# EXHIBIT B

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Steve Rounds, DTSC Project Manager
Department of Toxic Substances Control (DTSC)
State of California
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srounds@dtsc.ca.gov

Re: **Comments on Industrial Services Oil Company, Inc., Hazardous Waste Facility Application DEIR**

Dear Mr. Rounds,

On behalf of Communities for a Better Environment (CBE) I am submitting the following comments urging correction of deficiencies in the DEIR (Draft Environmental Impact Report) for the Industrial Services Oil Company, Inc. (ISOCI) Hazardous Waste Facility Application, November 2005. This company is not only proposing a very large expansion in storage and treatment of contaminated oils, but proposes to introduce a great new variety of hazardous wastes of many types onsite.

Given the facility history of environmental violations, including improper hazardous material storage, lack of permits and secondary containment, soil contamination, and the significant new risks associated with the proposed major expansion, it is crucial that this project receive a thorough review. The public must also receive more information on equipment and mitigation which will be included in the project, rather than leaving details of mitigation (such as key air pollution controls) for future evaluation. Specific deficiencies are outlined below.

- **The DEIR failed to evaluate significant potential impacts of Earthquakes and related fires, smoke, and hazardous air pollution**
    - Earthquake damage short of complete structural collapse
    - Earthquake fire risks due to hydrocarbons onsite and natural gas lines
    - Fire risk from any cause involving used and recycled oil onsite (currently defined as "non-ignitable" but which does have the ability to burn fiercely)
    - Severe air pollution impacts associated with fires due to earthquakes
- **The DEIR failed to evaluate significant potential impacts of Floodplain hazards and potential impacts on drinking water, the Los Angeles River, and sewer discharge impacts**
    - Flood Hazards were misrepresented in the DEIR, and floodplain management construction requirements were ignored

- Drinking water and groundwater occur at much more shallow depths than identified, and are threatened by previous and future spills of hazardous materials
- The Los Angeles River receives runoff from the area, and is at risk from past and future hazardous material spills from the facility, and from contamination in the event of a flood
- The DEIR fails to evaluate low-concentration, extremely toxic discharges of dioxins, PCBs, lead, mercury, and other highly hazardous materials into the proposed new sewer hookup

- **The DEIR and Part B application contradict themselves regarding accepting, storing, and treating dangerous PCBs**, leaving in question potential impacts
- **The DEIR failed to evaluate significant potential impacts on Biological resources** despite evidence that past contamination could have contaminated ecological systems

## I. The DEIR underestimated earthquake danger and failed to evaluate significant potential impacts of related fires, smoke, and hazardous pollution releases

The DEIR concluded that earthquakes and related fires would not cause significant environmental impacts without fully evaluating potential impacts or exploring mitigation measures. This analysis must be done particularly since the DEIR found that the risk of a major earthquake in the area is highly probable (DEIR page 3-70) and the site contains large quantities of materials that can cause fires, even if the facility does comply with the Uniform Building Code, as found in the DEIR.

The major earthquake hazard at the facility is not just a theoretical possibility– a major earthquake nearby will definitely occur sooner or later. A September 2005 Los Angeles Times article,[1] *Katrina's Aftermath, California Earthquake Could Be the Next Katrina,* reported:

> *"A state study published last year on hazard reduction paints a sobering picture of California's earthquake danger. About 62% of the population lives in a zone of high earthquake danger, including 100% of the population of Ventura County,* ***99% of Los Angeles County*** *and 92% of Riverside County.*
> . . .
>
> ***"Researchers at the Southern California Earthquake Center said there is an 80% to 90% chance that a temblor of 7.0 or greater magnitude will strike Southern California before 2024.***

[1] September 10, 2005, Los Angeles Times, KATRINA'S AFTERMATH, California Earthquake Could Be the Next Katrina, By Jia-Rui Chong and Hector Becerra, Times Staff Writers

The Southern California Earthquake Center (at the University of Southern California)[2] (SCEC) earlier found: [3]

> *"The last official estimate of earthquake potential in southern California was the 1988 report of the Working Group on California Earthquake Probabilities. The report estimated the probabilities of large "characteristic" earthquakes on major faults, like the San Andreas and San Jacinto faults. The report concluded that there is a 60% chance of at least one large earthquake (M=>7) on the San Andreas fault before the year 2018.* ***The new report concludes that the probability is even higher, 80-90%, when other faults are included."***

Such an earthquake could occur today, but at a minimum falls within the project lifetime. Fault lines are close to the facility (within 8 miles), so severe ground shaking will occur during the inevitable major earthquake in the area. Los Angeles soil types cause increased ground shaking:[4]

> *"Another project in progress will update this map by showing a higher level of shaking for soft-soil sites. This will lead to a higher rate of damaging shaking because the more common smaller earthquakes will produce greater shaking in soft soil. The result will be to increase slightly the rates for the sedimentary basins such as the Los Angeles basin and the San Gabriel, Ventura and San Bernardino Valleys."*

There is also general speculation that the Pacific Rim has been heating up in terms of seismic activity after relative quiet for many decades. Major earthquakes must be evaluated in the DEIR as the serious and likely hazards they are, rather than treating them superficially.

## The DEIR failed to evaluate earthquake damage short of complete structural collapse

While the DEIR admits high probability of major quakes occurring near the facility, the DEIR fails to analyze obvious risks and impacts from such earthquakes. The DEIR found:

> *"Based on the historical record, it is highly probable that the Los Angeles region will be affected by future earthquakes. Research shows that damaging earthquakes will be likely to occur on or near recognized faults showing evidence of recent geologic activity. The proximity of major faults to the ISOCI facility increases the probability that an earthquake may affect the ISOCI site and new project facilities. There is the potential for damage to the ISOCI facilities in the event of an earthquake. The Newport-Inglewood fault, about 7.5 miles south of ISOCI, poses a seismic hazard to Los Angeles . . . The impacts of an earthquake on the site are considered to be greater than the current conditions since additional structures will be constructed including new treatment and storage facilities. Impacts of an earthquake could include tank and other structural failure.*
>
> ***"Additional structures at the site must be designed to comply with the Uniform Building Code . . . The goal of the code is to provide structures that will: (1) Resist minor earthquakes without damage;***

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[2] SCEC (at the University of Southern California) gathers and combines new information about earthquakes in Southern California, is supported by the National Science Foundation and the U.S. Geological Survey, and coordinates efforts of over 50 institutions.

[3] *Seismic Hazards in Southern California: Probable Earthquakes, 1994-2024,* Presentation and Panel Discussion Held at the OES Conference, "Northridge Earthquake--One Year Later," January 20, 1995, Southern California Earthquake Center

[4] Seismic Hazards Map for Southern California, Southern California Earthquake Data Center, http://www.data.scec.org/general/PhaseII.html

***(2) resist moderate earthquakes without structural but with some non-structural damage; and (3) resist major earthquakes without collapse but with some structural and non-structural damage. . . .***

*"Compliance with the Uniform Building Codes is expected to minimize the seismic impacts on the ISOCI facility, i.e., no structures are expected to collapse in the event of a major earthquake. In addition, the containment devices (storage tanks) have been certified as structurally sound and adequate for their intended use by engineer registered in California (ISOCI Part B application, Appendix D). Therefore the seismic impacts on the facility are expected to be less than significant. The City of Los Angeles is responsible for assuring compliance with the Uniform Building Codes through the building permit process."* (DEIR page 3-58)

The DEIR concludes that by complying with the Uniform Building Codes, the ISOCI facility structures will not collapse during a major earthquake. Based on that conclusion, the DEIR takes the unjustifiable leap that, simply because structures are not expected to completely collapse, an earthquake will not cause significant environmental impacts. But this does not follow. The earlier paragraph specifically states that there is the potential for earthquake damage at the facility, including tank and structural failure. The DEIR may not simply conclude that there is no significant impact from earthquake damage without evaluation, and in a manner inconsistent with historical experience of devastation which does occur due to major earthquakes.

The DEIR acknowledges that in a severe earthquake the facility could suffer structural damage, which as demonstrated below could cause significant environmental impacts. However, the DEIR fails to analyze potential mitigation measures that could prevent these impacts.

The DEIR fails to provide an evaluation of earthquake damage (other than complete structural failure) which is likely to occur to the ISOCI facility during the major earthquake which is imminent in the nearby region, and which has a high potential to cause significant impacts. Such damage can involve tanks and their floating roofs, secondary containment structures, railcars, other containers of hazardous materials, boilers, heaters, generators, and other onsite and offsite facilities.

There is a significant risk of leaks, spills, fires, smoke, and other hazardous air pollution and hazardous material releases due to damage to the facility and surrounding facilities by a major earthquake which must be evaluated in the DEIR. The DEIR did briefly discuss offsite impacts from heat radiation from a potential fire[5] (and found no significant impacts) but failed to evaluate impacts such as smoke plumes and hazardous air pollutant and other hazardous pollutant releases caused by burning petrochemicals and spills onsite due to earthquakes.

Industrial damage from a major 1999 earthquake in Turkey was evaluated by the Pacific Earthquake Engineering Research Center. An excerpt of a report on this study is provided below. The report found *"The earthquake struck the industrial heartland of Turkey."* It found that complete structural failures due to earthquake were few in number, but severe damage short of complete structural failure did occur. One example was the failure of floating roofs in crude oil tanks. This is particularly of concern since ISOCI is planning to upgrade it's own fixed roof tanks to either use vapor recovery, or to turn them into floating roof tanks (with internal or external floating roofs). The DEIR failed to evaluate

[5] The DEIR found "The hazard impacts associated with fire radiation are expected to remain within the industrial area and would be considered less than significant (see Table 3.5.7)."

the potential for failure of planned floating roofs in tanks, during a major earthquake. The DEIR also failed to evaluate potential failure of other facility components short of complete structural failure.

Such fracturing and crumpling of support structures, failure of floating roof tanks, and other earthquake damage to industrial equipment can not only cause leaks and spills, but easily causes fires. Even in residences, fires during earthquakes are a known common hazard due to leaking natural gas, broken structures and electrical systems, ignition sources, etc. When damage occurs during major earthquakes to heavy industrial facilities which store, transfer, and process combustible materials, there is even more potential for dangerous fires. The Turkish example documented a fire occurring during the 1999 earthquake when a refinery cooling tower failed, and also when eight naphtha- storing fuel tanks burned.

Another publication funded by the Earthquake Engineering Research Institute and the Washington Emergency Management Division (2005)[6] found:

> *"Damage to industrial facilities resulted in indirect losses in previous major earthquakes; such impacts include release of hazardous materials, which can have long term environmental effects."*

The DEIR must provide analysis of damage which could occur to the facility during and after a major earthquake, including damage short of structural collapse, damage due to fires, and impacts of associated fires, leaks, and spills of hazardous materials onsite.

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[6] *Scenario for a Magnitude 6.7 Earthquake on the Seattle Fault, A Project Funded by the Earthquake Engineering Research Institute and the Washington Emergency Management Division, February 2005, Excerpts from a publication of the same title to be released March 2005* , page 20, http://seattlescenario.eeri.org/documents/EQ%202-28%20Booklet.pdf

## Kocaeli (Izmit), Turkey $M_w$ 7.4 Earthquake[7] (excerpt)

**"The earthquake struck the industrial heartland of Turkey.** The most significant damage to an industrial facility observed by the reconnaissance team was at the Tüpras refinery in Körfez, located approximately 20 km from the epicenter. Eight tanks containing naphtha fuel burned following the earthquake (fig. 5).

*Fig. 5. Fire damage to naphtha tanks at Tüpras refinery.*

"Oil was spilled into the Sea of Marmara. Other damage at the refinery, which was designed and constructed in the 1960s, included the **failure of floating roofs in crude oil tanks; failure and fire in a cooling tower; collapse of the upper 80 m of a 115-m-tall smokestack onto a processing unit and piping system; and fractured piles beneath a jetty that supported fuel-oil piping that served oil tankers.**

**"Structural damage was observed at a number of industrial facilities including the failure of components of precast concrete warehouses, collapse of concrete column supports for tanks of liquid oxygen, and significant translation and rotation of above-ground tanks** containing propane and other flammable gases. [emphasis added]

"The reconnaissance team visited two power generation/transmission stations. At the 380-kV substation in Adapazari, older porcelain disconnect switches and aluminum castings were damaged in the switching yard, and large transformers moved up to one meter on their rails. At the Enerjisa power generation facility, an 80-ton boiler dislodged from its pedestal foundation; transformers moved upwards of one meter; one transformer rolled off its pedestal foundation and overturned; the foundation of a heat exchanger was badly damaged; and porcelain switches failed.

Conclusions

"The M 7.4 Kocaeli earthquake resulted in great human and economic loss. Failures of older residential construction were widespread and severe, especially in zones that liquefied. Fault rupture, liquefaction, subsidence, and strong ground shaking caused such failures. Reinforced concrete moment-resisting frames were the most common lateral-force-resisting system and such construction routinely employed details similar to those used in the United States prior to the 1970s. Shear wall buildings performed well with no observed failures.

"Industrial facilities suffered significant damage but complete structural failures were few in number. Fire following the earthquake caused severe damage to the Tüpras refinery. Other observed structural failures in the refinery were to a 115-m-tall smokestack, floating roofs in crude oil tanks, and piles supporting a jetty. Substations and one power generation facility suffered damage ranging from overturned transformers to fractured porcelain switches."

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[7] *PEER Center News*, Vol. 2 No. 4 October 1999, http://peer.berkeley.edu/news/1999october/turkey.html, excerpt. *PEER Center News* is a quarterly publication of Pacific Earthquake Engineering Research Center, highlighting research and information of interest to earthquake engineering researchers and professionals.

**The DEIR failed to evaluate fire risks from earthquakes, especially due to hydrocarbons onsite and natural gas lines**

In addition to the risk of fires associated with earthquakes well known to California regulators (as well as those documented in the Turkish earthquake), a publication of the University of Patras, Greece[8] found major fire risks from earthquakes associated with burning hydrocarbons to be a general problem with major earthquakes around the world:

> *"Hydrocarbons, particularly gas, also create a much increased risk of fire as a major secondary consequence following earthquake damage. There is a growing danger that major Greek cities may experience fire damage after a strong earthquake, enhanced by the increased supply of gas into urban areas. Fires following the earthquake at Kobe in Japan 1995 and Turkey 1999 (Fig.1,2) provided a salutary example of impact even in a well-regulated, modern and earthquake conscious country. Longer memories recall the conflagration in Tokyo that followed the 1923 Kwanto earthquake."*

Figure 1. Fire at factory at Kobe's industrial zone, caused from the earthquake of 17-1-1995

ISOCI's storage of major quantities of hydrocarbons (over a million gallons planned of used and recycled oil and various other hydrocarbons onsite), increases the risk of fire during earthquake damage. In addition, there is also a widely-accepted significant potential for fires due to natural gas line ruptures and other causes during a major earthquake,

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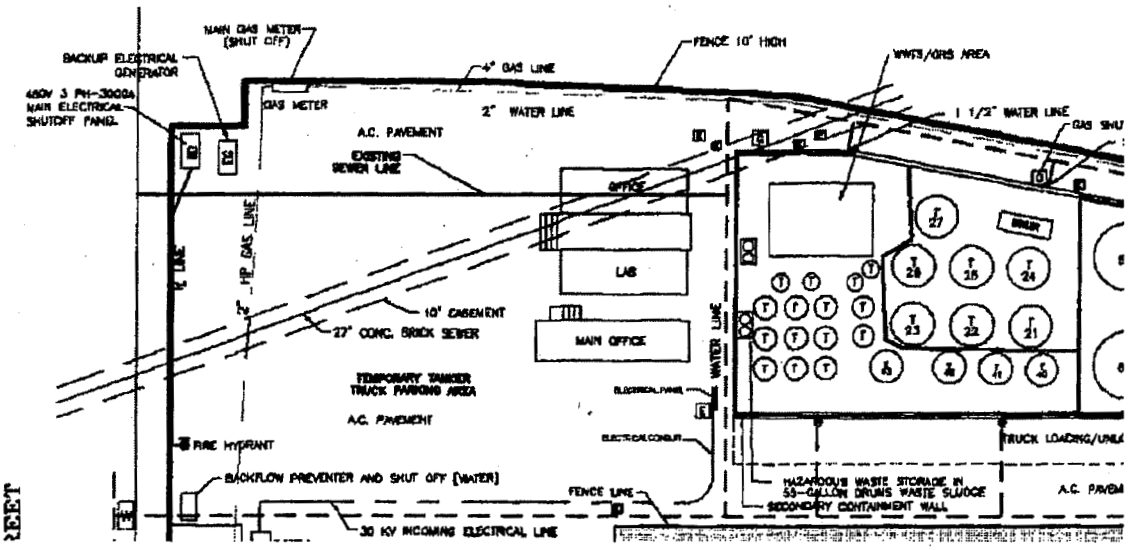
[8] *Safeguarding Hydrocarbons Inside Local Earthquake Defense Systems.*, Project participants: UPS: Seismology Centre, University of Patras, Greece, UEA: School of Environmental Sciences, University of East Anglia, Norwich, England, DEPA: The Public Gas Company of Greece, GSCP: The General Secretariat of Civil Protection, AGISCO, Aspinal & Associates, and ECS: Euroconsultants, http://seismo.geology.upatras.gr/shields/SHIELDS2003.htm

including Los Angeles. For example, a publication of Michigan Tech (*What Are Earthquake Hazards?*[9]) found:

> *"The fourth main earthquake hazard is **fire**. These fires can be started by broken gas lines and power lines, or tipped over wood or coal stoves. They can be a serious problem, especially if the water lines that feed the fire hydrants are broken, too."*

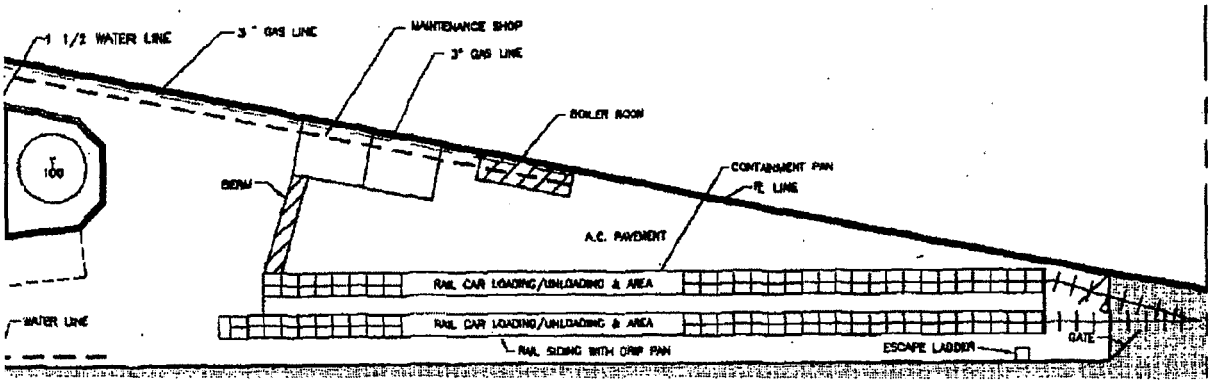
A diagram of ISOCI gas lines included in the Part B application[10] shows a 4" gas line along the entire northern property line, and a 2" "HP" gas line close to the western property line (shown below as it was broken into two pages in the Part B application). Gas lines appear to come within about 15 feet of ISOCI tanks, and pose a fire hazard during earthquakes not evaluated in the DEIR.

It is crucial that the DEIR fully evaluate the risk of fire during earthquakes due to equipment failures, due to the hydrocarbons onsite at ISOCI, due to natural gas fires, and other earthquake fire hazards, and identify appropriate mitigation or alternatives.




[9] Michigan Tech, Geological and Mining Engineering and Sciences Division, http://www.geo.mtu.edu/UPSeis/hazards.html

[10] Figure II-8 – Utility Plan, Part B Application, Volume 1 (147th, 148th & 149th pages of electronic version of Part B application)




## The DEIR improperly dismissed fire risk from used and recycled oil

The DEIR also minimized the risk of fire from any cause involving oil and recycled oil, by stating that they are by definition "ignitable."

> *"Used oil is currently the primary waste handled at the ISOCI facility. Used oils come to ISOCI from a variety of off-site sources such as community recycling centers; generators who use oil and lubricants in industrial activities; and generators that are involved in activities concerning machinery maintenance. The used oil is generally produced from oil tank cleanings, oil spills, sump cleaning, vehicle oil changes, and factory equipment maintenance.* ***Used oil is not ignitable,*** *corrosive, or reactive but can contain contaminants such as gasoline, diesel fuel, non-RCRA solvents and thinners, water and dirt.* ***It may also be contaminated with heavy metals, such as lead."*** Page 2-18 DEIR

Many other parts of the DEIR refer to used and recycled oils as not "ignitable," without explaining in plain terms that these materials can still burn and cause major fires. The DEIR finds that the impacts from potential fires would be insignificant. While used oils such as motor oils (one major component of used oil at the facility) are not defined as "ignitable" under EPA's formal definition, EPA's definition does not mean that such oils cannot burn. To the contrary, such materials can burn fiercely (as illustrated below in the burning of an entire Texas plant). The definition of "ignitable" substances are those liquid substances that readily ignite and burn at temperatures below 140°F (or specifically with a flash point[11] below 140°F). Such substances as used motor oil and other used oils onsite which have a higher flash point and which are defined as "non-ignitable," will most definitely ignite and burn at higher temperatures.

Furthermore, fires caused by "ignitable" materials (which will also be onsite at ISOCI and which can catch fire at low temperatures) cause temperatures to reach high enough to

[11] "The flash point of a fuel is the temperature at which vapour given off will ignite when an external flame is applied under specified test conditions. A flash point is defined to minimise fire risk during normal storage and handling. . . . Even when residual fuels are at a temperature below their measured flash point, they are capable of producing light hydrocarbons in the tank headspace, such that the vapour composition may be near to or within the flammable range. Hence all residual fuel oil headspaces should be considered to be potentially flammable." http://www.bunkerworld.com/technical/tech_fp.htm, a global industrial website with information on fuels, especially marine fuels.

ignite substances not defined as "ignitable." For example, new motor oils have flash points around 450°F (ranging from 390°F to about 480°F)[12] and so are not defined as "ignitable" at lower temperatures. When fires occur, temperatures can easily exceed flash points of new motor oils, causing them to burn. (Furthermore, used oils can have much lower flashpoints, at approximately 200°F, and so can burn at lower temperatures than new motor oils.[13])

Once such oil fires are burning, they can be very difficult to put out, especially when large amounts of these oils are stored. It is misleading to simply label used and recycled oils as not "ignitable" in the DEIR and then to fail to evaluate the real potential for such fires and likely impacts based on the paper definition, especially given the risk of fires caused by earthquakes.

Fires started by ignitable materials can spread to "non-ignitable" materials like used and recycled oil. Such fires have occurred, as in the major fire in an automotive fluids blending plant (called Third Coast Industries) south of Houston Texas, discussed later in this comment. This plant had about the same capacity as the proposed ISOCI facility (over a million gallons of oils).

**No less an authority than the U.S. Chemical Safety and Hazard Investigation Board came to the conclusion that higher flash point ("non-ignitable") materials can represent major fire hazards.**[14] This agency concluded after evaluation of the huge 2002 automotive fluid blending plant fire in Texas, that oils with flash points greater than 200°F classified as "Combustible IIIB" (including motor oils) should be treated with more care regarding fire safety. The Texas fire under investigation could not be put out, and completely destroyed the facility.

The ISOCI DEIR did briefly analyze the general risk of fire but did not evaluate fires associated with earthquakes damage, and did not evaluate fire risk of "non-ignitable" used and recycled oils. The ISOCI DEIR found *"The hazard impacts associated with fire radiation are expected to remain within the industrial area and would be considered less than significant (see Table 3.5.7)."* Given the greater than one million gallons onsite of oils and other materials and especially due to the earthquake hazard of fires, this conclusion is clearly incorrect, and contradicted by the U.S. Chemical Safety Board investigation.

In the Texas case, the Chemical Safety Board found that while <u>most</u> of the material onsite at this facility (98%) had higher flash points, the presence of some liquids (less than 2% of the materials onsite) were more easily combustible, with lower flashpoints which could have caused the fire and then combusted the bulk of the higher flashpoint materials. The Chemical Safety Board found that such higher flash point oils (currently identified in the ISOCI DEIR as non-ignitable) burn "fiercely" once a fire is started. **These conditions are very similar to those at ISOCI in terms of the kinds of materials present** – large amounts of high flash point materials that require higher temperatures to burn, but also the presence of a variety of lower flashpoint materials that can begin to burn more easily, but then cause high temperatures that will burn "non ignitable" materials and facilities to the ground.

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[12] *More than You Ever Wanted to Know About Motor Oil*, 1997-2006 Stephen Mullen, Oldsmar, FL, http://www.nightrider.com/biketech/oilinfo1.htm

[13] 86th page of Part B Vol 2 electronically available

[14] *Third Coast Industries Fire*, Brazoria County, Texas May 1, 2002, U.S. Chemical Safety and Hazard Investigation Board, CSB Investigation Digest, attached

The evaluation of the Chemical Safety Board found:

*"At the suspected origin of the fire, workers typically handled flammable and combustible liquids, such as cleaning solvents and light oils. These liquids had flash points below 200°F, and in some cases below 100°F, and could have been ignited by contact with hot motor surfaces or lights. However, about 98 percent of the materials at the Third Coast plant were classified as "Combustible IIIB" — materials that must be heated above 200°F before they will support a flame. While those combustible liquids are often regarded as a less serious fire hazard, once heated up — as they were during the Third Coast blaze — they burn as fiercely as other more easily ignited substances.* ***The Board concluded that fire codes and workplace safety regulations should apply more controls to combustible liquid storage and handling.*** *In the aftermath of the Third Coast fire, the Board communicated its concerns in correspondence to the U.S. Occupational Safety and Health Administration (OSHA)." [emphasis added]*

*"Due to the extent of the damage, investigators could not determine what had ignited the initial small fire. They surmised that the fire could have been started by a flammable liquid contacting the hot surface of a motor or light, or by a solvent-soaked rag combusting spontaneously. Arson was not ruled out.*

The Board also found:

*". . . the facility was not designed to contain the contaminated runoff that could result from fighting the fire with water. Fire officials therefore decided they had no choice but to let the plant burn, and they focused on protecting nearby homes from destruction.*

CEQA requires an evaluation of the conditions at the ISOCI facility, which include potential for fires caused by earthquakes where temperatures are elevated above the flash point of motor oils and other used and recycled oils onsite in great quantities.

The facility has historically been more than lax with regard to secondary containment of hazardous materials (which were non-existent for years, and were put in place through enforcement actions of DTSC). Secondary containment now in place is not sufficient to prevent significant impacts in the event of an earthquake or major fire. Secondary containment of tanks at ISOCI do not have the capacity to contain 100% of all materials within the containment area:

*"The impervious sealed concrete secondary containment structure surrounding the tank storage area is designed to contain precipitation from a 24-hour, 25-year storm, plus 10 percent of the total volume of all tanks or 100 percent of the capacity of the largest tank within the tank storage area, whichever is greater"* DEIR page 2-12

Dividing walls are not present between all tanks or between tanks and process equipment. For example, the following groups of numbered tanks and/or other equipment are placed within the same containment area:

- 500 & 600,
- 400& 700,
- 300, 800, & 200,
- 21, 22, 23, 24, 25, 26, 27, & an oil heater,
- 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, "Press," wastewater treatment system, glycol recovery system, & pump

The Texas fire was found to be so difficult to put out because of fire spreading to other equipment, because tanks were not separated by walls, and there was no containment to prevent runoff of contaminated water used in fire suppression. In the ISOCI case, there is

some separation present between tanks and equipment, but not between all tanks and/or other equipment. Furthermore, the secondary containment capacity is not large enough to contain 100% of the contents of the tanks, nor to additionally contain water used for fire suppression (it is designed for capacity only of the largest tank within the containment area).

The DEIR must not only evaluate whether the facility meets local codes, but also must evaluate whether significant impacts could occur even if the facility does meet local codes. The DEIR must evaluate the use of available alternatives, including sufficient secondary containment to prevent all runoff during a fire, and walls and containment to separate tanks and prevent fire from spreading, especially in the case of earthquakes that can damage both tanks and secondary containment.

Furthermore, the DEIR failed to evaluate the increased hazards associated with railcar storage of "non-ignitable" materials, including fire, including the fact that secondary containment capacity does not cover 100% of materials stored, and including many other well known concerns regarding "temporary" storage in railcars. In general, railcar storage of hazardous materials has been identified by many government and industry sources as representing multiple hazards (including risk of terrorist attack[15]). Other associated railcar risks were outlined by an industry environmental consulting firm (AIG – Railroads and Railcars):[16]

> *"The nature and frequency of activities performed at railyards can pollute these sites significantly. The liabilities are further complicated because many modern railyards operated long before regulatory oversight was common and many have also changed owners frequently. As a result, these sites have accumulated wastes and concealed their histories – vastly complicating the assessment and cleanup for today's owners and operators."*

The DEIR fails to identify the significant impacts which could occur due to lack of full capacity for secondary containment for tanks, other equipment, and railcars. The DEIR fails to evaluate at all the special risks associated with "temporary" (up to one year) storage of hazardous materials in railcars. The DEIR fails to evaluate major fires at the facility involving "non-ignitable" materials from all causes, and especially due to earthquake.

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[15] Railcar Hazmats Storage: Reducing Risks in a Time of Terrorism, Fred Millar, Ph.D, fmillar@erols.com

[16] AIG Environmental, Railroads and Railyards, http://www.aigenvironmental.com/environmental/public/envindustries/0,1340,63-11-335,00.html

U.S. Chemical Safety and Hazard Investigation Board

CSB Investigation Digest

# Third Coast Industries Fire

**Brazoria County, Texas May 1, 2002**

On May 1, 2002, a huge fire destroyed the Third Coast Industries automotive fluids blending and packaging plant in rural Texas, southeast of Houston.

The blaze began late at night, when none of the plant's 100 workers were present. The fire burned for more than 24 hours, consuming 1.2 million gallons of combustible and flammable liquids, including anti-freeze, motor oil, cleaners, solvents, brake fluid, transmission fluid, windshield wiper fluid, and power-steering fluid.

**Storage tanks at Third Coast collapsed from the intense fire which burned for over 24 hours.**

First established in 1987, the plant had grown over the years to include 74 storage tanks and four warehouses that routinely held thousands of tons of petroleum products. Nonetheless, the multi-acre facility had no sprinklers or other fire protection systems.

The fire forced the evacuation of scores of nearby residents, destroyed an adjacent small business, caused the temporary closure of a local school, and left neighboring homes with heavy soot and smoke damage. Some 900,000 gallons of liquid waste and 2,500 cubic yards of contaminated soil and debris needed to be removed from the Third Coast site for disposal. The facility itself was completely destroyed and was not rebuilt.

## SMALL FIRE SPREAD TO CONSUME PLANT

At 1:20 a.m. on May 1, a lone security guard discovered a small fire on a worktable used for packaging liquid products. The table was located outdoors between two warehouses. The guard responded by placing a 911 emergency call.

First to arrive was the chief of the Pearland Volunteer Fire Department, who reached the plant about seven minutes after the call. He found that the small fire had already grown into a flaming pool of liquid 65 to 80 feet wide and had engulfed two semi-trailers full of empty drums. In addition, flames had surrounded a 6,000-gallon tank wagon containing synthetic motor oil, heating the oil and igniting flammable vapors that vented from the tank. The fire chief reported hearing boiling and crackling sounds from burning heavy oil along with thumps and small explosions as the fire spread to additional containers of liquid.

The closest water source was located over one mile from the plant. In addition, the facility was not designed to contain the contaminated runoff that could result from fighting the fire with water. Fire officials therefore decided they had no choice but to let the plant burn, and they focused on protecting nearby homes from destruction.

The intense fire caused the 6,000-gallon tank wagon to fail and release its contents. The heat ultimately melted the tank into several puddles of aluminum. Meanwhile, flames surrounded several 2,000-gallon blending tanks. The tank supports buckled under the heat, toppling the vessels and spilling their contents into the fire as well. Pipelines from nearby storage tanks also ruptured, further fueling the blaze.

The burning fluids from the drums, tank wagon, and the blending tanks flowed unhindered toward the tank farm, a separate diked area where bulk storage tanks held additional combustible liquids. But the dike wall was cracked and

## COMBUSTIBLE LIQUIDS

**At the suspected origin of the fire, workers typically handled flammable and combustible liquids, such as cleaning solvents and light oils. These liquids had flash points below 200°F, and in some cases below 100°F, and could have been ignited by contact with hot motor surfaces or lights. However, about 98 percent of the materials at the Third Coast plant were classified as "Combustible IIIB" — materials that must be heated above 200°F before they will support a flame. While those combustible liquids are often regarded as a less serious fire hazard, once heated up — as they were during the Third Coast blaze — they burn as fiercely as other more easily ignited substances. The Board concluded that fire codes and workplace safety regulations should apply more controls to combustible liquid storage and handling. In the aftermath of the Third Coast fire, the Board communicated its concerns in correspondence to the U.S. Occupational Safety and Health Administration (OSHA).**

broken, and it failed to stop the flaming liquid from entering the tank farm and collecting around the storage tanks. The intense heat caused some tanks to burst and others to collapse and break open. Eventually, fire also spread to the plant's other warehouses, breaching their metal walls and consuming all the remaining fuel at the site. A day after it began, the fire finally subsided to a manageable size, allowing firefighters to extinguish remaining hot spots with foam and water.

Due to the extent of the damage, investigators could not determine what had ignited the initial small fire. They surmised that the fire could have been started by a flammable liquid contacting the hot surface of a motor or light, or by a solvent-soaked rag combusting spontaneously. Arson was not ruled out.

## PLANT NOT DESIGNED TO CONTAIN FIRES

Whatever started the blaze, CSB's investigation found that the Third Coast facility lacked fire detection and suppression equipment and was not designed to contain the spread of even a small fire. The plant had no smoke or heat detectors, sprinklers, or fire alarms, nor was the plant designed to contain or safely drain burning liquids. There was no supply of firefighting water at the plant. Blending tank supports were not fireproofed. The plant did have a dike around the tank farm, but the walls were broken in places and ineffective. Within the tank farm, storage tanks were positioned too close to each other and to dike walls. Finally, warehouse buildings lacked firewalls and were built too close together.

The Board said Third Coast should have systematically assessed how fire would affect the facility, its employees, the community, and the environment. Such an assessment likely would have led to the installation of fire protection systems that could have prevented the total loss of the plant.

## FACILITY NOT COVERED UNDER ANY FIRE CODE

Texas has no statewide fire code. In 1997, Brazoria County gained the authority to adopt its own fire code but had not acted by the time of the fire in May 2002. Although some Brazoria County cities already had fire codes in place, Third Coast Industries was not covered since it was located on unincorporated county land.

Consensus fire codes — like those of the National Fire Protection Association (NFPA) — are used in most other states and localities to promote the safe design and operation of industrial facilities. The CSB found that if a fire code had been in place as the Third Coast facility was constructed, the company would have been required to take various measures that would have lessened the severity of the 2002 fire. A fire code would have required the company to analyze and reduce fire hazards through measures like installing suppression systems, ensuring the availability of water, limiting product inventories, using fire-resistant building materials, and isolating bulk storage areas.

While noting the utility of such consensus fire codes, the CSB did find that the fire codes lack some useful safety provisions. For example, the NFPA combustible liquid code does not have specific requirements for fire detection equipment and does not require combustible liquid storage tanks to have pressure-relief devices, which can prevent tanks from exploding when engulfed in fire.

## RECOMMENDATIONS

On March 6, 2003, the Board approved its final report on the Third Coast investigation and issued recommendations designed to reduce the likelihood of similar fires elsewhere.

### To Brazoria County

The Board recommended that Brazoria County make unincorporated areas subject to a mandatory fire code, such as the National Fire Protection Association code or the International Fire Code. (Five days after the Board issued this recommendation, Brazoria County supervisors voted to adopt the International Fire Code for all unincorporated areas.)

### To Third Coast Terminals

The CSB called on Third Coast Terminals, parent company of Third Coast Industries, to audit its remaining production facility in the nearby city of Pearland, Texas, to ensure that it has required fire suppression and control systems.

### To NFPA and the International Code Council

The Board recommended that the organizations revise their fire codes to specify requirements for fire detection equipment at facilities that are not staffed around the clock. The CSB also recommended that the code councils narrow existing exemptions for combustible liquids and expand requirements for performing fire protection analyses.

*Published March 2004*

In addition to the Texas oil fire, an oil depot fire in the Hertfordshire in the United Kingdom also illustrates how severe offsite impacts from smoky fires can be. While this facility likely had different percentages of "ignitable" fuels onsite, the inefficient burning of petroleum products causing huge smoking plumes would be similar to smoke plumes which would be present during a fire at the ISOCI facility involving used and recycled oils. Although the Herfordshire terminal fire occurred on huge scale, there are also very large quantities of petroleum products proposed to be onsite at ISOCI, which if burned would also cause a major smoky petroleum fire.

## 2005 Hertfordshire Oil Storage Terminal fire[17]

**"Hertfordshire England huge oil depot fire had possible cause:**

"An oil industry specialist speculated on BBC News that a vapour leak could have built up to explosive concentrations because of the ground frost in the area keeping vapour concentration at ground level. This would have resulted in a fuel-air explosion. It is industry practice for detection systems to be in place to reveal leakages. In order for this scenario to be fulfilled there must have been a leakage that was not picked up by the leak detection system.

"A BBC News 24 interview with a petrol tanker driver, who was about to load his tanker at 06:00, reported a cloud of mist rolling in from the tank farm area behind the loading bay. All electric lights were turned off and they were ordered to leave the site on foot. As he was doing so the blast blew him off his feet. In another interview a security guard in a nearby office building reported an unusual smell of petrol inside his building before the explosion. Hertfordshire police reported speaking to a tanker driver concerned that switching the engine cut-off on his tanker might have triggered the explosion.

"Other safety experts spoke of a known "Weekend effect" in industry, in which weekend maintenance creates an unsafe condition."

[17] Excerpt from http://en.wikipedia.org/wiki/2005_Hertfordshire_Oil_Storage_Terminal_fire#Causes

**Fire caused by earthquake and all causes could result in severe air pollution impacts not evaluated in the DEIR**

Due to the significant risk of fires from earthquakes and other causes, the DEIR must evaluate the severe air pollution impacts offsite likely to occur in even a moderate fire at the facility. As shown above in the photo of the Hertfordshire Oil Terminal fire, oil fires cause huge smoky plumes due to poor combustion of hydrocarbon materials. Smoke from an oil fire and/or hazardous materials burning at the proposed ISOCI facility could cause major emissions of particulate matter, PAHs (Polycyclic Aromatic Hydrocarbons), sulfur oxides, heavy metals including lead, mercury, and chromium, chlorinated compounds including deadly dioxins, and many other hazardous compounds.

Smoky fires and gas plumes from such an event could easily reach residential areas and schools (1/4 mile away) or offsite workers next door. In fact, smoke and other air pollutants from an ISOCI oil fire could billow for miles. Even a moderate fire could heavily impact neighbors and schoolchildren, especially people with respiratory problems, asthma, or heart conditions, but could also significantly impact healthy adults. The impact would depend on fire size, availability of the fire department (which may not be the case in an earthquake), and how long it takes to put out the fire. Since fire smoke can easily drift for miles, the wind direction may not even matter, as there are residences and local businesses in all directions.

The DEIR incorrectly found that no potential significant impact would occur to the local schoolchildren from fire, but only evaluated heat radiation, and not smoke and other air pollutants. In the Texas fire discussed above, the Chemical Safety Board found significant impacts to people offsite did occur due to the fire at the oil processing facility:

> *"The fire forced the evacuation of scores of nearby residents, destroyed an adjacent small business, caused the temporary closure of a local school, and left neighboring homes with heavy soot and smoke damage."*
>
> *"The Board said Third Coast should have systematically assessed how fire would affect the facility, its employees, the community, and the environment."*

Smoky fires mean that there are large amounts of particulate matter present. Particulate matter is well known to highly impact people with asthma, heart disease, and is known to increase hospital death rates. Thus, people who are already ill are at risk of death from even a small increase in particulate matter in the air. In addition, healthy adults are adversely impacted by particulate matter. The U.S. EPA found:[18]

> *"Particle pollution - especially fine particles - contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:*
>
> - *increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing, for example;*
> - *decreased lung function;*
> - *aggravated asthma;*

[18] U.S. Environmental Protection Agency, Particulate Matter, Health and Welfare, http://www.epa.gov/oar/particlepollution/health.html

- *development of chronic bronchitis;*
- *irregular heartbeat;*
- *nonfatal heart attacks; and*
- *premature death in people with heart or lung disease.*

*"People with heart or lung diseases, children and older adults are the most likely to be affected by particle pollution exposure. However, even if you are healthy, you may experience temporary symptoms from exposure to elevated levels of particle pollution."*

Vast numbers of studies on particulate matter air pollution provide overwhelming evidence that as particulate concentrations increase, severe health impacts increase, including higher death rates, hospital visits, chronic bronchitis, increased heart attacks, etc. The studies also show that death rates are increased from both cardiopulmonary disease, and lung cancer. One of the studies was done in the San Francisco Bay Area (Santa Clara County), where particulate matter levels are considered relatively low compared to other areas of the country.

The Fairley Santa Clara study[19] found that not only were death rate increases significant on days of increased coefficient of haze (a measure of particulate matter), but it also found that only small increases in particulate matter had significant adverse impacts on local death rates. Here are excerpts from the study:

*"An association was found between high particulate concentrations and increased mortality. This association persists after adjustment for temperature, relative humidity, year, and seasonality. Contrary to expectation, the magnitude of the particulate effect appears the same or larger than that estimated for London, despite Santa Clara County's cleaner air.*

*"These analyses show that in Santa Clara County, mortality tends to increase on days with increased particulate levels. Moreover, contrary to expectation, the estimated magnitude of the effect is similar to, if not larger than, that found in the London studies.*

*"Having stated the caveats, it is also important to stress that the finding of any health effect indicates that there may be a sizeable health risk from particulates. If the mortality signal were not strong enough, no statistically significant effect would be observed."*

*"This study suggests that particulates may be a health risk at concentrations lower than previously suspected."*

The Fairley study was done in 1990, and since then a vast number of new studies have confirmed the severe health impacts from particulate matter. EPA set tighter standards on particulate matter, especially, the finest particles, due to the abundance of evidence documenting damage to human health (US EPA "Air Quality Criteria for Particulate Matter," April 1996). I have excerpted the Fairley study because it found that even in an area expected to have be relatively clean and to have no significant impacts due to particulate matter, a strong correlation between particulate matter and death rates was found.

The DEIR must evaluate the the full range of health problems associated with increases in particulate matter in smoke associated with potential fires at ISOCI, including bronchitis, hospital visits, asthma attacks, heart attacks, etc.

The project expansion also proposes bringing onsite such a vast array of other highly toxic materials, that fires could result in releases of highly toxic combusted and uncombusted materials, which must be evaluated in the DEIR, including:

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[19] Fairley, 1990, "The Relationship of Daily Mortality to Suspended Particulates in Santa Clara County, 1980-1986 (Env Health Persp, Vol 89 pp 159-168)

- PAHs ((Polycyclic Aromatic Hydrocarbons) -- May cause cancer, reproductive harm, and have adverse impacts on ability to fight disease. PAHs include compounds like anthracene and benzo(a)pyrene.
- SOx (Sulfur Oxides) – Cause bad odors, breathing and eye irritation, induce asthma attacks, and at higher levels, sulfur oxides are acutely hazardous.
- Dioxins can form under poor combustion conditions when chlorine compounds are burned, for example, which could occur during a fire at the ISOCI facility. A vast array of chlorine compounds will be accepted onsite as hazardous materials for treatment or disposal. Dioxins are highly toxic, disrupt human & animal hormones, cause cancer, reproductive damage, and immune system damage.
- Heavy metals do not break down during fires. Used oils and many other hazardous wastes proposed onsite contain heavy metals (as documented in the DEIR).

## II. Floodplain hazards and potential impacts on drinking water, the Los Angeles River, and sewer discharge impacts are misrepresented in the DEIR

The DEIR not only fails to identify floodplain hazards and potentially serious impacts on drinking water, and waterways identified in documents included in the ISOCI Part B Hazardous Waste Permit Application,[20] but the DEIR gives the impression that there are no such potential hazards. These blatant contradictions in the DEIR of the Part B Permit Application and its appended documents are serious flaws of the DEIR. Based on the Part B application:

- Flood Hazards were misrepresented in the DEIR, and floodplain management construction requirements were ignored
- Drinking water and groundwater can occur at much more shallow depths than identified in the DEIR, and are threatened by previous and future spills of hazardous materials
- The Los Angeles River receives runoff from the area, and is at risk from past and future hazardous materials spills from the facility, and from contamination in the event of a flood.
- The DEIR fails to evaluate low-level, yet extremely toxic discharges of dioxins, PCBs, lead, mercury, and other highly hazardous materials into the proposed sewer hookup

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[20] Hazardous Waste Facility Permit Application, RCRA Part A & B, for Industrial Service Oil Company, Incorporated, USEPA CAD 099452708, August 2005 Revision 7, Prepared by JRJ Associates, Palm Desert, CA

**Flood Hazards were misrepresented in the DEIR, and floodplain management construction requirements were ignored**

**The DEIR states that ISOCI is not in a flood plain:**

> *"The ISOCI facility is located outside of the 100 year floodplain. The Los Angeles River is expected to contain all run-off in this area, therefore no flooding is expected. All zones are rated C – no risk of flooding from a 100 year storm event (U.S. FEMA, 1986)"* DEIR page 3-81

**The City of Los Angeles found that ISOCI property is in a floodplain**, in a letter including in the Part B Permit Application[21]:

> *"The main building on the property is located above the Base Flood Level and is considered to be outside the Special Flood Hazard Area (SFHA); therefore, flood insurance is not required by the Federal Government. The remaining lot property remains in the SFHA; therefore, new construction must comply with floodplain management construction requirements."*

The DEIR fails to identify this hazard, which is of particular concern given that floods can inundate and cause considerable damage to areas containing hazardous materials, resulting in large releases of toxins to waters, soils and the environment in general. This is also of great concern given that the DEIR states that the ISOCI facility was found to have contaminated soil onsite, and that the investigation has not been completed to determine whether there are additional areas with contaminated soil needing cleanup. One County highlights this problem as part of its disaster-preparedness publications:

> *"Hazardous materials may also be released as a secondary result of a natural disaster like earthquakes or floods."*
> http://www.metrokc.gov/prepare/preparerespond/hazardsdisasters/hazmat.aspx)

Such flood damage to sites containing hazardous materials have been big concerns of U.S. floods, including:

- 2005 Hurricane Katrina flooding
- 1993 August 1st. Midwest / Mississippi: worst flooding in recorded history, 38,000 homes damaged or destroyed, 20 million acres of farmland under water[22]
- Recent California floods

We would not expect the ISOCI site to experience such severe flooding as New Orleans or the Midwestern states. However, any flooding could cause impacts releasing hazardous materials. We have seen record flooding and storms in recent years all over the U.S. (which may be due to global climate change). Global climate change and the associated general heating of the atmosphere causes higher energy storms, and more unstable weather conditions. As the atmosphere further heats up, we can expect increases in such extreme weather conditions.

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[21] City of LA, June 3, 2004, Gary Lee Moore, P.E., City Engineer, and Philip L. Richardson, Program Manager, Bridge, Seismic Bond, Streets and Stormwater Program) (Exhibit II-1 – L.A. Letter and Map Regarding Flood Zone Determination, Part B Application, Volume 1 (172nd and 173rd pages of Part B Application electronic version)

[22] Emergency and Disaster Management Inc., http://www.emergency-management.net/flood.htm

According to James knox of the University of Wisconsin Geography Dept:[23]

*"Alluvial records of paleofloods show that natural floods resulting from excessive rainfall, snowmelt, or from combined rainfall and snowmelt are highly sensitive to even modest changes of climate equivalent or smaller than changes expected from potential future global warming in the 21st century. . . .. Flood chronologies from several regions suggest that times of rapid climate change have a tendency to be associated with more frequent occurrences of large and extreme floods. The unusual high frequencies of large floods that have been observed in many regions since the early 1950s are often attributed to land use change, but the rapid climate forcing from the elects of increased atmospheric greenhouse gases may also be a contributing factor. . . .*

In fact, in 2005, Los Angeles has recently experienced very high rains, which increases the likelihood of shallow groundwater. Los Angeles:

*"had its 2nd wettest rainfall season since records began in 1877 and the wettest season in 121 years. Over 37 inches of rain (37.25) fell downtown, just failing to reach the record 38.18 inches set during the 1883-1884 rainfall season. Average wet season rainfall for LA is 15.14 inches, making the 2004-2005 season 246% wetter than the 1971-2000 normal."*[24]

Regardless of the cause of floods, the letter from the City of L.A. finds that new construction at ISOCI must comply with floodplain management construction requirements. The DEIR does not provide an evaluation of such construction requirements and how they apply to the expansion, nor does the DEIR evaluate whether the secondary containment structures which were constructed a few years ago, met floodplain management construction requirements. A full analysis of flood impacts on tanks, containers, secondary containment, piping, railcars, boilers, heaters, pumps, wastewater treatment, soils, and all other equipment, buildings, and materials onsite (especially hazardous materials) which could be impacted or carried away by a 100-year flood, and potential options for floodplain construction, management, and project alternatives, must be included in the DEIR.

**Threats to shallow drinking water, groundwater and the Los Angeles River identified in the Part B permit application were contradicted in the DEIR**

**The DEIR states that groundwater under ISOCI is not shallow**, is found at greater depths, is not at risk from hazardous materials spills at ISOCI, and is not in an area of groundwater recharge. The DEIR finds no significant impacts to groundwater, because the DEIR assumes that no contamination at the ISOCI site could reach deep enough to impact groundwater:

*"The Los Angeles County Hydrologic/Water Conservation Division, Hydrologic Records Unit indicated that the depth to ground water in the general ISOCI area is approximately 235 feet below the ground surface. Well Number 2778 was read on March 14, 2001 and the depth to ground water was listed as 235 feet below the ground surface. This well is located approximately 0.25 miles west of the*

[23] Sensitivity of modern and Holocene floods to climate change, James C. Knox, Geography Department, 234 Science Hall 550 North Park Street University of Wisconsin, Madison, WI 53706-1491, USA, Abstract

[24] National Climatic Data Center, 2004/2005 Winter Storms: California and the Southwest U.S., updated - 16 November 2005, http://www.nesdis.noaa.gov/

*ISOCI property. The existing ground surface in the general area is assumed to be flat and the depth of the local ground water table under the surface is expected to be similar." DEIR page 3-79*

*"There is no evidence that ground water contamination has occurred at the site from historical site operations.* ***The depth to ground water (over 200 feet) makes it highly unlikely that ground water contamination could occur. No ground water recharge areas are located on or near the project site."*** DEIR page 3-85

**But to the contrary, the Part B Permit Application, appended consent decree between DTSC and ISOCI,[25] finds that ground water / drinking water levels <u>can</u> be shallow** and that these aquifers are in hydraulic communication (water can flow between them):

*"The Facility is situated in the Los Angeles Forebay area of the Central Groundwater Basin.* ***The Los Angeles Forebay area acts as a recharge for the Central Basin Pressure Area located to the south of the Industrial Service site.***

*"The shallow aquifers present beneath the site include the Gaspur, Exposition, and Gage Gardena. In this Forebay portion of the Central Basin, it appears that all of these aquifers are in hydraulic communication.* ***Groundwater flow direction in the vicinity of the site appears to be southerly*** *and is probably controlled to a significant degree by groundwater withdrawal at City of Vernon production wells.* ***The closest public production well for drinking water purpose is located approximately one half mile south of the site*** *and is operated by the City of Vernon.* ***Although groundwater beneath the Industrial Service facility is estimated to occur 200 to 250 feet below ground surface (bgs), local perched groundwater could be present at much shallower depths, particularly after the heavier than normal rainfall.*** *The closest major surface water being the Los Angeles River which lies to the west within 1,000 feet of the site. [emphasis added]*

*"Releases from the Facility through the soil, groundwater and surface water.*

***VOC[s] which have been detected from the site soil samples may migrate toward groundwater in vapor and dissolved phase because of lack of secondary containment in the past.*** *Airborne migration of fugitive emissions can potentially affect the general population around the facility.* ***Furthermore, possible future consumption of contaminated groundwater is another pathway through which human receptors could be affected. Releases from the facility may have migrated to surface water and impacted local ecology.*** *The Los Angeles River may have received releases in the past because the river conducts storm water runoff and any other drainage from the immediate area, via local storm drain connections. This water is ultimately discharged to the ocean. Some ecological habitats which do exist along the river, may have been impacted."*

Impacts due to past, present and future site contamination of shallow groundwater which is present at times, especially due to heavy rainfalls, must be evaluated with respect to drinking water, groundwater, and surface waters such as the L.A. river must be evaluated, especially since soil onsite <u>was</u> found to be contaminated, and since the site investigation was not completed.

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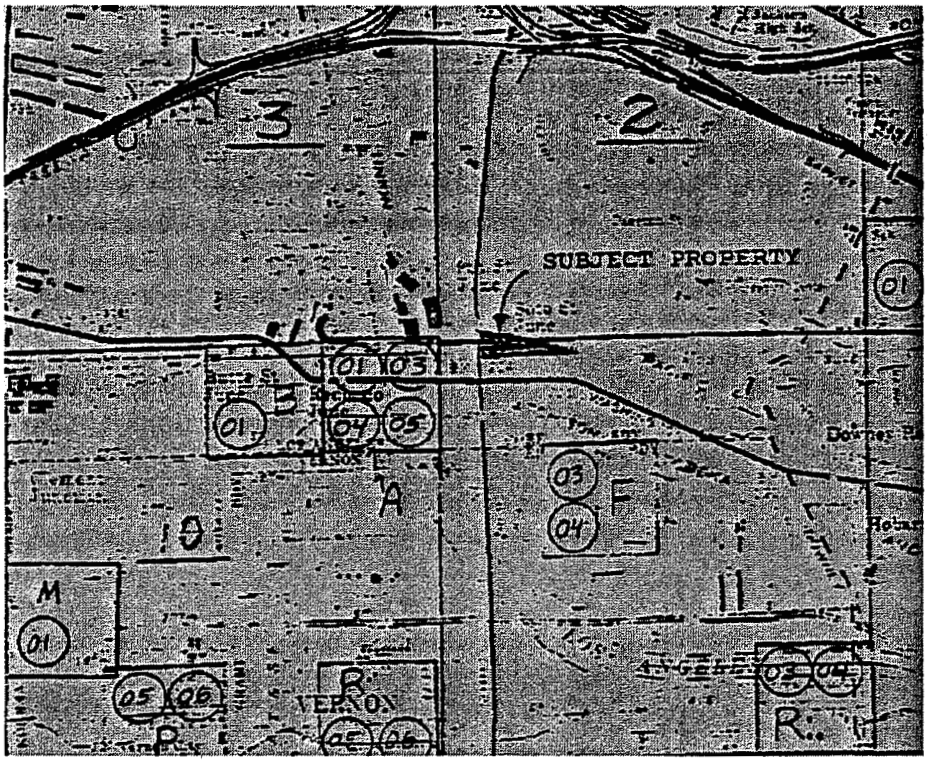
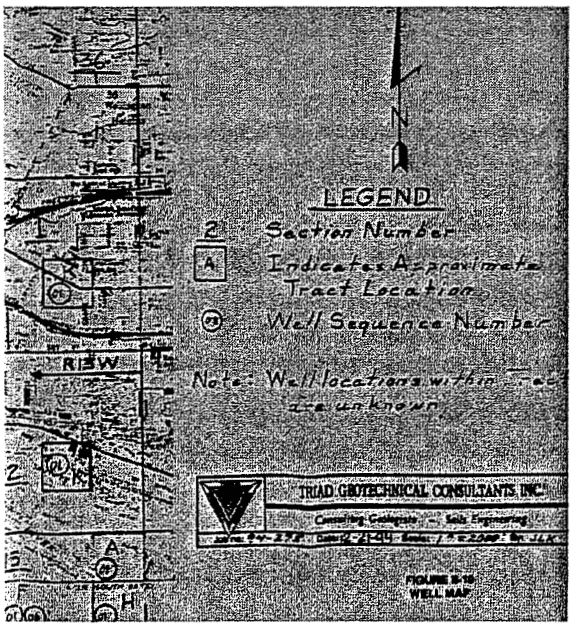
[25] Corrective Action Consent Agreement, Health and Safety Code Section 25187, State of California Environmental Protection Agency, Department of Toxic Substances Control , In the Matter of Industrial Service Oil Company, Incorporated, Docket HWCA: P3-00 01-002, included in Part B Permit Application, Volume 3, 258th page of electronically available version,

The Part B permit includes a map[26] showing drinking water wells in the vicinity, not evaluated in the DEIR:




[26] Figure II-10 – Well Map, ISOCI Part B Application, Volume 1, 151st, 152nd & 153rd pages of electronic version of Part B application (non-numbered pages)

**The DEIR fails to evaluate low-level, yet extremely toxic discharges of dioxins, PCBs, lead, mercury, and other highly hazardous materials into the proposed sewer hookup**

The DEIR found:

> *"Currently, there are no non-storm water discharges from the ISOCI facility. As part of the proposed project, ISOCI is applying for permits to connect the facility to the City of Los Angeles sewer system. The City of Los Angeles, Bureau of Engineering staff have indicated that as long as sewer discharge is within permitted limits, the discharge will not cause an adverse impact to the sewer system (Steve Chen, Personal Communication, City of Los Angeles Bureau of Engineering, Public Works Department). Any discharge of industrial wastes would have to be permitted separately by the City of Los Angeles Bureau of Sanitation, Industrial Waste Management Division."* Page 3-83

The DEIR therefore assumes that because ISOCI plans to meet sewer discharge limits in the future, there will be no potential impacts from the project due to these discharges. However, this cannot be assumed. There are many examples where poor monitoring of highly hazardous materials such as dioxins, present at very low levels and difficult to detect, have been discharged to sewers, then discharged through sewer systems to water ways where they have caused serious impacts.

**This project must be expected to cause a significant increase in discharge of pollutants to sewer systems, since before the project, this discharge was zero, but the project will increase processing to about 84,000 gallons per day.** (DEIR page 3-85) There is certainly a potential for significant impacts given the past history of violations at the facility, given the introduction of a complex new array of hazardous materials onsite, and given the facility's complete lack of experience with meeting the sewer discharge limits. The DEIR must evaluate these impacts, and not simply dismiss the possibility of their existence due to expected compliance with future permit limits.

## III. The DEIR and Part B application contradict themselves regarding accepting, storing, and treating dangerous PCBs, leaving in question potential impacts

The DEIR and Part B permit application contradict each other regarding whether PCB-contaminated waste will be onsite or not, leaving the project description incomplete. PCBs are highly hazardous, persistent in the environment, and have been identified by EPA as compounds needing testing at lower detection limits. PCB soil contamination has already been found onsite at ISOCI. The lack of a complete description on the extent to which PCBs will be onsite mean that an evaluation of potential impacts from PCBs has not been performed. PCBs could be released through the new sewer discharge planned, could be released during earthquakes to the air and soil, and could be released during floods. None of these impacts have been evaluated. PCBs are highly toxic at such low levels and persistent in the environment, so any releases should be considered significant.

The DEIR section evaluating Hazards and Hazardous Materials does not mention PCBs (polychlorinated biphenyls) except with regard to soil found to be contaminated onsite

with PCBs due to past contamination. This evaluation does not mention the new introduction of PCB-laden materials onsite which will be part of the proposed project, nor does it mention the potential water, air, and other impacts related to the introduction of these compounds. The DEIR Land Use section mentions the total of PCBs hazardous waste handled in the region, but mentions nothing regarding the introduction of new sources of PCBs to the ISOCI site as a part of this project. The DEIR discussion on the Health Risk Assessment (HRA) and the associated Table 3.3-10 "Chemicals of Potential Concern Evaluated in the HRA" (page 3-40 of the DEIR), fail to mention PCBs.

The Part B Permit Application on the other hand, describes how PCBs will be handled at ISOCI in some sections and documents, but in others states that there will be no acceptance of PCBs onsite. The contradictions within the Part B permit are highly problematic. Moreover, since the DEIR refers to and relies on the Part B permit to set appropriate limits and conditions for handling of hazardous materials, absence from discussion of highly dangerous PCBs in the DEIR results in an incomplete project description. These dangerous compounds must be evaluated.

The Part B application finds that the use, storage, and treatment of toxics such as PCBs can cause all sorts of environmental hazards, and **the Part B application states that PCBs will not be handled onsite.**

> *"Hazardous Properties of Waste: See Table III-1. If the wastes listed in Table III-1 are not properly stored and treated, the potential environmental effects may be significant. Effects may include toxicity to plant and animal life, and corrosion of equipment or structures. Related effects could also include mutagenic, teratogenic, or carcinogenic impacts. When wastes are properly handled including storage and treatment, the potential effects on the environment are minimized.*
>
> ***Examples of waste types that will not be handled at the facility include PCB's**, lab-pack, radioactive, explosive, reactive, compressed gases, dioxins, water reactive, biohazard, and medical wastes."* Part B application, 178th page of electronic version (in document entitled Section III Waste Characteristics, paginated 3of 24)

Multiple documents within the Part B permit identify PCB usage. (Examples are excerpted below.) The following Part B permit application tables[27] identify PCBs as part of the waste profiles for Container Management Area 1, Container Management Area 7, Wastewater Treatment Systems, Oil Treatment Systems, Fuel Blending, Glycol Recovery System, Railcar Loading, and Waste Solids Treatment.

Part B Exhibit III-4, Process Constituent Limits,[28] goes on to include this document:

> *"Oil Treatment System*
>
> ***"Chlorinated and organic solvents above 1,000 mg/L or polychlorinated biphenyl's (PCB's) above 2 mg/L will not be treated in the oil treatment system.** Materials that are unstable at up to 180°F will not be treated in the process. Wastes processed in the oil treatment system may also be processed in other ISOCI processes.*
>
> *"Fuel Blending*
>
> *"Fuel blending will be conducted in Tank 600. Chlorinated solvents will be limited to 3 percent. **PCB's will be limited to 49 mg/L. Metals will be limited to concentrations that are acceptable for incineration at cement kilns outside of California.** Waste in Tank 600 will be intended to meet* the acceptability criteria for cement kiln incineration as hazardous waste fuel."

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[27] Part B Volume 1, Table III-4, Process Chemistry, from the 230th and 231st pages

[28] Part B Vol 1, (254th page of electronic version in document entitled paginated 2of 2)

Part B "Section IV, Facility Design"[29] finds:

> ***Containers holding PCB's or devices containing PCB's are managed in accordance with Part 761,*** *Title 40, CFR (22 CCR 66270.14(b)(19), 40 CFR, part 761)."*
>
> *"ISOCI does not accept wastes containing Federally regulated PCB's (50 ppm or greater) for transfer or treatment at the facility. California regulates PCB's at concentrations between 5 and 49ppm. ISOCI may store these wastes in containers for disposal off-site."*

We can speculate based on the last cited section that ISOCI wishes to convey that PCBs above certain concentrations will not be used onsite, but PCBs at lower concentrations may, although this is not clearly stated. It is essential that this lack of clarity and these contradictions be removed. The difference between having no PCB's onsite, and having some levels of PCBs onsite as part of the new project must be evaluated. PCBs are compounds which are toxic at very low levels. PCBs can bioaccumulate in wildlife and humans. It is not only the concentration of PCBs introduced, but the total mass onsite that can cause impacts.

According to the USEPA, PCBs are very persistent contaminants, cycling from soil to air to soil again, and that the largest releases have occurred in California:[30]

> ***"How much PCBs are produced and released to the environment?***
>
> *"Production of PCBs has decreased drastically: from over 86 million lbs. in 1970 to 35 million lbs in 1977. Since EPA banned most uses of PCBs in 1979, current releases are due mainly to the cycling of this persistent contaminant from soil to air to soil again. PCBs are also currently released from landfills, incineration of municipal refuse and sewage sludge, and improper (or illegal) disposal of PCB materials, such as waste transformer fluid, to open areas.*
>
> *"From 1987 to 1993, according to EPA's Toxic Chemical Release Inventory, PCB releases to land and water totalled over 74,000 lbs. The bulk of these releases occurred in 1990 and were primarily from non-ferrous wire drawing and insulating industries. The largest releases occurred in California.*
>
> ***"What happens to PCBs when they are released to the environment?***
>
> *"PCBs are very persistent in soil and water, with no known break down processes other than slow degradation by microbes. They adhere to soils or evaporate, and so will not usually leach to ground water. PCB-contaminated sediments in lakes or rivers can slowly release PCB back into water, from which it eventually evaporates."*

A joint report of San Francisco Bay Area Cities, *Screening Evaluation of Dioxins Pollution Prevention Options,* funded by US EPA,[31] found that dioxins and related PCB sources are poorly tested and poorly quantified. The report identified hazardous waste management companies as one of many industries that need more complete monitoring of these compounds, using lower detection limits. It found that often PCBs are not included in testing, and that only a small percentage of annual sources (<1%) are tested.

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[29] Part B (19th page of Vol 2, "Section IV, Facility Design, paginated as IV-8 of 65, August 2005)

[30] USEPA, *Consumer Factsheet on: POLYCHLORINATED BIPHENYLS,* http://www.epa.gov/safewater/contaminants/dw_contamfs/pcbs.html

[31] *Screening Evaluation of Dioxins Pollution Prevention Options,* Prepared for the San Francisco Bay Area Dioxins Project, September 5, 2001, TDC Environmental. The San Francisco Bay Area Dioxins Project is managed by the Association of Bay Area Governments (ABAG), funded by the United States Environmental Protection Agency with contributions from the City and Port of Oakland, Alameda County, the Cities of Berkeley and Palo Alto

*"The term "dioxins" commonly refers to a family of complex, but related molecules with similar chemical structures. Within the dioxin family of substances (which includes dioxins, furans, and dioxin-like polychlorinated biphenyls), each unique structure is called a "congener." Among dioxins and furans there are 210 distinct congeners; polychlorinated bipyenyls (PCBs) have 209 congeners.*

*"Consistent with sound environmental and public health policy, the [SAB Review] Panel believes that it is important that EPA continue to limit emissions and human exposure to this class of chemicals in view of the very long biological and environmental persistence of these chemicals. . . .*

*The most important limitation of available dioxins source inventories is that many dioxins sources have not been adequately characterized. In a 1998 report, Communities for a Better Environment (CBE) provided a lengthy critique of San Francisco Bay Area dioxins source inventories.* ***In addition to calling for more complete and more frequent monitoring of dioxins sources using lower detection limits, the report provided a list of sources that CBE believes are priorities for characterization, which included refineries, chemical companies, hazardous waste management companies, metal reclaimers, drum reclaimers, sewage sludge incinerators, cement kilns, foundries, power plants, and medical waste incinerators (CBE, 1998).*** *. . .*

*"Some of these sources were addressed in the September 2000 update to the U.S. EPA national dioxins inventory, but lack of dioxins emissions data keeps many potential sources out of current dioxins inventories (U.S. EPA, September 2000). U.S. EPA has stated that it is unlikely that emissions of dioxins from known sources (those identified in the national dioxins inventory) correlate with general population exposures to dioxins (U.S. EPA, September 2000).*

***"Because dioxins testing is expensive and technically challenging, emissions from many potential dioxins sources have not been measured. Special sample collection and laboratory methods must be used to measure environmentally meaningful dioxins levels. Available dioxins emissions test results are typically difficult to interpret for one or more of the following reasons:***

- *Many of the important congeners were not detected.*
- ***Dioxin-like PCBs were not included in the testing.***
- *Blanks or controls contained dioxins (which could mean that the samples or sampling equipment were contaminated).*
- *Results understated dioxins releases because environmentally meaningful quantities of dioxins were left in sampling apparatus.*
- *Unusual or upset conditions (such as fires, accidents, and high or low production rates) were not monitored.*
- *The monitoring involved only a tiny fraction (less than 1%) of annual releases from a given source."*

# IV. Impacts on Biological resources were not evaluated

The DEIR found without any evaluation that the site would not impact biological resources, and concluded that therefore no evaluation was necessary on this important topic:

*"**Environmental Resource Areas Not Examined***

*"The environmental resource areas that DTSC determined would not be potentially impacted and the reasons why they would not be further examined in this DEIR are:"*

*"**Biological Resources** – The project site does not contain biological resources that would be of value to the region and the residents of the state. The site contains no riparian habitat or supports any protected species recognized in local or regional plans, policies, or regulations, or by the California*

*Department of Fish and Game or U.S. Fish and Wildlife Service. The site has on impact on protected wetlands and does not interfere with the movement of native resident or migratory fish or wildlife species. Therefore, further analysis of impacts to Biological Resources was not deemed necessary."* DEIR (page 1-2)

**The Part B permit application, with the appended consent decree between DTSC and ISOCI,[32] found to the contrary that runoff from the facility could already have impacted biological resources, including river and ocean wildlife.** This is an area of complete lack of analysis in the DEIR which must be completed. The consent decree found:

*"Releases from the Facility through the soil, groundwater and surface water.*

*VOC[s] which have been detected from the site soil samples may migrate toward groundwater in vapor and dissolved phase because of lack of secondary containment in the past. Airborne migration of fugitive emissions can potentially affect the general population around the facility. Furthermore, possible future consumption of contaminated groundwater is another pathway through which human receptors could be affected.* ***Releases from the facility may have migrated to surface water and impacted local ecology. The Los Angeles River may have received releases in the past because the river conducts storm water runoff and any other drainage from the immediate area, via local storm drain connections. This water is ultimately discharged to the ocean. Some ecological habitats which do exist along the river, may have been impacted."***

There is a significant potential for future contamination of biological resources due to the great expansion of this facility, and due to the major increase of the variety of new toxic materials proposed to be brought onsite as well as the quantities of materials to be processed. The improvements in secondary containment onsite do not preclude that significant impacts could still occur, especially during earthquakes, floods, or fires. The area of biological resources and impacts on local ecology, Los Angeles River wildlife, and ocean wildlife must be assessed.

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[32] Corrective Action Consent Agreement, Health and Safety Code Section 25187, State of California Environmental Protection Agency, Department of Toxic Substances Control , In the Matter of Industrial Service Oil Company, Incorporated, Docket HWCA: P3-00 01-002, included in Part B Permit Application, Volume 3,258th page of electronically available version

It was not possible to complete the review of the full DEIR, the six volumes of the Part B permit application, the Health Risk Assessment, the attached previous DEIR and scoping documents, and the appendices to the these documents within the period of time of less than 60 days we were afforded. CBE was not provided the DEIR and associated documents until well after the public comment period was announced. Even with the full 60 days, this review would have been very difficult, given the incompleteness of the DEIR and project description. In addition to correcting the deficiencies identified above, the public comment period should be extended to allow additional time for review of these documents.

Given the extremely hazardous nature of the processes at this facility, located in the middle of a densely populated region, it is incumbent upon DTSC to correct the DEIR deficiencies. Thank you much for your consideration on this very important issue.

Sincerely,

Julia May,
Environmental Consultant

## Adrienne Bloch

**From:** Adrienne Bloch [abloch@cbecal.org]
**Sent:** Monday, February 13, 2006 4:39 PM
**To:** 'srounds@dtsc.ca.gov'
**Cc:** 'Julia May'; 'abloch@speakeasy.net'
**Subject:** CBE's comments to the proposed ISOCI project

Attached are CBE's comments for the proposed ISOCI project. Thank you.

Adrienne Bloch
Communities for a Better Environment
Senior Staff Attorney
1440 Broadway, Suite 701
Oakland, CA 94612

## List of file attachments noted in comments of Julia May on ISOCI DEIR as follows:

(Comments of Julia May, Environmental Consultant to Steve Rounds, DTSC, February 12, 2006, Re: Industrial Services Oil Company, Inc., Hazardous Waste Facility Application DEIR)

| Footnote number | Footnote content | Filename of attachment which includes material cited in J. May comments on ISOCI DEIR | Also available at: |
|---|---|---|---|
| 1 | September 10, 2005, Los Angeles Times, KATRINA'S AFTERMATH, California Earthquake Could Be the Next Katrina, By Jia-Rui Chong and Hector Becerra, Times Staff Writers | California Earthquake Could Be the Next Katrina - Los Angeles Times | http://www.latimes.com/news/local/la-earthquake08sep08,1,2126004.story?coll=la-util-news-local) |
| 2 | SCEC (at the University of Southern California) gathers and combines new information about earthquakes in Southern California, is supported by the National Science Foundation and the U.S. Geological Survey, and coordinates efforts of over 50 institutions. | *No file attached – general information about SCEC (the Southern California Earthquake Center, at the University of Southern California)* | |
| 3 | *Seismic Hazards in Southern California: Probable Earthquakes, 1994-2024,* Presentation and Panel Discussion Held at the OES Conference, "Northridge Earthquake--One Year Later," January 20, 1995, Southern California Earthquake Center | issue11SCEC | http://www.scec.org/news/newsletter/issue11.pdf |
| 4 | Seismic Hazards Map for Southern California, Southern California Earthquake Data Center, http://www.data.scec.org/general/PhaseII.html | SCEC Probable Earthquakes 1994-2024 LA increased shaking soils | http://www.data.scec.org/general/PhaseII.html |
| 5 | The DEIR found "The hazard impacts associated with fire radiation are expected to remain within | *No file attached – DTSC has this document* | |

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| | the industrial area and would be considered less than significant (see Table 3.5.7)." | | |
| 6 | *Scenario for a Magnitude 6.7 Earthquake on the Seattle Fault, A Project Funded by the Earthquake Engineering Research Institute and the Washington Emergency Management Division, February 2005, Excerpts from a publication of the same title to be released March 2005* , page 20, http://seattlescenario.eeri.org/documents/EQ%202-28%20Booklet.pdf | ScenarioforMagnitude6.7Seattle | http://seattlescenario.eeri.org/documents/EQ%202-28%20Booklet.pdf<br><br>(page 20 cited) |
| 7 | *PEER Center News*, Vol. 2 No. 4 October 1999, http://peer.berkeley.edu/news/1999october/turkey.html, excerpt. *PEER Center News* is a quarterly publication of Pacific Earthquake Engineering Research Center, highlighting research and information of interest to earthquake engineering researchers and professionals. | Kocaeli (Izmit), Turkey, Mw 7_4 Earthquake | http://peer.berkeley.edu/news/1999october/turkey.html |
| 8 | *Safeguarding Hydrocarbons Inside Local Earthquake Defense Systems,*, Project participants: UPS: Seismology Centre, University of Patras, Greece, UEA: School of Environmental Sciences, University of East Anglia, Norwich, England, DEPA: The Public Gas Company of Greece, GSCP: The General Secretariat of Civil Protection, AGISCO, Aspinal & Associates, and ECS: Euroconsultants, http://seismo.geology.upatras.gr/shields/SHIELDS2003.htm | SAFEGUARDING HYDROCARBONS INSIDE LOCAL EARTHQUAKE DEFENSE SYSTEMS | http://seismo.geology.upatras.gr/shields/SHIELDS2003.htm |
| 9 | Michigan Tech, Geological and Mining Engineering and Sciences Division, http://www.geo.mtu.edu/UPSeis/hazards.html | What Are Earthquake Hazards | http://www.geo.mtu.edu/UPSeis/hazards.html |
| 10 | Figure II-8 – Utility Plan, Part B Application, Volume 1 (147th, 148th & 149th pages of electronic | *No file attached – DTSC has this document* | |

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| | version of Part B application) | | |
| 11 | "The flash point of a fuel is the temperature at which vapour given off will ignite when an external flame is applied under specified test conditions. A flash point is defined to minimise fire risk during normal storage and handling. . . . Even when residual fuels are at a temperature below their measured flash point, they are capable of producing light hydrocarbons in the tank headspace, such that the vapour composition may be near to or within the flammable range. Hence all residual fuel oil headspaces should be considered to be potentially flammable." http://www.bunkerworld.com/technical/tech_fp.htm, a global industrial website with information on fuels, especially marine fuels. | BUNKERWORLD -- Flash Point Definition -- Bunkers, Marine Fuel, Bunkering, Bunker Prices, BunkerNews, Suppliers, Brokers, Traders, Bunker, Price, Supplier, Broker, Trader | http://www.bunkerworld.com/technical/tech_fp.htm |
| 12 | *More than You Ever Wanted to Know About Motor Oil*, 1997-2006 Stephen Mullen, Oldsmar, FL, http://www.nightrider.com/biketech/oilinfo1.htm | More Than You Ever Wanted to Know About Motor Oil | http://www.nightrider.com/biketech/oilinfo1.htm |
| 13 | 86th page of Part B Vol 2 electronically available | *No file attached – DTSC has this document* | |
| 14 | *Third Coast Industries Fire*, Brazoria County, Texas May 1, 2002, U.S. Chemical Safety and Hazard Investigation Board, CSB Investigation Digest, attached | *This document was already included in entirety in J. May comments* | |
| 15 | Railcar Hazmats Storage: Reducing Risks in a Time of Terrorism, Fred Millar, Ph.D, fmillar@erols.com | Railcar Hazmats Storage Reducing Risks in a Time of Terrorism | http://www.mapcruzin.com/chemical_catastrophe/millar3.htm |
| 16 | AIG Environmental, Railroads and Railyards, http://www.aigenvironmental.com/environmental/public/envindustries/0,1340,63-11-335,00.html | AIG Environmental Railroads and Railyards | http://www.aigenvironmental.com/environmental/public/envindustries/0,1340,63-11-335,00.html |
| 17 | Excerpt from http://en.wikipedia.org/wiki/2005_Hertfordshire_ | 2005 Hertfordshire Oil Storage Terminal fire - Wikipedia, the free encyclopedia | http://en.wikipedia.org/wiki/2005_Hertfordshire_Oil_Storage_Terminal_fire |

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| | Oil_Storage_Terminal_fire#Causes | | |
| 18 | U.S. Environmental Protection Agency, Particulate Matter, Health and Welfare, http://www.epa.gov/oar/particlepollution/health.html | Health & Ecology Particulate Matter Air & Radiation EPA | http://www.epa.gov/oar/particlepollution/health.html |
| 19 | Fairley, 1990, "The Relationship of Daily Mortality to Suspended Particulates in Santa Clara County, 1980-1986 (Env Health Persp, Vol 89 pp 159-168) | Fairley Study Abstract | http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2088743&dopt=Abstract |
| 20 | Hazardous Waste Facility Permit Application, RCRA Part A & B, for Industrial Service Oil Company, Incorporated, USEPA CAD 099452708, August 2005 Revision 7, Prepared by JRJ Associates, Palm Desert, CA | *No file attached – DTSC has this document* | |
| 21 | City of LA, June 3, 2004, Gary Lee Moore, P.E., City Engineer, and Philip L. Richardson, Program Manager, Bridge, Seismic Bond, Streets and Stormwater Program) (Exhibit II-1 – L.A. Letter and Map Regarding Flood Zone Determination, Part B Application, Volume 1 (172nd and 173rd pages of Part B Application electronic version) | *No file attached – DTSC has this document* | |
| 22 | Emergency and Disaster Management Inc., http://www.emergency-management.net/flood.htm | Flood | http://www.emergency-management.net/flood.htm |
| 23 | Sensitivity of modern and Holocene floods to climate change, James C. Knox, Geography Department, 234 Science Hall 550 North Park Street University of Wisconsin, Madison, WI 53706-1491, USA, Abstract | Knox ClimateChange and Floods | http://geography.rutgers.edu/courses/05fall/605_02/weekly_readings/4OctKnox%202000.pdf |
| 24 | National Climatic Data Center, 2004/2005 Winter Storms: California and the Southwest U.S., updated - 16 November 2005, http://www.nesdis.noaa.gov/ | NCDC Climate of 2005 California Storms of winter 2005 | http://www.nesdis.noaa.gov/ |
| 25 | Corrective Action Consent Agreement, Health and | *No file attached – DTSC has this* | |

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| 25 | Corrective Action Consent Agreement, Health and Safety Code Section 25187, State of California Environmental Protection Agency, Department of Toxic Substances Control , In the Matter of Industrial Service Oil Company, Incorporated, Docket HWCA: P3-00 01-002, included in Part B Permit Application, Volume 3, 258th page of electronically available version, | *No file attached – DTSC has this document* | |
| 26 | Figure II-10 – Well Map, ISOCI Part B Application, Volume 1, 151st, 152nd & 153rd pages of electronic version of Part B application (non-numbered pages) | *No file attached – DTSC has this document* | |
| 27 | Part B Volume 1, Table III-4, Process Chemistry, from the 230th and 231st pages | *No file attached – DTSC has this document* | |
| 28 | Part B Vol 1, (254th page of electronic version in document entitled paginated 2of 2) | *No file attached – DTSC has this document* | |
| 29 | Part B (19th page of Vol 2, "Section IV, Facility Design, paginated as IV-8 of 65, August 2005) | *No file attached – DTSC has this document* | |
| 30 | USEPA, *Consumer Factsheet on: POLYCHLORINATED BIPHENYLS*, http://www.epa.gov/safewater/contaminants/dw_contamfs/pcbs.html | EPA Ground Water & Drinking Water breadcrumb Consumer Factsheet on POLYCHLORINATED BIPHENYLS | http://www.epa.gov/safewater/contaminants/dw_contamfs/pcbs.html |
| 31 | *Screening Evaluation of Dioxins Pollution Prevention Options*, Prepared for the San Francisco Bay Area Dioxins Project, September 5, 2001, TDC Environmental. The San Francisco Bay Area Dioxins Project is managed by the Association of Bay Area Governments (ABAG), funded by the United States Environmental Protection Agency with contributions from the City and Port of Oakland, Alameda County, the Cities of Berkeley and Palo Alto | Screening Eval of Dioxins Poll Prev | http://www.abag.org/bayarea/dioxin/pdf/DioxinsP2OptionsFinal.pdf |
| 32 | Corrective Action Consent Agreement, Health and | *No file attached – DTSC has this* | |

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| | Safety Code Section 25187, State of California Environmental Protection Agency, Department of Toxic Substances Control , In the Matter of Industrial Service Oil Company, Incorporated, Docket HWCA: P3-00 01-002, included in Part B Permit Application, Volume 3,258$^{th}$ page of electronically available version | *document* | |