TEXANS TOGETHER

*Together we can change Texas*

June 19, 2014

National Remedy Review Board
San Jacinto River Waste Pits Superfund Site
EPA Region 6

Re: Preferred Remedial Alternative

Texans Together Education Fund, a local 501(c)(3) nonprofit that organizes and represents the residents living near the Site, appreciates the opportunity to submit comments relating to the communities' preferred alternative remedy. I, Jacquelyn Young of Texans Together, wrote most of the attached memo, providing evidence and support for removing the toxic waste from the vulnerable site in the San Jacinto River. Fred Lewis, President of Texans Together and attorney, wrote section VI, explaining why the Remedial Investigation and Feasibility Study (RI/FS) along with other reports produced by the responsible parties' consultant, Anchor/Integral, should be disregarded. Mr. Lewis provides evidence which shows the consultant prejudged the alternative remedies for this specific site *long* before they studied the data and wrote the report.

I am a former community member of Highlands, TX and have worked on the ground with the residential communities surrounding the waste pits for the past four years. I strongly encourage you to consider the contents of this report, as an important element of hazard mitigation and environmental management is local knowledge. Due to the National Remedy Review Board being composed of experts from across the United States, you will find information in this report that is not in the RI/FS but is critical to understanding and evaluating the impacts and sustainability of your decisions.

Thank you for the opportunity to provide comments and information to the EPA and the National Remedy Review Board on the alternative remedies for the San Jacinto River Waste Pits Superfund Site. Again, we strongly encourage you to consider the contents of this report and the potential effects your decisions will have on our community.

Sincerely,

Jacquelyn Young

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## I. Introduction

The San Jacinto River Coalition (SJRC) serves as the voice of the communities surrounding the San Jacinto River Waste Pits (SJRWP). The coalition began its efforts in East Harris County in 2010 and strives to build a large, diverse coalition that represents the surrounding communities' voice in an organized, educated manner.

For over 40 years people in the surrounding communities have had highly toxic chemicals from the waste pits spreading throughout their local environments without being aware of it. People move to Highlands, Channelview and Baytown looking for riverfront property to raise their families. They love their lives on the San Jacinto River but are bound by health problems, environmental issues and diminishing property values. They fear the toxic exposure they have subjected their families to, the damage that has already occurred, and the future harm to their families if there is further contamination. The surrounding communities have witnessed workers in hazardous material suits in their yards. They tell stories of the fear and confusion they felt as they were unprotected and clueless watching these workers sample their surrounding environment for toxic chemicals.

The community members of Harris County, just as anywhere else in the United States, deserve clean air, clean water and clean soil. The communities surrounding the San Jacinto River Waste Pits have borne the toxic burden of this site for far too long. It is time to fully remediate this once pristine and highly sought after river. A remedial solution should be one that allows the surrounding communities and ecosystem to sustain and flourish and not be subject to further contamination from the frequent hurricanes and tidal surges common to the area. A remedial solution should be based on factual independent scientific knowledge and not from the subjectivity of consultants who prejudge the remedy on this specific site before studying the data. This report contains supporting documentation we feel shows that the remedial investigation/ feasibility study (RI/FS) was written with a predetermined solution. In addition, you will find a summary from the recent Flood Risk Assessment of the San Jacinto River Waste Pit Superfund Site by Dr. Sam Brody of Texas A&M University Galveston- Center for Texas Beaches and Shores.

## II. Stakeholders

### a. Surrounding Communities- 5 mile radius

The waste pits are surrounded by residential land and the river is frequently used for recreational purposes. The nearest residential home is 0.45 miles from the northern impoundment and is less than 10 feet above mean sea level. Approximately 16,700 people live within a 5 mile radius of the waste pits (Brody, 2014). The three towns nearest to the site are Highlands, Channelview and Baytown. These communities are home to over 112,000 people. Homeowners in Highlands and Channelview have found the value of their riverfront homes have decreased in recent years. There are beautiful riverfront vacation rental properties that the owners are having trouble renting out because of the toxic contamination of the San Jacinto River.

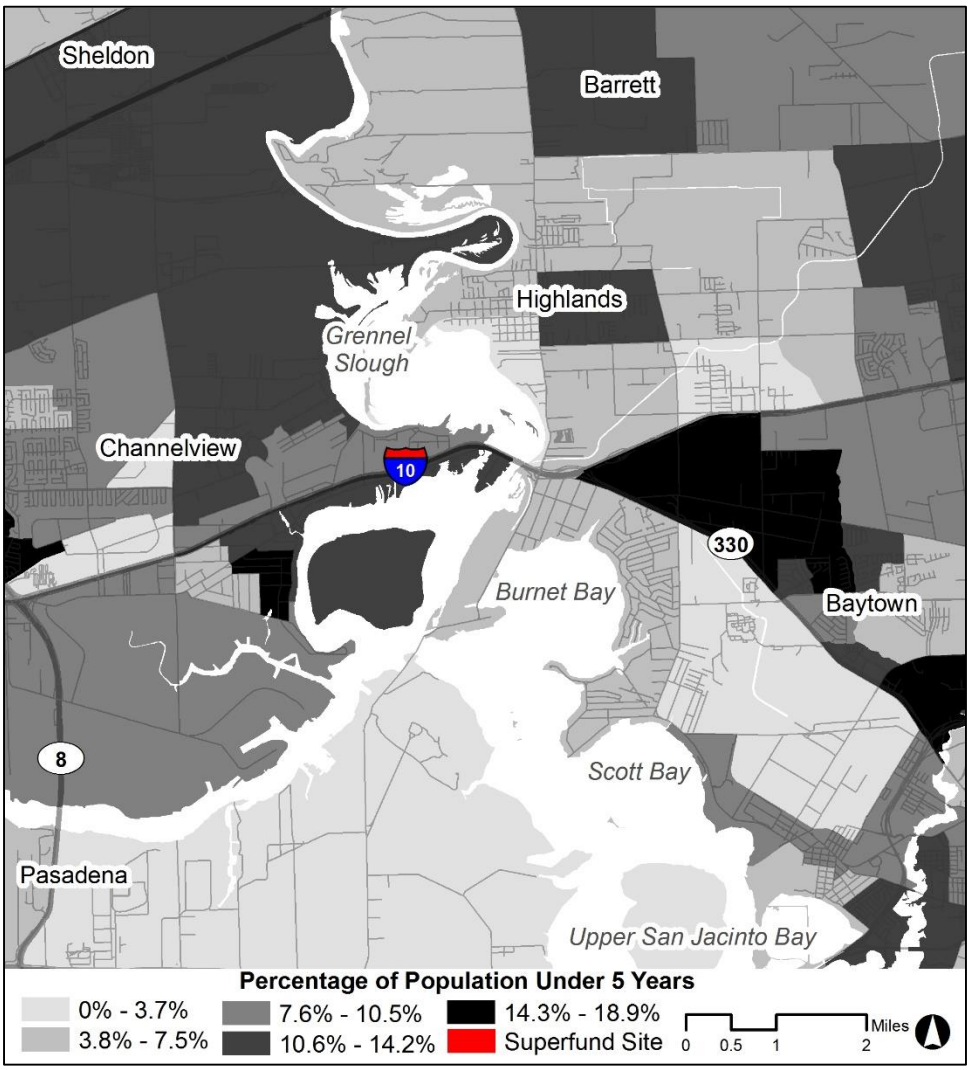



**Figure 1. Percentage of Population Below 5 Years of Age by Census Block Group (Brody, 2014).**

Distributed throughout a 5 mile radius of the SJRWP are demographics particularly vulnerable to dioxin exposure; elderly and children. The community directly east of the site has a disproportionate amount of children under the age of 5 years old. Between 14.3-18.9% of this community is under the age of 5 years old. Not only are the elderly and children "most sensitive to dioxin exposure, but also have the most difficult time evacuating and recovering from a flood event, further exacerbating the adverse impacts to this segment of the community. That said, exposure to the dioxins could potentially occur without the presence of a major storm due to the documented potential for chemical leakage" (Brody, 2014).

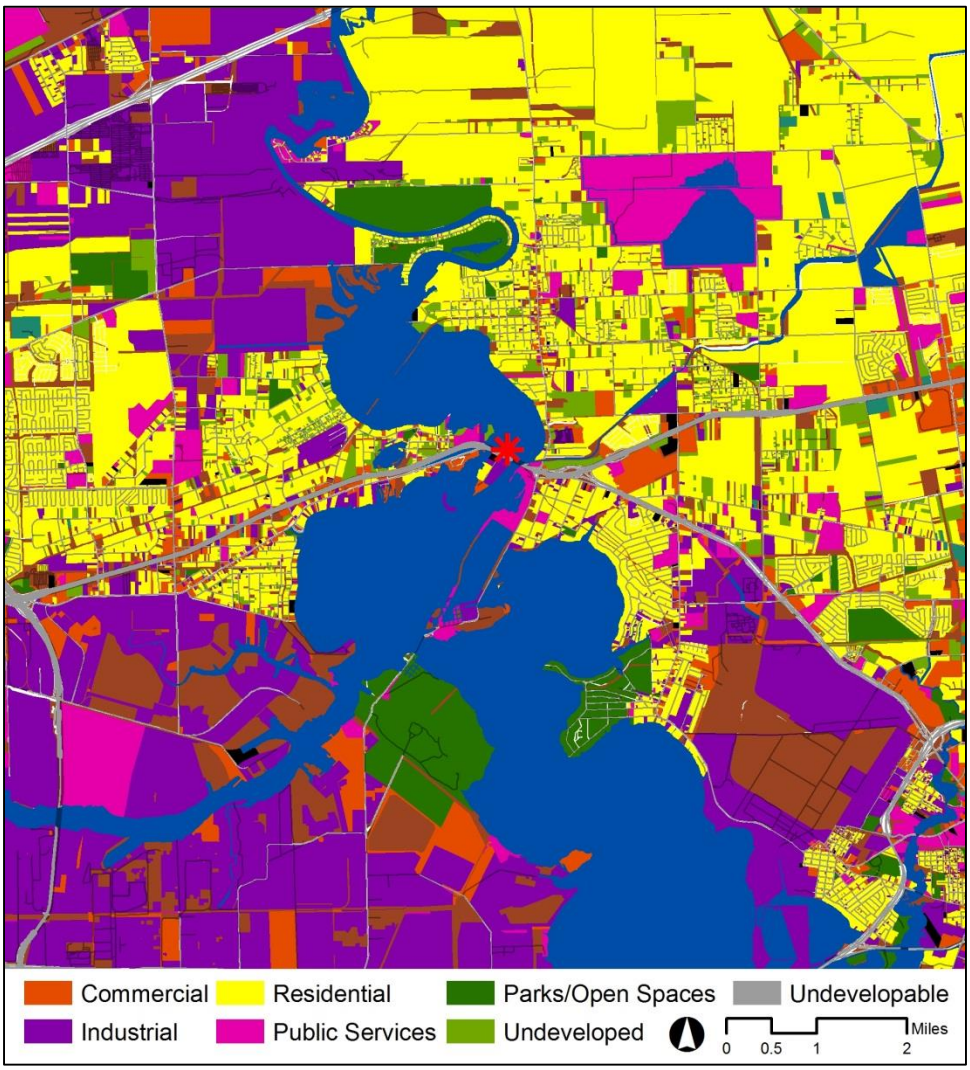



**Figure 2. Projected 2040 Land Use (HGAC, 2013).**

The SJRWP are located in an area of rapid development, which is projected to continue into the future. 865 community members have signed onto the SJRC's efforts in the hopes of creating a better future for their children. The coalition members believe remedial alternatives other than full removal are merely band aids on the problem, leaving them subject to future contamination. The people do not trust the PRPs to properly contain the waste pits and will continue to live in fear if alternatives 1N-5aN are selected. As you can see in figure 2, residential land use in close proximity to the pits is expected to increase. As residential development increases, so too do the amount of people at risk for future exposure to the toxic chemicals in the SJRWP.

<u>Primary concerns community members express regarding the waste pits being left *in situ*</u>:

1. Failure of containment applications and being unaware of risks associated with their environment.
2. Potential devastation when another hurricane or tropical storm occurs.
3. Contaminants entering the drinking water system.
4. Daily barge activity (prop wash disturbing the sediment) and the potential of a barge colliding into the waste pits.
5. Risk for future exposure to humans, aquatic ecosystem and wildlife.

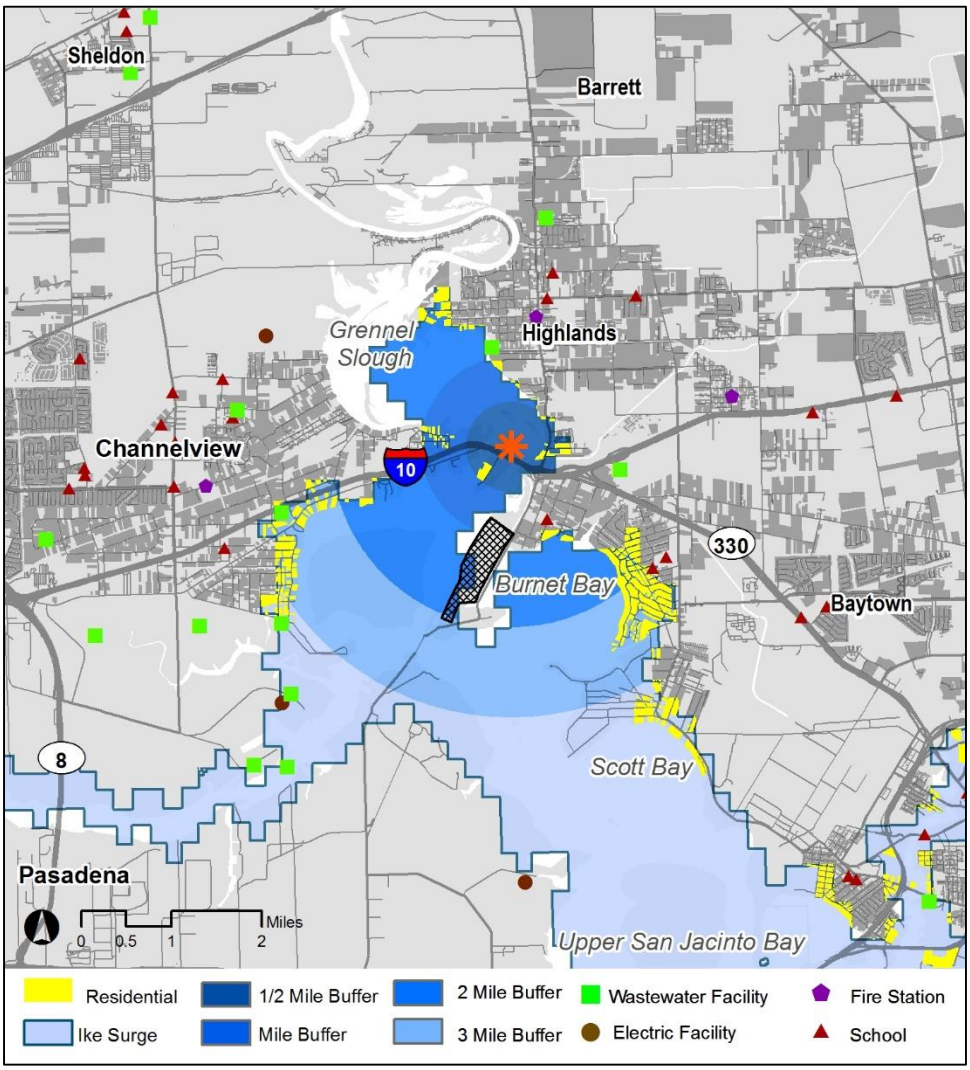



**Figure 3. Flood Impact Analysis by Dr. Brody- Current Residential Land Use Ike Inundation**

Within a 3 mile buffer of the SJRWP is residential land, elementary schools and the Lynchburg Reservoir (represented by the black and white grid and is approximately half a mile from the SJRWP). The reservoir is situated just 4-7 feet above sea level and supplies over 600,000 people with surface water. According to Dr. Brody's Ike SLOSH scenario, the southern tip of the reservoir was inundated and in the event of a category 5 NOAA scenario, the reservoir would be completely inundated. "Inundation of property is the most likely vector for dioxin contamination and increased bioaccumulation in the environment" (Brody, 2014). Within five miles of the SJRWP, Hurricane Ike caused $22.3 million in residential flood loss.

b. <u>General Public</u>

The San Jacinto River Waste Pits are located in the third most populated county in the United States which is home to the second fastest growing city in the country. In addition to residents of Harris County, people vacationing from all over the United States use the San Jacinto River and Galveston Bay for recreational purposes.

Within three miles of the waste pits are two public water parks and two public beaches. These locations are popular swimming attractions to people from all over Harris and surrounding

counties. Within two miles of the waste pits, there are six public boat ramps. People from all over the country travel to RV parks located in Highlands, some of which are directly on the river and encourage fishing. Many visitors to the area are unaware of the advisories and risks associated with the seafood they catch.

C. Aquatic Ecosystem

The San Jacinto River flows into Galveston Bay and the waste pits are situated just north of one of the most delicate and most productive estuaries in the United States. Galveston Bay is one of the largest estuaries in the United States and is often referred to as "Nature's Nursery". Almost 30% of Galveston Bay's fresh water is supplied from the San Jacinto River. The San Jacinto River and Galveston Bay provide a unique habitat for a myriad of different species to spawn and flourish. Unfortunately, it sits in a contaminated watershed and, **despite the seafood consumption advisory, nothing has stopped the dioxin-filled fish from being caught recreationally and commercially. Commercially, Galveston Bay produces over 1.5 million pounds of seafood a year; 95% of this is crab, shrimp and oysters**.

Through this Superfund process, Texas Department of State Health Services and the EPA have found it difficult, if not impossible, to limit the fishing and use of the river near the waste pits. Many community members fish the San Jacinto River to supplement their food supply. According to a recent report by the Harris County Attorney's Office; "Fish and shellfish tissue samples collected near the MIMC waste pits indicated that the health-based standard was exceeded in 97% of fish samples and 95% of crab samples". This being said, the only effective way to truly protect human health and prevent further exposure to dioxin and other toxic chemicals from the SJRWP on a national level, is to fully remove the toxic waste.

## III. Giving the Communities a Voice

In 2010, Texans Together began door-to-door canvassing in the communities surrounding the San Jacinto River Waste Pits. The goals of the canvass were to gather information regarding the communities' knowledge of the Superfund Site, to understand their uses of the San Jacinto River, and to provide information. Over 1,400 doors were knocked on in 2010 and 72% of the people surveyed were unaware the waste pits existed. 30% of the people surveyed swam in the river, 34% boated and 23% fished in the San Jacinto River. 20% of the people surveyed had consumed fish from the San Jacinto River and of this, 46% consumed fish once a month or more frequently.

In 2011, Texans Together and the SJRC organized another large canvass event. Over 2,000 doors were knocked on and 55% of those surveyed *were* aware of the waste pits. 25% of the people surveyed still swam in the San Jacinto River, 32% boated and 31% fished. Of those surveyed that consumed fish from the river, 76% consumed fish once a month or more frequently.

In February of 2014, the SJRC and Texas Campaign for the Environment conducted a small canvass in Highlands. 80 doors were knocked on during this event and 43 of the residents wrote letters to Ron Curry, EPA Region 6 Administrator. The letters were written by community members of all ages. Children expressed their desires to eat the fish they catch from the San Jacinto River. Parents wrote about well-water, health concerns, and their desire to allow their families to swim in the river. The elderly wrote of their memories growing up playing in the

river. Through these letters, the message from the community was clearly expressed - they want the waste removed and they want to use the river without fear of toxic exposure.

## IV. Remedial Alternatives

The EPA has an opportunity in the final remedy for the San Jacinto River Waste Pits Superfund Site to protect human health, the environment, the aquatic ecosystem and wildlife. By selecting remedial alternative 6N, full removal of the toxic waste, the EPA will act in a proactive manner to protect all of these values. Remedial alternatives 1N-5aN are not acceptable to the surrounding communities because they leave them at risk of further contamination from invariable natural processes like hurricanes, tidal surges, and erosion. The communities understand that there are risks and potential for other contamination involved with remedial alternative 6N. However, the communities feel the risks associated with remedial alternatives 1N-5aN greatly outweigh risks mentioned in the draft FS for alternative 6N. Greater emphasis must be placed on the long term and short term consequences borne by natural forces. According to Dr. Brody, "No studies have explicitly examined the exposure of these waste pits to riverine and surge-based flood events, which are likely the primary driver of the deterioration and subsequent release of pollutants from the Superfund Site. Existing [RI/FS] reports only superficially address the flood risk associated with the site and do not consider the impact of previous events, changing risk conditions, or potential wave action from storm surge."

The communities want the EPA to require the PRPs to fully remediate the site with engineering and design controls proven successful in similar situations. The communities do not want the EPA or the State of Texas to have to respond to this site in an emergency situation (for example, after a hurricane or barge accident at the site). Responding to this site in an emergency situation would increase the FS risks associated with human health, worker safety, and environmental impacts. This scenario would also put emergency responders at risk of involuntary exposure to toxic air, sediment and water. A report from the U.S. Government Accountability Office points out that while initial costs for leaving toxic waste on site are inexpensive, resulting clean-up costs after a natural disaster are high. **In addition to risks associated with natural disasters, a risk analysis of engineering containment and control systems reports that capping and lining is not a long-term solution and is likely to degrade within 50 years.**

Remedial alternative 6N should use lessons learned from other Superfund sites of similar toxicity and geologic setting. In appendixes 1-6, you will find research pertaining to similar NPL Superfund sites from Regions 5 and 10. The sites listed have either successfully completed or proposed remedial action near a water body using excavation and removal of contaminated sediment. In the same section you will also find a similar situation, the McCormick and Baxter Creosoting Co. Superfund site in Region 10, which selected capping the site. The construction of the sediment cap was complete in 2005 but is currently being reevaluated due to a sheen in the river and bubbling on areas of the cap.

The EPA manual Contaminated Sediment Remediation Guidance for Hazardous Waste notes that the most common Superfund site remedy is dredging and excavation of toxic wastes and that this approach removes the uncertainty of future toxic waste exposure when risks of erosion or extreme events exists. In deciding an appropriate remedial action, it points out that routine, repeated forces, such as waves, currents and tide, can erode caps over time. It also notes that the frequency and intensity of extreme events, such as hurricanes and flooding, *must* be taken into account for determining an appropriate remedy. The EPA manual also notes that

containment barriers, such as sheet piling and cofferdams, are used effectively to prevent further dispersion of toxic wastes into the water during the removal process.

## V. Site Vulnerability

### a. Coastal Storms

The northern impoundment of the San Jacinto River Waste Pits is located on one of the world's most threatened coasts. According to marine geologist John B. Anderson, "Nowhere on earth does the impact of humans and natural forces pose a greater threat to coasts than in Louisiana and Texas". The San Jacinto River Waste Pits are submerged in a river, a vulnerable and delicate setting, which is crucial to consider during the selection of a remedial alternative.

A *major* hurricane makes landfall on the upper Texas coast, on average, every 6 years according to the National Oceanic and Atmospheric Administration. Eight hurricanes have caused extensive damage to the upper Texas coast since 1959. The gentle slope of the continental shelf below the Gulf of Mexico and the warm Gulf waters provide an inviting setting for a hurricane. So inviting, in fact, that a tropical storm or hurricane hits the Texas coast every 2.68 years. When a major hurricane strikes the Texas coast, it has the potential to bring 12 inches of rain a day, a surge of 20 to 30 feet and cause flooding as far as 150 miles inland (Anderson, 2007). In 1962, Hurricane Carla's storm surge pushed large rocks inland from 50-80 ft deep in the Gulf and foredunes retreated as far as 100 ft. According to Professor Phillip Bedient of Rice University, "Severe tropical cyclones have been recorded in the region since the 1850s; such storms bring severe storm surge that can travel through Galveston Bay and in the San Jacinto River. Combined with overland runoff, the impacts on the water levels in the San Jacinto River are devastating. Flooding due to inland rainfall, however, is much worse at this location. During the major flood of 1994 on the San Jacinto River, elevations exceeded 27 feet and created scouring flows and velocities." When one consider the site's location, its high toxicity, and the risk of hurricanes, leaving the waste pits *in situ* is a catastrophic disaster waiting to happen. If a hurricane or flood were to disturb the waste pits' cap and entrain the toxic sediment in the flood waters, the transported toxins would persist in their new location and bioaccumulate. The contamination would further pollute the residents, the fishery, and the Galveston Bay environment. Prior to the construction of the temporary cap, past flood events resulted in such dispersion. Finger-printed dioxin, furans and PCBs from the waste pits can be found in the top 6 inches of soil in front yards of residents in Channelview. Dioxin and PCBs from the waste pits have been found in fish tissue samples north of the site in the San Jacinto River, and south of the site in the Houston Ship Channel, Trinity Bay and in Upper Galveston Bay.

Historical flood data of both freshwater flooding and storm surges should be seriously considered in the selection of a remedial alternative. "It should be noted that the San Jacinto waste pits are also vulnerable to damaging high-peak flows from regional runoff. Frequent large rainfall events can easily submerge the waste pits, causing them to overtop their levees and possibly spill contaminants into the San Jacinto River. Historical crest records from a USGS gage indicate that the waste pits have been exposed to potentially high-scouring flows at least 27 times since 1973 (Bedient, 2013). During these events the waste pits can remain submerged under water for days at a time" (Brody, 2014). In addition, from 1851-2006, 104 tropical storms or hurricanes hit the Texas coast, of which 66 were hurricanes and 24 were major hurricanes. 64% of the hurricanes hitting the Texas Coast were Categories 1 and 2, and 36% were categories 3 and 4 (No Category 5 hurricanes have hit yet.). The upper Texas coast including Galveston Bay is the area most prone to hurricanes on the entire Texas coast, with 56% of all hurricanes

hitting the upper Texas coast and Galveston Bay (Islam, 2009). If remedial alternatives 1N-5aN are selected, the anthropogenic structures are guaranteed to have to handle significant natural forces in the future. According to Rice University's Severe Storm Prediction, Education, and Evacuation from Disasters (SSPEED) Center, the significance and destructive force of hurricane storm surges are not fully appreciated and their destructiveness and power are seriously underrepresented in engineering literature. Hurricane surges, combined with rainfall, are an under-examined phenomenon and pose a worsening risk to the Houston area (Blackburn and Bedient 2010).

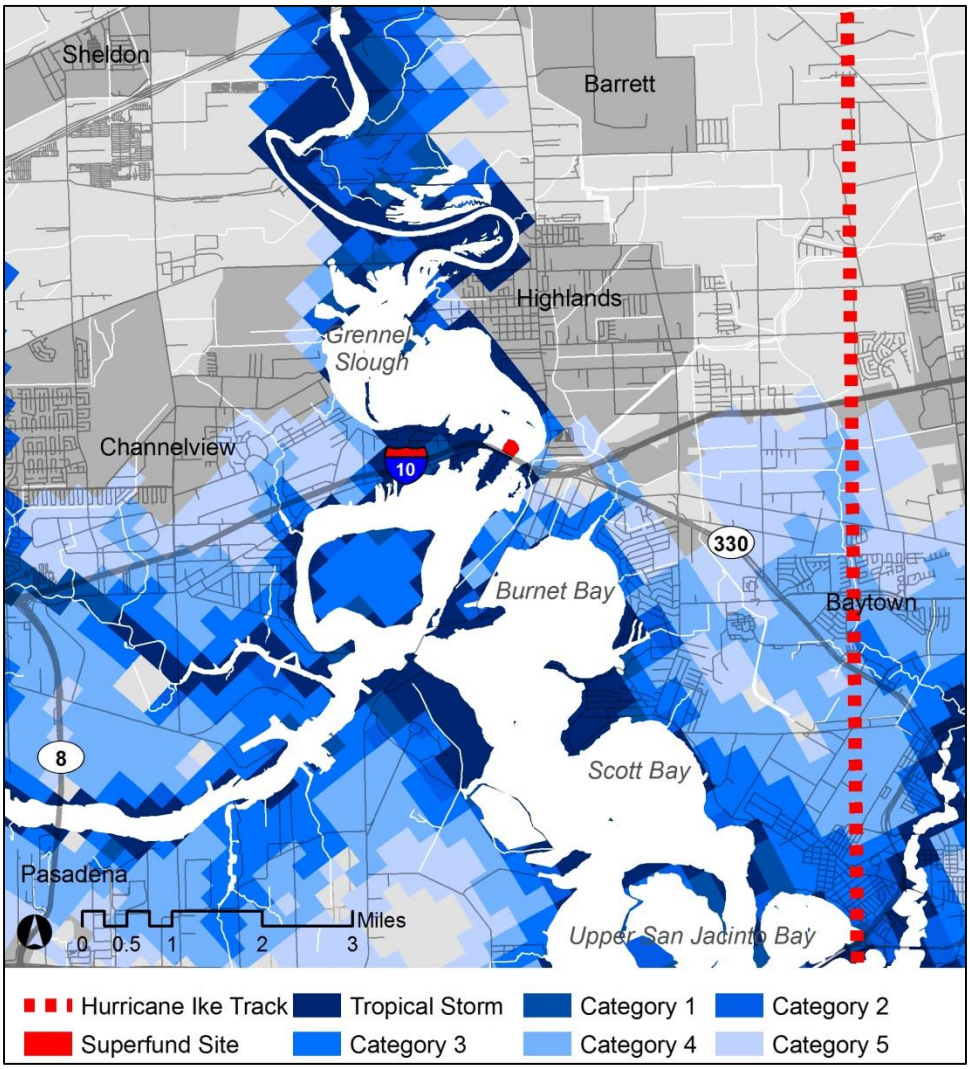



**Figure 4. Surge Inundation Zones Produced by NOAA Models (Brody, 2014).**

According to Dr. Brody, "Flooding via storm surge is the major threat to the waste pit site and surrounding properties. The position of the site close to the mouth of a river or freshwater inflow makes it especially vulnerable given the mechanics of a storm surge. **There are actually two inundation events: first, the initial rise and pulse of water inundating the waste pit site; second, the backwash of water as the surge releases back into Galveston Bay and ultimately the Gulf of Mexico. The intense tidal flushing can essentially deliver a "double dose" of pollutants to upstream residents, as well as a single downstream dose as the water returns to the Bay. Based on the NOAA hurricane surge inundation zones, the waste pit site would**

**be inundated by any hurricane and tropical storm due to its low elevation and vulnerable location. Given its vulnerability, the site will almost certainly experience repetitive erosive surge events in the coming years, further degrading the structural integrity of on-site protective devices**."

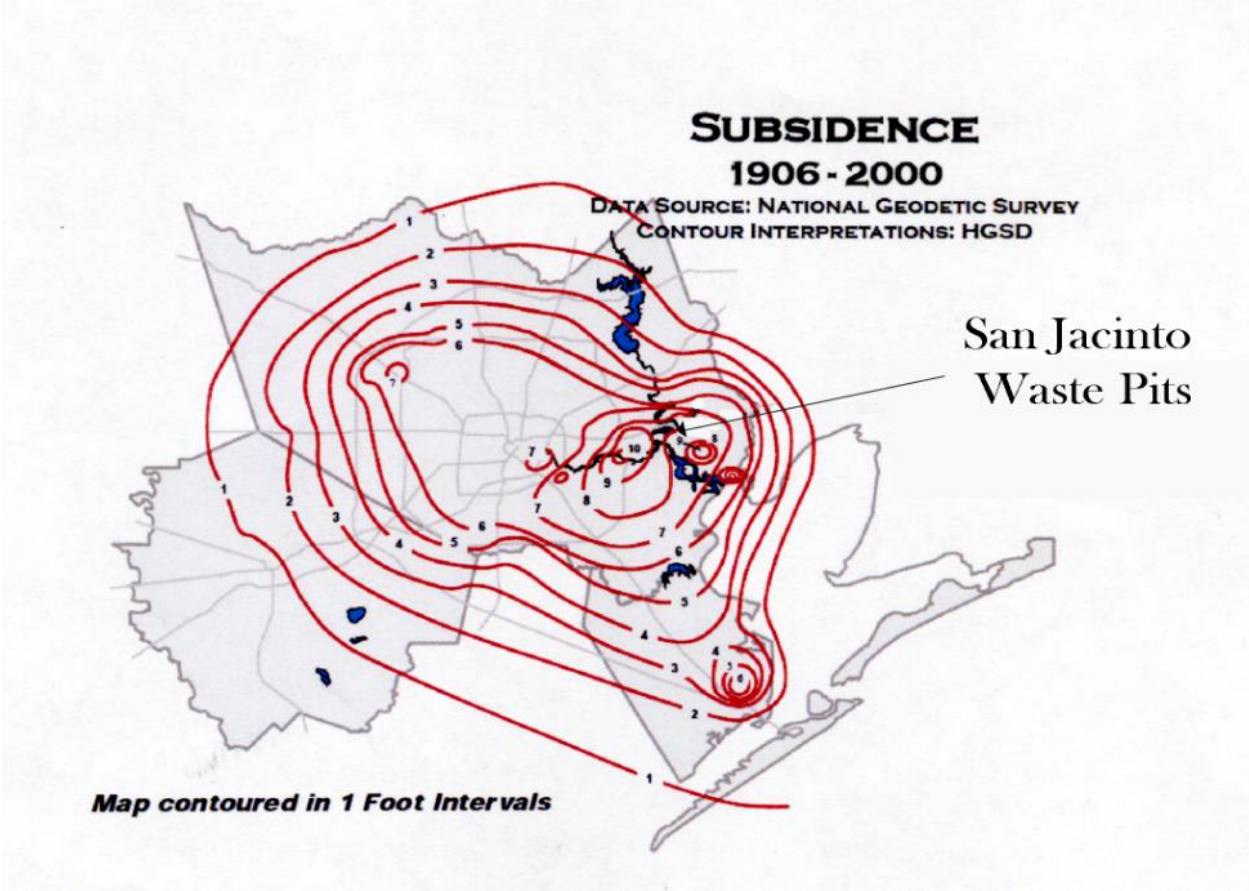
When you take into consideration storm frequency on the upper Texas coast and the force of coastal storms, it is not likely the following EPA CERCLA criteria is supported in remedial alternatives 1N-5aN:

- Long-term effectiveness and performance
- Overall protection of human health and environment
- Short-term effectiveness
- Reduction of toxicity, mobility, or volume

An example of the potential destruction when Superfund sites receive a visit from natural forces can be found in Ecological Economics (Gaddis, 2009). This report notes there were 26 Superfund sites in the path of Katrina and that massive amounts of toxic wastes, oil and debris were dispersed by the Hurricane, greatly impacting the environment and aquatic ecosystems. In one example, Hurricane Katrina's winds and surge were strong enough to topple a 250,000 barrel metal storage tank, causing a large oil spill. This example shows the power of hurricanes to disperse toxic chemicals stored in their path. Empty Pockets, a report by Public Interest Research Group, reviews the devastating impact of hurricanes, tornados, and other unpredictable natural disasters on existing Superfund sites. It explores the resulting serious secondary economic, environmental, and health damages as well as the huge taxpayer-borne costs. In addition, a Superfund report by the Government Accountability Office, points out that cleanup costs from hurricanes and natural disasters that spread toxic wastes are high and often result in new Superfund sites.

b. Subsidence

Unlike other coasts along the United States, the Gulf Coast is positioned along a large sedimentary basin, which lacks bedrock to support the overlying strata and development. Due to this geologic setting in combination with overdevelopment and extraction of natural resources, the USGS has named the Texas coastline the fastest submerging coast in the US. Subsidence is a historical problem for Houston but is also a problem for policy makers to mitigate for the future.




*Note the 8ft contour cuts directly through the location of the northern impoundment.*

Since the 1940's, over 100 acres of land near the SJRWP site have subsided into the San Jacinto River. The former Brownwood subdivision is roughly three miles south of the waste pits. In 1961 Hurricane Carla struck the Texas coast, inundating the subdivision. Due to the force of the hurricane and the instability of the subsurface, the Brownwood subdivision subsided and the floodwaters never fully receded. As a result, the neighborhood was condemned, which devastated and displaced the community.

In 1975 the Texas Legislature created the Harris-Galveston Subsidence District (HGSD) to mitigate subsidence issues. One of the HGSD's main tactics is phasing out groundwater extraction. However, local municipalities currently still provide millions of residents with 20% of their municipal demand from groundwater every day and there are still thousands of industrial and private water-wells in operation throughout the region. The nearest municipal water-well to the waste pits is 1.8 miles away. The nearest unregulated neighborhood water-well is 0.39 miles from the waste pits. Not only are the authorities of the nearby communities concerned about the local water quality, the community is concerned. Community members have voiced concerns regarding their well water during past storm events and they fear the potential for toxins to enter the groundwater system in future storms.

c. <u>Barge Activity</u>

In the immediate vicinity of the San Jacinto River Waste Pits are four large shipyards and barge facilities. Tug boats, barges and privately owned boats navigate past the site on a regular

basis. The surrounding communities are extremely concerned about daily prop wash disturbing the waste pits, and about the potential for a barge to collide into the pits. Unfortunately, the recent barge incident in Texas City, was a grim reminder to the community of the potential for disaster in their community as Kirby Inland Marine is one of the barge companies operating in the immediate vicinity of the waste pits. In fact, it sits atop the Southern waste pits impoundment adjacent to the northern impoundment.

## VI. Disregarding the RI/FS

The remedial investigation and feasibility study should be disregarded because evidence shows the report's consultant prejudged the remedy years before analyzing the data. The consultant's prejudging of the alternative remedies for this Site reflects, we believe, massive bias and conflicts of interest, making their prejudged analysis worthless for basing a scientific, credible judgment upon.

The evidence attached here shows, in our opinion, that Anchor is not an independent credible expert consultant on this Site, but rather serves as the biased expert for the two responsible parties for this Site, prejudged the alternatives and their conclusion for this specific Site as far back as 2011. Since a predetermined conclusion is neither science nor independent analysis, we ask that you completely disregard their analysis for failing to meet the most minimal legal requirements for independent expert analysis as required for EPA RI/FS studies.

**The Consultant Prejudged the Alternatives as Directed by the Responsible Parties**.

Attached emails produced by the responsible parties in their litigation with Harris County clearly reveal, in our opinion, that Anchor had prejudged its conclusion as for a specific remedy for this Site three years before its report. (page 16). In an email from Waste Management's Director of Closed Sites, Mark Smith, to the responsible parties' two project managers on this site, International Paper's Philip Slowiak and McGinnis Industrial Maintenance Corporation (MIMC) on March 9, 2011, Mr. Smith writes: "David [Keith, the responsible parties' head project Coordinator and Anchor's lead consultant on the Waste Pits RI/FS] is **the lead dog when it comes to building a consensus with the CAC members to view the TCRA (Time Critical Removal Action, which is a cap overlaid with rocks) as part of the permanent remedial action at the site**. I am working on **a global plan** to build this consensus with all stakeholders and David is the best spokesperson to address this group and **control our message**." (emphasis added). After stating that "Val Michael [of the EPA} will not speak out of turn when David [Keith] is present," Mark Smith continues in the same email: "**We need to control our message and build consensus are[sic] we may be facing a big and haul/burn as part of the final remedy**." (emphasis added).

Waste Management's "global plan" to ensure the alternative remedies were prejudged and controlled by the responsible parties before Anchor's RI/FS was revealed in another email of May 31, 2011. (Page 17) from Andrew Shafer, MIMC Site Project Director, to Chuck Rivette, of Waste Management of Texas. The email states, "The big plan is to sell the cap (TCRA) as part of the final remedy. We do have a few hot spots to the west and that are above the cleanup standards that will have to be addressed."

MIMC and their parent company Waste Management represent in these emails several years before their consultant Anchor/Integral began the RI/FS that they wanted the consultant to reach a specific alternative remedy for the site, essentially doing little beyond the temporary cap. They

indicate that they are using David Keith, their primary consultant on the RI/FS report, to "control our message" and "sell" their predetermined "plan". They are opposed to removing the waste before doing any analysis. David Keith is not serving as an independent expert, but the responsible parties' "lead dog" to build a consensus in favor of their preferred limited capping remedy, before any analysis or research has been done. This is the antithesis of scientific, expert analysis, which is what the EPA requires a RI/FS to be.

In addition, it is our understanding based on reading public discovery motions that Anchor/Integral serves as consulting expert witnesses for the responsible parties in their San Jacinto Waste Pits litigation with Harris County. Harris County, Texas et all vs International Paper, MIMC, Waste Management, Waste Management of Texas (No. 2011-76724)(295th District Court of Harris County, Texas. As consulting experts for the responsible party/defendants for several years, Anchor/Integral are paid to be adversarial expert defense witness by the responsible parties and to minimize the environmental impact of the Waste Pits--further undermining their appearance of objectivity and independent expertise. We are unaware that they have disclosed to the EPA their conflicting dual roles as superfund site independent experts and defense litigation experts.

**The Consultant's RI/FS and Other Reports Appear to Fail to Satisfy the EPA's Regulations and Policies on Conflicts of Interest.** The EPA has developed regulations and policies to ensure that RI/FS and other expert reports by consultants paid for by the responsible parties met basic standards for scientific objectivity and for being free of conflicts of interest. Over 20 years ago, the Congress' Office of Technology Assessment (OTA) recognized that the EPA would have to exercise close oversight of expert consultants paid for by the responsible parties to prevent conflicts of interest. Assessing Contractor Use in Superfund (OTA January 1989), pp. 35-36. The report noted that "local communities and PRPs are often at odds with one another over cleaning up sites" and "PRPs and the contractors are naturally concerned about costs". It noted that superfund contract consultants hired by the responsible parties "create several areas of potential conflicts of interest that can compromise environmental goals." To address these concerns, EPA requires superfund contract provisions to prevent and disclose conflicts of interest to ensure consultants are independent and reasonably conflict free. See Guidance for Conducting Remedial Investigations and Feasibility Studies (Interim Final, October 1988)(A-9)(EPA must verify contractors don't have conflict of interests); Applicable Conflict of Interest Provisions and Clauses for Solicitation (SOL-HQ-13—0100)(need to avoid conflicts of interests and have annual disclosure)

The EPA Administrative Regulations formalize its policies to prevent conflicts of interest by contractors at Sections 1552.209-70 – 1552.209.73. Contractors must certify they are conflict free and mitigate any potential conflicts; they are not to be awarded contracts if they have potential conflicts of interest. Section 1552.209-70. If conflicts of interest arise and are not revealed, the contractor can be dismissed or other remedies taken by the EPA. Section 1552.209-71.

In our view and to the best of our knowledge, the responsible parties and their consultant contractor in this San Jacinto Waste Pits Superfund Site matter did not disclose, or did not disclose adequately, that they prejudged the remedy for this specific site before they researched and wrote the RI/FS and other reports. The consultant's reports, in our opinion, should be totally disregarded in the final recommendation for the San Jacinto Waste Pits superfund site because:

1) the consultants prejudged their recommendations and conclusions before doing any analysis; 2) the consultants were controlled as part of a "global plan" by the responsible parties; 3) the consultants and responsible parties appear to have failed to disclose their myriad conflicts of interest, from being consulting defense litigation experts on this site as well prejudging the remedy for this site. These failures to disclose appear to us to be in violation of their contract and EPA regulations.

It is one thing for an independent consultant paid for by responsible parties to have a perspective based on their experience and judgment. It is another matter entirely—and should be disqualifying—to have a consultant serve who has prejudged the remedy for the specific site in question years before doing their report and who agreed to serve as part of a plan to "control the responsible parties message" to obtain a predetermined remedy impacting the health and environment of thousands of people. Whatever the standard for disqualifying a consultant and their reports, we feel it has been met in this case.

## VII. Excerpt from A Flood Risk Assessment of the San Jacinto River Waste Pit Superfund Site By Dr. Sam Brody of Texas A&M University Galveston- Center for Texas Beaches and Shores

# CONCLUSION

The San Jacinto Waste Pits are located in an area that is vulnerable to many different physical threats: hurricane surge, wave action, riverine flooding, subsidence, and sea level rise. These forces, over time, have eroded the sediment and embankments around the site, which are likely the primary reasons for the eventual leakage of the toxic chemicals into the surrounding environment. The threat of human exposure when this site was built during the 1960's was much lower than it is today. Historical development has rapidly increased the amount of people that live within a few miles of the site and this trend is projected to continue well into the future.

More serious attention needs to be given to the local socioeconomic and built environment characteristics of this hazardous site. The threat of future surge and riverine flood events coupled with a changing climate and increasing development all have a ratcheting effect on the amount of impact this superfund site could inflict on surrounding communities. As risk of failure increases so too does the risk of exposure from flood-induced water vectors. Bioaccumulation is already occurring exposing local fisherman and residents to harmful chemicals that consume the fish and crabs. Sediment contaminated with dioxins could potentially be scoured from the site and transported into neighboring residential areas, school and wastewater management facilities, and a reservoir that provides drinking water. That said, the installation of the temporary geomembrane by the EPA is a first attempt to prevent leaking and exposure, but this is likely the first of many repairs that are likely to occur due the vulnerable location of this site.

Based on the flood risk assessment above, it is my expert opinion that the waste pits should be fully removed as outlined by Alternative 6 in the Feasibility Study conducted for CIMC and International Paper, Inc. (Anchor QEU, 2013). As already mentioned, the site is in an extremely vulnerable location to repeated inundation, which will only increase in the future. There is insufficient evidence that any proposed on-site remediation alternative can effectively stabilize the pits over the long term and prevent the leakage of contaminants to surrounding areas. The information contained in this report

provides a more complete understanding of the flood risks associated with the site and can offer guidance to decision makers as they contemplate future mitigation actions.

## VIII. Conclusion & Recommendations

The only way to truly protect human health and the environment from dangers associated with the San Jacinto River Waste Pits is to fully remediate the site. The stories of fear and confusion that circulate the surrounding communities are not stories that should be relived. Community members were outraged and insulted at the January 30, 2014 EPA community meeting by all remedial alternatives except 6N. If remedial alternatives 1N-5aN are selected, the risk will be left in place for the contaminants from the waste pits to integrate into the local ecosystem and food chain. Alternative 6N is the only remedial alternative that meets the CERCLA criteria for overall protection of human health and environment, reduction of toxicity and mobility, and considers a long-term scale for effectiveness and permanence.

The San Jacinto River Waste Pits are located in a delicate setting; vulnerable to freshwater flooding, coastal storms, tidal surges, subsidence, sea level rise and barge activity. For over 40 years the waste pits were left unattended and exposed to local environments. The people and animals of Highlands, Channelview and Baytown have borne the burden of the local environment and they too should be considered. High rates of disease and cancer in the surrounding communities need investigation beyond the idea that exposure occurs in the river or from ingesting locally caught fish and crab. Sediment samples taken on the Channelview side of the river show dioxin and furans in the top 6 inches of residential soil. In the surrounding communities, it is common to hear tragic stories about animals with tumors and nervous system disorders in both humans and animals. One in-home nurse to Lou Gehrig's patients, has been assigned 20 new cases in the area within the last year. In the small town of Highlands, the SJRC is aware of 6 people who have the rare cancer Multiple Myeloma. Texas Department of State Health Services is unwilling to conduct an epidemiological study because they cannot find a comparable community. I strongly encourage you to consider the ramifications of your decision to those who have borne the expense of the waste pits in the surrounding communities and the future generations who will move to East Harris County. In addition, the San Jacinto River Waste Pits are not only located in a residential area but in a river of high recreational use situated above one of the United States' most productive estuaries.

Furthermore, fully remediating the waste pits removes the potential for the financial burden to fall on taxpayers. According to U.S. Secretary of State, John Kerry, "For every dollar spent on a mitigation project, a savings of four dollars will be experienced." The surrounding communities do not want to push this hazard onto future generations. If the San Jacinto River Waste Pits are not fully remediated now, the surrounding communities, ecosystem and tax-payers will ultimately pay. It is not a matter of "if" a significant hurricane strikes the upper Texas coast, it is a matter of "when" a significant hurricane strikes the upper Texas coast. In this event, we do not want to suffer the burden of the toxic waste from the San Jacinto River Waste Pits.

**From:** Shafer, Andrew
**To:** Smith, March; Philip J Slowiak
**Sent:** 3/9/2011 8:49:16 AM
**Subject:** RE: Please mark your calendars: next CAC meeting and other informational items.

From experience we know how Valmichael addresses the crowd. When we don't have someone present he will say anything.

**Andrew L. Shafer, P.E.**
**District Manager, Wx Closed Sites Management Group**
9590 Clay Road
Houston, TX 77080

Office No.: 713-772-9100 Ext. 109
Fax No: 832-668-3188
Cell No. 832-724-3802
*Did you know? "Waste Management's landfills provide over 24,000 acres of protected land for wildlife habitats and 73 of the sites are certified by the Wildlife Habitat Council."*

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**From:** Smith, March
**Sent:** Wednesday, March 09, 2011 8:47 AM
**To:** Philip J Slowiak
**Cc:** Shafer, Andrew
**Subject:** RE: Please mark your calendars: next CAC meeting and other informational items.

Good point, however, David is the lead dog when it comes to building a consensus with the CAC members to view the TCRA as part of the permanent remedial action at the site. I am working on a global plan to build this consensus with all stakeholders and David is the best spokesman to address this group and control our message. ValMichael will not speak out of turn when David is present because he know s he will be called out immediately. We need to control our message and build consensus are we may be facing a dig and haul/burn as part of the final remedy.

*March Smith*
Director of Closed Sites

**From:** Philip J Slowiak [mailto:Philip.Slowiak@ipaper.com]
**Sent:** Wednesday, March 09, 2011 9:41 AM
**To:** Smith, March
**Cc:** Shafer, Andrew
**Subject:** RE: Please mark your calendars: next CAC meeting and other informational items.

Let's talk about this. I'm not so sure it's in our best interest to have Dave become too familiar a face at these meetings. It might be better to let Valmichael report all the progress. We need to keep Dave in reserve for bigger issues. The CAC won't move on to other big picture issues if Dave is the center of attention.

MIMC-HC064622

**From:** Shafer, Andrew
**To:** Rivette, Chuck
**Sent:** 5/31/2011 7:59:52 AM
**Subject:** RE: SJWP - Update - Time Critical Removal Action (TCRA)

The big plan is to sell this cap (TCRA) as part of the final remedy for the old cell area. We do a have few hotspots to the west and that are above the clean up standards that will have to be addressed. These areas will probably require some dredging or insitu capping. The Remedial Investigation (RI) is almost complete. We will be completing and submitting the draft Preliminary Site Characterization Report by about mid June. The contamination has not spread very far downstream. I guess one big thing are the some pit on the south side of I-10. We have been able to stay out of the portion of the RI. The EPA is treating it as another operable unit. When IP did the initial investigation they found all kinds of nasty stuff. They found free product floating on the groundwater. Southwest shipyards has submitted a MSD to the City of Houston. There is some data in the MSD that shows about 20 or so VOC COCs above the groundwater protection standard and several heavy metals including Mercury and Lead . They had one GW well with a Vinyl Chloride hit of 47,000 µg/L (GWPS is 2 µg/L) . The dioxin over there seems to be contained but the extent of the pit is unknown. I believe IP will have to do some more investigation. That's about it for now.

**Andrew L. Shafer, P.E.**
**District Manager, WM Closed Sites Management Group**
9590 Clay Road
Houston, TX 77080

Office No.: 713-772-9100 Ext. 109
Fax No: 832-668-3188
Cell No. 832-724-3802
*Did you know? "Waste Management's landfills provide over 24,000 acres of protected land for wildlife habitats and 73 of the sites are certified by the Wildlife Habitat Council."*

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**From:** Rivette, Chuck
**Sent:** Saturday, May 28, 2011 7:32 AM
**To:** Shafer, Andrew
**Subject:** Re: SJWP - Update - Time Critical Removal Action (TCRA)

Wow. Had no idea you were this far along. What exactly is the plan?

**From:** Shafer, Andrew
**Sent:** Friday, May 27, 2011 03:10 PM
**To:** Rivette, Chuck
**Subject:** SJWP - Update - Time Critical Removal Action (TCRA)

Rock cap in water areas (North and East Cells) completed. Some touch up work will be required after review of bathymetric surveys. Photo taken today of the West cell. West cell is 2/3 black in, including welding. They will probably finish up to the where the 12 oz bottom geotextile is installed today. Liner crew will cut and pull destruct samples and then make repairs to those areas. The liner crew will then start installing the 16 oz moving from south to north. USA will install the remaining North portion of the

MIMC-HC065072

## Appendexis

1)EPA Region 10 Memo (May 2010): McCormick and Baxter Creosoting Co. (Oregon)(http://yosemite.epa.gov/r10/nplpad.nsf/epaid/ord009020603)
This superfund site resulted from an abandoned wood treatment plant in the Willamette River near Portland Oregon. The site contained PCBs and heavy metals in a part of the River used for recreational activities and surrounded by residents. EPA first ordered capping, but when dioxin was later discovered, ordered excavation and removal of the waste off site to protect the public's health. The site was then capped.

2) EPA Region 10 Memo (December 2011): Wyckoff Company and Eagle Harbor (Washington)(http://yosemite.epa.gov/r10/nplpad.nsf/epaid/wad009248295)
This superfund site was caused by an abandoned wood treatment plant on an island in Puget Sound, which is partially underwater. Contamination includes PAHs, heavy metals, and dioxins. Two thousand residents live within a mile of the site, which is surrounded by commercial and residential sites. EPA has ordered excavation and removal, treatment, capping, and tidal barriers and walls to protect the public health.

3)EPA Region 10: Pacific Sound Resources(Washington) (May 2010)(http://yosemite.epa.gov/r10/nplpad.nsf/epaid/wad009248287)
This superfund site lies underwater in Puget Sound and on a bay shore and results from an abandoned wood treatment plant containing PCPs, PCBs, and heavy metals. Primarily in an industrial area, it also contained nearby residents, recreational use, and contaminated seafood that was being consumed. EPA ordered excavation and removal of 10,000 cubic yards of wastes, a slurry wall, sophisticated capping, and groundwater monitoring.

4) EPA Region 1: Centredale Manor Reclamation Project(Rhode Island)(2013)(http://yosemite.epa.gov/r1/npl_pad.nsf/51dc4f173ceef51d85256adf004c7ec8/bbe0100a535e8840852576e90053b186!OpenDocument)
This nine acre superfund site, from a variety of abandoned industrial plants, sits on a former apartment complex property and drains into the Woonasquatucket River in North Providence. The River is used by anglers, residents, and recreational users and is contaminated from the site by dioxins, furans, and PCBs. To protect the public health and environment, the EPA has order a $104 million clean-up, including 2 interim caps, excavation and removal of contaminated soil and sediment, rebuilding of a dam, restoration of the ground to its natural state, and wetland mitigation.

5) EPA Region 1: Loring Air Force Base (Maine)(2013)(http://yosemite.epa.gov/r1/npl_pad.nsf/f52fa5c31fa8f5c885256adc0050b631/01550369A32B31BB8525691F0063F6D6?OpenDocument)
This superfund site is an abandoned military base, containing PCBs, benzene, and chlorinated organic chemicals that flow into a drainage ditch and stream that contaminates the sediment and groundwater. In a rural area, 1500 residents live within a mile of the site. The EPA has ordered excavation and removal of 150,000 cubic yards of soil, capping of that waste, stream restoration, and in situ treatment of toxic wastes.

6) EPA Region 5: Ashland/Northern States Power Lakefront (Wisconsin)(2014)http://www.epa.gov/region5/superfund/npl/wisconsin/WISFN0507952.html)
This superfund site results from an abandoned water treatment plant in a mixed residential and recreational area. It consists of 12 acres of organic chemicals and PAHs, causing groundwater and lakefront contamination. Because the site is subject to wave action from boat and other uses, the EPA has ordered excavation and removal, water treatment, and water barriers.

7) Public Interest Research Group, Empty Pockets: Facing Hurricane Katrina's Cleanup with a Bankrupt Superfund (December 2005), pp. 5, 13-22, 23-27. (http://www.uspirg.org/sites/pirg/files/reports/Empty_Pockets_USPIRG.pdf)
This report reviews the devastating impact of hurricanes, tornados, and other unpredictable natural disasters on existing superfund sites. It explores the resulting serious secondary economic, environmental, and health damages as well as the huge taxpayer-borne costs. The report points to a number of superfund sites impacted by hurricanes, flooding and other natural disasters, including the superfund sites of the American Creosote Works (Florida), Bunker Hill Mine(Idaho), South Eighth Street Landfill (Arkansas, Lower Darby Creek (Pennsylvania), and Mohawk Tannery (New Hampshire). It also discusses the enormous amount of toxic wastes from superfund and industrial sites dispersed by Hurricane Katrina, with potentially serious environmental and health harm as well as taxpayer costs.

8) Government Accountability Office, Superfund: Information on the Nature and Costs of Cleanup Activities at Three Landfills in the Gulf Coast Region (February 18, 2011)(GAO-11-287R),pp. 2, 5-11. (http://www.gao.gov/new.items/d11287r.pdf)
This report reviews superfund cleanup costs from hurricanes and natural disasters that spread toxic wastes and debris from existing superfund sites, resulting in contaminated landfills and new superfund sites. It also points out that while leaving toxic wastes on site at a superfund site is inexpensive, that if there is a natural disaster the resulting clean-up costs are high. Three landfills on the Texas Coast cost an estimated $13-$55 million each to clean up from debris from natural disasters.

9) Gaddis, Miles et. al., 63 Ecological Economics, Full Cost Accounting of Coastal Disasters in the U.S. (2007), 307-318 (http://www.sciencedirect.com/science/article/pii/S0921800907000985)
Looking at Hurricane Katrina, this report notes that the true societal costs of hurricanes extend beyond typical building costs and human costs to ecological and health costs from toxic contamination from industrial and superfund sites. The report notes there were 26 superfund sites in the path of Katrina and that massive amounts of toxic wastes, oil and debris were dispersed by the Hurricane, greatly impacting the environment and aquatic eco-systems. In one example, Hurricane Katrina's winds and flooding were strong enough to topple a 250,000 barrel metal storage tank, causing a large oil spill--showing the power of hurricanes to disperse toxic chemicals in their path.

10) Hayes, American Association of Petroleum Geologists Bulletin, Vol. 51, No. 6, Hurricanes as Geological Agents on the South Texas Coast (1967), pp 937-956 (http://archives.datapages.com/data/bulletns/1965-67/data/pg/0051/0006/0900/0937.htm). This study looks at the impact of the massive Hurricane Carla in 1961 and the smaller Hurricane Cindy in 1963 on Padre Island. The report noted that there were an average of .67 hurricanes on the Texas Coast with 42 hurricanes between 1900-1963. It found Hurricane Carla moved rocks and materials from as deep as 50-80 feet from the ocean to the beach and dunes. It also indicated that foredunes were moved as far as 100 feet as well as barrier flats suffering massive erosion.

11) Islam et. al., Natural Hazards Review, Vol 10, Origin, Distribution and Timing of Texas Hurricanes, 1851-2006 (2009), pp.136-144 (http://ascelibrary.org/doi/abs/10.1061/(ASCE)1527-6988(2009)10:4(136),
From 1851-2006, 104 tropical storms or hurricanes hit the Texas coast, with 66 being hurricanes and 24 being major hurricanes. 64% of the hurricanes hitting the Texas Coast were Categories 1 and 2, and 36% were categories 3 and 4 (no Category 5 hurricanes have hit yet). The upper Texas Coast and Galveston Bay is the area most prone to hurricanes on the entire Texas coast because of various natural phenomenon, with 56% of all hurricanes hitting the Upper Texas Coast and Galveston Bay. These hurricanes are also the strongest that hit the Texas coast.

12) Clarke et. al., Risk Analysis, Vol. 24. No. 3, Engineering Containment and Control Systems: Nurturing Nature (2004), pp. 771-779 (http://onlinelibrary.wiley.com/doi/10.1111/j.0272-4332.2004.00474.x/abstract). This report states that capping and lining is not a long-term solution, since over time these approaches will degrade over time, likely within 50 years. The result will be much high costs to remediate and cleanup to society. The remedy must be appropriate for the site in question and adapted to the particular environment, its health and environmental risks, and the long-term costs over time of continued contamination from future remediation degradation and costs of monitoring.

13) Boruff et. al, Journal of Coastal Research Journal, Erosion Hazard Vulnerabilities of US Coastal Counties, Vo1. 21, Issue 5 (2005), 932-942 (http://jcronline.org/doi/abs/10.2112/04-0172.1)
This report indicates that coastal erosion analysis has focused primarily on physical factors (land forms, hydrology, and buildings), but that social factors, such as the level of poverty and demographics, also pay a large role in the analysis of the economic, environmental and human costs of erosion. Because of the greater poverty and other demographics of the Gulf Coast, social factors play a larger role in the erosion cost analysis on the Gulf Coast than other US coasts.

14) Marritz, New Jersey Public Radio, Concerns Grow Over Flooding from a New Jersey River That is also a Superfund Site (November 13, 2012)
(http://www.wnyc.org/story/250565-concerns-grow-over-flooding-river-s-also-superfund-site/) When the Passaic River in New Jersey has flooded from Hurricane Sandy and other storms, its waters have overflowed causing leakage of dioxin and PCBs from a superfund site on the River's banks. Scientists worry that dioxin and PCBs were transported to residences and deposited in people's basements, posing health risks.

15) Cooperating Parties Group, River Mile 10.9 Removal Action Pre-Final Design Project, Lower Passaic River Study Area (November 2012)(http://www.ourpassaic.org/ProjectNews.aspx). The EPA and cooperating parties agree to remove 18,000 cubic yards of contaminated sediments containing dioxin and PCBs from the banks of the Lower Passaic River to protect public health and the environment. After the toxic wastes are remove and moved to a permitted disposal facility, the site will be treated and capped.

16) Farley, WNET New York Public Radio, Four Toxic Rivers: A Super Sad True Superfund Story (November 11, 2011) (http://www.thirteen.org/metrofocus/2011/11/four-toxic-rivers-a-super-sad-true-superfund-story/)
This article discusses four superfund sites in New York area rivers. It notes that 200,000 cubic yards of toxic wastes, containing PCBs and dioxin, were dredged and removed from the Lower Passaic River. To prevent further toxic waste dispersion into the river during excavation, the site was enclosed by a giant barrier. In addition, a pipeline was built to transport the wastes from the superfund site to a disposal facility.

17) EPA, Contaminated Sediment Remediation Guidance for Hazardous Waste Sites (2005), pp. 2-27 - 2-19, 5-2 - 5-6, 6-1 - 6-29 ( http://www.epa.gov/superfund/health/conmedia/sediment/guidance.htm)
This EPA manual notes that the most common superfund site remedy is dredging and excavation of toxic wastes and that this approach removes uncertainty of future toxic waste exposure when risks of erosion or extreme events exists. In deciding an appropriate remedial action, it points out that routine, repeated forces, such as waves, currents and tide, can erode caps over time. It also notes that the frequency and intensity of extreme events, such as hurricanes and flooding, must be taken into account for determining an appropriate remedy. It notes that containment barriers, such as sheet piling and cofferdams, are used effectively to prevent further dispersion of toxic wastes into the water during the removal process.

18)Center for Health, Environment and Justice, Superfund: in the Eye of the Storm (June 2010)(http://chej.org/wp-content/uploads/Superfund-In-the-Eye-of-the-Storm-REP-013.pdf)
This study notes that 56 superfund sites on the Gulf Coast were adversely impacted by extreme weather events between 2004 and 2008. Climate change is causing more frequent and intense extreme weather events, such as hurricanes, flooding, and tornados, which are causing an increased threat to the integrity of superfund sites and the public health and environment.

19) Blackburn and Bendit, Learning the Lessons of Hurricane Ike (May 2010) (http://sspeed.rice.edu/sspeed/downloads/SSPEED_Interim_Report_2010.pdf)
This report from Rice University's SSPEED Center that the significance and destructive force of hurricane storm surges are significant and serious destructive force that is not fully appreciated and that their destructiveness and power are seriously underrepresented in the engineering literature. Hurricane surges, combined with rainfall, are an under-examined phenomenon and pose a worsening risk to the Houston area and coast.

20) Brody, Sam. *A Flood Risk Assessment of the San Jacinto River Waste Pit Superfund Site*. Texas A&M University Galveston: , 2014.