of Conservation Voters of the East Bay
- Expert Scott Cashen, Senior Independent Biological Resources Consultant
- Russell Hands, M.D., Chief of Surgery, Kasier, Napa, Solano County

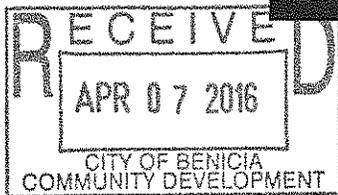
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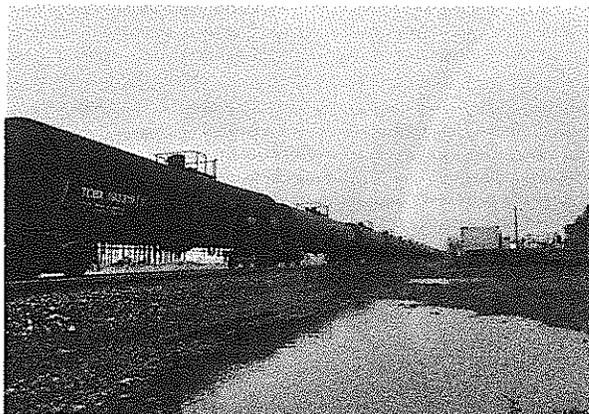
Mobile: 530-304-9336
Email: don@guthrie.com
www.donguthrie.com

COLBUCCI BANKER D
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YOLO COUNTY NEWS



A train rolls into Fairfield, underneath a rainbow last month. Final hearings on the Valero crude oil-by-rail project are planned Monday evening at the Benicia City Hall. Robinson Kuntz/McNaughton Newspapers photo

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Columns

Davis at greater risk for oil train explosion

By Special to The Enterprise From page B7 | February 07, 2016

By Alan Miller

Have your say

What: Final hearing on Valero oil refinery expansion proposal

When: 6:30 p.m. Monday; sign-ups will be taken all day. Hearings may be continued Tuesday evening and beyond if all who wish to speak cannot be heard Monday

Where: City Council Chambers, Benicia City Hall, 250 E. L St., Benicia

Central Davis could be incinerated. An estimated 1.5 million gallons of highly flammable crude oil will roll through Davis per train, cutting through the core of our commerce and population. Directly adjacent lie the Olive Drive neighborhood, the Nishi Gateway, the Mondavi Center, Solano Park, the Old East Davis Neighborhood and downtown Davis.

These oil trains will run as close as 50 feet from the nearest residential structures, and less than one block from core downtown businesses. Maybe the odds are one in a million, maybe one in a billion, that a given train will derail and ignite on any given day at any one point on the railroad (such as Davis).

But rest not easy on those odds, for 12 hours later another 1.5 million gallons of fuel will roll

through Central Davis, another one in 1 billion chance of incineration. That chance of incineration will recur more than 700 times a year, perhaps for the next several decades. More than 1 billion gallons of flammable crude annually. Hell on wheels.

The Union Pacific rail line already carries a plethora of flammable liquids and dangerous chemicals. Rail is the safest form of transport for these materials. But oil trains are a unique animal, and the proof is in the pudding.

Oil train accidents have increased several-times-over in the past five

Recent Posts

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years, largely in response to the sheer quantity of oil being shipped. In the past three years there have been more than a dozen derailments resulting in tanker ruptures, several of which ignited in catastrophic explosions. For an idea of the catastrophic magnitude, search the web for "oil train explosion video."

The deadliest of these explosions occurred in the center of downtown Lac Mégantic in eastern Canada. The burning lake of oil released flowed through the town for several city blocks, engulfing buildings and leaving 47 people dead, some burned so intensely there were no remains.

Benicia is considering expansion of its crude oil refinery in Benicia. The project EIR states the "odds" of a derailment/spill, but this vague average ignores the specific risks at any point along the rail line. Davis has a much higher than average chance for a derailment due to an inherent weak link in the rail infrastructure. This weak point is a left-handed, low-speed crossover between the main lines. It lies a few hundred feet east of the Amtrak passenger platform, adjacent to the PG&E substation near Second and L streets.

Prior to the early 1990s, the railroad operated one direction per track on the right, so mainline trains could not access this crossover. However, in the early 1990s, the track was upgraded for Capital Corridor service and trains now travel on either track in either direction. Trains cross over between tracks at new crossover points throughout the corridor, all of which are rated for 45 mph operation and protected by bi-directional signaling.

However, the crossover switch in Davis is a legacy item from Southern Pacific days, originally installed to allow trains coming off the West Valley line (that runs along H Street) to turn and travel east. Since trains coming off the West Valley line already were coming around a slow curve, the crossover presented no inherent safety hazard at the time.

Today, however, mainline trains coming from the east on Track No. 2 can travel on the left-hand track and enter this crossover, and trains from the west on Track No. 1 may enter this crossover as well. Freight train top speeds east of Davis vary from about 50 to 65 mph, while curve speed is 30 mph. While all other mainline crossovers on the line are designed for 45 mph operation, the aforementioned crossover is rated at just 10 mph!

What makes this crossover so dangerous is the extreme difference in speed rating between the mainline and the crossover. This is compounded by the fact that train engineers see a "red-over-green" signal, just like the signal for crossovers on this line that are rated at 45 mph. Train engineers are sometimes lulled into the hypnotized rhythm of mainline rail operations, and must remember that this one crossover is the 10 mph exception.

Remembering this is an engineer's job, but that doesn't mean they will always remember. About 10,000 freight trains pass through Davis each year, and if oil trains run, there will be more than 1,000 more. If only 1 percent of trains pass through this crossover, and 1 percent of engineers forget the crossover speed, that predicts that about one train per year will blow through the crossover at full speed.

The threat from having a low-speed crossover between higher-speed main tracks is real and known. Several rail accidents have happened due in this scenario. On Feb. 26, 2012, such an accident in Ontario, Canada, killed three members of the train's crew. Safety board officials called into question the practice of allowing low-speed crossovers between much-higher-speed mainline tracks.

While the Davis crossover is used for relatively few freight trains, the crossover in Ontario similarly was used relatively rarely. This fact was cited as a contributing factor in the accident, as it was speculated that the train crew may have used that crossover so rarely that they simply forgot the posted speed.

Trains passing through the Davis crossover at excessive speed in Davis is not theory. In 2006, I witnessed a westbound unit liquid-petroleum-gas (LPG) train pass through this 10 mph crossover at 47 mph! The scene was terrifying. As the engine entered the crossover, the headlight swung like an inverted pendulum to the right, then back left. I thought the engine was going to tip over the motion was so extreme. The engine and tank cars whipped side to side on their wheel trucks, accompanied by the

sickening sound of screeching metal. Oddly, the train eventually slowed but did not stop.

I thought at the time I had witnessed a once-in-a-lifetime event. However, in 2009 I witnessed an eastbound train pass through the 10 mph crossover at mainline speed. The engineer immediately realized his mistake, as he “dumped the air” (made an emergency brake application) and the train quickly ground to a halt. That train also carried LPG cars.

In neither case did the train derail, but a rail track engineer related to me, “I’m surprised they didn’t derail.” How many more trains have nearly derailed at this crossover that I did not witness? Without a derailment, the crew could continue on and not report the incident, as the event recorders (railroad black boxes) are checked only if there is an accident or suspicion of misconduct.

My attempts to report these “near misses” as near disasters to the National Transportation Safety Board and the Federal Railroad Administration were met with terrifying bureaucratic incompetency. The NTSB claimed they couldn’t investigate since no actual derailment occurred, while the FRA simply found an unrelated typo in a Union Pacific manual and closed the case.

The railroad views such incidents as “crew error” while failing to acknowledge the inherent hazard of the crossover. Only the crew itself has the power to slow those 1.5 million gallons of crude should their train be routed through the crossover; there are no automatic-override safety devices to slow such a train. Blaming humans for human error does nothing to make the railroad itself safer.

Positive Train Control is a system that would bring a freight train to a stop should it approach a speed restriction (such as the crossover) too fast. PTC was due to be implemented by 2015. However, PTC implementation requirements have been delayed to 2020 at least. Freight railroads are claiming a 40-percent failure rate with PTC testing in 2015. The technology is simply not ready.

To run oil trains through Davis with this crossover in place — and without PTC — would be the height of brazen corporate aloofness. This crossover must be upgraded to the 45 mph standard if oil trains are to run before PTC is fully implemented.

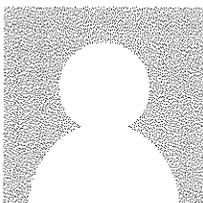
I wrote a comment letter expressing the nature of the crossover hazard for the project EIR. The response was bureaucratic jargon speaking of “unavoidable impacts” and “insignificant risks.” This language says nothing as far as acknowledging corporate awareness of the specific danger in Davis. Fixing this crossover is not optional. This is a disaster waiting to happen.

“Everyday Davis citizens” (read *you!*) must act — not just the handful of Davis anti-oil activists. One last chance to act remains.

The final hearing on the project begins Monday, Feb. 8, at 6:30 p.m. at the City Council Chambers at Benicia City Hall, 250 E. L St. in Benicia. Sign up to speak all day at the same location. Hearings may be continued Tuesday evening and beyond if all who wish to speak cannot be heard Monday.

Come an hour early with a protest sign against the oil trains, or about boycotting Benicia and not buying Valero gas if they continue to ignore the very real safety risks in Davis and other “up-rail” communities. I hope to see you there!

— Alan C. Miller is a 37-year resident of Davis with a lifetime interest and working knowledge of railroading. He has worked in various areas of public transportation and rail transportation for the past 20 years. He lives near the railroad in Old East Davis.

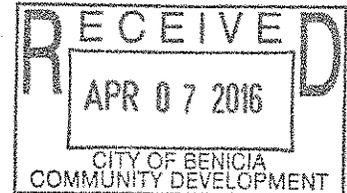


Special to The Enterprise

Amy Million

From: Charles Davidson <charlesdavidson@me.com>
Sent: Thursday, April 07, 2016 12:51 PM
To: Elizabeth Patterson; Tom Campbell; Alan Schwartzman; Christina Strawbridge; Mark Hughes
Cc: Amy Million; Charles Davidson
Subject: With brief project description: Resolution to Cap Bay Area Oil Refinery Emissions and to Severely Limit the Planned Bay Area Influx and Refining of Toxic Tar Sands Bitumen"

To: epatterson@ci.benicia.ca.us, tcampbell@ci.benicia.ca.us,
aschwartzman@ci.benicia.ca.us,
cstrawbridge@ci.benicia.ca.us, mhughes@ci.benicia.ca.us
Cc: Amy Million <Amy.Million@ci.benicia.ca.us>



My name is Charles Davidson. I am a scientist, I live in Hercules and am writing to you as a citizen concerned with the planned influx of tar sands to the Bay Area and its refineries. This influx and radical crude slate change is unnecessary for the refinery, economically, it is a unique departure from past refinery operations. Most importantly, the crude by rail nature of the Project poses a threat to local and uprailand air quality and to the environment of Benicia, the Bay, the Delta and upstream ecosystems and to critical water-source aquifers.

Please read the following brief introduction that describes the important aspects of the current project and then read the following resolution that describes, as close to lay language as is possible, what exactly tar sands is and why its processing and transport are a unique threat, that could last for decades, if Valero's Project is approved by the Benicia City Council.

Respectfully,

Charles Davidson
USPTO 6,594,335

The Valero Crude by Rail Project:

Valero's recent Valero Improvement Project (VIP) was designed to facilitate the processing of much higher sulfur and heavier crudes than the refinery's former crude oil "slate". The VIP expressly facilitated the Refinery to process heavier, high sulfur feedstocks as 60% of its total supply, up from only 30% prior to the VIP. And the project could raise the average sulfur content of the imported raw materials from past levels of about 1 - 1.5% up to new levels of about 2 - 2.5% sulfur.

Valero's proposed crude by rail (CBR) Project is specifically designed for the importation into Valero of so-called "mid-continent", north american crudes, that would only be either very lightweight, flammable shale oil from Bakken ND or extra heavy tar sands from Alberta Canada, which are on opposite ends of the oil density spectrum.

Because the Valero CBR project combined with the VIP are related parts of an expanded heavy oil project, the CBR project could only be for the deliver of tar sands bitumen, that has distinct qualities that render it both

more toxic and difficult to process (ie, energy intensive) (1) than even so-called extra-heavy oils, such as from Venezuela. (2)

References:

1) Know Your Oil: Towards a Global Climate-Oil Index. <<http://carnegieendowment.org/2015/03/11/know-your-oil-creating-global-oil-climate-index>> (2015)

2) R.F. Meyer, E.D. Attanasi, and P.A. Freeman, "Heavy Oil and Natural Bitumen Resources in Geological Basins of the World," U.S. Geological Survey Open-File Report 2007-1084 (2007) p. 14, Table 1 (available at: <http://pubs.usgs.gov/of/2007/1084/>).

From: Charlie Davidson <charlesdavidson@me.com>

Revised Tar Sands Resolution

WHEREAS tar sands, a nearly solid material mined in Alberta, Canada, is increasingly being used by U.S. and Bay Area petroleum refineries as an inexpensive substitute for liquid petroleum for making gasoline; and West Coast refineries are expected to increase their tar sands usage eight-fold by 2030, especially in the Bay Area, which has the highest percentage of heavy crude refining capacity in the U.S.; and importantly, tar sands contains far more noxious sulfur and toxic heavy metals than traditional crudes, containing 21, 11 and 5 times more vanadium, nickel and lead, respectively, according to a U.S. Geological Survey report; and

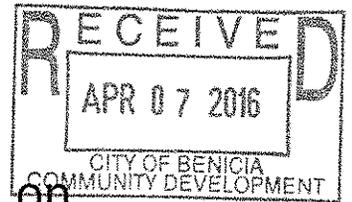
WHEREAS, in order to refine tar sands into gasoline, vastly greater amounts of heat and energy-intensive hydrogen production are required to (1) remove the sulfur, found at a percentage level greater than in any other crude worldwide, and to (2) break the bonds in heavy, complex molecules that are not found in traditional liquid petroleum; and the high amounts of sulfur and acidity found within tar sands tend to accelerate the corrosion of pipe metal, which according to the conclusions of U.S. Chemical Safety Board led to the 2012 Chevron fire in Richmond CA; and moreover, peer-reviewed literature as well as a recent Carnegie Endowment study of a wide range of global crudes types, entitled "Know Your Oil: Towards a Global Climate-Oil Index," have determined that refining tar sands produces the most global warming greenhouse gases, implicated as a central cause of climate change; and most critically, the refining of tar sands will invariably release more local toxic air pollutants, the principal cause of asthma and implicated in cancer, into front-line communities; and

WHEREAS, in order to flow into railroad tank cars, pipelines and refinery equipment, tar sands must be diluted with lightweight, flammable hydrocarbon solvents, so it is actually a diluted bitumen called "DilBit"; and in order for DilBit to be delivered to California refineries, primarily by mile-long trains of railroad tanker cars not constructed to carry this volatile cargo, it must travel through cities and delicate ecosystems and over vital water-source aquifers, such as the Feather River Canyon and the Delta; and a DilBit spill penetrates deeply into water and soil, tends to remain far underground, and is virtually impossible to adequately remediate, as evidenced by the 2010 Kalamazoo River Enbridge Pipeline spill that has cost over \$1 billion to date; and a tar sands railroad derailment fire would release a dense, heavy, metal-laden toxic cloud of smoke that would contaminate nearby homes and schools in the Bay Area and along the rail line; and currently, no mandated

mitigation measures, at either the state or federal level, adequately address the above-mentioned public health and safety risks of DilBit railroad tanker transport or refining beyond a small percentage of that risk;

THEREFORE, MAY IT BE RESOLVED, in light of the expected nearly ten-fold increase in Bay Area refining of tar sands, and also for critical public health and safety reasons, I call on the board members of the Bay Area Air Quality Management District, i.e., the "Air Quality District", as an elected representative or political party official, to demand that Air Quality District executive staff institute an enforceable numerical "cap," or limit on each refinery's total greenhouse gas and toxic co-emissions, in order to prevent otherwise predictable increases in local disease-causing toxic air pollutants, railroad diesel pollution within communities from possibly several mile-long DilBit trains per day, and risk of a major refinery fire due to sulfur corrosion; and

THEREFORE, MAY IT FURTHER BE RESOLVED, as an elected representative or party official, I call on jurisdictions to deny refinery project land-use permits for refinery tar sands DilBit projects and deliveries that will increase local toxic pollution, create the above stated non-mitigable public safety and environmental hazards, and counter state, federal and international efforts to control greenhouse gas emissions responsible for climate change.



At the last Council meeting, held March 15th, on Valero's appeal, several council members expressed surprise at Valero's request for a delay, and wondered why the request could not have been made much earlier in this 2-1/2 year process.

The answer is that the idea of indirect pre-emption did not exist until very recently.

The Draft EIR, released in 2014, included a statement from Union Pacific on how federal law pre-empted local control of railroad operations. But there was no statement at that time from either Valero or the City that even hinted at the idea that Valero itself could somehow be covered under the pre-emption shield.

It was not until the release of the Revised Draft EIR in August 2015 that this idea was presented at all, and that was in Appendix H, which was the final inclusion in a group of Appendices only provided on a CD attached at the back of the RDEIR document, or available online.

By the time of the release of the Final EIR just four months later, this indirect pre-emption argument had become the basis for the staff recommendation that the applicant should not be held responsible for any of the significant and unmitigated impacts of their project, as required by CEQA – either here or in any of the uprill communities that would take on significant unbudgeted

expenses as a result of this project.

The request to delay the decision and ask the Surface Transportation Board for an opinion should not be approved.

Further delay will keep the staff from attending to other pressing duties, and will not serve the citizens of Benicia who have been waiting nearly three years for a final decision on this project.

The Surface Transportation Board is a regulatory panel in Washington DC that, according to their website, "is an independent adjudicatory and economic-regulatory agency charged by Congress with resolving railroad rate and service disputes and reviewing proposed railroad mergers. The agency has jurisdiction over railroad rate and service issues and rail restructuring transactions (mergers, line sales, line construction, and line abandonments)". I do not see how giving an opinion on indirect pre-emption falls within those defined duties.

The purpose of the STB is to rule on disputes between shippers and railroads. In this case, Valero is the shipper and UP is the railroad. But there is no dispute between those two parties- they are on the same side of the issue.

So to allow Valero to characterize BOTH sides of the issue, and then seek an opinion on an issue on which they themselves do not disagree, would lead to an inevitable, but irrelevant, opinion.

This issue of pre-emption by proxy will likely end up in the courts where it belongs. Ample testimony was received by attorneys from both governmental agencies and environmental groups that directly contradicted the opinions put forth by Valero and the City's contract attorney Mr. Hogin.

In summary, the issue of indirect pre-emption is a novel approach by Valero and their attorneys-but can certainly NOT be characterized as settled law.

Findings of Overriding Consideration

I am sure your staff and attorneys have informed you that, in order to approve a project under CEQA where there are significant and unavoidable impacts that will not be mitigated, it is necessary for you to make Findings of Overriding Consideration.

In this case those Findings, included in your packet, are not supported by facts that have been entered into the public record, as required by CEQA.

The first benefit listed in the Findings involves extra tax revenue as estimated by a report from the Andrew Chang company commissioned by Valero. That report references the \$55 million value of the project and the up to 20 new jobs that would be created.

However, it then expands those benefits from the known 20 new jobs to 1000 jobs generated from unknown sources. There is no justification presented for this 50 fold increase in jobs to be created.

It further claims that the City will receive a one time injection of \$2 million in one time sales tax from the sales of construction materials.

According to the Benicia Finance Department, the City receives approximately 1% of the sales tax generated by sales by Benicia companies. To generate \$2 million in sales tax would, therefore, require total sales by Benicia companies of construction materials totaling \$200 million.

Not only is it unclear that there are Benicia companies able to produce that amount of steel, concrete, piping and electrical materials required for this project, but the entire project, including labor, materials and engineering, is estimated to cost only \$55 million.

The math simply does not add up, and there is no factual basis to accept this Finding.

Benefit 1 also says the project will increase property tax

revenues by \$175,000 per year.

This number needs to be put in perspective.

According to the Solano County Assessor, in 2004, Valero had their property tax assessment reduced on appeal from \$864 million to \$674 million. That reduction in their property tax assessment cost the City general fund \$600,000 per year.

In 2005, after the completion of the Valero Improvement Project, Valero's assessed value was increased to \$963 million. They again appealed their assessment and had it reduced to \$848 million. That action by Valero cost the City general fund another \$300,000 per year.

Currently, Valero has another assessment appeal pending that would lower their property tax assessment from \$900 million to \$100 million-an astonishing request.

If that appeal is granted, as were the last two, that would cost the City general fund an additional \$3 million per year.

If the Council chooses to approve this project against the unanimous recommendation of your Planning Commission, I would hope that part of the approval would include a requirement for Valero to drop their current assessment appeal and pledge not to seek additional reductions in the future. The City can ill afford the lost revenue from Valero's repeated appeals of their property

tax assessment.

A second benefit listed in the Findings is the presumed reduction in GHG emissions from the switch from tankers to diesel locomotives. This is based on the assertion that the average distance of tanker travel is approximately 7300 miles. However, the data needed to support that claim has never been made public as Valero is claiming it is a trade secret.

CEQA requires that findings of overriding consideration be based on known, accepted, data and the City needs to seek substantiation of this claim, and share that data with the public, before relying on it in making this Finding.

The Findings also say that the switch to trains from ships will reduce the likelihood of an oil spill. In my careful review of all the documents, I can find no scientific or other support for that conclusion.

There continues to be a lack of clarity over questions of liability in the event of an accident or spill. Who would be responsible for clean up and reimbursement for actions by first responders and property damage anywhere along the route?

In past instances, liability on crude oil leaks and explosions has been a subject of multiple lawsuits and bankruptcies, with insurance companies, railroads, tank car owners and shippers all pointing fingers of responsibility at each other- and with local governments

left holding the bag to address immediate clean up and recovery costs and longer term impacts while the liability issues work their way through a jammed legal system.

While UPRR states that they are self-insured, that does not provide any level of coverage for potential victims of an accident. Valero has not addressed this issue at all.

In describing the Phillips 66 project in San Luis Obispo (SLO) County at the March 14 hearing, a very similar project to this one, the SLO staff position was characterized by Mr. Hogin as adopting the same position as Valero and City staff in regards to pre-emption.

That characterization was misleading, as was pointed out at the April 6 hearing.

Among the significant differences between the two projects is the fact that the EIR for the SLO project did, unlike the Benicia EIR, identify mitigating measures that could be imposed on the applicant to address impacts in uprail communities. In fact, SLO County Deputy County Counsel, Whitney McDonald, was quoted in the local paper as follows: "The County could consider impacts along the main rail line because the County is charged with carrying out and implementing state law and policy. We are required to look at the environmental effects of a project we are evaluating and if we approve it, what may happen as a result. And what may happen as a result may need to be addressed by other agencies."

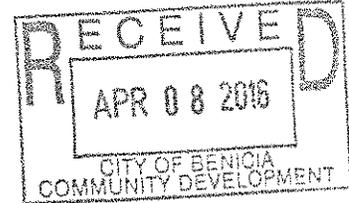
In addition, Planning staff in SLO County is recommending denial of the application.

The request for a delay in this process should be denied, and the actions of your Planning Commission should be upheld.

Thank you for your attention to this important issue.

Steve Young

April 6, 2016



Dear Mayor Patterson and City Council Members,

Thank you for the opportunity to comment on the Valero Crude By Rail Project. Many concerns come to mind when addressing this important issue. Previous public written and verbal comments have been submitted on this Project since the Negative Declaration of Impact during the summer of 2013, which are already part of the Public Record. I ask that these along with what is being shared here will be included in your current deliberations about whether or not to approve the Valero CBR Project. This letter's purpose is to cover the topics of whether or not to accept or deny the STB Proposal, the FEIR and the CBR Project. I am requesting the denial of all three for a number of reasons;

1. The STB does not deal with land issue railroad preemption so it would not apply to our situation, nor would it be a valued opinion in court since the STB's jurisdiction is to deal with disputes between a shipper and a railroad.

2. Reasons for inadequacy of the FEIR: Topics of "on-site issues" were not properly evaluated.

- The location for the unloading ramp is dangerously close to the storage tanks.
- b. The unloading ramp site is too close to Sulphur Springs Creek, when considering being able to maneuver emergency equipment around the area in case of a derailment or accident.
- c. Emergency access road would be blocked by new railroad spurs/oil trains inconveniencing local businesses for prolonged periods of time, creating a potentially dangerous situation for them if they had an emergency when the area was blocked by a unit train, or in the advent of a CBR accident.
- d. Available site for unloading ramp is too small for adequate emergency access.
- e. There was no in-depth discussion of the Project aligning it accordance with Benicia's General Plan in regard to the health and safety of the community nor is the Project in line with our City's sustainability and climate action goals. The Valero GHG emission estimates in the EIR were not reliably accurate particularly concerning marine vessel transport.
- f. Improper use of outdated 2002 health assessment for statistical analysis of health issues was used in the EIR from the Valero BIP Project for the CEQA Review. An updated analysis is necessary for the purpose of CEQA document.

- g. Traffic concerns leading into and throughout the Benicia Industrial Park from the freeway off-ramp were considered by many not to be adequately covered by the traffic study done by the CEQA Review. According to local residents' testimonies and photos, traffic backups can push the flow of cars all the way up the off-ramp and into the next lane of the highway. The size of the freight trains used in the traffic study were not as long as two 50 CBR unit trains. These two projected 50 tank car unit trains per day could conceivably be coming to and leaving from the refinery twice daily, making four crossings a day at these intersections of concern. The RDEIR did not revisit the traffic study as the consultants deemed it to be a less than significant issue. Several members of the public held an opposing view, seeing the traffic of these CBR freight trains to be a significant impediment to the flow of the BIP traffic, further reducing the ability of the Industrial Park to attract new businesses.

The traffic study has repeatedly drawn complaints from some businesses in the Industrial Park as well as from commuters. Many consider this to be an unsafe condition due to the 780 flyover merging into either 680 or the one lane exit to the Industrial Park. Cars move at various speeds, some trying to exit 680 into the BIP. As traffic starts backing up, waiting cars stack up on the freeway exit lane causing hazardous conditions to the the high speed of vehicles coming up from behind on the 780 flyover.

- h. A large number of complaints have been received by Benicia residents and from those up and down rail concerning railroad health and safety issues. These were not sufficiently dealt with in the FEIR. City staff deems railroad issues to be "off limits" for this project due to their perspective on Federal Preemption of the railroads, an opinion disputed by the Planning Commission and many others. This conflict of legality was not dealt with in the FEIR, which considering the ruckus it has caused maybe considered another flaw. The FEIR expressed only one side of the preemption opinion of this, and ignoring the other. Since federal preemption of railroads is considered to be a matter of "unsettled law," it remains a point of contention, with lawyers defending both sides of the issue.
- i. The late disclosure to the Planning Commission about the City Staff's position of preemption was not dealt with upfront from the beginning of this project evaluation which is also considered a flaw of the document.
- j. The City Staff asserts "the benefits of the project do not outweigh the significant and unavoidable hazards." The FEIR fails to adequately explore options available to deal with this assertion. No mitigations are offered to assist the City in coping with the challenges CBR presents, nor does the City feel free to explore any options due to the restrictive belief in federal preemption of railroads.

- k. Failure to expose in the FEIR anticipated increase in marine vessel exports due to decreasing need for refined oil products in CA/US markets. These are down by more than 20%, and continuing to decrease as our reliance on fossil fuels lessens with the development of more sustainable energy resources in accordance with the CA/US climate action plans. Flexibility re: obtaining fuel delivery via CBR is seen to be not only for price flexibility but in order to provide openings at the port for increased exports overseas, particularly for the increased refined products that can be made out of the cheaper low grade crudes. This significant motivation for this change in oil delivery was carefully obscured in all the environmental impact reports.

3. Several of us, including many experts, had their comments dismissed, ignored and/or erroneously responded to by the consultants, often skirting the issues being discussed. Many examples could be cited. For the sake of brevity, only a couple of samples from my letters will be addressed, although other substantial examples could be used. In checking the responses to comments yourself, you will no doubt be aware of how often these dismissive responses occurred. One letter, (D/79) addressed concern about the refinery's persistent violations of BAAQMD Air Quality Emission Regulations. A series of questions about the ongoing history and progression of these infractions were posed. Since CEQA is an Environmental Impact Report, facts about Valero's track record in this area is important. Particularly since the new domestic crude slates planned to be brought in with the chemical additives are known to be even more toxic than the conventional crudes currently being refined at Valero.

It is important to question what kind of steward to the environment Valero has been so far and what can be projected for the future when considering the increased TAC pollutants anticipated with the new lower grade crude slates planned to be delivered via CBR. The response received in the DEIR was not only dismissive without providing any requested information, but told me I could find out this information myself by checking the BAAQMD website. I feel the information sought was significant for the DEIR's evaluation. One can't help but wonder why this was not considered to be a valid inclusion in a California Environmental Quality Act Review?

Other inquiries on the same general subject of air pollution were about the TAC, Bitumun Coke/PM2.5, which never got responded to from any of my letters. Recently it was discovered that Valero along with the local Tesoro and Phillips 66 Refineries, are doing a joint appeal in opposition to BAAQMD's new regulation requiring them to cover large mounds of Bitumun Coke/PM2.5 on their properties. This appeal further led me to question their disturbing stance regarding protecting the public from toxic air pollution by this protest.

Leaving these mounds uncovered allows them to be free to blow in the wind contaminating our air space before being transported elsewhere. This refined byproduct is made up of tiny particles PM2.5 and other toxic chemicals which easily enter the lungs, causing numerous respiratory health problems for sensitive receptors,

a condition which one might assume will increase with the dirtier toxic crude slates projected to be brought in by this CBR Project. The commenter's standard reply to questions regarding Pet. coke was: "Valero must blend feedstocks to a narrow range of weight and sulfur content before they can be processed. This project would not alter any processing equipment at the refinery, which means crude blends must fall with a narrow range of weight and sulfur content before being processed." This answer did not make sense in response to questions being asked, and nor to questions of the new crude stocks which received the same response. Many of us received this repetitive reply when seeking information about the TAC emissions involved in the new crude slates involved as they related to health issues. Even experts in the refinery business asking similar questions received this stock reply to their more detailed scientific inquiries. This lack of respect and disclosure to the public is another serious flaw of the FEIR.

Between 2013-April 6, 2016, 31 CBR accidents have occurred in the U.S. alone. Two thirds of these accidents resulted in oil spills, some of which contaminated waterways which supply cities connected to them, fires and/or fireball explosions. This more up to date information demonstrates that these kinds of accidents are increasing. I recommend an ongoing awareness on this subject as the facts change on a regular basis. The uptick in CBR accidents, even with the 1232 tank cars, needs to be duly noted. The infrastructure of the rails, which are old and not designed to carry the weight of these CBR unit trains are a significant contributing cause for these accidents. Further damage to the rails because of this kind of transport are said to be causing even more fractures in the rails, which is now problematic for other trains having to use the same tracks.

The city staff has claimed that Federal Preemption of the Railroads precludes their ability to deny or safely mitigate this CBR Project, even though their assessment of it has been "the benefits do not outweigh the significant and unavoidable hazards." There is much debate about that conclusion. I ask you to stand by the unanimous Planning Commission's decision. They have spent the last three years examining this situation in detail. No matter what the city's stance happens to be, it is important for the city staff, mayor and city council to stay abreast of the increasing number of CBR accidents in the U.S. since the 13 ones listed in the RDEIR were examined.

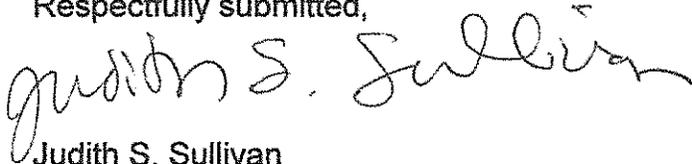
For all of the above reasons and those previously submitted during this review process, the FEIR and CBR Project are considered to be seriously flawed. I respectfully request that the mayor and city council deny adequacy of the EIR and deny the Valero Benicia CBR Project. If the city council decides to deny the project, there would be no need to recirculate the EIR, which would save the staff time and Valero money. The "on-site issues," which Valero cannot really do anything about due to the footprint available for this project, is enough of a reason for denial, without even having to deal with the railroad preemption issue.

Significant and unavoidable hazards such a project would impose can be avoided if the CBR Project is denied. The Valero Benicia Refinery still is able to be quite profitable

without the addition of CBR. They have already demonstrated their ability to receive these domestic crudes by marine vessel and pipeline. By denying the project, our beautiful city and those cities up and down rail would be spared the challenges and impacts CBR would present, for perpetuity.

Each one of you has the sacred trust of our town and many other communities in your hands. As our decision-makers, I ask you to follow your hearts in making a choice that once made, cannot be undone.

Respectfully submitted,

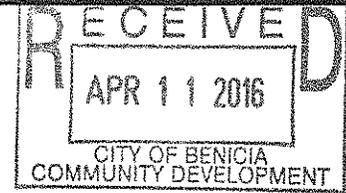
A handwritten signature in black ink that reads "Judith S. Sullivan". The signature is written in a cursive style with a large initial 'J' and 'S'.

Judith S. Sullivan

37 year Benicia resident and homeowner

Amy Million

From: Janet Leventhal <janetbleventhal@hotmail.com>
Sent: Friday, April 08, 2016 7:16 PM
To: Amy Million
Subject: Submit written comments regarding Crude by Rail



I am Dr. Janet Leventhal, a retired physician living in Benicia for 26 years. I attended the public meeting on April 4 but was unable to speak before the meeting adjourned. Here are my comments:

From the expert report by Greg Karras, the EIR does not address the increased substances released into the environment by refining the crude that will be delivered by rail. The increased emission of toxic substances from the refinery will increase incidence of respiratory cancers in our community.

Lung cancer is already our top cause of cancer deaths. Non-smokers' lung cancers are the most common lung cancer. Incidence of non-smokers' lung cancer is known to be linked to fossil fuel pollution.

As a physician who saw more and more cancer during my career I am concerned about our community's health.

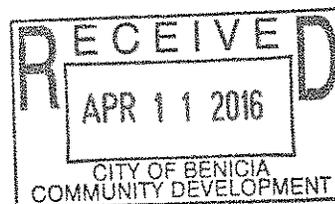
As for the claim that Crude by Rail is good for our economy, we need to consider the larger cost both to our priceless health and the actual price for medical treatment of increasing cancer our community.

Please to what's right for citizens and deny Valero's request.

Thank you,

Janet B. Leventhal, MD

Nicholas Zefeldt
350 East O Street
Benicia, CA 94510



April 9, 2016

To Whom it May Concern,

I would like to take a moment to voice my opinion that the city council should vote no on Valero's proposed crude by rail project.

My wife and I purchased our home in Benicia in 2014. Coming from Berkeley and San Francisco, we chose Benicia because it is quiet, safe, and charming. It is the kind of place ideal for starting a family. There is a sense of community here that we have fallen in love with. We believe that the crude by rail project will significantly change the quality of life that we will be afforded as members of this community. We prioritize our community's safety and the environment's well-being over the profits of a private corporation.

We watched nearly every moment of the planning commission meetings touching on this subject. It was so clear that the community does not want this project to pass. Nearly every community member who spoke during public comment was against the project. Nearly every person who was in favor of the project was either an employee or a contracted worker of the refinery - with something to gain directly from the project. The planning commission unanimously voted against the project. The city council should follow their recommendation.

I have found myself taken back by the widespread opposition to the project outside of our community as well. We have heard opposition from a state senator and elected officials and citizens from Yolo county, the Solano air district, the cities of Davis, Sacramento, Berkeley, Dixon, Vallejo, Richmond, and Lafayette. This is a project that has impact outside of the boundaries of our community. Those effected by this project have little to gain and much to lose - they do not want this project either.

As a new home owner in Benicia, I would like to be clear. This is the decision that will define my choice of whom to vote for during elections moving forward. I cannot support anyone in elected office who would support a private corporation over the reasonable, nearly unanimous concerns voiced by the community they represent.

Please vote no on Valero's proposed crude by rail project.

Sincerely,

Nicholas Zefeldt
Educator of the Year, San Ramon Valley Unified School District, 2013

My name is Carol Thompson and I've lived in Benicia since December of 2014. My daughter and her husband have been here over 5 years, and my first grandson came home to Benicia not quite two years ago.

While my daughter was pregnant I was living in Vermont and became concerned when I found out about the poor air quality in the Bay area. I signed up to receive the "Spare the Air Alert" notifications for the East Bay. There were frequently several days in a row when the air quality was deemed "unhealthy for sensitive groups" with a warning to "active children and adults", as well as people with asthma to limit outdoor exertion and stay inside. It was a bit worrisome, to say the least, and something to consider as far as investigating a move to bring me closer to my family.

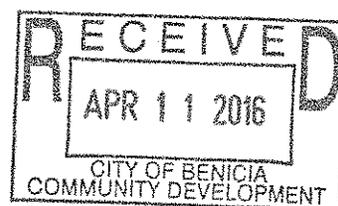
A couple of weeks ago I attended a Planning Commission's meeting and heard Steve Young discuss the many aspects of Valero's Crude by Rail request for a land use permit. I was impressed by his knowledge of the project and his ability to clarify many of the details in the request that the Planning Commission would be voting on.

I was also surprised by the apparent lack of facts that Valero kept turning to, such as the conditions (rated on a scale of 1 to 5) of some of the tracks and nobody could confirm where the sub-par tracks were located. The frightening thought of 50 railroad cars filled with dangerously explosive types of oil, either from Alberta tar sands or the Baaken fields in North Dakota, and not knowing exactly which car was holding which crude (because that would be important to know in case of a spill), caused my imagination to picture those 50 cars going over Donner Pass (possibly twice a day) and all I could think was, "this looks like a disaster waiting to happen".

In the time that I have called Benicia my home, I have noticed a pride that this town shows with its many community parks, the Holiday tree lighting, the 4th of July Parade, farmer's markets, community gardens and a strong commitment to the arts. Today as I was walking along the shoreline trail, overlooking the Carquinez Strait, I watched a train on the tracks on the other side of the water, pulling 34 cars filled with shipping containers. The long string of cars covered most of my direct field of view and I imagined a future line of black oil tankers, over twice as long, making their way to our town, from a dirty, polluting environmental nightmare far, far away.

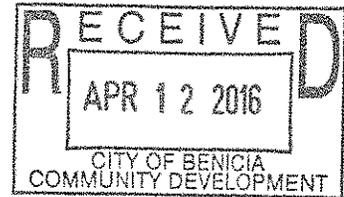
I can only hope that the powers that be in the Oil Industry eventually call "Uncle" and admit that the cost of extracting, transporting, refining and distributing crude from thousands of miles away has reached beyond the scope of economic viability. There are some who do not agree with the scientists who tell us to "leave it in the ground", but once the pollutants caused by excavating and burning these fossil fuels get into my air, and especially into the lungs of my two year old grandson, I am not thrilled.

Carol Thompson
131 E. B Street
Benicia, CA 94510



April 11, 2016

Mayor Patterson, City Council Members, and Staff
City of Benicia
250 L Street
Benicia, CA 94510



Re: Valero Crude by rail project

Dear Honorable Major Patterson, City Council Members, and Staff,

I have a few comments and questions for you pertaining to the Valero Crude by rail project, listed below.

1. Nossaman LLP is incorrect in their assessment of Federal Preemption.

In the Valero Appeal, Valero's Attorney, Nossaman LLP, argues that the "City Counsel's hand are, in fact, tied by the law of federal preemption," This statement does not appear to be correct. It appears that federal preemption is invoked when a rail carrier is prevented by local or state regulation from passing through a particular area to avoid having local control of rail operations when transporting goods. Here, there is nothing in this project preventing rail operations from transporting crude oil along the rail lines owned and operated by the Union Pacific. In fact, the rail lines are being asked to transport oil to Valero on private property using a rail line spur owned and operated by Valero. Here, the crude oil could be transported by rail to Valero whether or not the city approves the project. However, if the city denies the project due to local onsite issues, Valero would not be able to receive the oil.

Therefore, there is nothing limiting Union Pacific from transporting crude oil along the rail lines they own and operate. For example, Nossman cites *Norflok Southern Railway Corporation v. City of Alexandria* (4th Cir. 2010) 608. F.3d 150 which a local ordinance placed limits on what could "hailed through the city." Here, a denial of the project would NOT place limits on what could be hauled through Benicia on rail lines owned and operated by Union Pacific, only limit Valero's ability to receive oil via Valero's private transloading facility.

2. To promote the health and safety of Benicia residents, why can't Valero build a transloading facility nearby in an unincorporated area along highway 680 and use a short pipeline to transport the oil to Valero?

Since due to the design of the transloading facility it appears that the proposed project would place Benicia residents in serious risk due to unmitigable local safety and health concerns, and impact traffic to local business in the industrial business park, it seems logical that Valero should be able to build a transloading facility along highway 680 where there is plenty of open space to build a separate track and transloading facilities away from heavily populated areas. Valero can then use existing pipelines to deliver the oil safely to the refinery, or build a short pipeline section using underground pipelines and pipeline routes already in use.

3. The denial of the Phillip 66 Company Rail Spur Extension Project (permit #DRC2012-00095) by the San Luis Obispo Planning Commission is a good model to look to when analyzing the Valero Project and EIR.

The Phillips 66 project contains local issues that seem identical to the Valero Project. I urge you to carefully consider the findings of the San Luis Obispo Planning Commission that denied the Phillips 66 project.

http://www.slocounty.ca.gov/planning/environmental/EnvironmentalNotices/Phillips_66_Company_Rail_Spur_Extension_Project.htm

In short, the planning commission found that because there was **unmitigable** local safety and health concerns, the plan did not meet their general plan. Here are some excerpts to consider:

“There are insufficient specific, overriding economic, legal, social, technological, or other benefits of the project that outweigh the significant effects on the environment, as would be required to approve the project pursuant to Public Resources Code section 21081. Additionally, due to federal preemption, implementation of mitigation measures to lessen the Class I impacts on the Mainline within San Luis Obispo County and the state are infeasible, as argued by the Applicant.”

“20. Safety Element of the General Plan, Fire Safety Policy S-14, Facilities, Equipment and Personnel: “Ensure that adequate facilities, equipment and personnel are available to meet the demands of fire fighting in San Luis Obispo County based on the level of service set forth in the fire agency’s master plan.” It has come to the County’s attention through numerous letters from jurisdictions along the mainline that there are not adequate resources through their respective fire agencies to respond to a derailment, spill or explosion as a result of a rail accident. In addition, the County may be preempted from implementing conditions or mitigation measures that could mitigate these impacts along the mainline rail routes, therefore **the County can’t ensure there will be adequate facilities, equipment and personnel available in the event of an accident. This is the case throughout the state as well as within San Luis Obispo County. Therefore, the project is not consistent with this policy of the General Plan.**”

“21. Safety Element of the General Plan, Hazardous Materials Policy S-26, Program S-68: S- 26 states: “Reduce the potential for exposure to humans and the environment by hazardous substances.” S-68 states “Review commercial projects which use, store, or transport hazardous materials to ensure necessary measures are taken to protect public health and safety.” Implementation measure Program S-68 states that commercial projects which use, store, or transport hazardous materials are to ensure necessary measures are taken to protect public health and safety. As the Applicant has stated, the County would not be able to mitigate or require conditions upon the project which would ensure the safety for citizens along the mainline rail routes, including the portions within the County, due to the County likely being preempted from requiring these types of measures. **The project is not**

in compliance with this policy because the County would not be able to ensure the safety of the residents of the County, or the state, as a result of the additional probability of a derailment, spill, fire or explosion because of the proposed project.

“22. Air Quality Policy AQ 3.2, Attain Air Quality Standards: Policy AQ 3.2 states that the County will attain or exceed federal or state ambient air quality standards for measured criteria pollutants. San Luis Obispo County is in non-attainment for ozone standards as well as the state particulate matter standards. The Project would generate fugitive dust and DPM onsite that would contribute to PM10 emissions within the County. It is unlikely that these fugitive dust and DPM emissions (i.e., PM10 emissions) could be offset at the SMR due to a lack of available onsite emission reductions. **The addition of these onsite PM10 emissions would further exacerbate the ability for the County to attain the state particulate matter standards and therefore the project would not be in compliance with this General Plan policy of the Conservation and Open Space Element.**

The rail spur project would be generating NOx and ROG emissions along the mainline rail route that would lead to ozone increases and would generate DPM along the mainline rail routes that would contribute to PM10 emissions within the County. Due to Federal preemption, the County may not be able to require emissions reduction credits for the mainline rail NOx, ROG, and DPM emissions. The addition of these NOx, ROG, and PM10 emissions would further exacerbate the ability for the County to attain the state particulate matter and ozone standards. **The addition of these NOx, ROG, and PM10 emissions along the mainline rail route within the County would further exacerbate the ability for the County to attain the state particulate matter and ozone standards and therefore the project would not be in compliance with this General Plan policy of the Conservation and Open Space Element.**

“23. Air Quality Policy AQ 3.3, Avoid Air Pollution Increases: Policy AQ 3.3 states that the County will, “Avoid a net increase in criteria air pollutant emissions in planning areas certified as Level of Severity II or III for Air Quality by the County’s Resource Management System (RMS).” The Nipomo Mesa area is in a level of severity II for Ozone, a level of severity III for PM2.5, and a level of severity III for PM10. The “PM” or particulate matter includes hazardous materials in the air that gets into the lungs and causes a variety of health effects. The PM2.5 tends to be a greater health risk because the particles are smaller and can travel deeper into the lungs. Sources of particulate pollution include diesel exhaust, mineral extraction and production, combustion products from industry and motor vehicles, smoke, wind-blown dust and other sources (Source: County Resource Summary Report). The Project does not comply with this standard because it would add diesel exhaust from locomotives to an area which is currently in a level of severity of III. Even with implementation of mitigation measures the Project would exceed the threshold of cancer causing diesel particulate which is 10 in a million by creating a risk factor of about 13.6 in a million (for emissions occurring at the project site and along the mainline impacting the same receptors near the SMR). Without implementation of mitigation, the Project would create a risk factor of 26.5 in a million, both of which are exceeding the

threshold. In addition, without full mitigation, the Project would exceed the 1.25 lbs per day threshold for DPM onsite. In addition, the most effective mitigation measure is likely not implementable due to federal preemption (i.e., requiring use of Tier 4 locomotives).

Operation of the locomotives along the mainline rail routes would result in increase in NOx and ROG emissions that would lead to ozone increases. The locomotives would also generate diesel particulate matter emissions along the mainline rail routes, which would increase PM10 emissions in the County. Due to Federal preemption, the County may not be able to require emissions reduction credits for the mainline rail NOx, ROG, and diesel particulate matter emissions. **The addition of these NOx, ROG, and PM10 emissions would result in air pollution increases in the County and therefore the project would not be in compliance with this General Plan policy of the Conservation and Open Space Element.**

"24. Air Quality Policy AQ 3.4, Toxic Exposure: Policy AQ 3.4 states that the County will, "Minimize public exposure to toxic air contaminants, ozone, particulate matter, sulfur dioxide, carbon monoxide, nitrogen oxides, and lead." This Project does not comply with this Policy of the General Plan because it allows for an increase in hazardous emissions as a result of the project. Calculations in the FEIR have shown that this Project would exceed the cancer threshold, which is 10 in a million, by resulting in a cancer risk of about 26.5 in a million (with no mitigation), or about 13.6 in a million (with partial mitigation). **This impact would exceed San Luis Obispo County Air Pollution Control District (APCD) health risk thresholds when factoring in the 2012 California Office of Environmental Health Hazard Assessment (OEHHA) childhood exposure and breathing rate adjustments.**

The Project does not comply with this Policy of the General Plan because it allows for an increase in hazardous emissions as a result the locomotives operating on the mainline rail routes in the County. Calculations in the FEIR show that the Project would exceed the cancer threshold of 10 in a million for areas where trains speeds are limited to 30 miles per hour or less and thus impacting people in the county along the routes which will see the additional rail traffic as a result of this proposed project."

"25. Air Quality Policy AQ 3.5, Equitable Decision Making: Policy AQ 3.5 states that the County will, "Ensure that land use decisions are equitable and protect all residents from the adverse health effects of air pollution." This policy is also consistent with the discussion above regarding air quality Policy AQ 3.3. The Project would bring locomotives (up to 5 trains per week, 10 round trips) to the site for unloading of heavy crude, and would depart the site empty. **The additional diesel exhaust from these locomotives, upwind of many residences and sensitive receptors, would cause a significant impact to the air quality for these residences.** In addition, a large onsite buffer between the residential neighborhoods and the facility would be reduced from over 7,600 feet to approximately 3,300 feet. This project application for a "Development Plan/Coastal Development Permit" is a discretionary land use permit with the discretion by the County to decide if this project complies with the General Plan including the health

and safety of the County's residents. **The Project imposes health risks which would be inconsistent with the health and safety requirements of the General Plan with regard to air quality from the property (increase in cancer causing thresholds). This project would not ensure that all residents are protected from the adverse health effects of air pollution as this policy requires.**

"26. Air Quality Goal AQ 3: Implementation Strategy AQ 3.6.1, Identify Health Risks to Sensitive Receptors: This implementation strategy of the General Plan states that health risks are to be mitigated consistent with Air Pollution Control District standards. This is generally applicable to projects for which construction would occur near a freeway or rail line and mitigation would be required to reduce the air quality hazards to "sensitive receptors" or citizens which are sensitive to these pollutants. However, this project would increase the amount of toxic emissions as an increase in rail traffic would occur as a result of the proposed project. **Toxic emissions from the locomotives operating on the mainline rail routes would exceed the cancer risk thresholds for areas where speeds are limited to 30 miles per hour or less and thus impacting people in the county along the routes which will see the additional rail traffic as a result of this proposed project. Therefore, the project would not be in compliance with this General Plan policy of the Conservation and Open Space Element.**"

"27. Biological Resources Policy 1.2, Limit Development Impacts: This policy calls for the regulation and minimization of proposed development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, coastal and riparian habitats, and wildlife habitat and movement corridors as necessary to ensure the continued health and survival of these species and protection of sensitive areas. The Project would result in the extension of refinery infrastructure (i.e., rail spur, unloading facility, pipelines, and emergency vehicle access road) into a dune habitat system. **Approximately 20 acres of various project features would be constructed within dune vegetation that is considered sensitive habitat as classified by the California Department of Fish and Wildlife (CDFW) under the National Vegetation Classification system described in A Manual of California Vegetation, Second Edition and is also considered Unmapped ESHA; therefore, the Project does not comply with this policy.**"

I have attached the "Exhibit C – Findings for Denial" along with other pertinent information for your review. Thank you for your consideration of these questions, comments, and information provided.

Sincerely,

C. Bart Sullivan
1543 Sherman Drive
Benicia, CA 94510

Report finds overwhelming opposition to project that would bring crude-by-rail through Bay Area cities

By Tom Lochner, tlochner@bayareanewsgroup.com
San Jose Mercury News

Posted: Fri Mar 04 05:44:34 MST 2016

BERKELEY -- A crude-by-rail project in Central California that could bring up to five trains a week through Berkeley and other East Bay shoreline cities has garnered overwhelming opposition among local politicians and the public, an observer for the city reports.

Ray Yep, a member of the Public Works Commission working with Councilwoman Linda Maio, represented Berkeley at hearings before the San Luis Obispo County Planning Commission last month on the Phillips 66 Rail Spur Project. The proposal calls for bringing out-of-state crude oil, likely the tar sands variety, to the Phillips 66 Santa Maria refinery via 80-car trains, via a 1.3-mile spur that would connect the refinery with the Union Pacific mainline.

Possible access routes to the refinery from outside the area would be from the south via the Los Angeles Basin, and from the north via the East Bay and South Bay along Amtrak's Capitol Corridor tracks.

As early as 2014, the Berkeley and Richmond city councils voted to oppose the transport of crude oil through the East Bay.

Hearings were held Feb. 4 and 5, with at least one more hearing before the planning commission votes on the project. The next hearing is 9 a.m. March 11.

At the Feb. 4 hearing, the county staff gave a presentation, ending with a recommendation to deny the project. A county attorney followed with a discussion of federal pre-emption, characterizing it as a "gray area," according to the Berkeley report.

Phillips 66 has challenged the county's standing to evaluate Union Pacific mainline issues -- including possible effects on the communities it traverses. In an ensuing presentation, the company held that mainline issues fall under federal regulations, the Berkeley report noted.

Phillips 66 said the rail spur project is needed because of declining of oil production in California, and that it would keep the refinery in operation and provide local jobs and taxes, according to the Berkeley report. The company declared willingness to reduce the volume of trains to three per week, which critics have derided as a tactic to facilitate approval without addressing the danger of fire, explosion and pollution.

Without approval of the rail spur project, 100 trucks would transport crude oil daily from Kern County to the Santa Maria refinery, according to the report.

About 300 people submitted speaker cards at the Feb. 4 hearing and 69 spoke that day, from as far away as Crockett, Davis and Sacramento, according to the Berkeley report. Some 430 speaker cards were submitted at the Feb. 5 hearing.

The report noted that 17 elected officials spoke, all but one against the project.

Maio is expected to present the report to the City Council on Tuesday. It is available online at bit.ly/1QsQL6w.

Contact Tom Lochner at 510-262-2760. Follow him at [Twitter.com/tomlochner](https://twitter.com/tomlochner).

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County Of Santa Barbara

Mona Miyasato
County Executive Officer



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Executive Office

November 24, 2014

Mr. Murry Wilson
County of San Luis Obispo Department of Planning and Building
976 Osos Street, Room 200
San Luis Obispo, CCA 93408

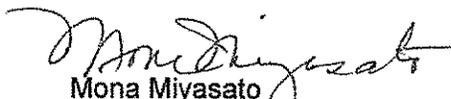
**Re: Notice of Availability of Recirculated Draft Environmental Impact Report – Phillips 66
Company Rail Spur Extension Project**

Mr. Wilson:

Thank you for the opportunity to comment on the Recirculated Draft Environmental Impact Report for the Phillips 66 Company Rail Spur Extension Project. At this time, the County is submitting the attached letter from the County Planning and Development Department.

The County has no further comments on this project at this time and looks forward to hearing more about the project's progress. If you should have any further questions, please do not hesitate to contact my office directly or Matt Schneider, Deputy Director in the Office of Long Range Planning, at (805) 568-2072.

Sincerely,


Mona Miyasato
County Executive Officer

cc: Glenn Russell, Ph.D., Director, Planning and Development Department
Matt Schneider, Deputy Director, Long Range Planning Division
Kevin Drude, Deputy Director, Energy and Minerals Division

Attachments: November 19th Letter, Planning and Development Department

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County of Santa Barbara Planning and Development

Glenn S. Russell, Ph.D., Director
Dianne Black, Assistant Director

November 19, 2014

Murry Wilson
County of San Luis Obispo Department of Planning and Building
976 Osos Street, Room 200
San Luis Obispo, CA 93408

**Re: Comments on the Proposed Phillips 66 Company Rail Spur Project Recirculated
Draft Environmental Impact Report**

Mr. Wilson,

Thank you for the opportunity to comment on the Revised Draft EIR for the proposed Phillips 66 Company Rail Spur Project. The primary purpose that the EIR was recirculated was to expand the discussion of the mainline rail impacts beyond the borders of San Luis Obispo County, which has been adequately done. However, the EIR fails to identify any pipeline alternatives to rail transportation which, if feasible, could reduce or even eliminate some of the most significant public safety and environmental impacts. The comments presented herein provide additional information and suggested EIR changes to address this deficiency. Our comments are focused on the Project Objectives, the Project Description and Project Alternatives.

2.1 SMR Rail Project Purposes and Objectives

A project objective that limits transportation by rail alone sets an unreasonable and restrictive limit of the Lead Agency's ability to develop project alternatives that may identify safer and less environmentally damaging forms of crude oil transportation, like pipelines. The primary objective of the proposed project should be more appropriately stated as allowing the refinery to obtain a range of competitively priced crude oil from North American sources via existing and possible upgraded transportation systems. If so stated, the potential list of project alternatives could be effectively expanded beyond the limited list identified in EIR Section 5.0, including pipeline alternatives.

2.7 Rail Spur Project Effect on Refinery Throughput

The Santa Maria refinery has a single feed stock pipeline which serves local producers. The rail project is proposed by Phillip 66 to give them access to a broader market of crude oil, or "Advantaged Crudes", so that they can remain competitive. The EIR further notes that Advantaged Crude production areas often have limited pipeline service, causing transportation challenges to refinery destinations. These reported pipeline system limitations are driving the rail

transportation proposal, but the question remains why new pipeline capacity is not proposed, or even considered as an alternative given that pipeline transportation is a more environmentally protective and safe means to transport crude oil.

This section also describes, accurately, that more imported crude to the refinery could displace local production feed-stocks. This would likely result in those displaced volumes being transported to other areas for refining. The County believes this is a reasonably foreseeable result of the proposed project and should be analyzed in the EIR. The current combined onshore and offshore production volume of approximately 61,000 barrels per day could be displaced. Although much of this oil is already transported by trucks to local pump stations for transportation to the Santa Maria refinery, displacing it entirely would require that it be transported to other refinery destinations, likely in the Los Angeles and Bay areas, and in trucks for most or all of that distance due to the lack of pipeline capacity. This would undoubtedly result in air quality and traffic impacts greater than current levels. As the trend in Santa Barbara County for the last decade has been an increase in onshore production, the impacts caused by such a displacement of local production could be significant.

5.0 Project Alternatives

Santa Barbara County has long been at the forefront of developing and enforcing policies and rules that regulate the transportation of hazardous liquids. The County strictly enforces the transportation of Natural Gas Liquids (NGLs), requiring maximum blending of the liquids in crude streams, then only by truck on designated haul routes and by certified carriers. Natural gas and oil transportation is similarly regulated, involving careful risk-based design review and permitting of the pipelines and associated processing facilities. Because the proposed project involves the transportation of crude oil with its associated risks, and because the transportation path cuts directly through Santa Barbara County, it's imperative that the EIR consider a pipeline alternative(s) consistent with our strict pipeline transportation policies and rules.

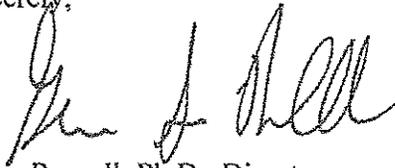
As is apparent in reviewing the Alternatives Analysis, there are many complications associated with the acquisition of crude oil stock for refining. Because the crude oil is identified as coming from numerous North American locations, the transportation infrastructure will vary and is difficult to precisely identify at this time. The County also understands that pipeline networks are operated by numerous entities, transport multiple feed stocks, are sometimes contractually dedicated and have other legal and technical constraints limiting their use or modification. However, the EIR fails to include a discussion of pipeline transportation alternative(s) even in the screening study, giving the reader no opportunity whatsoever to comment on or even understand why such options are not considered.

The rail transportation of crude presents numerous potential and known risks to the environment, all dangerous and some potentially catastrophic or fatal. Impacts to our local environment including creeks and streams, groundwater and the ocean would be significant in the event of a train accident, and the health and welfare of our residents would be negatively affected by the fugitive emissions from the rail cars. Because the project is anticipated to lengthen the operational life of the Santa Maria refinery for 20 to 30 years or more, the associated impacts of rail transportation would continue for that duration, with little or no opportunity for the County

to mitigate project impacts in our jurisdiction once approved. In fact, as the County grows and changes over time, a long-term and dangerous rail transportation project cutting directly through our jurisdiction would present difficult planning challenges.

The County asks that the EIR include a robust discussion of pipeline transportation alternatives, identifying to the extent feasible potential pipeline system upgrades and of primary importance how pipeline transportation in the general vicinity could be augmented or constructed anew to avoid the rail transportation of crude in our County altogether. If you have any further questions or comments regarding this letter, please contact Kevin Drude at (805) 568-2519.

Sincerely,



Glenn Russell, Ph.D., Director

Responses to County of Santa Barbara Comments

SBC-01	<p>While one of the project objectives is to obtain a range of competitively priced crude oil from North American sources that are served by rail, another is to avoid and minimize environmental and community impacts, and mitigate any unavoidable impacts to the maximum extent feasible. This has allowed the County to evaluate a wide range of transportation alternatives. Chapter 5.0, Alternatives Analysis looks at a number of transportation alternatives for delivering crude oil including trucking, marine tankers, as well as pipelines.</p>
SBC-02	<p>A discussion of pipeline alternatives has been added to Chapter 5.0, Alternatives Analysis. Also see Response to SBC-06.</p>
SBC-03	<p>Not all of the 61,000 barrels per day of onshore and offshore oil production from Santa Barbara County is processed at the SMR. As discussed in the Project Description (Chapter 2.0) the majority of the crude that is processed at the SMR comes from the OCS platforms offshore Santa Barbara County, with The Exxon Santa Ynez Unit providing the largest share. All of the Point Pedernales crude is processed at the SMR. The SMR also processes oil from local producers in the Santa Maria area, most of which is trucked to the Santa Maria Pump Station (SMPS) and then moved via pipeline to the SMR. Oil from the Price Canyon Oil Field in Southern San Luis Obispo County is also trucked to the SMPS for delivery via pipeline to the SMR. A breakdown of the major sources of crude currently being run at the SMR the Outer Continental Shelf (60-85%), Price Canyon/Santa Maria Valley/San Joaquin Valley (5-20%), San Ardo (5-10%) and Canada (2-7%).</p> <p>The Rail Spur Project would be able to deliver an average of 37,142 barrels per day. With the approval of the Throughput Increase Project, the SMR would have a capacity of 48,000 barrels per day. This would leave a capacity of 10,858 barrels per day for other local crudes. If the Rail Spur Project is approved, it is likely that OCS crude moving through the All American Pipeline to the Sisquoc Pipeline would be displaced. This OCS oil would continue to move via the All American Pipeline system to other refinery destinations in Los Angeles. However, it is possible that other local crude oils could be displaced and would have to find other refinery destinations.</p> <p>As discussed in the Project Description (Chapter 2.0), in the short-term, depending upon the volume of crude oil received by rail, some of the oil delivered via pipeline or via truck to the Santa Maria Pump Station could be displaced. Any displaced crude oil would likely be sold to other refineries in the Los Angeles or Bay areas. The amount, location, and destination of any displaced oil would be driven by market forces. Given the dynamics of the crude oil market, it is speculative as to what if any local crude oil would be displaced, and what would happen to any oil if it were displaced. However, if local crude oil was displaced producers may have to transport their crude oil via truck to markets other than the SMR. This would increase air emissions associated with trucking the crude oil a farther distance or trucking as opposed to pipeline transportation, which could result in cumulative air quality and</p>

Responses to County of Santa Barbara Comments

	<p>safety impacts.</p> <p>Another option would be for the Phillips 66 Sisquoc Pipeline, which connects the All American pipeline to the Santa Maria Pump Station (SMPS) to be reversed, allowing local producers to ship their crude oil via pipeline to Los Angeles via pipeline. Such reversal of the pipeline flow direction would allow production from area producers to be transported to refinery destinations via pipeline instead of by truck if the SMR is not available. This pipeline reversal project was approved by Santa Barbara County in 2002 and a permit, but the permit subsequently expired and the pipeline was never reversed.</p> <p>There are also a number of oil development projects in various stages of development and permitting in Northern Santa Barbara County that have proposed to transport the crude oil production to the SMR. The cumulative analysis has been expanded to discuss these cumulative projects (see Table 3.1 in Chapter 3.0, Cumulative Project Description). The cumulative impact discussions in Chapter 4.0, Environmental Analysis, have been expanded to discuss the potential cumulative impacts associated with the potential for displacing local crudes from the SMR.</p>
SBC-04	<p>A discussion of pipeline alternatives has been added to Chapter 5.0, Alternatives Analysis. Also see Response to SBC-06.</p>
SBC-05	<p>The RDEIR has identified significant and unavoidable (Class I) impacts in Santa Barbara County related to air and GHG emissions, and well as spill impacts to public safety, biological, water, agricultural, and cultural resources.</p> <p>It is speculative as to whether the Rail Spur Project would extend the life of the SMR. In the short-term there are a number of local oil development projects that could provide crude supplies to the SMR. For example, the Arroyo Grande Oil Field (AGOF) in San Luis Obispo has applied to the County to increase production to 10,000 barrels per day. If this project is approved it would increase the production from the AGOF by about 8,000 barrels, which would all go to the SMR. There are a number of other oil development projects currently proposed in northern Santa Barbara County that could add an additional 23,000 barrels per day of oil production that could be transported to the SMR. These include projects such as Santa Maria Energy, which could move 3,000 barrels per day via pipeline to the SMR, Pacific Coast Energy, which could move 3,600 barrels per day to the SMR via pipeline, ERG Cat Canyon, which could move 5,000 barrels per day via pipeline to the SMR, the PetroRock development, which could move 1,600 barrels per day, and the Aera Energy Cat Canyon Project that could add 10,000 barrels per day. A listing from Santa Barbra County shows a total of 943 oil production wells in various phases of development, all of which could provide oil to the SMR. While some of these projects state that the oil will move to the SMR, some do not. For example the Aera Energy Project will truck oil to various customers.</p>

Responses to County of Santa Barbara Comments

	<p>A May 2014 report by the United States Energy Information Administration (EIA) estimated that as much as 13.7 billion barrels of oil may be recoverable from the Monterey Shale, of which some of this shale formation is in northern Santa Barbara County and Southern San Luis Obispo County. While it is unknown, when and if any of these reserves would be developed (and in what quantity), they could in, the future, provide local crude supply to the SMR.</p> <p>It is also possible in the future that the portions of the All American Pipeline between the Sisquoc Pump Station and Kern County could be reversed to allow crude oil to move to the Sisquoc pipeline. This portion of the All American Pipeline that connects to the Sisquoc Pipeline is current used to move only OCS crude from Southern Santa Barbara County to the Kern County and then on to refinery destination in the Bay Area and Los Angeles. When OCS production reaches a level where it does not make economic sense to operate this portion of the All American Pipeline, it could be reversed to move crude oil from the Kern County to the SMR. This would provide the SMR with access to other sources of crude. If and when this would happen is unknown and speculative, but it is a potential future option for obtaining crude for the SMR.</p> <p>The point of this discussion is to show that there are potential options in the future for the SMR to obtain crude oil without the rail project, however, they are unknown, and as with all crude supply issues, would be determined based upon market forces, including the future price of crude oil. This point can be illustrated by the past history of the crude supply at the SMR. In the 1970's the SMR did not receive any crude from offshore Santa Barbara County since none of this crude had been developed. With the development of the offshore crude, pipelines were built that allowed the SMR to receive this crude source. Now offshore crude from Santa Barbara is a major source of crude for the SMR. As this source of crude declines, it is likely that other sources of crude will become available to the SMR as discussed above. This would occur with or without the Rail Spur Project. What future crude is processed at the SMR will depend upon economic and market factors.</p> <p>Therefore, it would be speculative at best to estimate when the local crude supply would not be sufficient to support further operation of the SMR without the proposed Rail Spur Project.</p>
SBC-06	<p>A discussion of pipeline alternatives has been added to Chapter 5.0, Alternatives Analysis. Two pipeline alternatives were addressed. One would be a cross country pipeline the other was a pipeline to Kern County. Both of these were found to be potentially infeasible due to environmental and/or technical factors. With regard to a cross country pipeline, permits would be needed from a large number of Federal, State and local jurisdictions, and Phillips 66 does not own the land that would be needed along a pipeline route. The Keystone XL Pipeline project is an example of the difficulties that a long-distance pipeline project alternative would face.</p>

Responses to County of Santa Barbara Comments

With regard to the pipeline from the Sisquoc Pump Station to Kern County. This alternative would have to connect with one of the proposed rail unloading facilities such as the Alon Terminal or the All American Terminal. Oil could then be unloaded via rail and then moved via pipeline to the SMR. This alternative would just move most of the rail impacts to the San Joaquin Valley. Also, Phillips 66 does not own the land along the pipeline right-of-way and permits would be needed from various Federal, State, and local agencies, which are outside of the control of the County of Santa Barbara.

The law does not require in-depth review of alternatives which cannot be realistically considered and successfully accomplished; the County could properly find that an alternative located outside of its decision making authority was not a feasible project alternative (*Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 566, 575).

Exhibit C – Findings for Denial

A. Environmental Determination

1. The Environmental Coordinator, after completion of the initial study, found that there is evidence that the project may have a significant effect on the environment, and therefore a Final Environmental Impact Report (FEIR) was prepared (pursuant to Public Resources Code Section 21000 et seq., and CA Code of Regulations Section 15000 et seq.) for this project. The FEIR considers the following issues: Aesthetics and Visual Resources, Agricultural Resources, Air Quality and Greenhouse Gases, Biological Resources, Cultural and Historical Resources, Geological Resources, Hazards and Hazardous Materials, Land Use and Recreation, Noise and Vibration, Population and Housing, Public Services and Utilities, Transportation and Circulation and Water Resources. The FEIR also considers alternatives in addition to the "No Project" alternative.
2. While a FEIR has been prepared, per the Public Resources Code 21080(b)(5) and CEQA Guidelines, CEQA does not apply to projects which a public agency rejects or disapproves. However, the FEIR has provided evidence and information to support this recommendation for denial, including an evaluation of the significant and unavoidable environmental impacts of the proposed project.
3. There are insufficient specific, overriding economic, legal, social, technological, or other benefits of the project that outweigh the significant effects on the environment, as would be required to approve the project pursuant to Public Resources Code section 21081. Additionally, due to federal preemption, implementation of mitigation measures to lessen the Class I impacts on the Mainline within San Luis Obispo County and the state are infeasible, as argued by the Applicant.

B. Environmentally Sensitive Habitat

4. The proposed project is located within an Environmentally Sensitive Habitat area:

Following the circulation of the Public Draft EIR, additional biological survey efforts were conducted in 2015 by Arcadis and Leidos to ensure accuracy and consistency with vegetation type mapping with the National Vegetation Classification system, as described within A Manual of California Vegetation (Sawyer et al 2009).

Based on the best available information, it is determined that the Rail Spur Project area:

- a. Is currently occupied by plant species that are listed as Rank 1B status by the California Native Plant Society; and,
- b. Is currently occupied by sensitive communities as classified by the California Department of Fish and Wildlife (CDFW) under the National Vegetation Classification system described in A Manual of California Vegetation, Second Edition.

Due to these factors, the project site meets the definition of Unmapped ESHA in the County's LCP (CZLUO Section 23.11). The area contains sensitive plant and animal species needing protection, including Rank 1B status plants, sensitive communities recognized by the CDFW, burrowing owls, and coast horn lizard. In addition, the Rail Spur Project area meets the definition of ESHA as defined in the guidelines set forth by the California Coastal Commission for defining ESHA (CCC 2013). As discussed further below in impact BIO.5, the Rail Spur Project would permanently impact a total of about 20 acres of ESHA, including the sensitive plant communities as classified by the California Department of Fish and Wildlife (CDFW)

under the National Vegetation Classification system described in A Manual of California Vegetation, Second Edition.

5. The Proposed Project does not meet the requirements of Coastal Zone Land Use Ordinance Section 23.07.170 b for Environmentally Sensitive Habitat Areas:

a. *There would be a significant negative impact on the identified sensitive habitat and the proposed uses would be inconsistent with the biological continuance of the habitat because the proposed rail spur would remove approximately 20 acres of habitat area containing "rare" or "1B" species, and is not a project that is included within the list of projects noted in the ordinance as a "development project (which) would be allowable within an ESHA" such as a resource dependent use, habitat enhancement project, or coastal access way.*

b. *The proposed uses would significantly disrupt the habitat because development would remove approximately 20 acres of habitat area containing listed "rare" or "1B" species by the California Department of Fish and Wildlife and the California Native Plant Society. The Project is located within dune habitat containing sensitive vegetative communities as classified by the California Department of Fish and Wildlife (CDFW) under the National Vegetation Classification system described in A Manual of California Vegetation, Second Edition (i.e., Silver dune lupine – mock heather scrub). The Project and associated infrastructure would extend within this habitat area. Due to the extensive distribution of Unmapped ESHA, there does not appear to be an alternative design or Project configuration that would avoid disturbance and removal of this habitat in order for the Project, or any project alternative, to proceed on the portion of the property outside the existing disturbed envelope of the refinery. The inability to avoid ESHA is in direct conflict with sub-section (e) of 23.07.170 which states, "All development and land divisions within or adjacent to an Environmentally Sensitive Habitat Area shall be designed and located in a manner which avoids any significant disruption or degradation of habitat values."*

C. Development Plan Findings

The proposed project does not meet the requirements of 23.02.034.c.4 as follows:

A. The proposed project or use is not consistent with the Local Coastal Program, the Land Use Element of the General Plan, and the General Plan. Following is a list of the items for which the project is not in compliance:

Coastal Plan Policies:

6. Environmentally Sensitive Habitats, Sensitive Habitats, Policy 1, Land Uses Within or Adjacent to Environmentally Sensitive Habitats: This policy states that new development within or adjacent to locations of environmentally sensitive habitats (within 100 feet unless sites further removed would significantly disrupt the habitat) shall not significantly disrupt the resource. Within an existing resource, only those uses dependent on such resources shall be allowed within the area. Unmapped ESHA is present throughout the Project area and within 100 feet of other areas determined to be Unmapped ESHA, including portions of the project area where the rail spur and unloading facility would be constructed, the emergency vehicle access route, and the area where the pipelines would be constructed from the rail spur unloading facility to the existing storage tanks. The Project would impact 20 acres of Unmapped ESHA. The Refinery was built in 1955 to be in close proximity to local onshore oil sources (non-coastal dependent). In the mid-1980's, upon development of offshore oil, the Refinery began use of offshore crude as a major source. During this time, and to present day, the Refinery has used a combination of offshore crude as well as a variety of onshore sources (including Canadian

Tar Sands crude which arrives by truck from the Central Valley and is delivered to the Santa Maria Pump Station). The Refinery is dependent upon a complex arrangement of roadways, rail lines, pump stations, and pipelines that are located, in some instances in the coastal zone, but primarily outside of the coastal zone. The Refinery does not rely on the ocean or marine resources and is therefore not coastal dependent. Because the Project would impact Unmapped ESHA and is not a coastal dependent use, it would be inconsistent with this policy.

7. **Environmentally Sensitive Habitats, Sensitive Habitats, Policy 29, Protection of Terrestrial Habitats:** This policy states that designated plant and wildlife habitats are environmentally sensitive habitat areas and emphasis for protection should be placed on the entire ecological community. Only uses dependent on the resource shall be permitted within the identified sensitive habitat portion of the site. The Project would be located within and would impact an approximate 20-acre area that contains Unmapped ESHA. In addition the Project is not a coastal dependent use as described above. Because the Project is not considered a coastal dependent use and would impact Unmapped ESHA, it is not consistent with this policy.

The proposed Project has the potential to result in oil spills and resultant fires that could impact terrestrial habitats along the mainline rail routes. Depending upon the location of an oil spill it could result in significant impacts to terrestrial habitats. Given the potential significant impacts that could occur to terrestrial habitats within the County in the case of an oil spill, rail transport of crude oil along the mainline it is not consistent with this policy.

8. **Environmentally Sensitive Habitat Area Policy 36, Protection of Dune Vegetation:** Policy 36 states "disturbance or destruction of any dune vegetation shall be limited to those projects which are dependent upon such resources where no feasible alternatives exist and then shall be limited to the smallest area possible. Development activities and uses within dune vegetation shall protect the dune resources and shall be limited to resource dependent, scientific, educational and passive recreational uses. Coastal dependent uses may be permitted if it can be shown that no alternative location is feasible, such development is sited and designed to minimize impacts to dune habitat and adverse environmental impacts are mitigated to the maximum extent feasible." Based on the location of proposed improvements associated with the Project, portions of the development would be located within and would impact approximately 20 acres of Unmapped ESHA. As described above, neither the Project nor the existing refinery are coastal dependent uses (i.e., requiring a site on, or adjacent to, the sea to be able to function at all). The objective of the Project is to increase the Applicant's ability to access more economically priced crude from a wider diversity of suppliers throughout various locations in North America. Because the Project and the existing refinery are not "coastal dependent" and would result in the removal of Unmapped ESHA, the Project does not comply with this policy.

Coastal Zone Framework for Planning:

9. **Land Use Goal 4:** The Land Use Element land use categories identify areas that are to be compatible with each other and specific goals related to conflicts of uses and preservation of important areas. Land use goal no. 4 provides that "areas where agricultural, residential, commercial and industrial uses may be developed in harmonious patterns and with all the necessities for satisfactory living and working environments." The proposed rail spur project would modify an existing industrial property to allow the construction of the spur within a buffer area between neighboring residential and agricultural land uses. Operation of the rail spur project could result in significant health risk impacts to the closest residences mainly due to diesel particulate matter from the locomotives servicing the refinery. The project would also generate additional particulate matter emissions due to fugitive dust and diesel locomotive engines at the refinery in an area that already exceeds state PM₁₀ standards. Therefore, the

project would be inconsistent with this policy by allowing an expansion of a use that is not compatible with neighboring residential or agricultural uses and would result in additional negative health impacts.

10. **Strategic Growth Goal 1, Objective 2. Air Quality:** This air quality objective is put forth to maintain and protect a living environment that is safe, healthful and pleasant for all residents. The applicable goal associated with this objective seeks to ensure that development projects maintain, or exceed, the minimum state and federal ambient air quality standards. The Project would not comply with this objective and goal because it would generate toxic air emissions that exceed San Luis Obispo County APCD (SLOCAPCD) health risk thresholds when factoring in the 2012 California Office of Environmental Health Hazard Assessment (OEHHA) childhood exposure and breathing rate adjustments. The proposed Project would result in a maximum exposed individual resident (MEIR) cancer risk of 26.5 in a million. This includes emission sources at the project site as well as the mainline emissions near the SMR. The SLOCAPCD cancer risk threshold is 10 in a million for toxic emissions. The use of Tier 4 locomotives and reduced idling time for locomotives onsite as mitigation would reduce the MEIR to 6.0 in a million at the same receptor. However, since UPRR (and not the Project Applicant) would own the locomotives, and the locomotives are used for interstate commerce, the mitigation measure requiring the use Tier 4 locomotives would likely be preempted by Federal law, and therefore may not be a feasible mitigation measure. Without the use of Tier 4 engines but with implementation of other mitigation measures, the MEIR would be 13.6 in a million at the same receptor (this includes the reduction in idling at the site, use of cleaner truck engines, and daytime unloading only). In addition, without full mitigation, the project would also exceed the SLOCAPCD diesel particulate matter threshold of 1.25 lbs per day onsite.

The Project would also not comply with this objective and goal because it would generate toxic air emissions that exceed San Luis Obispo County APCD (SLOCAPCD) health risk thresholds of 10 in a million for mainline rail operations in areas where train speeds would be less than 30 mph. The project would also exceed the SLOCAPCD NO_x, ROG, and diesel particulate matter emission CEQA thresholds without full mitigation. Due to Federal preemption, the County may not be able to require emissions reduction credits for the mainline rail NO_x, ROG, and DPM emissions, leaving potential exceedances of the state and/or federal ambient air quality standards unmitigated and making the Project inconsistent with this goal.

11. **Combining Designations, SRA – Sensitive Resource Area, General Objectives: 1.** General Objective 1 states that Environmentally Sensitive Habitats should be identified and protected by construction setbacks, use limitations, and other appropriate regulations. A portion of the Project area of disturbance is located within the existing refinery site in an area previously disturbed for storage and handling of coke; however, a large portion of the improvements associated with the Project would be located within identified sensitive vegetative communities as classified by the California Department of Fish and Wildlife (CDFW) under the National Vegetation Classification system described in A Manual of California Vegetation, Second Edition and Unmapped ESHA (i.e., Silver dune lupine – mock heather scrub). Project construction would impact approximately 20 acres of this sensitive vegetative community and Unmapped ESHA. For this reason, the Project would not comply with this objective.
12. **Coastal Zone Framework for Planning, Coastal Zone Land Use Element Strategic Growth Goal 1:** The Land Use Element states that the County will “preserve open space, scenic natural beauty and natural resources” and in addition “conserve energy” and “protect agricultural land and resources.” The project has the potential to result in an increased risk of oil spills and fires that could impact natural resources, scenic areas, and agricultural land along the mainline rail routes as a result of this project. An oil spill could result in significant impacts to agricultural, biological, and water resources in the event of a spill because of the

additional rail traffic from this proposed project. These impacts are discussed in applicable sections of Chapter 4.0 of the FEIR. Because the project is anticipated to increase the oil spill risk, the project would not be in compliance with this goal of the Land Use Element.

13. **Strategic Growth Goal 1: Objective 4. Agriculture & Land Use Goal 2:** This objective states that agricultural land for the production of food, fiber and other agricultural commodities is to be protected. This includes the protection and support of the rural economy and locally based commercial agriculture. The proposed rail spur project has the potential to result in oil spills or fires that could impact agricultural land along the mainline rail routes. An oil spill could result in significant impacts to agricultural commodities and soils within the County. Because of the increase in risk and potential for a spill which would directly impact agricultural resources the project is not consistent with this land use policy.
14. **Chapter 6: Environmentally Sensitive Habitats, Coastal Streams Policy 20:** Coastal streams and adjoining riparian vegetation are environmentally sensitive habitat areas and the natural hydrological systems and ecological functions of coastal streams shall be "protected and preserved". The proposed rail spur project has the potential to result in oil spills and fires that could impact coastal streams and riparian areas along the mainline rail routes. An oil spill could result in significant impacts to coastal streams and riparian vegetation which is discussed in section 4.4 (Biological Resources) of the FEIR. This project would allow for an increase of rail traffic which would increase the probability of a potential spill which could severely impact the County's riparian areas. Because of this, the project is not consistent with this Coastal Policy.
15. **Chapter 7: Agriculture Policy 1:** Policy 1 states that prime agricultural land shall be maintained and protected for agricultural uses. Similar to the strategic growth goals listed above related to agriculture, the Coastal Plan Policies also outlines requirements for protection of agricultural lands which would potentially be impacted severely as a result of an accident or spill of oil on agricultural resources or soils, which is discussed in section 4.2 Agricultural Resources in the FEIR. The proposed project would increase oil traffic via rail throughout the County and thereby increase the probability of an accident or spill. In the event of a spill or fire there could be significant impacts to agricultural resources as a result of this project. Therefore, the project is not in compliance with this policy.
16. **Chapter 12: Archaeology, Policy 1: Protection of Archaeological Resources:** This General Plan policy states that the County shall provide for the protection of both known and potential archaeological resources. All available measures shall be explored at the time of a development proposal to avoid development on important archaeological sites. While development is not proposed on or near an archaeological site, impacts to archaeological resources could occur as a result of an oil spill and associated clean up actions along the mainline rail routes. Impacts to archaeological resources could not be avoided if a spill were to occur within an area where these resources are located in proximity to the mainline rail within the County. Therefore, the project is not in compliance with this policy.

South County Coastal Area Plan:

17. **Land Use, Rural Area Land Use, Industrial:** The Area Plan states that for the existing Santa Maria Refinery (SMR), the refinery occupies only a portion of the total area, and the large vacant areas around the refinery provide a desirable buffer from adjacent uses and an area where wind-carried pollutants can be deposited onsite, thereby not affecting neighboring properties. This is particularly important to the agricultural uses in the vicinity of the project site. The Area Plan provides that any proposed modification or expansion of the refinery (e.g., the proposed rail spur project) should be subject to Development Plan approval covering the entire property to designate buildable and open space areas. The Area Plan continues by

stating offshore oil and gas lease sales may generate the need for onshore partial oil and gas processing facilities and that expansion of industrial uses in the vacant portion of the rail spur project site may be appropriate in the future to accommodate offshore oil and gas lease sales. However, the Plan does not envision expansion for other purposes such as the Project. The rail spur component of the Project would extend an approximate 200-foot wide swath of development and industrial use approximately 0.8 mile to the east beyond the currently industrialized portion of SMR, toward existing residences and Highway 1. From the eastern terminus of the proposed rail spur, the buffer would be reduced to approximately 0.5 mile to the eastern boundary of the project site. This would reduce the buffer area between the Project and the residential area to the east and would therefore result in the Project being inconsistent with this policy.

18. **Industrial Air Pollution Standards:** This requirement of the South County Area Plan requires that "any expansion or modification of existing petroleum processing or transportation facilities or the construction of new facilities shall meet San Luis Obispo County Air Pollution District (SLOCAPCD) standards." The Project does not comply with this requirement as it exceeds the minimum threshold for cancer risk of 10 in a million. Without full mitigation, the project would also exceed the SLOCAPCD threshold for DPM of 1.25 lbs per day onsite and due to federal preemption, the County cannot impose measures (e.g. Tier 4 locomotives) to fully mitigate this impact. The toxic air emissions including the DPM added to the basin as a result of this project is not in compliance with this requirement.

Safety Element of the General Plan:

19. **Safety Element of the General Plan, Fire Safety Goal S-4:** "Reduce the threat to life, structures and the environment caused by fire." There is the potential for fire and explosions along the mainline rail routes due to a train derailment, which could impact life, structures and the environment depending on the location of the accident. The County is likely preempted from implementing conditions or mitigation measures that could mitigate these impacts along the mainline rail route. There are significant impacts to the safety of the populations near the rail lines within the County and the project is not consistent with this policy of the General Plan.
20. **Safety Element of the General Plan, Fire Safety Policy S-14, Facilities, Equipment and Personnel:** "Ensure that adequate facilities, equipment and personnel are available to meet the demands of fire fighting in San Luis Obispo County based on the level of service set forth in the fire agency's master plan." It has come to the County's attention through numerous letters from jurisdictions along the mainline that there are not adequate resources through their respective fire agencies to respond to a derailment, spill or explosion as a result of a rail accident. In addition, the County may be preempted from implementing conditions or mitigation measures that could mitigate these impacts along the mainline rail routes, therefore the County can't ensure there will be adequate facilities, equipment and personnel available in the event of an accident. This is the case throughout the state as well as within San Luis Obispo County. Therefore, the project is not consistent with this policy of the General Plan.
21. **Safety Element of the General Plan, Hazardous Materials Policy S-26, Program S-68:** S-26 states: "Reduce the potential for exposure to humans and the environment by hazardous substances." S-68 states "Review commercial projects which use, store, or transport hazardous materials to ensure necessary measures are taken to protect public health and safety." Implementation measure Program S-68 states that commercial projects which use, store, or transport hazardous materials are to ensure necessary measures are taken to protect public health and safety. As the Applicant has stated, the County would not be able to mitigate or require conditions upon the project which would ensure the safety for citizens along the mainline rail routes, including the portions within the County, due to the County likely being preempted from requiring these types of measures. The project is not in compliance with this

policy because the County would not be able to ensure the safety of the residents of the County, or the state, as a result of the additional probability of a derailment, spill, fire or explosion because of the proposed project.

Conservation and Open Space Element of the General Plan:

- 22. Air Quality Policy AQ 3.2, Attain Air Quality Standards:** Policy AQ 3.2 states that the County will attain or exceed federal or state ambient air quality standards for measured criteria pollutants. San Luis Obispo County is in non-attainment for ozone standards as well as the state particulate matter standards. The Project would generate fugitive dust and DPM onsite that would contribute to PM₁₀ emissions within the County. It is unlikely that these fugitive dust and DPM emissions (i.e., PM₁₀ emissions) could be offset at the SMR due to a lack of available onsite emission reductions. The addition of these onsite PM₁₀ emissions would further exacerbate the ability for the County to attain the state particulate matter standards and therefore the project would not be in compliance with this General Plan policy of the Conservation and Open Space Element.

The rail spur project would be generating NO_x and ROG emissions along the mainline rail route that would lead to ozone increases and would generate DPM along the mainline rail routes that would contribute to PM₁₀ emissions within the County. Due to Federal preemption, the County may not be able to require emissions reduction credits for the mainline rail NO_x, ROG, and DPM emissions. The addition of these NO_x, ROG, and PM₁₀ emissions would further exacerbate the ability for the County to attain the state particulate matter and ozone standards. The addition of these NO_x, ROG, and PM₁₀ emissions along the mainline rail route within the County would further exacerbate the ability for the County to attain the state particulate matter and ozone standards and therefore the project would not be in compliance with this General Plan policy of the Conservation and Open Space Element.

- 23. Air Quality Policy AQ 3.3, Avoid Air Pollution Increases:** Policy AQ 3.3 states that the County will, "Avoid a net increase in criteria air pollutant emissions in planning areas certified as Level of Severity II or III for Air Quality by the County's Resource Management System (RMS)." The Nipomo Mesa area is in a level of severity II for Ozone, a level of severity III for PM_{2.5}, and a level of severity III for PM₁₀. The "PM" or particulate matter includes hazardous materials in the air that gets into the lungs and causes a variety of health effects. The PM_{2.5} tends to be a greater health risk because the particles are smaller and can travel deeper into the lungs. Sources of particulate pollution include diesel exhaust, mineral extraction and production, combustion products from industry and motor vehicles, smoke, wind-blown dust and other sources (Source: County Resource Summary Report). The Project does not comply with this standard because it would add diesel exhaust from locomotives to an area which is currently in a level of severity of III. Even with implementation of mitigation measures the Project would exceed the threshold of cancer causing diesel particulate which is 10 in a million by creating a risk factor of about 13.6 in a million (for emissions occurring at the project site and along the mainline impacting the same receptors near the SMR). Without implementation of mitigation, the Project would create a risk factor of 26.5 in a million, both of which are exceeding the threshold. In addition, without full mitigation, the Project would exceed the 1.25 lbs per day threshold for DPM onsite. In addition, the most effective mitigation measure is likely not implementable due to federal preemption (i.e., requiring use of Tier 4 locomotives).

Operation of the locomotives along the mainline rail routes would result in increase in NO_x and ROG emissions that would lead to ozone increases. The locomotives would also generate diesel particulate matter emissions along the mainline rail routes, which would increase PM₁₀ emissions in the County. Due to Federal preemption, the County may not be able to require emissions reduction credits for the mainline rail NO_x, ROG, and diesel particulate matter emissions. The addition of these NO_x, ROG, and PM₁₀ emissions would result in air pollution

increases in the County and therefore the project would not be in compliance with this General Plan policy of the Conservation and Open Space Element.

- 24. Air Quality Policy AQ 3.4, Toxic Exposure:** Policy AQ 3.4 states that the County will, "Minimize public exposure to toxic air contaminants, ozone, particulate matter, sulfur dioxide, carbon monoxide, nitrogen oxides, and lead." This Project does not comply with this Policy of the General Plan because it allows for an increase in hazardous emissions as a result of the project. Calculations in the FEIR have shown that this Project would exceed the cancer threshold, which is 10 in a million, by resulting in a cancer risk of about 26.5 in a million (with no mitigation), or about 13.6 in a million (with partial mitigation). This impact would exceed San Luis Obispo County Air Pollution Control District (APCD) health risk thresholds when factoring in the 2012 California Office of Environmental Health Hazard Assessment (OEHHA) childhood exposure and breathing rate adjustments.

The Project does not comply with this Policy of the General Plan because it allows for an increase in hazardous emissions as a result the locomotives operating on the mainline rail routes in the County. Calculations in the FEIR show that the Project would exceed the cancer threshold of 10 in a million for areas where trains speeds are limited to 30 miles per hour or less and thus impacting people in the county along the routes which will see the additional rail traffic as a result of this proposed project.

- 25. Air Quality Policy AQ 3.5, Equitable Decision Making:** Policy AQ 3.5 states that the County will, "Ensure that land use decisions are equitable and protect all residents from the adverse health effects of air pollution." This policy is also consistent with the discussion above regarding air quality Policy AQ 3.3. The Project would bring locomotives (up to 5 trains per week, 10 round trips) to the site for unloading of heavy crude, and would depart the site empty. The additional diesel exhaust from these locomotives, upwind of many residences and sensitive receptors, would cause a significant impact to the air quality for these residences. In addition, a large onsite buffer between the residential neighborhoods and the facility would be reduced from over 7,600 feet to approximately 3,300 feet. This project application for a "Development Plan/Coastal Development Permit" is a discretionary land use permit with the discretion by the County to decide if this project complies with the General Plan including the health and safety of the County's residents. The Project imposes health risks which would be inconsistent with the health and safety requirements of the General Plan with regard to air quality from the property (increase in cancer causing thresholds). This project would not ensure that all residents are protected from the adverse health effects of air pollution as this policy requires.

- 26. Air Quality Goal AQ 3: Implementation Strategy AQ 3.6.1, Identify Health Risks to Sensitive Receptors:** This implementation strategy of the General Plan states that health risks are to be mitigated consistent with Air Pollution Control District standards. This is generally applicable to projects for which construction would occur near a freeway or rail line and mitigation would be required to reduce the air quality hazards to "sensitive receptors" or citizens which are sensitive to these pollutants. However, this project would increase the amount of toxic emissions as an increase in rail traffic would occur as a result of the proposed project. Toxic emissions from the locomotives operating on the mainline rail routes would exceed the cancer risk thresholds for areas where speeds are limited to 30 miles per hour or less and thus impacting people in the county along the routes which will see the additional rail traffic as a result of this proposed project. Therefore, the project would not be in compliance with this General Plan policy of the Conservation and Open Space Element.

- 27. Biological Resources Policy 1.2, Limit Development Impacts:** This policy calls for the regulation and minimization of proposed development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, coastal and riparian

habitats, and wildlife habitat and movement corridors as necessary to ensure the continued health and survival of these species and protection of sensitive areas. The Project would result in the extension of refinery infrastructure (i.e., rail spur, unloading facility, pipelines, and emergency vehicle access road) into a dune habitat system. Approximately 20 acres of various project features would be constructed within dune vegetation that is considered sensitive habitat as classified by the California Department of Fish and Wildlife (CDFW) under the National Vegetation Classification system described in A Manual of California Vegetation, Second Edition and is also considered Unmapped ESHA; therefore, the Project does not comply with this policy.

28. **Biological Resources, Policy BR 1.15: Restrict Disturbance in Sensitive Habitats during Nesting Seasons:** This General Plan policy states that projects are to avoid impacts to sensitive riparian corridors, wetlands and coastal areas in order to protect bird-nesting activities. In addition to the impacts discussed above related to Coastal Streams in Coastal Plan Policies, impacts as a result of a spill along the mainline would negatively impact nesting birds which is in conflict with this General Plan policy. This project would increase the risk of a spill or fire which would remove and damage nesting habitats. Therefore, the project would not be in compliance with this General Plan policy of the Conservation and Open Space Element.
29. **Energy, Goal E 7: Design, siting, and operation of non-renewable energy facilities:** Implementation Strategy E 7.1.1 states that new facilities will not be located in a manner which will impact the health and safety of human populations with special attention to disabled and elderly populations as they require additional resources for evacuation in the event of an emergency. The risk analysis for the mainline rail routes found that significant hazards would exist to the public in the vicinity of the mainline rail routes in the event of a derailment and release of crude oil that could lead to a fire or explosion. This proposed project would increase crude oil rail traffic which could have potential for catastrophic impacts in the event of a derailment or explosion and would be in direct conflict with this General Plan policy as it relates to the health and safety of the citizens around the mainline within San Luis Obispo County.
30. **Non-Renewable Energy Facility Siting Policy E 7.1:** Energy Goal 7 states that, "Design, Siting, and Operation of Non-renewable energy facilities will be environmentally appropriate." In addition the related Policy E 7.1 for Non-Renewable Energy Facility Siting, "Energy fossil fuel, and related facilities will be sited, constructed, and operated in a manner to protect the public from potential hazards and significant environmental impacts." The implementation Strategy related to Goal 7 and Policy 7.1 requires facility design, siting and operational standards: There are 30 of these outlined for energy projects and the pertinent policies for the rail spur project are listed here (numbers correspond to the numbers in the Conservation and Open Space Element Energy Policy E 7.1):

- 3) Continue to maintain, operate, monitor, and repair the facility so that it does not constitute a public safety hazard or an environmental threat.

The Project does not comply with this component of the goal due to air toxic emissions from the operation of the Project that would exceed the acceptable levels determined by the SLOCAPCD for both cancer risk and diesel particulate matter. The Project, while located within and adjacent to an existing facility, would increase the intensity of rail activity and change the use of the site to allow for crude to be brought in via rail. The addition of up to five trains per week would increase toxic air emissions which would impact neighboring residences to the east and north of the project site.

- 4) Employ the best reasonably achievable techniques available to prohibit disruption of environmentally sensitive areas such as wetlands, animal or bird refuges,

or habitat of species of special concern. Avoid impacts to habitat of rare, threatened, or endangered species.

The Project does not comply with this component of the policy because construction of the Project would impact about 20 acres of sensitive habitat as classified by the California Department of Fish and Wildlife (CDFW) under the National Vegetation Classification system described in A Manual of California Vegetation, Second Edition and an area of the project site considered Unmapped ESHA.

B. The proposed project does not satisfy all applicable provisions of Title 23 of the County Code because:

31. **Section 23.07.170 of the Coastal Zone Land Use Ordinance Environmentally Sensitive Habitats:** The Project is located within dune habitat containing sensitive vegetative communities as classified by the California Department of Fish and Wildlife (CDFW) under the National Vegetation Classification system described in A Manual of California Vegetation, Second Edition (i.e., Silver dune lupine – mock heather scrub). The Project will extend within this habitat area, and there are no alternatives around disturbance or removal of this habitat area in order for the project, or project alternative, to proceed. This is in direct conflict with this standard which states, "All development and land divisions within or adjacent to an Environmentally Sensitive Habitat Area shall be designed and located in a manner which avoids any significant disruption or degradation of habitat values. This standard requires that any project which has the potential to cause significant adverse impacts to an ESHA be redesigned or relocated so as to avoid the impact, or reduce the impact to a less than significant level where complete avoidance is not possible." The extension of the rail spur adjacent to the Santa Maria Refinery is located within a dune habitat area which also acts as a spatial buffer between the refinery and the residences to the east.

C. The establishment and subsequent operation or conduct of the use will, because of the circumstances and conditions applied in the particular case, be detrimental to the health, safety or welfare of the general public or persons residing or working in the neighborhood of the use, and will be detrimental or injurious to property or improvements in the vicinity of the use because:

32. The Rail Spur Project would modify and expand the existing industrial uses and activities at the Santa Maria Refinery (SMR) by delivering crude oil to the refinery by rail. The onsite activities associated with the rail spur project would result in cancer risk from air toxics and increased DPM that would both exceed Air Pollution Control District CEQA thresholds. These significant air quality impacts would directly impact neighboring residences, employees, and populations in the vicinity of the Santa Maria Refinery. The Project would generate toxic air emissions that exceed San Luis Obispo County APCD (SLOCAPCD) health risk thresholds when factoring in the most recent 2012 California Office of Environmental Health Hazard Assessment (OEHHA) childhood exposure and breathing rate adjustments. The SLOCAPCD cancer risk CEQA threshold is 10 in a million for toxic emissions and with this proposed project (with partial mitigation) there would be a risk of 13.6 in a million, which exceeds these thresholds. Onsite operation of the locomotives would exceed the SLOCAPCD CEQA threshold of 1.25 lbs per day of diesel particulate matter even with partial mitigation. These are both considered a significant and unavoidable environmental impact.

Operation of the locomotives along the mainline rail routes would result in increase in NO_x and ROG emissions that would lead to ozone increases both in the County and in other parts of the State. Operational activities of trains along the mainline rail route outside of San Luis Obispo County associated with the Project would generate criteria pollutant emissions that exceed thresholds of 15 air districts other than SLOCAPCD. For three of these districts

impacts cannot be mitigated to less than significant levels. Mitigation has been recommended that includes use of Tier 4 locomotives and the purchase of emission credits. For the mainline rail emissions it is possible that contractually the Applicant could require the use of lower emission locomotives such as Tier 4 locomotives. However, since these are operated by UPRR on UPRR tracks, a requirement that the Applicant enter into this type of contractual provision would likely be preempted by Federal law and therefore unenforceable. The County may also be preempted by Federal law from requiring emission reduction credits for mainline rail emissions. Since these mitigation measures may not be implementable and it is uncertain if the other Air Districts could require emission reduction credits, the impacts associated with the mainline rail operation would remain significant.

The locomotives would also generate diesel particulate matter emissions along the mainline rail routes, which would increase PM₁₀ emissions in the County. Due to Federal preemption, the County may not be able to require emissions reduction credits for the mainline rail NO_x, ROG, and diesel particulate matter emissions. The addition of these NO_x, ROG, and PM₁₀ emissions would result in significant and unavoidable air quality impacts.

This proposed project would increase rail traffic by importing heavy crude via rail into the Santa Maria Refinery. A risk assessment was conducted for the mainline rail routes to the Santa Maria Refinery. The risk along the mainline rail routes that were evaluated was found to be significant in the event of a rail accident that occurred near populated areas. The EIR identified mitigation measures to reduce the potential for release of crude oil in the event of an accident. However, the County may be preempted by Federal law from applying these mitigations to the project. Furthermore it has been communicated to the County through numerous letters from outside jurisdictions that many of the jurisdictions do not have the necessary personnel, equipment or training in order to provide appropriate emergency response to an oil train derailment or explosion within their areas. This proposed project will create a significantly hazardous and potentially dangerous situation within many areas along the mainline not only in San Luis Obispo County, but to other jurisdictions along the main rail lines and therefore, the project is inconsistent with this policy.

D. The proposed project or use will be inconsistent with the character of the immediate neighborhood or contrary to its orderly development because:

33. The proposed rail spur project will expand the existing industrial uses of the Santa Maria Refinery onto a currently vacant portion of the refinery property which acts as a buffer between the residential areas to the east and the refinery operations. The South County Coastal Area Plan specifically identifies the undeveloped areas of the project site as providing a desirable buffer from the heavy industrial activities and more sensitive adjacent land uses. The rail spur extension would extend a total of approximately 1.3 miles (6,915 feet), including approximately 0.5 mile (2,445 feet) within the exiting industrial coke area. This would result in an extension of industrial uses approximately 0.85 mile into the undeveloped area in the eastern portions of the project site. The buffer between residential and recreational uses east of State Route 1 would be reduced from approximately 1.4 miles to 0.6 mile. The rail spur extension would similarly reduce existing buffers between the industrial structures and agricultural crops located northeast and southeast of the project site.

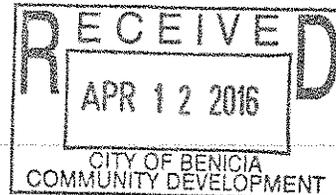
This important buffer is what allows these incompatible land uses (refinery and residential) to coexist as neighbors, however this project will greatly reduce this buffer. The rail spur will be incompatible with the residential and agricultural resources that surround the spur and will bring additional toxic air contaminants and PM₁₀ closer to the residential and agricultural land uses. Therefore, the proposed extension of the industrial activities by allowing the railroad spur would be incompatible with surrounding uses and would therefore not comply with the character of the immediate neighborhood and will be contrary to its orderly development.

E. Coastal Access:

34. Coastal access was addressed in a previously approved permit (Throughput DRC2008-00146), which included a condition of approval requiring Phillips 66 to construct coastal access improvements associated with the vertical public access within "□ 10 years of the effective date of this permit (including any required Coastal Development Permit to authorize such construction) or at the time of any subsequent use permit approved at the project site, whichever occurs first." Because the proposed rail spur project (DRC2012-00095) is recommended for denial, the previous condition of approval from the Throughput project will remain in place and effective. Phillips 66 will be required to uphold the previous coastal access condition of approval from DRC2008-00146 as adopted. Denial of the proposed rail spur project will not impact Coastal Access.

Amy Million

From: Teresa Olson
Sent: Monday, April 11, 2016 2:38 PM
To: Amy Million
Subject: FW: Public Comment re: Valero Crude by Rail Project - Appeal Application No. 16PLN-00009



From: Richard Gray [mailto:richardgraysart@gmail.com]
Sent: Monday, April 11, 2016 9:19 AM
To: Teresa Olson
Subject: Public Comment re: Valero Crude by Rail Project - Appeal Application No. 16PLN-00009

Dear Council Members,

I'm writing to urge you to reject the Valero Appeal of the Planning Commission denial of their application to bring Crude By Rail to Benicia. I suggest that you cannot possibly in good conscience certify an EIR which claims there are no significant, indeed life-threatening, impacts of this project, which obviously puts not only Benicia residents at serious risk but also up-line cities and communities. The suggestion that the Benicia City Council does not have the authority to protect it's own citizens and their best interests is a corporate challenge to local self-control and democracy itself, which must be rejected.

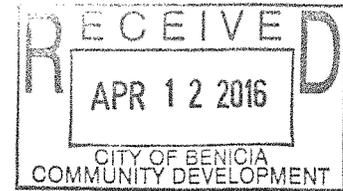
It is also clear to me that developing more infrastructure for the distribution of Tar Sands Crude will put our bay and coastal lands at greater risk. I think the science of climate change is now settled and it is clear that our society as a whole, and Benicia in particular, is at great risk from sea level rise this century, that will not be possible to mitigate. A frequent definition of madness is to keep repeating the same mistakes and expect a different outcome. We must quickly transition to renewable energy sources and stop building new infrastructure for refining dangerous fossil fuels which will hasten our self-destruction.

You are in a position to make a real difference for the protection of this community. I urge you to muster the courage to stand up for our children's and grandchildren's future. Please make this important decision to protect the future of Benicia, California and the Earth on which we all depend for survival.

Richard Gray
350 Bay Area

MEMORANDUM

DATE: April 11, 2016
TO: Benicia Mayor and City Council
REGARDING: Valero Crude by Rail Project
FROM: Bob Berman
250 West K Street
Benicia, CA 94510



MESSAGE:

Dear Mayor and City Council Members

I am writing to the Benicia City Council to urge you to DENY the Use Permit for the Valero Crude by Rail Project.

As you are aware, the Final EIR for the Valero project identified 11 significant and unavoidable impacts either directly or indirectly related to the proposed project. These impacts are related to air quality, biological resources, greenhouse gas emissions, plus hazards and hazardous materials. Several of these significant and unavoidable impacts will directly affect Benicia residents, individuals working in Benicia, or individuals passing through Benicia.

Contrary to the staff report prepared for the Benicia Planning Commission, I believe that these impacts would result in a project inconsistent with several goals of the City's General Plan, including Goals 2.5, 4.8, and 4.9. For example, I believe that the direct and indirect impacts of the proposed project will not maintain the City's health, safety, and quality of life. Thus in conflict with Goal 2.5.

I also believe that the City Council cannot make the necessary findings to support the Use Permit. Section 17.104.060 of the Benicia Municipal Code states that the City cannot approve a project that will be detrimental to the public health, safety, or welfare of persons residing or working in or adjacent to the neighborhood of such use, nor detrimental to properties or improvements in the vicinity or to the general welfare of the city. I believe that based on the documented direct and indirect impacts of the proposed project the necessary finding required by section 17.104.060 cannot be made.

I understand that City staff relies on the legal concept of "federal preemption" in stating that the City is precluded from conditioning or regulating the operation of the railroad. Furthermore, City staff contends that potential impacts resulting from operation of the railroad that are identified in the EIR, shall not bear on the City's decision making with respect to certification of the EIR or consideration of the Use Permit.

To me this type of thinking does not pass the straight face test. We are going to acknowledge significant and unavoidable impacts, including those that could pose a significant hazard to the public, but we are going to ignore them in the review of the proposed project.

I maintain that the identified significant and unavoidable impacts identified in the Final EIR are either direct or indirect impacts of the proposed Valero Crude by Rail Project. As direct or indirect impacts of the proposed project these impacts need to be taken into consideration when the City Council considers consistency with the City's General Plan or making the necessary findings for the issuance of a Use Permit. When taken into account the City Council has only one option - deny the Use Permit.

Amy Million

From: KnowWho Services <noreply@knowwho.services>
Sent: Wednesday, April 06, 2016 4:20 PM
To: Amy Million
Subject: Public Comment re Valero Crude by Rail Project - Appeal Application No. 16PLN-00009

Dear Benicia City Council,

I'm writing to urge the Benicia City Council to back the Planning Commission's unanimous decision to reject Valero's proposal to transport explosive crude oil by rail through California communities to its refinery in Benicia, and to reject Valero's attempts to delay a final decision on this project.

The Planning Commission rightfully rejected this dangerous project because it "would be detrimental to the public health, safety, or welfare" of Benicians and communities along the oil train routes. The project's impacts include increased air pollution from refinery emissions (which could disproportionately affect low-income communities and communities of color) and oil spills during the offloading process (which could harm the Sulphur Springs Creek riparian corridor).

Furthermore, increases in the transportation of crude by rail has corresponded with an alarming increase in the number of derailments, spills, and explosions. More than five million Californians live in the blast zones of oil train routes, and this project would significantly increase the number of unsafe oil trains rolling through our communities.

As Attorney General Kamala Harris pointed out, the U.S. Department of Transportation found that rail shipments of highly volatile crude oil represent an "imminent hazard," such that a "substantial likelihood that death, serious illness, severe personal injury, or a substantial endangerment to health, property, or the environment may occur." I agree with regulators, elected officials, local residents, nurses, and the the many thousands of Californians who have sounded the alarm about the unacceptable risks posed by this project.

For these reasons, I again urge the City Council to reject Valero's oil train project, as well as its attempts to delay resolution of this issue.

Thank you for your consideration.

Sincerely,

Sally Picciotto
5940 Chabot Rd
Oakland, CA 94618-
sallypicciotto@yahoo.com
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