FINAL
ENVIRONMENTAL IMPACT REPORT

SDCRAA # EIR-19-01
State Clearinghouse No. 2018111052

ADDITIONAL FUEL TANKS PROJECT
SAN DIEGO INTERNATIONAL AIRPORT

SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY

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1. INTRODUCTION

1.1 FINAL EIR INTENDED USE AND ORGANIZATION

This Final Environmental Impact Report (Final EIR) for the Additional Fuel Tanks Project (proposed Project) at San Diego International Airport (SDIA or Airport) has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970, as amended, and Sections 15089 and 15132 of the State CEQA Guidelines. The San Diego County Regional Airport Authority (SDCRAA or the Authority) is the lead agency for the proposed Project and has prepared this Final EIR. The Final EIR is finalized upon certification by the SDCRAA's decision-making body (the SDCRAA Board); consequently, additional modifications to the Final EIR may be provided up until the time of certification.

This document incorporates the Additional Fuel Tanks Project at San Diego International Airport Draft EIR (State Clearinghouse No. 2018111052) by reference, in its entirety, as revised by the correction and addition contained in Chapter 3 of this Final EIR. The Draft EIR is available for review at the San Diego International Airport, Airport Authority Administration Building, 3225 N. Harbor Drive, 3rd Floor, San Diego, CA 92101 and at the website www.san.org (under link to Airport Projects/Environmental Affairs/CEQA & NEPA).

This Final EIR will support the permitting and approval processes of relevant agencies, including the California Coastal Commission and the County of San Diego.

The contents of this Final EIR include:

- **CHAPTER 1: INTRODUCTION** – This chapter includes a summary of the contents of the Final EIR, and a description of the proposed Project and alternatives considered.
- **CHAPTER 2: RESPONSES TO COMMENTS** - On November 5, 2019, the Authority published a Draft EIR for the proposed Project. In accordance with CEQA, the Draft EIR was circulated for public review a total of 45 days, with the public review period ending on December 20, 2019. Chapter 2 of this Final EIR consists of a compilation of the comments received on the Draft EIR, either verbatim (including typographical and grammatical errors) or, in the case on one comment letter identified below in Chapter 2 as "DEIR-PC001," a summary based on the content and length of the comment letter, and written responses prepared by the Authority. This chapter also includes a list of the agency, the organization, and the individuals that commented on the Draft EIR.
- **CHAPTER 3: CORRECTION TO THE DRAFT EIR** – Chapter 3 provides additional language describing the existing Airport fuel storage and distribution facility and a minor revision to one exhibit of the Draft EIR. The changes made to the Draft EIR do not add significant new information that would require recirculation of the document under State CEQA Guidelines Section 15088.5.
- **ATTACHMENT 1** – This attachment consists of bracketed scan copies of the comment letters submitted to the Authority regarding the Draft EIR.

This document constitutes the Final EIR for the Additional Fuel Tanks Project.

1.2 SUMMARY OF PROPOSED PROJECT AND ALTERNATIVES

1.2.1 BACKGROUND

SDIA encompasses 661 acres, within the City of San Diego, approximately one mile north of the San Diego central business district. The Airport operates a single, 9,401-foot-long and 200-foot-wide east-west runway (Runway 9-27) that accommodated 225,058 flight operations in 2018, making it the busiest single-runway commercial airport in the nation. Passenger levels at SDIA increased by nearly 40 percent since 2010, accommodated by an increase in daily aircraft operations and the use of larger aircraft with higher seating capacity.[1] The increase in number of operations and size of aircraft currently serving the Airport has resulted in a correlated increase in daily aviation fuel use, which has expedited depletion of on-Airport fuel reserves. In July 2018, the Airport's peak aviation activity month, the existing fuel farm could accommodate approximately 2 days of fuel.[2] The industry standard for airports similar to SDIA is a 5- to 7-day supply of fuel.

Currently, fuel stores at SDIA are supplied by a regional pipeline that serves a number of fuel types and storage facilities in southern California. Due to the regional fuel demand and limited capacity of the fuel farm, resupply of SDIA's full fuel storage capacity, via regional suppliers, can only be accommodated once every seven days. The extended period between refueling cycles taxes the on-Airport fuel reserves and subjects SDIA operations to the risk of service interruptions due to pipeline malfunctions or fuel system maintenance.

The proposed Project would construct three additional aviation fuel storage tanks at the existing SDIA fuel farm to meet the industry standard for on-Airport fuel storage and allow SDIA operations to continue during fuel supply chain interruptions. The proposed Project would not increase the number of passenger or aircraft operations at SDIA. Airport capacity is a function of the airport's physical facilities or components; its layout or geometry; its operating environment, including the airspace allocated to the airport; the aircraft fleets utilizing the airport; and weather conditions.[3] Accordingly, any growth in number of passengers or aircraft operations would occur regardless of on-Airport fuel storage capacity.

1.2.2 PROJECT OBJECTIVE

The objective of the proposed Project is to increase fuel storage at the Airport to meet industry fuel reserve standards for existing aircraft operations and to accommodate supply pipeline shutdowns or fuel farm maintenance activities without compromising aircraft refueling service. Additionally, the proposed Project would greatly reduce the need for, and risks associated with, fuel resupply or supplementation via tanker truck.

1.2.3 PROPOSED PROJECT COMPONENTS

A three-tank concept is proposed, as opposed to a single tank, to allow flexibility in fuel reception, distribution, and maintenance activities. The existing fuel tanks would remain in operation following construction of the proposed Project. The proposed 1,146,320-gallon (shell volume) cylindrical tanks would be 58 feet high and 58 feet in diameter. Pending final design, each tank would include a set of safety stairs as well as catwalks between the tanks

1 San Diego County Regional Airport Authority, *Air Traffic Report Summary, Calendar Year 2018*. Available: https://www.san.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=12717&Command=Core_Download&language=en-US&PortalId=0&TabId=403 (accessed March 15, 2019).

2 Burns & McDonnell, *SAN Tanks Project Information*, November 12, 2018.

3 Transportation Research Board of the National Academies, Airport Cooperative Research Program, *ACRP Report No. 79 – Evaluating Airfield Capacity*, 2012.

to allow for maintenance and operational functions. Upgrades to the existing fire suppression system would also be constructed as a part of the proposed Project, including the installation of foam makers, foam monitors, and foam chambers. Containment dike walls, approximately 1-foot in width and 6 feet in height, on the east, west, and south periphery of the proposed tanks would be constructed. The proposed containment dike walls would be connected to the fuel farm's existing walls to create an expanded containment area. Secondary containment dike walls would also be constructed between the proposed tanks and the primary dike wall.

1.2.4 ALTERNATIVES TO THE PROPOSED PROJECT

1.2.4.1 ALTERNATIVE 1 - NO PROJECT ALTERNATIVE

The existing aviation fuel farm at SDIA consists of two identical aviation fuel tanks that are approximately 80 feet in diameter and 28 feet in height and have a total useable fuel storage capacity of 1.71 million gallons. The existing SDIA fuel farm was originally designed to receive fuel by tanker truck, and as such, has 6 tanker truck unloading stations. Although almost all fuel currently supplied to the SDIA fuel farm is transported to the Airport via pipeline, occasional tanker truck deliveries are conducted, primarily for smaller carriers without adequate capacity to utilize the aviation fuel pipeline. Additionally, any lapse in the on-Airport fuel delivery system, as well as inspection and maintenance activities, requires fuel to be delivered via tanker truck, which results in substantially slower and less reliable replenishment of the Airport's supply.

In July 2018, the peak aviation activity month during 2018, the fuel farm had the capacity to supply approximately 2 days of fuel.[4] In the event that a pipeline is disrupted, and the Airport's fuel is to be supplied entirely by tanker trucks, the maximum daily fuel usage for 2017 of 662,800 gallons would require approximately 88 tanker truck deliveries per day assuming the tanker trucks have a capacity of 7,500-gallons.[5] Alternative 1 would require SDIA to supplement fuel shortages at the Airport with tanker truck deliveries. In the instance the Airport's fuel supply is compromised or halted, the airlines would have to depend on tens of daily fuel tanker truck deliveries to maintain operations.

1.2.4.2 ALTERNATIVE 2 - MISSION VALLEY TERMINAL

The Mission Valley Terminal is a component of the existing SDIA fuel supply pipeline chain, located approximately 5.5 linear miles or approximately 10.4 road miles northeast of the Airport. Mission Valley Terminal has a storage capacity of approximately 28.6 million gallons and supplies a variety of fuels to numerous bulk-fuel clients in the San Diego Region; however, currently no aviation fuel is stored on site. Alternative 2 would require conversion of one Mission Valley tank and the facility's fuel truck loading equipment would require conversion to accommodate aviation fuel tanker trucks. The tank availed to aviation fuel at Mission Valley would store a two-day reserve fuel supply for SDIA in the event of a pipeline disruption.

Mission Valley would continue to serve other fuels, which would require the aviation fuel tank to be used for other product regularly. Minimum fuel obligations and maximum storage periods at Mission Valley would require approximately 95 truck deliveries to SDIA each week whether SDIA airlines required the fuel or not. Additional truck traffic would place an added burden on administration and the SDIA fuel farm operator to ensure safe and adequate delivery.

4 Burns & McDonnell, *SAN Tanks Project Information*, November 12, 2018.

5 Burns & McDonnell, *SAN Tanks Project Information*, November 12, 2018.

The Mission Valley Terminal receives fuel product via the same pipeline that serves the SDIA fuel farm directly. As such, SDIA would still be at risk of fuel deficiencies or trucked fuel operations as a result of pipeline disruption. Any disruptions that occurs upstream from Mission Valley would result in impacts to SDIA in a manner similar to Alternative 1 and use of the Mission Valley Terminal would not meet the proposed Project objective of increasing the on-Airport fuel supply. The on-Airport fuel supply would not be increased; therefore, the restrictions on maintenance of the fuel pipelines, fuel farm tanks, and associated systems would remain. Additionally, under Alternative 2, fuel supplied to SDIA would need to be transmitted to the Airport via tanker truck because there would be no additional storage capacity at SDIA to hold additional fuel.

Based on the substantial number of trucks required to deliver fuel reserves, SDIA would need to confirm with local trucking companies that the quantity of fuel trucks could be accommodated. Approximately 95 tanker trucks per week would be required regularly if supply pipelines were to fail or require cessation for maintenance. The risks associated with transporting aviation fuel via tanker truck would also not be resolved. Alternative 2 does not meet proposed Project objectives of providing on-Airport storage capacity commensurate with industry standards, allowing maintenance on the supply pipeline or individual fuel tanks, or reduce risk of requiring tanker truck delivery of fuel.

1.2.4.3 ALTERNATIVE 3 - OFF-AIRPORT FUEL TANK

Alternative 3 would require the Authority to construct a fuel storage facility at an off-Airport location. Construction of additional fuel storage and installation of an associated supply pipeline off-Airport would theoretically increase the Airport's fuel supply; however, off-airport capacity would fail to meet the proposed Project objectives. Furthermore, the Airport is located in a highly urbanized area and locating a development site large enough to accommodate fuel storage facilities sized to meet SDIA's needs would be problematic. Safety and health requirements, as well as zoning and land use restrictions, limit the locations at which a fuel facility could be located in proximity to the Airport. Transference of fuel from an off-Airport site to the Airport may require construction of a new fuel supply pipeline or implementation of trucked fuel operations.

Financial and logistical challenges, including cost of land and construction of new supply pipeline connections would also make Alternative 3 infeasible. Alternative 3 would not meet the proposed Project objectives of providing on-Airport storage capacity commensurate with industry standards, allowing maintenance on the supply pipeline, individual fuel tanks, or the associated ancillary fuel farm systems, reduce risk of requiring tanker truck delivery of fuel, or reduce risks associated with trucked fuel operations.

2. COMMENTS AND RESPONSES

2.1 INTRODUCTION

In accordance with Section 15088 of the State CEQA Guidelines, the Authority has prepared responses to all comments received on the SDIA Additional Fuel Tanks Project Draft EIR. As required by the State CEQA Guidelines, the focus of the responses to comments is on "the disposition of significant environmental issues raised." Detailed responses are not provided to comments on the merits of the proposed Project or on other topics that do not relate to environmental issues.

This section of the SDIA Additional Fuel Tanks Project Final EIR presents the Authority's written responses to comments received on the Draft EIR. The responses to comments present the content of each letter followed by the

Authority's response. The comments and responses are organized and grouped into categories based on the affiliation of the commenter. The first letter received was from the Governor's Office of Planning and Research – State Clearinghouse and Planning Unit (State Clearinghouse) noting that no comment letters from state agencies were received by the State Clearinghouse during the Draft EIR comment period. Comments received on the Draft EIR for the proposed Project came entirely from the public (i.e., letters from one local organization and three private citizens). Comments from the local organization is presented first, followed by comments from individual private citizens. Comments are identified using an alphanumeric identification (ID) Code, that is keyed to each comment letter and the individual comments therein. The ID Code consists of "DEIR" to denote that the letter was provided on the Draft EIR, followed by a two-letter prefix designating the commenter's affiliation, followed by sequential three-digit numbers. The State Clearinghouse letter has an ID code of DEIR-SA. The commenting local organization has an ID code of DEIR-LO, and private citizens have an ID code of DEIR-PC. The three letters received from private citizens are assigned ID Codes DEIR-PC001 through DEIR-PC003. Each individual comment within a letter is then assigned a corresponding sequential number. For example, Letter DEIR-PC003 includes seven individual comments, which are designated as Comment DEIR-PC003-1 through Comment DEIR-PC003-7.

To assist the reader's review and use of the response to comments, an index of the comment letters is provided. This index provides the alphanumeric letter ID number, commenter name, affiliation (i.e., name of agency or organization that the author represents), and date the comment letter was received. Comments are provided verbatim (including typographical and grammatical errors), with the exception of DEIR-PC001. Comment letter DEIR-PC001 was lengthy and included material published for projects unrelated to the Additional Fuel Tanks Project; therefore, the comment letter was summarized. A bracketed scan copy of each comment letter is provided in **Attachment 1** of this Final EIR. In multiple instances, the response to a particular comment may refer to a prior response to a similar comment. Cross-referencing of responses uses the alphanumeric index system described above. For example, a response may indicate "Please see Response to Comment DEIR-LO001-1" if that response addresses the same concern expressed in a different comment.

2.2 INDEX OF COMMENT LETTERS

The following is an index that organizes the comment letters by a letter ID number.

TABLE 2.1 INDEX BY COMMENT LETTER ID

LETTER ID	COMMENTER	AGENCY/AFFILIATION	DATE OF RECIEPT
DEIR-SA001	S. Morgan	State Clearinghouse	12/19/2019[1]
DEIR-LO001	A.M. Stiegler	Quiet Skies La Jolla, Inc.	12/08/2019
DEIR-PC001	J. Gilhooly	None Provided	12/16/2019
DEIR-PC002	J. Holland	None Provided	12/19/2019
DEIR-PC003	A. Gordon	None Provided	12/20/2019

NOTE:
1 Date of receipt is unavailable. Date listed refers to the date the letter was composed.
SOURCES: Comment Letters in Attachment 1 of this Final EIR; Ricondo & Associates, Inc., January 2020

2.3 COMMENTS AND RESPONSES

The following provides the individual responses to comments on the SDIA Additional Fuel Tanks Project Draft EIR.

DEIR-SA001 Scott Morgan State Clearinghouse 12/19/2019

Comment DEIR-SA001-1:

The State Clearinghouse submitted the above named EIR to selected state agencies for review. The review period closed on 12/18/2019, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act, https://ceqanet.opr.ca.gov/2018111052/2.

Response:

The comment is noted.

DEIR-LO001 Anthony M. Stiegler Quiet Skies La Jolla, Inc. 12/08/2019

Comment DEIR-LO001-1:

This letter is submitted by the Quiet Skies La Jolla, Inc. We address here the San Diego County Regional Airport Authority's (SDCRAA) release of its November 5, 2019 "Draft Environmental Impact Report" ("DEIR") addressing three new 1-million-gallon fuel tanks at San Diego International Airport ("SDIA").

Response:

The Authority thanks Mr. Stiegler and Quiet Skies La Jolla, Inc. for their comment on the Additional Fuel Tanks Project. The comment is a general introductory statement to the specific comments that follow later in the letter. Please see Responses to Comments DEIR-LO001-2 through DEIR-LO001-7 below.

Comment DEIR-LO001-2:

<u>Background of the ADP and Proposed New Fuel Tanks</u>

The SDCRAA's Airport Development Plan proposes a currently unfunded $3Billion project to add 11 new gates, an undefined number of additional overnight jet parking places, a new Airport Administration office and improvements including restaurants and stores to enhance the customer experience at Terminal 1 of our airport. The ADP does nothing to mitigate the increasing jet noise that will affect the surrounding communities as a consequence of this expansion, including and specifically La Jolla.

SDCRAA released a supplemental Draft Environmental Impact Report on November 5, 2019 ("SDEIR") describing three new 1-million-gallon fuel tanks to be placed adjacent to the two existing tanks at the fuel farm on the northeast quadrant of the airport property. The airport and its jets burn approximately 1M gallons of jet fuel per day. The additional tanks will allow the airport to keep between 5-6 days of fuel supply on hand. The additional tanks and fuel capacity are also a direct proxy for increased flight operations and the associated increase in flight frequency and noise in the community. Tripling fuel capacity will supply the anticipated additional flights that SDCRAA forecasts to depart and land at SDIA every day under the ADP's plan to add 11 new gates and an undetermined

number of "Remain Overnight" jet parking places. The extra fuel capacity also matches the SDCRAA's plan to reach maximum flight operation capacity at SDIA as soon as possible.

Response:

The commenter's assertion that the November 5, 2019 Draft EIR for the proposed Additional Fuel Tanks Project is a "supplemental" or "SDEIR" to the SDIA Airport Development Plan (ADP) EIR is incorrect. As stated in Section 2.5.2 of the Additional Fuel Tanks Project Draft EIR:

> "The proposed Project would be constructed to accommodate existing deficiencies with aircraft fuel reserves and to allow for the maintenance and rehabilitation of the existing tanks. Projects the SDCRAA is proposing as part of the 2018/2019 Airport Development Plan (ADP) are currently undergoing environmental review to comply with CEQA requirements. The proposed Additional Fuel Tanks Project has independent utility; is required to increase aviation fuel storage at the Airport that meets industry fuel reserve standards for existing aircraft operations; would reduce risk of fuel shortages due to supply pipeline and fuel farm shutdowns; and would reduce the need to transport aviation fuel via tanker truck. The proposed Project would not result in an increase in passenger or aircraft capacity at SDIA. The proposed Project is not related to the 2018/2019 Draft ADP EIR or other ongoing environmental reviews for SDIA projects."

The proposed Project would install three additional fuel tanks to extend the on-Airport fuel supply capacity from approximately 2 days to 6 days, based on existing periods of peak aviation activity, as is the industry standard. As stated in Section 1.4 of the Draft EIR, airport capacity is a function of the airport's physical facilities or components; its layout or geometry; its operating environment, including the airspace allocated to the airport; the aircraft fleet mix; and weather conditions. The primary constraints of SDIA are airfield related, namely the single runway. A finite number of aircraft can arrive and depart on a single runway, regardless of the availability of fuel. Operations at SDIA are not constrained by lack of fuel. Indeed, if airlines were not able to access sufficient fuel via the SDIA fuel farm, airlines could procure fuel from an off-site facility.

As discussed in Section 1.4 of the Draft EIR, growth or decline in the number of passengers and aircraft operations would occur regardless of on-Airport fuel storage capacity. Further, in the instance the proposed Project is not constructed, airlines would schedule trucked fuel deliveries to supplement on-Airport fuel shortfalls. The Authority does not dictate whether carriers supplement fuel supplies from off-Airport locations. Consequently, an increase in on-Airport fuel supply would not result in any change to the number of aircraft operations or fleet mix operating at SDIA or increase the Airport's operating capacity.

Comment DEIR-LO001-3:

Quiet Skies La Jolla, Inc. reiterates the same or similar human health concerns about the proposed fuel tank expansion SDEIR as identified in our response to the DEIR addressing the Airport Development Plan.[6] Increasing fuel tank capacity is a prefatory step to supporting the increased jet traffic and operations proposed under the ADP and, therefore, should be subject to the same timing and order requiring that commercial jet noise mitigation measures be implemented first, human health studies be conducted and completed, followed then by consideration of the DEIR addressing the ADP and the SDEIR addressing the supplemental fuel tanks.

[6] Quiet Skies La Jolla, Inc. reserves its rights to challenge the DEIR regarding the Airport Development Plan regardless of whether it challenges the SDEIR regarding the additional fuel tanks and waives no rights by addressing the SDEIR herein.

Response:

Regarding the commenter's reference to the proposed Project as "a prefatory step to supporting the increased jet traffic and operations proposed under the ADP," please see Response to Comment DEIR-LO001-2.

The comment states that SDCRAA should not continue with the proposed Project until commercial jet noise mitigation measures be implemented, and human health studies be conducted and completed. The purpose of the Draft EIR is to address the potential environmental impacts of the proposed Additional Fuel Tanks Project. Construction of the proposed Project would not increase the Airport's airfield capacity and, therefore, would not induce additional aircraft operations. As described in the Initial Study (Appendix A of the Draft EIR), the proposed Project would result in temporary increases of noise and vibration levels during construction as a result of construction-related traffic and operation of construction equipment; however, noise generated during operation of the proposed Project would be consistent with the existing noise environment. Construction would occur during daytime weekday periods (i.e., 6:00 a.m. to 6:00 p.m.) to the extent possible and would not result in a substantial increase in ambient noise generated by the Airport and surrounding land uses. Overall noise impacts resulting from the proposed Project were determined to be less than significant.

Additionally, potential human health risks as a result of the proposed Project stemming from impacts to air quality and hazardous materials and waste were not determined to be significant. Operation of the proposed Project would have no bearing on existing aircraft operations. Due to the limited scope of the proposed Project, brief construction schedule, and required implementation of emission reduction measures, emissions related to construction and operation of the Additional Fuel Tanks Project would not exceed state or federal thresholds of significance or contribute to an existing air quality violation with impacts to air quality. Greenhouse gas emissions are expected to be less than significant.

The proposed Project would operate in accordance with applicable spill prevention and control measures as well as National Fire Protection Code standards. Potential hazard and hazardous material impacts would be consistent with the existing fuel farm and no further inherent risk to human health is expected.

In summary, the Draft EIR provides a sufficient level of information and analysis to evaluate the potential health impacts of the proposed Project. The proposed Project would accommodate existing aircraft operations and would not increase the Airport's capacity. Accordingly, there would be no significant environmental change associated with the proposed Project that would increase risks to human health, including degradation of air quality or additional aircraft noise. The Airport's nighttime departure curfew would remain in place.

Comment DEIR-LO001-4:

<u>The ADP DEIR and the Associated Commercial Jet Noise</u>

The ADP DEIR notes that there will be very "significant but unavoidable harm" to human health associated with the ADP, caused by increased jet noise due to more frequent flight operations during all hours, including significant risks of human physiological harm, stress, cardiac issues and cancer. The DEIR also discloses that the ADP will cause atmospheric environmental harm from greenhouse gas emissions and damage to environmentally sensitive areas and biodiversity. The DEIR acknowledges that the FAA Reauthorization Bill of 2018 <u>requires</u> the FAA to study these issues, but then concludes that the human health issues are "too speculative" to consider and dismisses them from further consideration in the DEIR and ADP. We disagree. The FAA and SDCRAA have it exactly backwards. Before spending $3B+ on an airport improvement project that coincidentally enables and accelerates the airlines to reach

maximum capacity at SDIA sooner, the studies should be conducted and assessed first, before the ADP progresses - and the damage to human health and the environment is irreversible.

SDCRAA concedes that project implementation would cause a 3dB or more increase in noise sensitive areas starting as early as 2024, due to a substantial increase in flight operations from the current average of 36 flights per hour now to an average of 50 per hour. That means communities surrounding the airport and its departure and arrival flight paths, including Point Loma, La Mesa, Kensington, North Park, Golden Hill, Mission Beach, Ocean Beach, Pacific Beach, La Jolla and others, where noise levels have traditionally been around 40-45dB or less, will be substantially impacted. Any additional jet overnight parking places will essentially guarantee a corresponding increase in the number of early departing flights in the 6:30 a.m. - 9:00 a.m. window, and a corresponding number of increased arrivals at night, including after 11:30 p.m. when there is no curfew on arrivals. Perhaps worse, the SDCRAA also reveals that "implementation of the proposed project would cause a substantial increase in the number of night-time flight operations that produce Sound Exposure Levels ("SELs") sufficient to awaken an increasing population starting in 2024, which would be significant and unavoidable". It is questionable how this is consistent with SDCAA's CEO Kim Becker's stated commitment to "[b]eing a good neighbor to surrounding communities, especially when it comes to noise mitigation".

The DEIR and SDCRAA argue that the increase in flight operations at SDIA would occur, with or without the ADP, because airlines will pack more flights into the SDIA schedule to meet customer demand, regardless of whether the airport is expanded. Yet the SDCRAA also concedes that the ADP and its 11 new gates and the new additional "Remain Overnight" jet parking places would enable SDIA to reach maximum capacity much faster.

The Adverse Impacts to Human Health from Jet Noise, the ADP and the Supporting New Fuel Tanks

The DEIR and SDCAA data note, but accept, that if the ADP moves forward, the 65dB-75dB noise contour directly around the airport will significantly expand, dramatically impacting 15,000 additional residents by 2026 and that the "noise would be significant and unavoidable". The noise will not stop at the airport boundaries: it will carry over to the surrounding communities and clearly, the increased noise is not good for humans, and in particular the residents of La Jolla.

Response:

As indicated in Response to Comment DEIR-LO001-2, the proposed Additional Fuel Tanks Project has independent utility from the SDIA ADP and is not related to the 2018/2019 Draft ADP EIR or other ongoing environmental reviews for SDIA projects. The comment above is specific to the SDIA ADP Recirculated Draft EIR; all comments submitted by Quiet Skies La Jolla Inc. on the Recirculated Draft EIR for the SDIA ADP were thoroughly and adequately addressed in accordance with CEQA as part of the January 2020 Final EIR, which was certified by the SDCRAA Board on January 9, 2020. As the comment offers no specific critique of the analysis provided in the Draft EIR for the Additional Fuel Tanks Project, no further response is required.

Comment DEIR-LO001-5:

Sleep Disturbance, Cardiovascular Disease, Cancer and Cognitive Learning Issues Associated with Jet Noise

The DEIR admits that there are sleep disturbance, stress and cardiology issues associated with jet noise, but dismisses them. Buried in the DEIR is the statement that while a "relationship between noise and health effects seems plausible, it has yet to convincingly be demonstrated" and "it is not known whether changes in pulse rate and blood pressure cause harm or are a sign of harm". The medical community, which is eminently more qualified to opine than the self-interested FAA and SCRAA, thinks otherwise. Indeed, the DEIR even notes that a 2018 World

Health Organization ("WHO") study strongly recommended reducing noise exposure levels produced by aircraft to below 45dB during the daytime and below 40dB at night, because of the causal relationship between noise and cardiovascular disease, sleep disturbances, cognitive impairment, adverse birth outcomes, mental health and quality of life. Remarkably the DEIR only addresses the probability of being awakened by jet noise but conveniently provides no data about the inability to begin the sleep cycle until after jet noise from departures subsides at 11:30 p.m. each night. The DEIR further notes that the implementation of the ADP "would result in a significant cancer risk human health impact", which is "significant and unavoidable". The DEIR further says that the human perception of "annoyance from noise depends on frequency" and that noise adversely affects children's' school performance for reading ability, concentration, motivation and long-term learning retention.

The DEIR dismisses the impact of noise pollution on health. In fact, an increasing number of studies demonstrate a strong and significant association between residential day-night equivalent noise levels and cardiovascular health. It is well established that aircraft noise, particularly at night, dose-dependently stimulates adrenaline release and impairs endothelial function, a key player in the development of cardiovascular disease, and that this process occurs in response to noise independently of whether or not there is an annoyance reaction. (Schmidt FP, Basner M, Kroger G, Weck S, Schnorbus B, Muttray A, Sariyar M, Binder H, Gori T, Warnholtz A and Munzel T. Effect of nighttime aircraft noise exposure on endothelial function and stress hormone release in healthy adults. *Eur Heart J*. 2013;34:3508-14a.) In a recent comprehensive review of the topic published in the well-regarded and high-impact *Journal of the American College of Cardiology*, Münzel et al state that "more and more large studies of high quality" find that noise, including that from air traffic, "is associated with coronary heart disease and stroke, as well as with major risk factors for cardiovascular disease, most importantly hypertension and metabolic disease" (Münzel et al, J Am Coll Cardiol 2018; 71:688-97). The authors further propose noise abatement measures to mitigate noise exposure throughout the day and night that include changing the descent and other flight procedures. The World Health Organization (WHO) guidelines for air traffic noise "strongly recommend" reducing noise levels produced by aircraft to below 45 dB, as aircraft noise above this level is associated with adverse health effects; for night noise exposure, the WHO "strongly recommends reducing noise levels produced by aircraft during night time to below 40 dB, as night-time aircraft noise above this level is associated with adverse effects on sleep" (WHO Housing and Health Guidelines. Geneva: World Health Organization; 2018. Table 8.11).

Response:

The Additional Fuel Tanks Project serves an independent utility at the Airport and is given independent consideration under CEQA. Therefore, comments regarding the environmental impacts associated with construction and operation of the SDIA Airport Development Plan are not considered applicable to the Additional Fuel Tanks Project.

Regarding the commenter's reference to potential issues to human health and safety as a result of noise, please see Response to Comment DEIR-LO001-3.

Regarding the commenter's reference to the SDIA Airport Development Plan and its relation to the proposed Additional Fuel Tanks Project, please see Response to Comment DEIR-LO001-2.

Comment DEIR-LO001-6:

SDCRAA's Disregard of the FAA Reauthorization Act of 2018

The DEIR notes that the FAA's Reauthorization Act of 2018, requires additional noise studies to be completed, including a "health impact study" for many airports across the U.S., including San Diego International Airport. Inexplicably, however, the DEIR concludes that the California Environmental Quality Assessment (CEQA) Guidelines

authorize an agency "who finds a particular impact too speculative after a thorough investigation, to note this conclusion and terminate the discussion of the impact". The SDCRA then unilaterally concludes: "The discussion above shows that, at this time, the effects of noise on cardiovascular health at noise levels below 65 CNEL are too speculative for further evaluation in this CEQA document", and proposes to plow ahead with the ADP in the face of serious and compelling scientific and peer-reviewed medical journal research that raise substantial concerns for human health linked to aircraft noise. The SCRAA's proposed path forward is irresponsible and negligent.

Response:

Language referenced in the comment regarding the FAA Reauthorization Act of 2018 is an excerpt from the SDIA ADP Recirculated DEIR. As stated previously, the proposed Project is analyzed independently from the ADP under CEQA and, therefore, does not analyze impacts associated with projects identified under the ADP beyond the potential for cumulative impacts. Regarding the commenter's reference to the ADP and its relation to the proposed Additional Fuel Tanks Project, please see Response to Comment DEIR-LO001-2.

Comment DEIR-LO001-7:

Ongoing Plans to Mitigate Jet Noise Have Been Ignored by the ADP DEIR and the Supplemental Fuel Tank SDEIR

The DEIR and the SDEIR are particularly troubling in light of the ongoing Flight Path and Procedure and Analysis and Part 150 Studies, which are evaluating proposed solutions to mitigate jet noise arising from SDIA. The initially proposed procedures include a requirement for departing jets to fly further west over the ocean, away from our beach and coastal communities, before turning north or south. We are fortunate to live next to the Pacific Ocean and it should be used to San Diego's advantage. Planes can fly more directly away from the coast and over the ocean, thereby minimizing the disturbance and health issues visited on the communities they serve. Flying shorter routes closer to the coast only saves the airlines a few cents or dollars in jet fuel and is strong evidence of airline and SDCRAA economic policies being placed ahead of human health concerns and the individuals on the ground.

Further study by these agency and community committees will also be performed and are projected to be completed in 2021, including the request by Quiet Skies La Jolla, Inc. that the "handshake agreement" requiring all departing flights from SDIA in the evening and/or night time hours be routed north away from Point Loma, be rescinded such that flight traffic during these hours be evenly distributed between Point Loma and the coastal communities to the north of the airport, including La Jolla. Quiet Skies La Jolla specifically requests that the "night-time noise abatement procedure" for SDIA be rescinded and replaced with an even-handed approach in which all flights during "nighttime noise abatement hours", occurring at least after 10:00 p.m. until 6:30 a.m., fly the standard daytime procedures. La Jolla, Mission Beach, and Pacific Beach should not bear the disproportionate brunt of night-time flight operations and the associated noise. Given the objective medical data reported thus far, the ADR must address these real and imminent health risks as air traffic volume from SDIA increases. First, the procedure recommendations in the Part 150 currently being evaluated must be adopted before moving forward with the ADP. Second, as the ADP will further exacerbate the inordinate impact of the "hand-shake" night-time noise abatement procedure on the communities of Mission Beach, Pacific Beach, and La Jolla (which direct all departing traffic on a northerly heading after 10pm), this procedure should be disbanded and daytime departure procedures should be followed throughout the time of airport departing operations prior to the adoption of the ADP. Third, the SDIA's and SDCRAA's commitment to a nighttime curfew on departures before 6:30 a.m. and after 10pm should re-avowed and memorialized in writing, and appropriate limitations to the number of arriving flights after 11:30 p.m. and before 6:30 a.m. should be proposed.

The referenced studies and process should proceed to conclusion before the DEIR, the SDEIR and ADP are further considered, let alone before they move forward. The solutions from these studies should be required conditions

before any EIR for the ADP or supporting fuel tanks are approved. The surrounding communities' interests for quiet, healthful living must be placed ahead of the airlines' and SDCRAA's desire to maximize their revenue and profit by building out the airport to reach maximum capacity as soon as possible.

The correct order should be (1) assess and implement all proposals to materially mitigate jet noise that affects the community, (2) gather and assess the medical evidence regarding the health, sleep and cognitive risks of the proposed San Diego Airport expansion and the new supporting fuel tanks, and (3) and only after steps 1 and 2, then consider whether to expand the airport operations and add the fuel tanks which will increase the frequency of flight operations and the associated noise. SDCRAA and the FAA have the process exactly backwards.

Response:

Regarding the commenter's reference that SDCRAA should not continue with the proposed Project until the Flight Path & Procedure and Part 150 studies are completed, the SDCRAA sees no reason to postpone the EIR for the Additional Fuel Tanks Project, the sole purpose of which is to addresses the potential environmental impacts of the proposed Project. The evaluation of those impacts is not dependent upon the Flight Path & Procedure and Part 150 Studies for SDIA; nor is the preparation and completion of those Studies dependent upon the conclusions of the Draft EIR.

Regarding the commenter's reference to the proposed Project supporting increased jet traffic and operations, please see Response to Comment DEIR-LO001-2.

Regarding the commenter's reference to potential issues to human health and safety as a result of noise, please see Response to Comment DEIR-LO001-3.

Regarding the commenter's reference to the ADP and its relation to the proposed Additional Fuel Tanks Project, please see Response to Comment DEIR-LO001-2.

DEIR-PC001 ***Jim Gilhooly*** ***12/16/2019***

Comment DEIR-PC001-1:

The commenter noted generally the potential for cumulative impacts.

Response:

Cumulative impacts resulting from the combination of the proposed Project and other development projects are addressed in Section 4.7, Cumulative Impacts, of the Draft EIR. The potential for significant impacts was assessed for the three environmental resource categories carried forward for analysis in the Draft EIR; aesthetics, biological resources, and hazards and hazardous materials. Therefore, potential cumulative impacts were assessed on aesthetics, biological resources, and hazards and hazardous materials. The analyses in Section 4.7 of the Draft EIR determined that cumulative impacts on aesthetics and biological resources would be less than significant, and cumulative impacts related to hazards and hazardous materials would be less than significant with implementation of the proposed Project-specific mitigation measure HZ-1 Hazardous Materials Management Plan and Hazardous Materials Release Response Plan.

Comment DEIR-PC001-2:

Commenter suggested the Authority include worker carpooling requirements in the construction contract to reduce traffic.

Response:

As discussed in Section 4.17.1 of the Initial Study (Appendix A of the Draft EIR), based on the limited level of construction, traffic associated with employee commutes, construction, demolition hauling, delivery, and miscellaneous construction-related activities is expected to be minimal. Delivery of materials and worker shifts would be scheduled to reduce disruptions to the local surface transportation network. The proposed Project would not modify existing on-Airport roadways, parking systems, remote parking facilities, rental car facilities, transit systems, or pedestrian and bicyclist activities, nor would it modify off-airport transportation operations. The number of additional personnel required at the fuel farm to operate the three fuel tanks would be nominal, if necessary.

Comment DEIR-PC001-3:

Commenter noted that they expected construction associated with the ADP to result in an exceedance of local noise ordinance standards; therefore, the cumulative impacts of the ADP and Additional Fuel Tanks Project could be significant.

Response:

Regarding the commenter's reference to potential impacts to noise, please see Response to Comment DEIR-LO001-3. Regarding the commenter's reference to cumulative impacts, please see Response to Comment DEIR-PC001-1.

Comment DEIR-PC001-4:

Commenter requested confirmation on whether the appropriate environmental considerations were accounted for, including trash disposal and dust control requirements, during construction.

Response:

As discussed in Sections 4.3.1 and 4.6.1 of the Initial Study (Appendix A of the Draft EIR), the SDCRAA, through a 2008 Memorandum of Understanding (MOU) with the Attorney General of California, applies specified air pollutant emission reduction measures to control GHG emissions and increase sustainability at the Airport, which includes measures to reduce fugitive dust associated with construction and operation of Airport projects. Dust control measures and requirements would be followed during construction of the proposed Project in accordance with this MOU. Further, as discussed in Section 4.3, Biological Resources, of the Draft EIR, removal of construction debris, demolished materials, and refuse resulting from the proposed Project would be conducted in accordance with the 1993 Biological Opinion prepared by the U.S. Fish and Wildlife Service for the protection of the California least tern.

Comment DEIR-PC001-5:

Commenter recommended modular design to reduce schedule and minimize traffic and operational impacts.

Response:

Regarding the commenter's reference to potential issues to traffic, please see Response to Comment DEIR-PC001-2. Regarding the commenter's reference to modular design, the SDCRAA appreciates the materials submitted by the commenter. The Authority would select a construction contractor based on a range of factors, including efficiency and brevity of construction and ability to minimize impacts to Airport operations.

Comment DEIR-PC001-6:

Commenter recommended examining the use of special safeguard systems and safety features into the design of the fuel tanks in order to contain potential spills and protect the public view. Specifically, the commenter recommended containment dike walls be added to existing containment walls and upgrades made to the existing fire suppression system.

Response

Design elements, including containment dike walls and fire suppression systems, are described in Section 1.2.3 above, and in Section 2.4, Project Characteristics, of the Draft EIR. In reference to the protection of public views, as noted in Section 4.2, Aesthetics, of the Draft EIR, while noticeable from public viewpoints beyond Airport property, the proposed Additional Fuel Tanks would be consistent with the existing use and would not degrade any viewsheds to or near the proposed Project site or result in visual character substantially different than the existing fuel farm.

Comment DEIR-PC001-7:

Commenter noted concern regarding air pollution and its potential as an issue in conjunction with other Navy Point Loma projects when combined with Project construction and vehicular traffic.

Response:

Regarding the commenter's reference to potential issues related to traffic, please see Response to Comment DEIR-PC001-2. Regarding the commenter's reference to potential impacts to air quality, please see Response to Comment DEIR-LO001-3. Regarding the commenter's reference to cumulative impacts, please see Response to Comment DEIR-PC001-1.

DEIR-PC002 Janet Holland 12/19/2019

Comment DEIR-PC002-1:

I oppose the implementation of adding three new, 1-million-gallon fuel tanks, at the fuel farm on the N.E. quadrant of the San Diego International Airport. I request that the noise mitigation measures being considered in the Part 150 and Flight Plan and Procedures studies funded by the SDCRAA and FAA along with the required health studies be completed before work begins on tripling SDIA's fuel capacity.

Response:

Regarding the commenter's request to postpone the proposed Project until the Flight Path & Procedure and Part 150 studies as well as human health risk studies are completed, please see Responses to Comments DEIR-LO001-3 and DEIR-LO0001-7.

DEIR-PC003 ***Alan Gordon*** ***12/20/2019***

Comment DEIR-PC003-1:

After reviewing the Draft Environmental Impact Report (EIR) SDCAA #EIR-19-01 for the additional fuel tanks at the airport I still think there has not been adequate analysis of the size of the containment dike which is still insufficient if there is a failure to multiple fuel tanks.

Response:

As described in Section 2.4 of the Draft EIR, the existing containment dike walls and associated containment area are sufficient to protect against a failure of one of the existing tanks at full volume as required under Spill Prevention Control and Countermeasure (SPCC) regulations under Title 40 Code of Federal Regulations, Part 112.7 (c)[7] and National Fire Protection Agency (NFPA) Code 30.[8] Per these regulations, an expanded containment dike area would be constructed to protect against failure of one of the proposed fuel tanks at full volume. The proposed Project would include the construction of containment dike walls, approximately 1-foot in width and 6 feet in height, integrated with existing containment dike walls around the east, west, and south periphery of the proposed tanks. Secondary containment dike walls would also be constructed between the proposed tanks and the main dike wall. Upon completion, containment capacity for the new and existing tanks would exceed regulatory capacity requirements, providing the ability to contain 775,000 gallons above what is required by code. The Airport is committed to being consistent with applicable spill prevention and control measures as well as National Fire Protection Code standards.

Moreover, it should be noted that under State CEQA Guidelines Section 15204(a), "reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require the lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commentors."

Comment DEIR-PC003-2:

The EIR also has not adequately addressed the impact of rising water levels due to climate change and how to prevent fuel from enter the bay when the water level contacts the fuel tanks.

Response:

Rising sea level is a global occurrence and is not an impact that would be caused by the proposed Project. Moreover, the Airport's exposure to sea level rise will not be exacerbated as a result of the proposed Project or any of the alternatives. Nevertheless, the Draft EIR discusses how the Airport might reduce its vulnerability to sea level rise. As described on page 4-23 in Section 4.3, Biological Resources, SDIA is committed to adherence to the San Diego International Airport Stormwater Management Plan (SWMP), California Building Code Standards, as well as federal and NFPA containment and fuel storage tanks regulations that would provide the appropriate design elements required to protect the fuel farm, and surrounding uses, against sea level rise and contamination of water resources.

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[7] Title 40, Code of Federal Regulations, Part 112.7, *General Requirements for Spill Prevention, Control, and Countermeasure Plans*.

[8] National Fire Protection Association, Code 30, *Flammable and Combustible Liquids Code*.

Additionally, the SDCRAA developed a comprehensive Climate Resilience Plan in June 2019, which serves as its strategy for achieving uninterrupted business continuity at the San Diego International Airport in future climate conditions. The Plan builds off existing initiatives ranging from improving storm drainage capacity in low-lying areas to collaborating with regional stakeholders to explore large-scale coastal flood protection strategies. The Climate Resilience Plan is available at www.san.org/green.

Comment DEIR-PC003-3:

The excessive heights of the fuel tanks has also not been addressed adequately.

Response:

Dimensions of the proposed fuel tanks would be 58 feet in height and 58 feet in diameter. The proposed fuel tanks are subject to review by the California Coastal Commission; however, as discussed in Section 4.2, Aesthetics, of the Draft EIR, the height of the proposed fuel tanks is consistent with the visual character of the existing fuel farm and nearby Airport development (with building heights up to 90 feet) and the fuel farm is an existing use.

Additionally, FAA approval of the proposed fuel tanks and associated construction equipment heights was required to verify the proposed Project would not result in an obstruction to air navigation. As discussed in Sections 2.4 and 4.2.5.1 of the Draft EIR, the FAA made a final determination on September 3, 2019 that a maximum proposed tank height of 58 feet, as well as the use of a 100-foot crane during construction, would not result in an obstruction or other substantially adverse effect to air navigation or safety.[9]

Further, as noted in Section 4.2, Aesthetics, while noticeable from public viewpoints beyond Airport property, the proposed Additional Fuel Tanks would be consistent with the existing use and would not degrade any views of scenic resources (i.e., San Diego Bay and the Pacific Ocean) or result in visual character different than the existing fuel farm.

Comment DEIR-PC003-4:

I request that an additional EIR be performed to address these issues.

Response:

The comment is noted. Please see Responses to Comments DEIR-PC003-1 through DEIR-PC003-3 above. In accordance with Section 15088 of the State CEQA Guidelines, the SDCRAA considered and prepared responses to all comments received on the Draft EIR. The responses to comments on the Draft EIR are included in the Final EIR and will be made available for review and consideration prior to the Authority taking any action on the SDIA Additional Fuel Tanks Project.

[9] Federal Aviation Administration. RE: Aeronautical Study Number 2018-AWP-4161-NRA, September 3, 2019.

3. CORRECTIONS AND ADDITIONS TO THE DRAFT EIR

3.1 INTRODUCTION

The following includes minor revisions to the Draft EIR that both corrects information and clarifies proposed Project components in the Draft EIR. These changes do not add significant new information to the EIR that would require recirculation under State CEQA Guidelines Section 15088.5. These changes do not disclose or suggest new or substantially more severe significant environmental impacts of the proposed Project, or a new feasible mitigation measure or alternative considerably different than those analyzed in the Draft EIR.

3.2 CORRECTIONS AND ADDITIONS TO THE DRAFT EIR

Section 3.2.1 Existing Physical Conditions – San Diego International Airport

The third paragraph under heading 3.2.1 on page 3-1 of the Draft EIR is hereby revised as follows:

On the north side of the east end of the AOA is the FBO, which accommodates general aviation operations at SDIA. West of the FBO, within the AOA, are SDIA cargo aircraft facilities. North of the FBO is the SDIA Rental Car Center, which comprises a four-level garage and rental car company lobby and adjacent surface rental car parking lots. As depicted in Exhibit 2-2 and described in Section 2.3, the existing fuel farm is located in the northeast portion of the Airport, west of the Rental Car Center. <u>The fuel farm covers an area of approximately 3.5 acres and the facility comprises two 80-foot diameter, 28-foot tall, 1-million-gallon aviation fuel tanks; the associated fuel pipeline and pump systems; six fuel tanker truck fuel loading positions; small equipment, control room, and administrative building; and surface parking.</u> The fuel farm is adjacent to the MCRD, which lies to the north and west; the FAA Airport Traffic Control Tower (ATCT) and SDIA Receiving and Distribution Center (RDC) to the east; and the SDIA ARFF facility to the west. The proposed Project site is completely within the Airport property.

Section 4.2 Aesthetics

Exhibit 4-1 on page 4-4 of the Draft EIR presented an incorrect existing Airport boundary on a map conveying locations of viewpoints to the proposed Project site. The Airport boundary on the exhibit was reapplied to the map correctly, consistent with the other exhibits in the Draft EIR. Exhibit 4-1 on page 4-4 of the Draft EIR is hereby revised as shown on the next page:

SOURCE: San Diego International Airport, Airport Layout Plan, Updated October 2009 (boundary); Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, December 2015 (aerial imagery for visual reference only - may not be to scale); Ricondo (photo locations).

NORTH 0 1,300 ft.

EXHIBIT 4-1

PROPOSED PROJECT RENDERING VIEWPOINTS

Drawing: \\ricondo.com\access\projects\Project-Chicago\San Diego\SAN Fuel Farm\05-Drawings&Models\SAN Fuel Tank Project_Photo Locations_20191001.dwgLayout: 4-1 Plotted: Jan 13, 2020, 09:00AM

ATTACHMENT 1

Draft EIR Comments

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

Comment DEIR-SA001

December 19, 2019

Ted Anasis
San Diego County
P.O. Box 82776
San Diego, CA 92138-2776

Subject: San Diego International Airport - Additional Fuel Tanks
SCII#: 2018111052

Dear Ted Anasis

The State Clearinghouse submitted the above named EIR to selected state agencies for review. The review period closed on 12/18/2019, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act, https://ceqanet.opr.ca.gov/2018111052/2. 1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL 1-916-445-0613 state.clearinghouse@opr.ca.gov www.opr.ca.gov

From:	Anthony Stiegler <stiegleranthony@gmail.com>
Sent:	Sunday, December 8, 2019 10:17 AM
To:	Airport Planning
Cc:	Price Dr Matthew; Chris McCann; Anthony Stiegler
Subject:	Quiet Skies La Jolla's Comment and Response re: SDCRAA's Draft Environmental Impact Report Addressing the Addition of New Fuel Tanks to SDIA
Attachments:	FINAL QSLJ's Comment on San Diego Airport Fuel Tank Addition DEIR.pdf

Dear Mr. Anasis

Attached please find Quiet Skies La Jolla's response to the Draft EIR addressing the proposed addition of new fuel tanks at SDIA.

Please confirm timely receipt, thank you.

Best regards.

--Anthony M. Stiegler
Secretary, Quiet Skies La Jolla, Inc.

Quiet Skies La Jolla, Inc.

A 501(c)(4) Non-Profit Public Benefit Corporation

San Diego Country Regional Airport Authority
Attention: Ted Anasis
P.O. Box 82776
San Diego, CA 92138-2776
Email: Planning@san.org

Dec. 9, 2019

Re: San Diego County Regional Airport Authority's Draft Environmental Impact Report addressing the Addition of New Fuel Tanks to San Diego International Airport

This letter is submitted by Quiet Skies La Jolla, Inc. We address here the San Diego County Regional Airport Authority's (SDCRAA) release of its November 5, 2019 "Draft Environmental Impact Report" ("DEIR") addressing three new 1-million-gallon fuel tanks at San Diego International Airport ("SDIA"). 1

Background of the ADP and Proposed New Fuel Tanks

The SDCRAA's Airport Development Plan proposes a currently unfunded $3Billion project to add 11 new gates, an undefined number of additional overnight jet parking places, a new Airport Administration office and improvements including restaurants and stores to enhance the customer experience at Terminal 1 of our airport. The ADP does nothing to mitigate the increasing jet noise that will affect the surrounding communities as a consequence of this expansion, including and specifically La Jolla.

SDCRAA released a supplemental Draft Environmental Impact Report on November 5, 2019 ("SDEIR") describing three new 1-million-gallon fuel tanks to be placed adjacent to the two existing tanks at the fuel farm on the northeast quadrant of the airport property. The airport and its jets burn approximately 1M gallons of jet fuel per day. The additional tanks will allow the airport to keep between 5-6 days of fuel supply on hand. The additional tanks and fuel capacity are also a direct proxy for increased flight operations and the associated increase in flight frequency and noise in the community. Tripling fuel capacity will supply the anticipated additional flights that SDCRAA forecasts to depart and land at SDIA every day under the ADP's plan to add 11 new gates and an undetermined number of "Remain Overnight" jet parking places. The extra fuel capacity also matches the SDCRAA's plan to reach maximum flight operation capacity at SDIA as soon as possible. 2

Quiet Skies La Jolla, Inc. reiterates the same or similar human health concerns about the proposed fuel tank expansion SDEIR as identified in our response to the DEIR addressing the 3

Airport Development Plan.[1] Increasing fuel tank capacity is a prefatory step to supporting the increased jet traffic and operations proposed under the ADP and, therefore, should be subject to the same timing and order requiring that commercial jet noise mitigation measures be implemented first, human health studies be conducted and completed, followed then by consideration of the DEIR addressing the ADP and the SDEIR addressing the supplemental fuel tanks.

The ADP DEIR and the Associated Commercial Jet Noise

The ADP DEIR notes that there will be very "significant but unavoidable harm" to human health associated with the ADP, caused by increased jet noise due to more frequent flight operations during all hours, including significant risks of human physiological harm, stress, cardiac issues and cancer. The DEIR also discloses that the ADP will cause atmospheric environmental harm from greenhouse gas emissions and damage to environmentally sensitive areas and biodiversity. The DEIR acknowledges that the FAA Reauthorization Bill of 2018 requires the FAA to study these issues, but then concludes that the human health issues are "too speculative" to consider and dismisses them from further consideration in the DEIR and ADP. We disagree. The FAA and SDCRAA have it exactly backwards. Before spending $3B+ on an airport improvement project that coincidentally enables and accelerates the airlines to reach maximum capacity at SDIA sooner, the studies should be conducted and assessed first, before the ADP progresses—and the damage to human health and the environment is irreversible.

4

SDCRAA concedes that project implementation would cause a 3dB or more increase in noise sensitive areas starting as early as 2024, due to a substantial increase in flight operations from the current average of 36 flights per hour now to an average of 50 per hour. That means communities surrounding the airport and its departure and arrival flight paths, including Point Loma, La Mesa, Kensington, North Park, Golden Hill, Mission Beach, Ocean Beach, Pacific Beach, La Jolla and others, where noise levels have traditionally been around 40-45dB or less, will be substantially impacted. Any additional jet overnight parking places will essentially guarantee a corresponding increase in the number of early departing flights in the 6:30 a.m.—9:00 a.m. window, and a corresponding number of increased arrivals at night, including after 11:30 p.m. when there is no curfew on arrivals. Perhaps worse, the SDCRAA also reveals that "implementation of the proposed project would cause a substantial increase in the number of night-time flight operations that produce Sound Exposure Levels ("SELs") sufficient to awaken an increasing population starting in 2024, which would be significant and unavoidable". It is questionable how this is consistent with SDCAA's CEO Kim Becker's stated commitment to "[b]eing a good neighbor to surrounding communities, especially when it comes to noise mitigation".

[1] Quiet Skies La Jolla, Inc. reserves its rights to challenge the DEIR regarding the Airport Development Plan regardless of whether it challenges the SDEIR regarding the additional fuel tanks and waives no rights by addressing the SDEIR herein.

The DEIR and SDCRAA argue that the increase in flight operations at SDIA would occur, with or without the ADP, because airlines will pack more flights into the SDIA schedule to meet customer demand, regardless of whether the airport is expanded. Yet the SDCRAA also concedes that the ADP and its 11 new gates and the new additional "Remain Overnight" jet parking places would enable SDIA to reach maximum capacity much faster.

The Adverse Impacts to Human Health from Jet Noise, the ADP and the Supporting New Fuel Tanks

The DEIR and SDCAA data note, but accept, that if the ADP moves forward, the 65dB-75dB noise contour directly around the airport will significantly expand, dramatically impacting 15,000 additional residents by 2026 and that the "noise would be significant and unavoidable". The noise will not stop at the airport boundaries: it will carry over to the surrounding communities and clearly, the increased noise is not good for humans, and in particular the residents of La Jolla.

Sleep Disturbance, Cardiovascular Disease, Cancer and Cognitive Learning Issues Associated with Jet Noise

The DEIR admits that there are sleep disturbance, stress and cardiology issues associated with jet noise, but dismisses them. Buried in the DEIR is the statement that while a "relationship between noise and health effects seems plausible, it has yet to convincingly be demonstrated" and "it is not known whether changes in pulse rate and blood pressure cause harm or are a sign of harm". The medical community, which is eminently more qualified to opine than the self-interested FAA and SCRAA, thinks otherwise. Indeed, the DEIR even notes that a 2018 World Health Organization ("WHO") study strongly recommended reducing noise exposure levels produced by aircraft to below 45dB during the daytime and below 40dB at night, because of the causal relationship between noise and cardiovascular disease, sleep disturbances, cognitive impairment, adverse birth outcomes, mental health and quality of life. Remarkably the DEIR only addresses the probability of being awakened by jet noise but conveniently provides no data about the inability to begin the sleep cycle until after jet noise from departures subsides at 11:30 p.m. each night. The DEIR further notes that the implementation of the ADP "would result in a significant cancer risk human health impact", which is "significant and unavoidable". The DEIR further says that the human perception of "annoyance from noise depends on frequency" and that noise adversely affects children's' school performance for reading ability, concentration, motivation and long-term learning retention. 5

The DEIR dismisses the impact of noise pollution on health. In fact, an increasing number of studies demonstrate a strong and significant association between residential day-night equivalent noise levels and cardiovascular health. It is well established that aircraft noise, particularly at night, dose-dependently stimulates adrenaline release and impairs endothelial function, a key player in the development of cardiovascular disease, and that this process occurs in response to noise independently of whether or not there is an annoyance reaction. (Schmidt FP, Basner M, Kroger G, Weck S, Schnorbus B, Muttray A, Sariyar M, Binder

H, Gori T, Warnholtz A and Munzel T. Effect of nighttime aircraft noise exposure on endothelial function and stress hormone release in healthy adults. *Eur Heart J.* 2013;34:3508-14a.) In a recent comprehensive review of the topic published in the well-regarded and high-impact *Journal of the American College of Cardiology*, Münzel et al state that "more and more large studies of high quality" find that noise, including that from air traffic, "is associated with coronary heart disease and stroke, as well as with major risk factors for cardiovascular disease, most importantly hypertension and metabolic disease" (Münzel et al, J Am Coll Cardiol 2018; 71:688-97). The authors further propose noise abatement measures to mitigate noise exposure throughout the day and night that include changing the descent and other flight procedures. The World Health Organization (WHO) guidelines for air traffic noise "strongly recommend" reducing noise levels produced by aircraft to below 45 dB, as aircraft noise above this level is associated with adverse health effects; for night noise exposure, the WHO "strongly recommends reducing noise levels produced by aircraft during night time to below 40 dB, as night-time aircraft noise above this level is associated with adverse effects on sleep" (WHO Housing and Health Guidelines. Geneva: World Health Organization; 2018. Table 8.11).

SDCRAA's Disregard of the FAA Reauthorization Act of 2018

The DEIR notes that the FAA's Reauthorization Act of 2018, requires additional noise studies to be completed, including a "health impact study" for many airports across the U.S., including San Diego International Airport. Inexplicably, however, the DEIR concludes that the California Environmental Quality Assessment (CEQA) Guidelines authorize an agency "who finds a particular impact too speculative after a thorough investigation, to note this conclusion and terminate the discussion of the impact". The SDCRA then unilaterally concludes: "The discussion above shows that, at this time, the effects of noise on cardiovascular health at noise levels below 65 CNEL are too speculative for further evaluation in this CEQA document", and proposes to plow ahead with the ADP in the face of serious and compelling scientific and peer-reviewed medical journal research that raise substantial concerns for human health linked to aircraft noise. The SCRAA's proposed path forward is irresponsible and negligent. 6

Ongoing Plans to Mitigate Jet Noise Have Been Ignored by the ADP DEIR and the Supplemental Fuel Tank SDEIR

The DEIR and the SDEIR are particularly troubling in light of the ongoing Flight Path and Procedure and Analysis and Part 150 Studies, which are evaluating proposed solutions to mitigate jet noise arising from SDIA. The initially proposed procedures include a requirement for departing jets to fly further west over the ocean, away from our beach and coastal communities, before turning north or south. We are fortunate to live next to the Pacific Ocean and it should be used to San Diego's advantage. Planes can fly more directly away from the coast and over the ocean, thereby minimizing the disturbance and health issues visited on the communities they serve. Flying shorter routes closer to the coast only saves the airlines a few cents or dollars in jet fuel and is strong evidence of airline and SDCRAA economic policies being placed ahead of human health concerns and the individuals on the ground. 7

Further study by these agency and community committees will also be performed and are projected to be completed in 2021, including the request by Quiet Skies La Jolla, Inc. that the "handshake agreement" requiring all departing flights from SDIA in the evening and/or night time hours be routed north away from Point Loma, be rescinded such that flight traffic during these hours be evenly distributed between Point Loma and the coastal communities to the north of the airport, including La Jolla. Quiet Skies La Jolla specifically requests that the "night-time noise abatement procedure" for SDIA be rescinded and replaced with an even-handed approach in which all flights during "nighttime noise abatement hours", occurring at least after 10:00 p.m. until 6:30 a.m., fly the standard daytime procedures. La Jolla, Mission Beach, and Pacific Beach should not bear the disproportionate brunt of night-time flight operations and the associated noise. Given the objective medical data reported thus far, the ADR must address these real and imminent health risks as air traffic volume from SDIA increases. First, the procedure recommendations in the Part 150 currently being evaluated must be adopted before moving forward with the ADP. Second, as the ADP will further exacerbate the inordinate impact of the "hand-shake" night-time noise abatement procedure on the communities of Mission Beach, Pacific Beach, and La Jolla (which direct all departing traffic on a northerly heading after 10pm), this procedure should be disbanded and daytime departure procedures should be followed throughout the time of airport departing operations prior to the adoption of the ADP. Third, the SDIA's and SDCRAA's commitment to a nighttime curfew on departures before 6:30 a.m. and after 10pm should re-avowed and memorialized in writing, and appropriate limitations to the number of arriving flights after 11:30 p.m. and before 6:30 a.m. should be proposed.

The referenced studies and process should proceed to conclusion before the DEIR, the SDEIR and ADP are further considered, let alone before they move forward. The solutions from these studies should be required conditions before any EIR for the ADP or supporting fuel tanks are approved. The surrounding communities' interests for quiet, healthful living must be placed ahead of the airlines' and SDCRAA's desire to maximize their revenue and profit by building out the airport to reach maximum capacity as soon as possible.

The correct order should be (1) assess and implement all proposals to materially mitigate jet noise that affects the community, (2) gather and assess the medical evidence regarding the health, sleep and cognitive risks of the proposed San Diego Airport expansion and the new supporting fuel tanks, and (3) and only after steps 1 and 2, then consider whether to expand the airport operations and add the fuel tanks which will increase the frequency of flight operations and the associated noise. SDCRAA and the FAA have the process exactly backwards.

Very truly yours,

/Anthony M. Stiegler/

Anthony M. Stiegler, Esq., Member,
SDCRAA Community Advisory Committee for Flight Procedure Analysis and Part 150 Studies;
Secretary Quiet Skies La Jolla, Inc.

Matthew J. Price, MD, Scripps Clinic, Division of Cardiology;
President Quiet Skies La Jolla, Inc.

DEC 16 2019

BY: .....

WWESCO

WORLDWIDE ENGINEERING SERVICES COMPANY

TED:

WWESCO WOULD LIKE TO PERFORM THE OVERSIGHT INSPECTION ON THE FIELD ERECTION OF FUEL TANKS AT LINDBERGH AIRPORT

JIM GILHOOLY

WESCO
WORLDWIDE ENGINEERING SERVICES COMPANY

James Gilhooly

3451 TRUMBULL STREET
SAN DIEGO CA 92106
TEL (619) 223-9768
FAX (619) 223-8939

INDUSTRIAL
Successful Manufacturing Projects

- Management Commitment.
- Clear Decision Making Authority for Project Manager.
- Financial Resources. (adequate budget)
- Realistic and Firm Schedules.
- Early Engineering - Design - Procurement - Manufacturing - Quality Involvement. (sequential engineering)
- Team work with Client.
- Flexible Project Control Tools.
- Organizational Flexibility.
- On-going Critique of Project Status.
- Single Source Communication with Client.

****

COST + SCHEDULE + QUALITY = CUSTOMER SATISFACTION
= PROFIT

1 - 10 - 100 - Rule

(1) Dollar required to modify document - drawings - specifications.

(10) Dollar required to modify Equipment in manufacturing shop.

(100) - Dollar required to modify/ repair equipment at the jobsite.

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WORLDWIDE ENGINEERING SERVICES COMPANY

SCOPE OF RESPONSIBILITY FOR

1. Site Selection Report*
2. Site Evaluation (Owner//Consultants//Designer/
3. Environmental Report**
4. Safety Analysis Reports**
5. State and Local Permits
6. Project Cost Estimates
7. Outline of Procedures
8. Project Schedules
9. Construction Schedule
10. Economic Evaluation of Alternates

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WORLDWIDE ENGINEERING SERVICES COMPANY

SERVING THE CONSTRUCTION INDUSTRY

Equitable Contract Adjustments (Claims)
Management Consulting
Scheduling and Cost Control
Project Troubleshooting

REGISTERED PROFESSIONAL ENGINEER
JAMES GILHOOLY
No.
Exp.
STATE OF CALIFORNIA

WORLDWIDE ENGINEERING SERVICES COMPANY
WWESCO
JAMES GILHOOLY
President

ENGINEERING • INSPECTION • EVALUATION • TRANSPORTATION
3451 TRUMBULL ST • SAN DIEGO CA 92106
TEL 1 619-223-9768 • FAX 1 619-223-8939

WORLDWIDE ENGINEERING SERVICES COMPANY
WWESCO
JAMES GILHOOLY
President

INGENIERA • INSPECCIÓN • EVALUACIÓN • TRANSPORTACIÓN
PLAYAS DE ROSARITO • BAJA CA
FROM US 1 619-223-9768 • FAX 1 619 223-8939

QUALITY AUDIT & SURVEILLANCE PLAN FOR ALL AIRPORT JOBSITES (ERECTION AND NON-ERECTION SCOPE)

A. AUDIT AND REVIEW ERECTION CONTRACT QUALITY REQUIREMENTS, DRAWINGS, SPECIFICATIONS AND RESPONSIBILITIES WITH CONTRACTOR

B. AUDIT AND REVIEW COMPLETE AND COMMERCIAL INSPECTION PROGRAMS WITH CONTRACTORS, WHERE APPLICABLE.

C. AUDIT AND REVIEW WELDING PROGRAM, INCLUDING WELD PROCEDURES, OPERATOR QUALIFICATIONS, WELD SCHEDULE, WELD MAPS, ETC.

D. AUDIT AND REVIEW JOBSITE RECEIVING, NONCONFORMANCE AND BACKCHARGE PROCEDURES.

E. AUDIT AND REVIEW BOTH CONTRACT INSPECTION TRAVELERS.

F. AUDIT AND REVIEW AUTHORIZED INSPECTION AGENCY INVOLVEMENT.

G. AUDIT AND REVIEW PREHEAT AND P.W.H.T. PROCEDURES.

H. AUDIT AND REVIEW OVERALL N. D. E. PROCEDURES AND REQUIREMENTS.

I. AUDIT AND REVIEW HYDROSTATIC AND FUEL TIGHTNESS PROCEDURES.

J. REVIEW PROPOSED API & NON-API DOCUMENTATION PACKAGES.

WWESCO

WORLDWIDE ENGINEERING SERVICES COMPANY

LOCATIONS

ENGINEERING -TECHNICAL SERVICES
for
PETROCHEMICAL, PETROLEUM, POWER
and
TRANSPORTATION PROJECTS

(SCHEDULE - COST - QUALITY)

(PROJECT TROUBLESHOOTING)

Extensive Experience
with
International Codes

(ASME - AISC - AWS - DIN. - JIS - ISO9000)

WWESCO IS YOUR ANSWER
for
GLOBAL PROCUREMENT

PART TIME - FULL TIME

MULTI- LANGUAGE STAFF

AVAILABLE ON REQUEST

San Diego, CA
Tel. (619) 223-9768
Fax (619) 223-8939

Shanghai, China
Tel. 6430-2391 X207
Fax 6463-1912

Inchon, Korea
Tel. 032-862-2234
Fax 032-866-7962

Rosarito, Baja
Mexico
Tel. 011-52-223-9768
Fax 011-52-223-8939

STATE OF CA ★ REGISTERED PROF JAMES G No. 2

WESCO

Non-Destructive Examination/ Engineering/ Technical Services for the Petroleum, Petrochemical & Power Industries

Non-Destructive Examination

Magnetic Particle Testing
Liquid Penetrant Testing
Ultrasonic Thickness Surveys
Ultrasonic Flaw Detection (Manual & Automated Techniques)
Bolting Inspection
Visual Inspection
Boiler Inspection
Exchanger Inspection
Eddy Current Testing
Radiographic Testing

Inspection Services

Refinery Equipment Inspection
Welding Inspection
Video Inspection
Specialized Heat Exchanger Tube Inspection Services
Ferroscope/I.R.I.S.

Engineering Services

QA Engineers/Managers
Welding Engineering
Welding Supervision
Reactor Inspection and Serviceability Analysis
Preservice and Inservice Inspection

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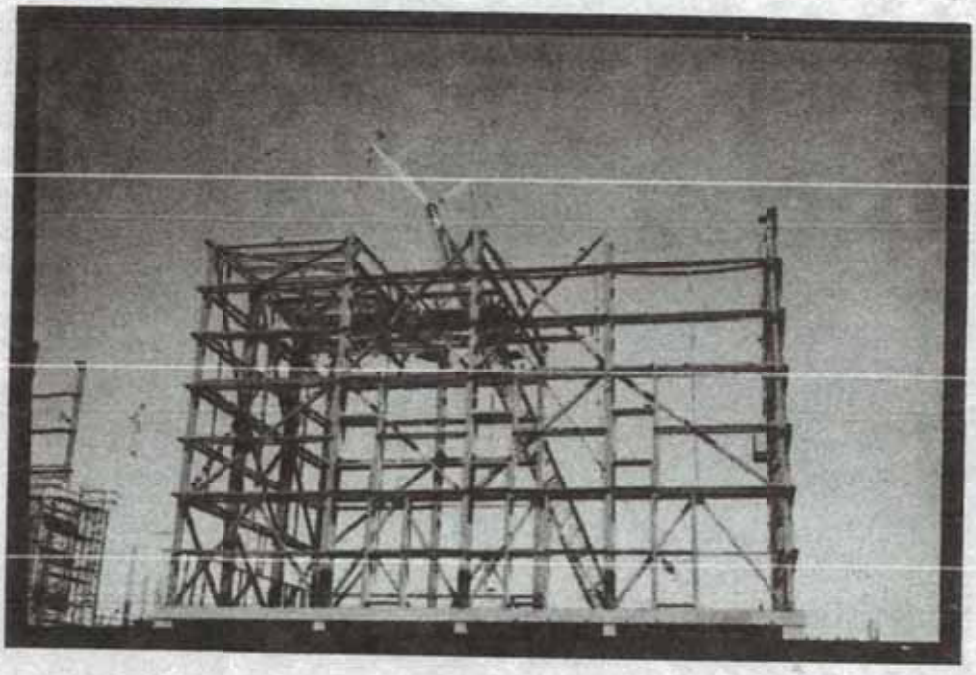
INSPECTION AND SURVEILLANCE OF MAJOR INDUSTRIAL COMMERCIAL PROJECTS



- CIVIL CONSTRUCTION
- STRUCTURAL ERECTION
- MECHANICAL INSTALLATION
- ELECTRICAL INSTALLATION
- ARCHITECTURAL SYSTEMS
- CONTROL & PROTECTION SYSTEMS
- QA/QC DOCUMENTATION
- R.C.C. DAMS, RESERVOIRS, ETC.
- RECEIVING INSPECTION/STAGING

"IT'S NOT WHAT YOU EXPECT,
IT'S WHAT YOU INSPECT THAT COUNTS".

WESCO

OVERSIGHT

PLAN

ACTIONS

- Design of Equipment
- Design of Facilities
- Reliability Consideration
- Maintainability Consideration
- Human Factors Consideration
- Specification Preparation
- Integrated testing

All those planned and systematic actions necessary to provide adequate confidence that specified design requirements are satisfied.

- Construction Management
- Procurement Management
- Contractor/Supplier Select
- Configuration Management
- Scheduling
- Cost Administration
- Contractors and Supplier Operations

ACTIONS

PROGRAM ADMINISTRATION

ENGINEERING

Interpretation of specified design requirements into a series of planned actions which provide objective evidence of acceptability to those established design requirements.

CONTROL

Quality assurance actions which provide a means to control and measure characteristic as related to those established design requirements.

AUDITS

Review contractors and suppliers activities relating to quality for conformance to approved programs, program conformance to contract requirements and program adaptability to design requirements.

DATA BANK

Assembly of quality data and records into a logic sequence for review and analysis of quality status and trends, documentation that established design requirements are satisfied and for use in system certification if desired by Owner.

PROCUREMENT ACTIVITIES

Surveillance of vendor inspection and testing activities, performance of mini-audits to verify adherence to design criteria in vendor quality programs and review of vendor quality documentation for accuracy, completeness and acceptability.

CONSTRUCTION ACTIVITIES

Surveillance of contractor inspection activities and direction of testing agencies in the performance of tests and/or examinations to verify adherence to design specifications and review of contractor and testing documentation for accuracy, completeness and acceptability.

SOURCE INSPECTION

Performance of procurement QC activities by resident or itinerant inspectors. Includes release for shipment after quality review.

RECEIVING INSPECTION

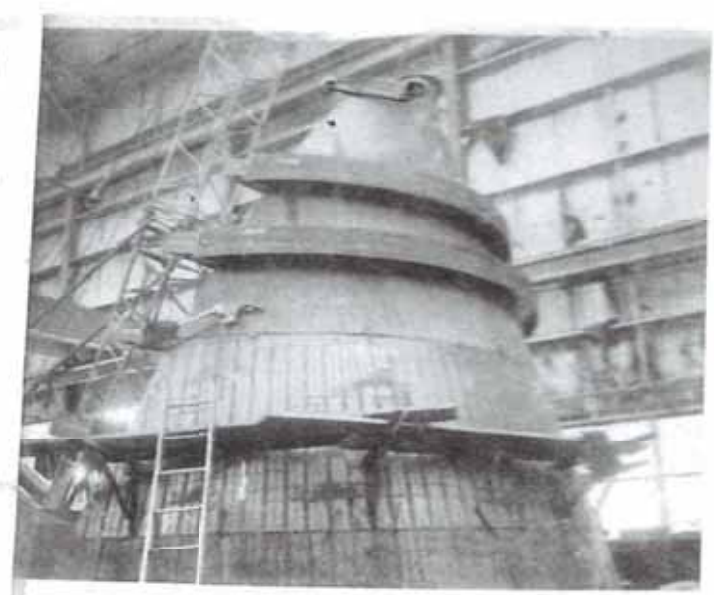
Inspection of received items for shipping damage adherence to specification and/or proper documentation and surveillance of storage areas.

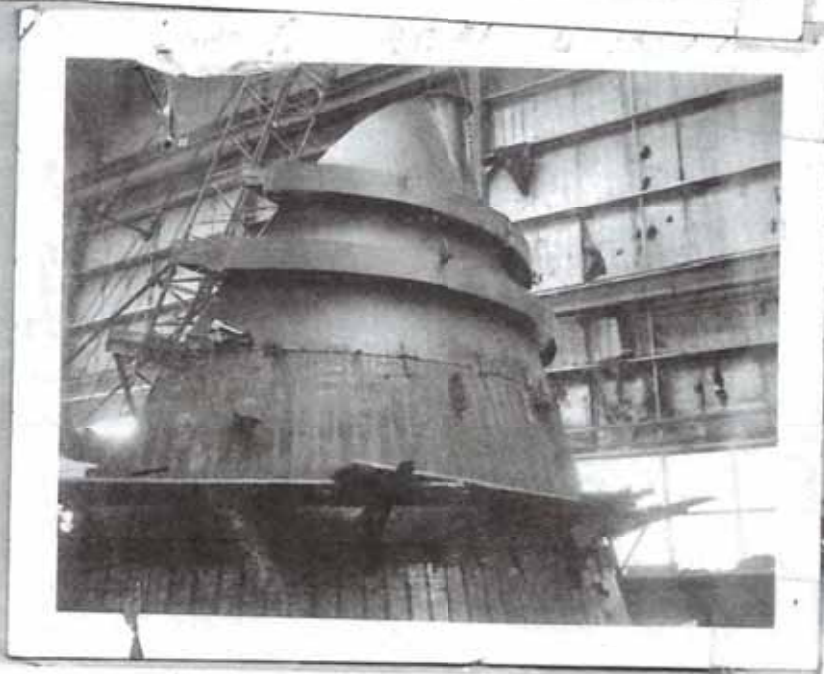
SITE INSPECTION

Maintain surveillance of contractor activities and provide testing personnel for required tests. Review documentation for accuracy and completeness.

TESTING

Direct testing agencies in performing requires destructive and non-destructive testing in construction areas. Review results of tests for acceptability.





SHOP TRIAL FIT OF LARGE TANK UNITS
PRIOR SHIPMENT TO FIELD ASSEMBLY @ SITE

REPLACE FUEL STORAGE TANKS

Naval Station North Island, San Diego, California (Completion: June 2004)
Client: U.S. Navy

This project involved the construction of four new 13,500 barrel aboveground jet fuel (JP-5) bulk storage tanks with cathodic protection, leak detection, secondary containment and automatic high level shutoffs. Also included in the project construction was a 2,400 GPM pumphouse with fuel pumping equipment and programmable PLC panel, carbon steel fuel distribution piping, a truck loading and unloading station, utilities, and site improvements.

Nova also constructed two new hot refueling sites with the installation and welding of approximately 340 linear feet of direct buried double contained fuel pipe, 165 linear foot jack and boring of casings for double contained fuel pipe under two active taxiways and two concrete fueling stations for aboveground fuel pipe and pantograph systems. These two new hot refueling stations feed from the new aboveground fuel storage tanks and pumping station.

Nova incorporated four existing 500,000 Gallon underground fuel storage tanks into the system with the new aboveground tanks.

Upon completion of all construction activity, Nova's specialty fueling system supplier Bay Associates, conducted the system start-up, commissioning, testing and system prove-out prior to use by the military.

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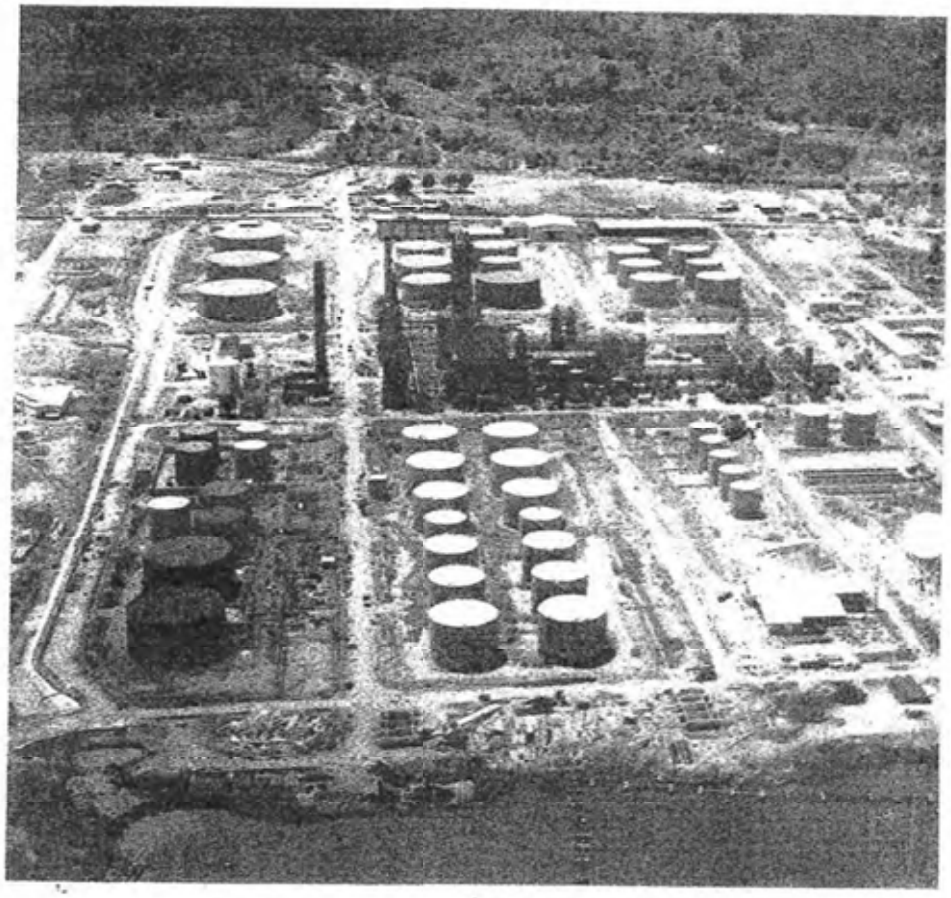


Above right: Philippine Petroleum Corporation — Supply and fabrication of 58 vertical storage tanks for a tank farm in Pililla, Rizal.

REPLACE
FUEL
TANKAGE

Elmendorf Air Force Base, Alaska
(Completion: February 2000)
Client: U.S. Army Corps of Engineers

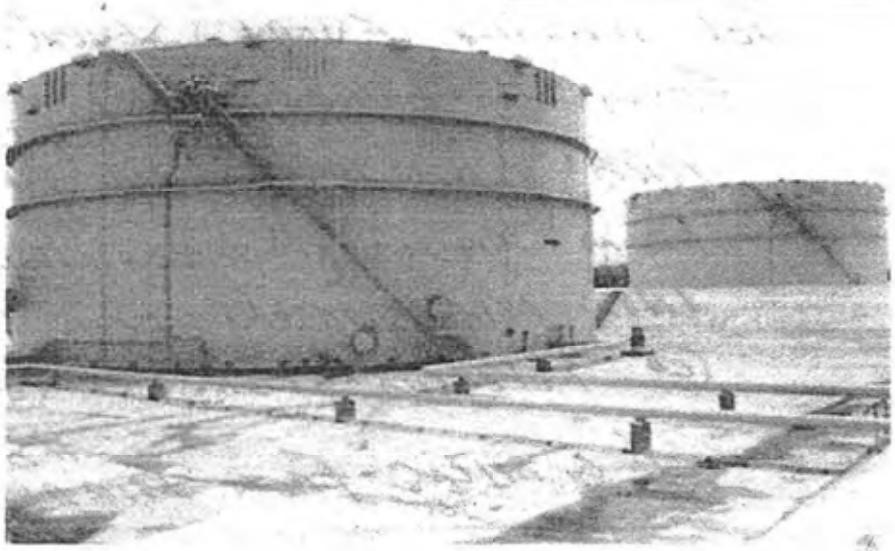
This project consists of construction of three new 83,300 barrel (bbl) aboveground welded steel jet fuel (JP-8) bulk storage tanks with fixed roofs, floating pans and impervious dikes, 12,200 linear feet of 12 inch receipt pipeline, a new 1,800 gallon-per-minute (gpm) pumphouse/operations building, a truck fill stand, and two fiberglass low point pits. Site improvements included pavement and two access roads, water service, 12 kV electrical service, and deep well cathodic protection. Security fencing and lights were also required.

The 1,200-square foot pumphouse construction consisted of a new structural steel building complete with four Union 600 gpm pumps, five M.E. Industries fuel filter separators, CLA-VAL control valves, General twin seal plug valves, a programmable PLC system, and a fire protection alarm system. Due to the extreme weather conditions in Alaska, the pumphouse required a complete heating and ventilation system in addition to being a completely enclosed facility. A 4,000 gallon product recovery tank was installed adjacent to the pumphouse.

The project required the installation of an additional 8,200 linear feet of direct bury carbon steel 10" issue pipe adjacent to the 12" receipt line. Pig launchers and receivers are also included. The new 10" issue line connects the new bulk fuel storage tanks to the West Ramp Hydrant Fuel System (installed by Nova under another contract).

Also included was demolition of four aboveground 25,000 bbl North Jet Fuel Tanks and two aboveground 20,000 bbl South Jet Fuel Tanks.

REPLACE FUEL TANKS & POL HYDRANT (PHASES 2 & 5)



Andersen Air Force Base, Guam
(Completion: October 2002)
Client: U.S. Navy

Phase 2: Nova installed a new Military Type III hydrant fueling system with a 2,400 gallon-per-minute (GPM) precast, 3,750 SF concrete pumphouse. The mechanical fueling equipment included 600 GPM fuel transfer pumps, numerous control valves, issue filter separators, receipt filter separators and micronic filter, a Pump Logic Control (PLC) panel and graphic display panels, 400 kW emergency power Generator; 12 kV/480 volt Motor Control Center and Main Distribution Board, other electrical panels and interior lighting.

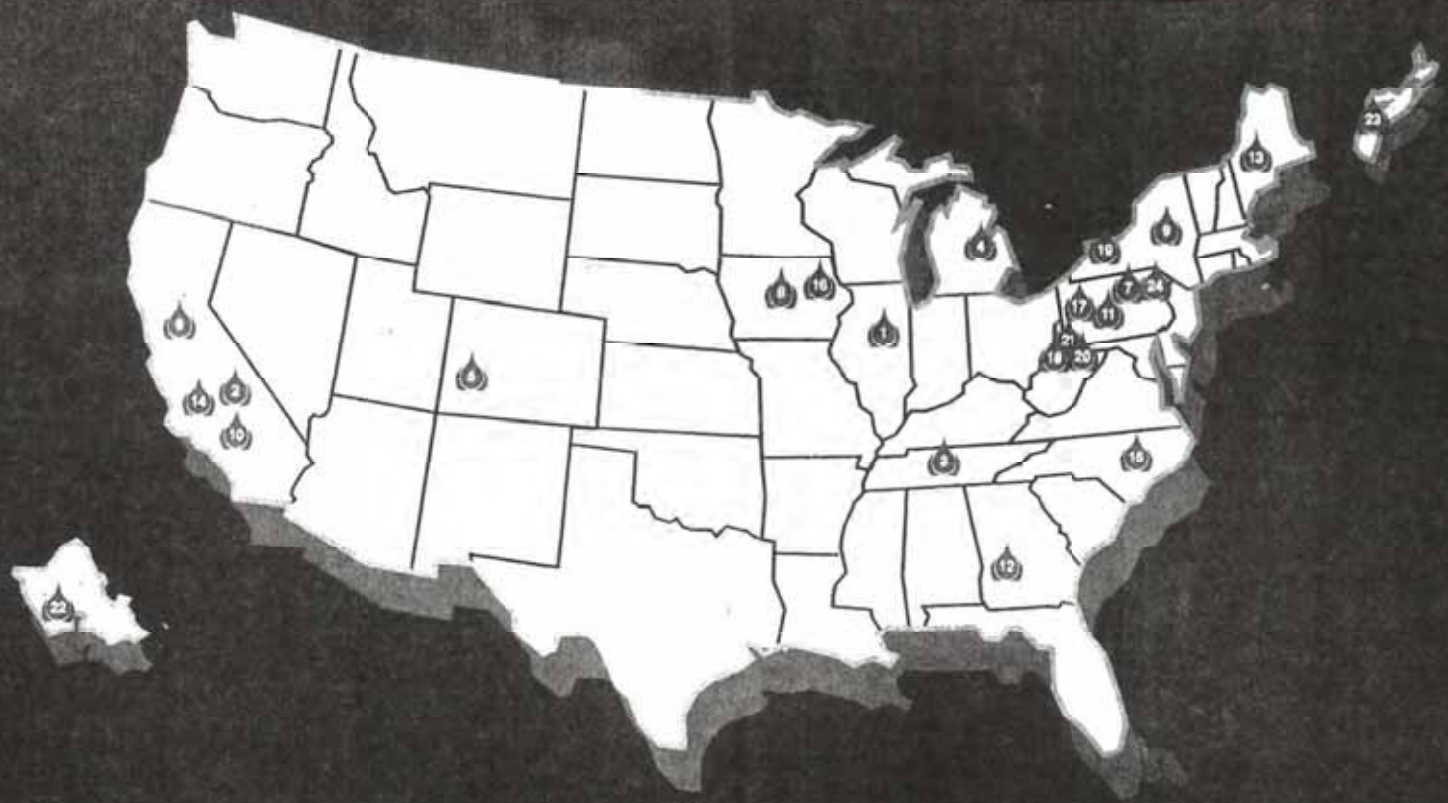
Also constructed were two 1,590 cubic meter (10,000 BBL) vertical aboveground JP-8 steel fuel storage tanks with a fixed cone roof structure and aluminum honeycomb floating plans. Nova resurfaced the site with 88,350 SF of Asphalt Concrete pavement and 74,500 SF of POL Area 8" and 5" thick Portland Cement Concrete.

The new work on the apron was separated into 3 phases of construction that included over 15,000 lf of buried 14" stainless steel piping. The airfield concrete pavement work consists of approximately 183,000 SF 12" thick and pavement stripping removal and replacement.

Phase 5: Nova constructed two 15,900 cubic meter (100,000 BBL) aboveground JP-8 jet fuel steel storage tanks with a center pipe supporting fixed cone roof and a pumphouse, installed transfer pumps, control valves, filter separators, micronic filters, PLC panel, graphic display panels, and 400kW emergency power generator. Nova removed ten 50,000 gallon underground jet fuel and two 1,500 gallon waste fuel tanks; 10,500 LF of underground receipt and issue piping, ten hydrant outlets and lateral control pits and pumphouses with interior piping and fuel equipment.

DOMESTIC TANK/PIPING INSTALLATIONS

[redacted]



Units

1.	B.F. Goodrich Co.	Henry, IL	125,000 lb/hr
2.	California Portland Cement Co.	Colton, CA	191,300 lb/hr
3.	Central Soya Co.	Chattanonga, TN	88,000 lb/hr
4.	General Motors	Pontiac, MI	300,000 lb/hr
5.	Colorado-Ute Elec. Assoc.	Nucla, CO	925,000 lb/hr
6.	Air Products & Chemicals, Inc.	Stockton, CA	500,000 lb/hr
7.*	Gilberton Power Company	West Mahoney, PA	2x355,000 lb/hr
8.	Iowa State University	Ames, IA	2x170,000 lb/hr
9.*	Black River Partners	Fort Drum, NY	3x175,000 lb/hr
10.*	Mt. Poso Cogeneration Co.	Bakersfield, CA	500,000 lb/hr
11.	P.H. Glatfelter Co.	Spring Grove, PA	400,000 lb/hr
12.	Southeast Paper Mfg. Co.	Dublin, GA	400,000 lb/hr
13.*	Rumford Cogeneration Co.	Rumford, ME	2x415,000 lb/hr
14.*	ACE Cogeneration Co.	Trona, CA	910,000 lb/hr
15.	University of North Carolina	Chapel Hill, NC	2x250,000 lb/hr
16.	University of Northern Iowa	Cedar Falls, IA	105,000 lb/hr
17.	Cambria Cogeneration	Ebensburg, PA	2x395,000 lb/hr
18.	North Branch Partners, Ltd.	Grant County, WV	2x395,000 lb/hr
19.	United Development Group	Niagara Falls, NY	468,000 lb/hr
20.	Morgantown Energy Associates	Morgantown, WV	2x280,000 lb/hr
21.	American Bituminous Power Partners	Grant Town, WV	2x400,000 lb/hr
22.	AES - Barbers Point	Ewa Beach, Oahu, HI	2x664,444/598,269 lb/hr
23.	Nova Scotia Power Corporation	Point Aconi, Nova Scotia, Canada	1,162,678/1,024,873 lb/hr
24.*	Panther Creek Project	Nesquehoning Borough, PA	2x380,000 lb/hr

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E.P.A – AIRPORT FUEL FARI

ARCHAEOLOGICAL

AN ASSESSMENT WHICH INCLUDED A RECORDS SEARCH (LIBRARY) AND WALKOVER SURVEY CONCLUDED THAT NO ARCHAEOLOGICAL RESOURCES ARE KNOW TO EXIST WITHIN AIRPORT SITE.

TRAFFIC, CIRCULATION / PARKING

1 THE POTENTIAL FOR CUMULATIVE IMPACTS - TRAFFIC, CIRCULATION & PARKING

RELATES TO THE TIMING, SPECIFICALLY TO OVERLAP OF CONSTRUCTION ACTIVITES AND SCHEDULES AND AM & PM PEAK

2 HOURS.

PROVISIONS FOR CARPOOLING OF CONSTRUCTION WORKERS COULD BE INCLUDED IN PROJECT CONTRACTS REQUIREMENTS TO HELP PARKING NEED.

AIR QUALITY

1 CUMULATIVE AIR QUALITY RELATED IMPACTS ARE EXPECTED TO OCCUR DURI CONSTRUCTION.

SDAPCD PERMIT REQUIREMENTS WOUL REGULATE SUCH EMISSIONS

E.P.A — CONT'D

NOISE

3 DEVELOPMENT OF AIRPORT MASTER PLAN WILL RESULT IN SHORT-TERM CONSTRUCTION RELATED NOISE IMPACTS. SUCH IMPACTS ARE EXPECTED TO EXCEED THE AIRPORT'S NOISE ORDINANCE STANDARDS OR RESULT IN NO SIGNIFICANT IMPACTS DURING CONS. WORKING HOURS.

HUMAN HEALTH / PUBLIC SAFETY

THE AIRPORT'S MASTER PLAN INCLUDES SEVERAL IMPROVEMENTS IN EXISTING FACILITIES WHICH SERVE TO IMPROVE THE HUMAN HEALTH / PUBLIC SAFETY CHARACTERISTICS OF THE AIRPORT

NOTE THE ISSUE IS NOT WHETHER AIR POLLUTION EXISTS BUT WHETHER THE ADDITIONAL AIR POLLUTION CAUSED BY CONSTRUCTION AND VEHICULAR TRAFFIC FROM FUEL TANK PROJECT POSES A THREAT TO THE HEALTH OF CONSTRUCTION CREW, GENERAL PUBLIC, PASSENGERS IN THE AIRPORT AREA & ZONES.

COUNTY
REGIONAL
AIRPORT
AUTHORITY

NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL IMPACT REPORT

SAN DIEGO INTERNATIONAL AIRPORT – ADDITIONAL FUEL TANKS
SCH NO. 2018111052 – SDCRAA #EIR-19-01

Pursuant to the California Environmental Quality Act (CEQA), the San Diego County Regional Airport Authority (SDCRAA or Authority), as the Lead Agency, has prepared a Draft Environmental Impact Report (EIR) for additional aviation fuel storage tanks at San Diego International Airport (SDIA or Airport). The Additional Fuel Tanks Project (proposed Project) would not result in any significant and unavoidable impacts during construction and/or operation of the Project. The analysis in the Draft EIR determined that impacts related to aesthetics and biological resources would be less than significant, and impacts related to hazards and hazardous materials would be less than significant with mitigation.

PROJECT LOCATION: SDIA is located in the northwest portion of the downtown area within the City of San Diego. The Airport is generally bounded by North Harbor Drive and San Diego Bay to the south, the Navy Boat Channel and Liberty Station mixed-use development to the west, the Marine Corps Recruit Depot to the north, and Pacific Highway and Interstate 5 to the east.

PROJECT DESCRIPTION: The existing fuel farm at SDIA, constructed in the early 1990s, is located in the northeast corner of the Airport property, north of Runway 9-27 and the Aircraft Rescue and Fire Fighting facility, east of Marine Corps Recruit Depot – San Diego, and west of W. Washington Street and the Airport Traffic Control Tower. The existing fuel farm contains two 1-million-gallon aviation fuel tanks and is supplied by regional refineries via the existing Airport fuel delivery pipeline. Any lapse or shortage in fuel delivery, as well as inspection and maintenance activities of on- or off-Airport fuel pipelines or the fuel farm systems, requires fuel to be delivered to the Airport via tanker truck, which results in substantially slower and less reliable replenishment of the fuel farm supply. Since the construction of the existing fuel farm, aircraft operations and passenger enplanements have increased through the use of larger aircraft and additional scheduled operations. In July 2018, the peak aviation activity month, the fuel farm could accommodate approximately two days of fuel. The existing fuel reserve capacity is well below industry standard for airports similar to SDIA (a 5- to 7-day supply of fuel), making SDIA operations susceptible to inadequate fuel supply during pipeline malfunctions and impeding facility maintenance.

The proposed Project would increase the capacity of the Airport's fuel storage facilities to accommodate an industry standard of 6 days of peak-period fuel demand reserves by constructing three 1,146,320-gallon (shell volume) fuel tanks, with a usable storage capacity of approximately 966,000 gallons each, adjacent to the existing fuel farm. The proposed cylindrical tanks would be approximately 58 feet high and 58 feet in diameter. Containment dike walls approximately 1 foot in width and 6 feet in height would be constructed on the east, west, and south periphery of the proposed tanks. The proposed containment dike walls would be connected to the fuel farm's existing containment dike walls to create an expanded containment area. Secondary containment dike walls would also be constructed between the proposed tanks and the primary dike wall. The secondary containment dike walls would be approximately 8 inches thick and 3 feet above grade. Upon completion, containment capacity for the fuel farm would exceed regulatory capacity requirements, enabling the containment system to capture 775,000 gallons above what is required by Chapter 22 of the National Fire Protection Association code. In addition to the proposed tanks, upgrades to the existing fire suppression system would be constructed as part of the proposed Project. Twenty-one foam makers would be installed

BUFFER ZONE

at the fuel farm; six surrounding each of the existing fuel tanks and nine surrounding the proposed storage tanks. Additionally, one foam chamber would be installed at each of the proposed fuel tanks and existing foam monitors would be updated.

Construction of three additional aviation fuel tanks at the existing fuel farm is proposed to meet the industry standards for on-airport aviation fuel reserves. The proposed Project would facilitate existing aviation activity and would also allow for repair of the fuel storage and conveyance system to occur without compromising fuel service. The proposed Project would not increase the number of passenger or aircraft operations at SDIA.

PUBLIC REVIEW AND COMMENT: The Draft EIR will be available for review and comment for forty-five (45) days commencing November 5, 2019 and ending December 20, 2019 at 5:00 PM. The Draft EIR is available for general public review on the website www.san.org (under link to Airport Projects/Environmental Affairs/CEQA & NEPA), and at the locations listed below (review days and times vary by location).

1) Airport Authority Administration Building (former Commuter Terminal) at San Diego International Airport, 3225 North Harbor Drive, 3rd Floor, San Diego, CA 92101, during the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday

2) San Diego Central Library, 330 Park Boulevard, San Diego, CA 92101

3) Mission Hills Branch Library, 215 W. Washington Street, San Diego, CA 92103

X 4) Point Loma/Hervey Library, 3701 Voltaire Street, San Diego, CA 92107

5) Ocean Beach Branch Library, 4801 Santa Monica Avenue, San Diego, CA 92107

X Comments should be addressed to the San Diego County Regional Airport Authority, Attention: Ted Anasis. **The deadline for receiving written comments regarding the adequacy of the Draft EIR is December 20, 2019.** Comments may be submitted by:

- X Mail to the Authority offices at SDCRAA, P.O. Box 82776, San Diego, CA 92138-2776 (these comments must be postmarked by Friday, December 20, 2019).
- X Delivery to the Authority offices at San Diego International Airport, 3225 N. Harbor Drive, 3rd Floor, San Diego, CA 92101, or faxed to (619) 400-2459 by 5:00 p.m. on Friday, December 20, 2019.
- E-mail to the Authority offices at planning@san.org. The Airport Authority will accept comments to this notice via e-mail received by 5:00 p.m. on Friday, December 20, 2019.

Please contact Ted Anasis, Manager, Airport Planning, at (619) 400-2478, if you have any questions.

NOTE ENVIRONMENTAL CONSIDERATIONS
TRASH DISPOSAL - MEATHOD HAULER
SITE REST ROOM FACILITIES.
DUST CONTROL REQUIREMENTS
RESPIRATOR "
PERMIT REQUIREMENTS

4

R. A - B.

DEC. 12/20/19

SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY

NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL IMPACT REPORT

SAN DIEGO INTERNATIONAL AIRPORT – ADDITIONAL FUEL TANKS
SCH NO. 2018111052 – SDCRAA #EIR-19-01

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BUFFER ZONE

WESCO

SUGGESTION

SUGGESTIONS FOR ORDERING TANKS

The purchaser should state on his inquiry or purchase order the following:

- Specification
- Number of tanks
- Nominal capacity, in barrels
- Specific gravity of contents
- Appurtenances (type, size, and location)
- Painting requirements
- Time of completion
- Erection location and facilities
- Tank grade details
- Special provisions (permits, fees, etc.)
- Wind velocity

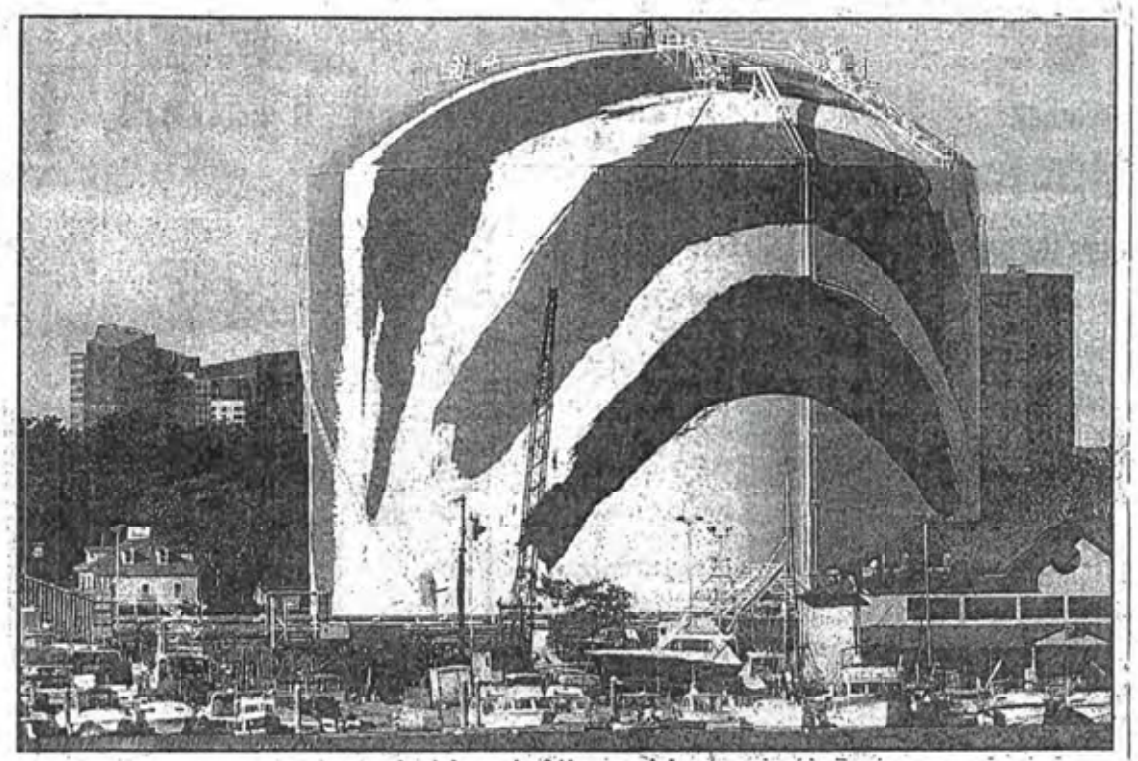
The purchaser may exercise an option with respect to the following requirements:

- Diameter, in feet
- Height, in feet
- Plate specifications (bottom, shell, and roof)
- Mill test reports
- Shop inspection
- Field inspection
- Bottom test
- Shell test
- Roof test
- Welding procedure qualification
- Sectioning method
- Closure of openings
- Segment ownership
- Radiographic method
- Film ownership
- Bolting
- Bottom plates:
  - Thickness
  - Size and arrangement
  - Joint design and welding procedure
- Shell plates:
  - Thickness
  - Width and number of courses
  - Alignment
  - Horizontal joint penetration and fusion
  - Top-angle orientation
  - Wind girders
- Roof plates:
  - Thickness
  - Slope
- Roof supports
- Roof live load and its distribution
- Appurtenances:
  - Shell manhole design
  - Shell nozzle design
  - Cleanout fitting support
  - Drawoff sump design
  - Roof nozzle flange design
- Stairways, platforms, and walkways
- Freight and hauling

TYPICAL OIL STORAGE TANK

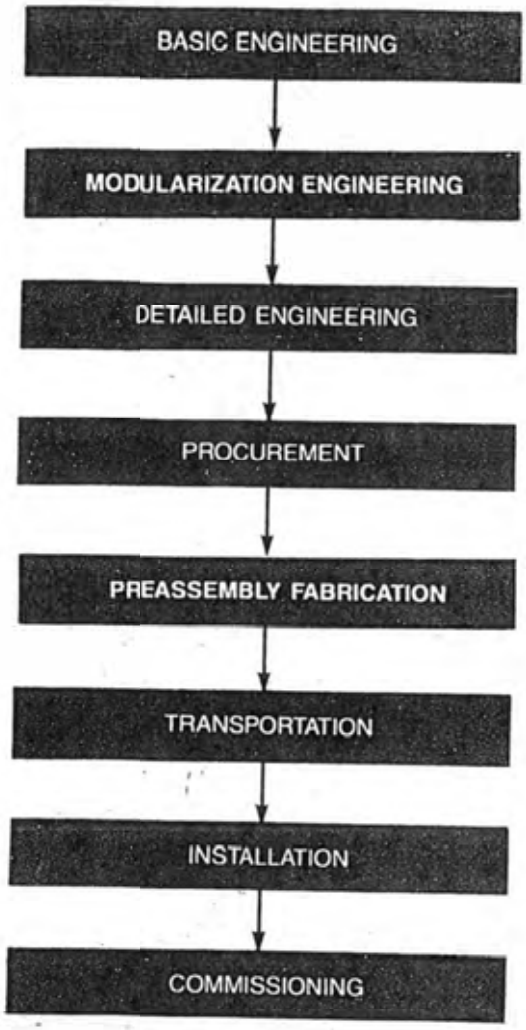
PAINT SUGGESTION

GONE ARE THE DAYS WHEN THE MARKINGS ON TANKS SAID
" IN BLACK BLOCK LETTERS
" NUMBER
LOCATION
?



I SUGGEST "AIRPORT LOGO" WITH COLORS & ARTWORK
?

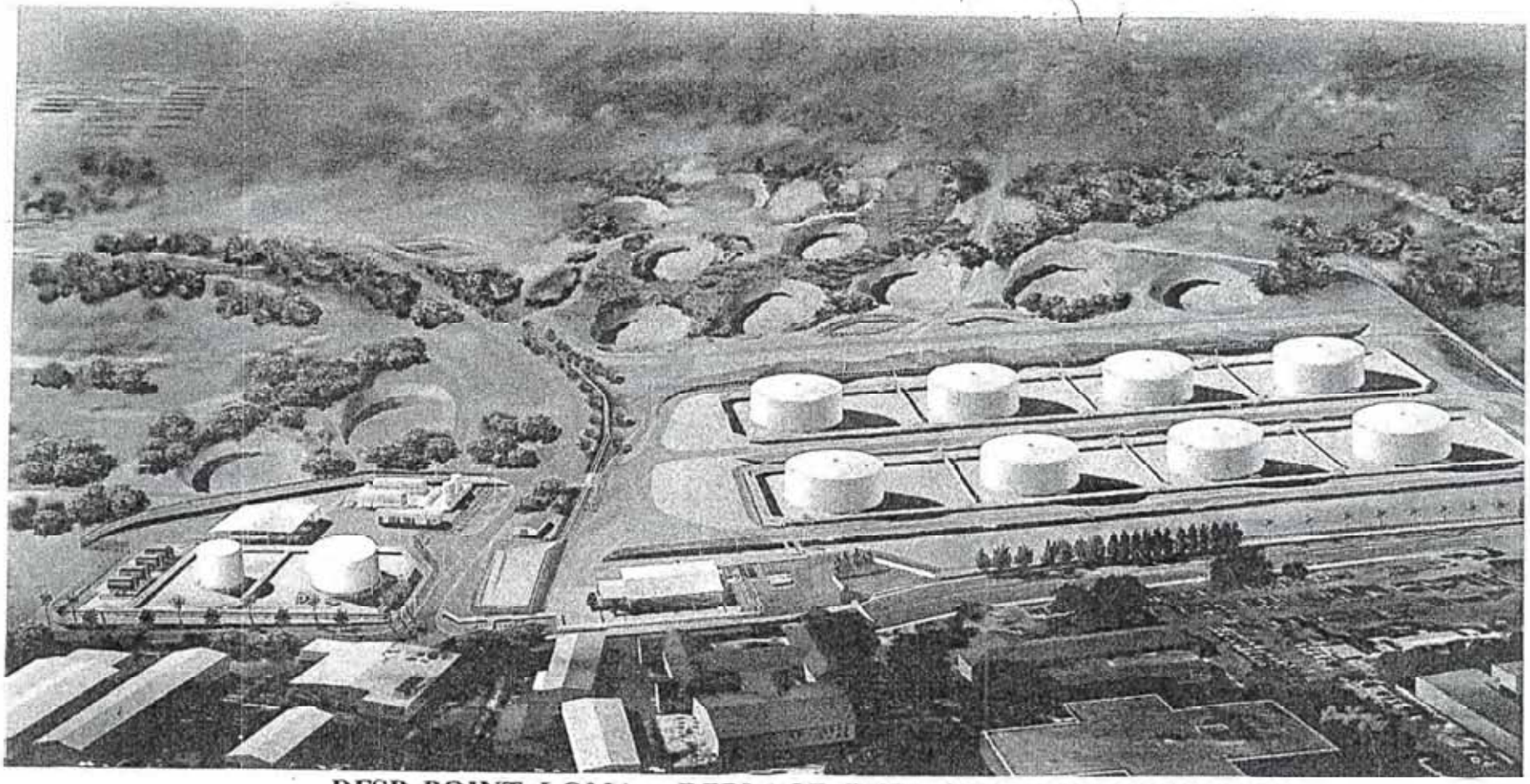
Project Modularization



SUGGESTION ONLY

OWNER - ERECTION CONTRACTOR HAS FINAL RESPONSIBILITY

Take Miles of Welds



DFSP POINT LOMA - REPLACE FUEL STORAGE FACILITIES
FISC SAN DIEGO, CALIFORNIA

NAVY FUEL STORAGE FARM.

EXAMPLE

API STD 650 TANK

API APPENDIX	A, E	YEAR COMPLETED	[illegible]
API EDITION	11th	API ADDENDUM NO.	1
NOMINAL DIAMETER	148'-0"	NOMINAL HEIGHT	58'-0"
DESIGN SPECIFIC GRAVITY	0.88	DESIGN LIQUID LEVEL	46'-3"
DESIGN INTERNAL PRESSURE	ATM	MAXIMUM TEST LEVEL	46'-3"
DESIGN EXTERNAL PRESSURE	0.039 PSI	DESIGN METAL TEMP.	32 DEG F
PURCHASER'S TANK NO.	TFL-[illegible]	MAXIMUM DESIGN TEMP.	200 DEG F
CONTRACT NO.	167354	MAXIMUM CAPACITY	144261 BBL
PARTIAL STRESS RELIEF	[illegible] YES		

SHELL COURSE	MATERIAL
#1 - #4	A573-70
#5 & #6	A36

CBI Services, Inc.

5304 REV JUNE 06

EXAMPLE

MANUFACTURER'S CERTIFICATION FOR TANK BUILT TO API STANDARD 650

TO: NAVFAC Southwest Point Loma FEAD/Code ROPML
(Name and address of purchaser)
Naval Base Point Loma 4635 Pacific Highway

San Diego, CA 92110-2756

We hereby certify that the tank constructed for you at

Defense Fuel Supply Point Naval Base Point Loma, San Diego, CA
(Location)

and described as follows: Contracts 167360 & 167364, TK# TFL-TK-001, 149' Ft ø,
(Serial or contract number, diameter, height, capacity, floating or fixed roof)
51 Ft ht,144,261 Bbl, fixed Cone Roof Tank with IFR, meets all applicable requirements of API Standard 650, 11th Edition; 1st Revision, Appendix E & H, dated 2008, including the requirements for design, materials, fabrication and erection.

The tank is further described on the attached as-built data sheet dated N/A.

CBI Services, Inc.
Manufacturer

Derek Brown
Authorized Representative Derek Brown

8-02-13
Date

Attachment #2: STORAGE TANK INTEGRITY

TEST PERFORMED	AST STORAGE TANK							
	1	2	3	4	5	6	7	8
STRUCTURAL X								
Tank Shell to Bottom Inside Corner Weld								
Test of Tank Bottom (Vacuum Box)								
Shell plate xrays								
Special inspections (anchor chairs)								
Code Dimensional Check Form (API 650)								
Hydrostatic Test								
Tank Bottom Puddle Test								
Roof Puddle Test		N/A	N/A	N/A	N/A	N/A	N/A	N/A
COATING X								
Interior Tank coating								
Exterior Tank Coating								
Tank ID Labels								
MANWAYS & VALVES								
Manway @ 60deg								
Manway @ 111deg								
Manway @ 152deg								
Manway @ 236deg								
Manway @ 328deg								
Valve 24", suction, MOV V-0X01								
Valve 14", inlet, MOV V-0X02								
Valve 6", OW, V-0X03								
Valve 2", OW, V-0X04								
Valve 2", F/S return, V-0X05								
FINAL X								
IFR - visual inspec. seal tightness								
Broom clean								
Inlet diffuser orientation								
Verification letter of approved test results.								
Strapping charts X								

1. Reference Spec Section 33 52 89.90, 3.1.3
2. Contractor QCM to initial each item for each tank to confirm completion to specification requirements.

WESCO

WORLDWIDE ENGINEERING SERVICES COMPANY

DESCRIPTION

INTRODUCTION

To realize the maximum benefits of parallel construction, the FUEL TANK project has dedicated itself to modularization. In this way, we have provided preliminary site plans and general arrangement drawings that address module sizes and placement from the very start of the project. Since some of the major benefits of modularization are realized through the construction portion of the project by the transfer of direct field labor to the controlled environment of a module assembly or a vendors shop, the size of the modules becomes very important. The module sizes anticipated will allow the project to transfer approximately 25% of the field hours to a shop environment.

The prime difference between a conventional TANK and the FUEL FARM modular design chosen from PAST is in the modular design of the main FUEL TANKS IN FARM area. The low profile, ground level WALL design, as proposed for TANK FARM offers several inherent advantages from both a safety and operations viewpoint. The FACILITY will be easier and faster to construct since special rigging, high time labor, scaffolding, etc., are much reduced. The modules also represent a more completed state of construction. Therefore, lost time due to plant complexity, physical size and labor efficiency should be much improved. From an operations viewpoint, the equipment layout affords easy access and is simpler to visualize and understand than COMPLEX plant designs. Since all equipment is located at grade, maintenance access is improved and more flexible equipment can be utilized, i.e. cherry picker access to virtually all equipment on a continuous floor vs. rigging and the manual intensive removal/maintenance of equipment on a multi-floor design. As a general item, safety should be improved both

EQUIPMENT COSTS HAVE RISEN 68% SINCE YEAR —— 2017

MODULARIZATION

THE TERM MODULARIZATION IS USED TO DEFINE A SERIOUS OF CONSTRUCTION TECHNIQUES, THAT HAVE THE POTENTIAL FOR LOWERING OVERALL PROJECT COSTS TRAFFIC CONJESTION, ENVIRONMENTAL PROBLEMS ON PROPOSED NEW TANK FARMS COMPARED TO

CONVENTIONAL STICK BUILT TANK FARMS

MODULAR DESIGN AND CONSTRUCTION TECHNIQUES DEVELOPED FOR OFFSHORE AND ALASKA HAVE BEEN APPLIED TO NUMEROUS APPLICATIONS THROUGHOUT THE UNITED STATES WITH GREAT RESULTS. 5

STUDIES HAVE ESTABLISHED THAT MODULAR DESIGN & SHOP ASSEMBLY CONCEPTS HAVE IMPROVED OVERALL CONST. SCHEDULES, REDUCED LABOR HOURS, IMPROVED ENVIRONMENTAL CONDITIONS.

Jim Galloway

LINDBERGH
AIRPORT FUEL FARM

1) WITH ORIGINAL FUEL FARM STILL IN PLACE, LIMITED LAY DOWN WORK AREA AVAILABLE?
FOR CONSTRUCTION/ERECTION OF THREE(3) NEW FUEL TANKS, THE AIRPORT SHOULD EMPHASIZE MAX. MODULARIZATION AS A PRE-QUALIFICATION FOR BID?

2) POTENTIAL FOR LOWERING OVERALL PROJECT COSTS.

3) SHORTER FIELD ERECTION SCHEDULE

4) RANDOM SHOP/FAB. FIT-UPS IN FAB. SHOP

5) REDUCE TRAFFIC/TRANSPORTATION ISSUES

6) IMPROVE OVERALL ENVIRONMENTAL CONDITIONS (LESS FIELD WELDING)(AIR-NOISE-WATER) @ JOBSITE.

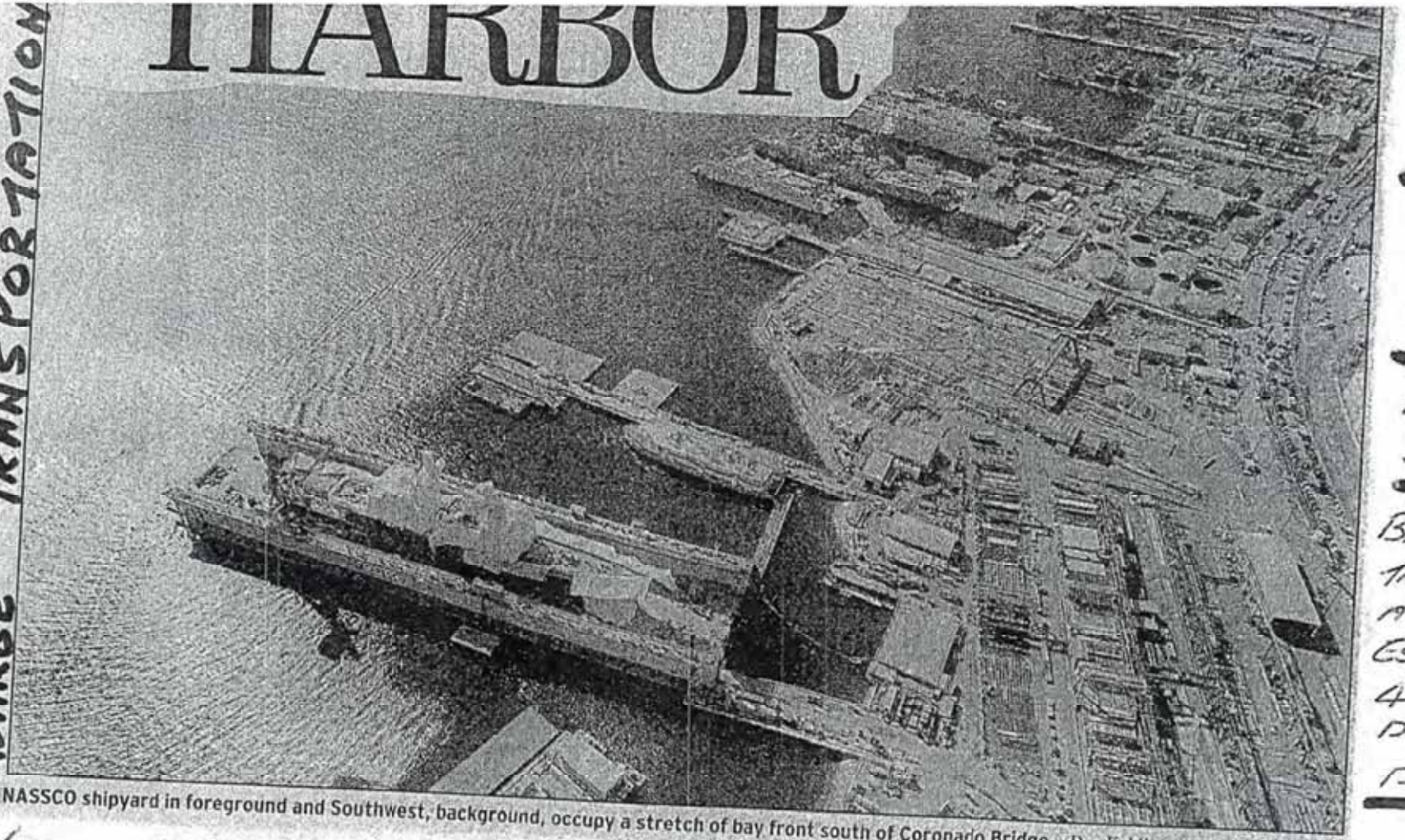
MODULARIZATION IS USED AS A MANAGEMENT TOOL TO ENHANCE PARALLEL CONST. (SHOP/FIELD) BY REMOVING FIELD LABOR COSTS TO CONTROLLED SHOP ENVIRONMENT.

ADVANTAGES OF FUEL TANK MODULARIZA

1) WITH THE ORIGINAL FUEL TANK & STILL IN PLACE LIMITED LAY DOWN WORK AREA IS AVAILABLE; FOR CONSTRUCTION / ERECTION OF NEW
THE DESIGN / GNR SHOULD EMPHASIZ MAX. MODULARIZATION AS PREQUALIFICATION FOR BID.
2) POTENTIAL FOR LOWERING, OVERALL PROJECT COST.
3) SHORTER FIELD ERECTION, & SCHEDULE.
4) BETTER QUALITY CONTROL IN FAB. SHOP.
5) REDUCE TRAFFIC & TRANSPORTATION ISSUES.
6) IMPROVE OVERALL ENVIRONMENTAL CONDITIONS (LESS WELDING FUMES) (AIR - NOISE - WATER) @ JOBSITE.

- MODULARIZATION IS USED AS A MANAGEMENT TOOL TO ENHANCE PARALLEL CONSTRUCTION (SHOP & FIELD) BY REMOVING FIELD LABOR COSTS TO CONTROLLED SHOP ENVIRONMENT.

BARGE TRANSPORTATION



NASSCO shipyard in foreground and Southwest, background, occupy a stretch of bay front south of Coronado Bridge. Don Kohlbauer / Union-Tribune

GENERA
DYNA
(NASS

COMMERC
MARI
(NORTH

B.A.E
SHIPBU

BARGING
TANK MO
ACROSS
EST. TIM
4-6 HO
DOCK T
DOCK.

LOCAL SHIPYARDS COULD BE AVAILABLE FOR MFG. OF AIRPORT NEW FUEL TANKS.
THIS WOULD BE IDEAL FOR MODULAR COMPONENTS, IF SHIPYARDS HAVE " SPACE - EQUIPMENT - PERSONNEL - SCHEDULE & PRICE AVAILABLE.

* BARGING MODULES ACROSS BAY TO PT. LOMA AIRPORT SITE WOULD SAVE TIME, EQUIPMENT AND COULD BE FACTORED IN SCHEDULE ON SINGLE 3-FUEL TANK BASIS TO SUIT AIRPORT REQUIREMENTS.

proper contour. During construction, the movement of equipment and materials across the grade will mar the surface of the softer materials. These irregularities should be corrected before the bottom plates are placed for welding. The finished grade may be oiled or stabilized in some manner to preserve better contour during construction and to protect the tank bottom against ground moisture. Caution should be observed, however, that the quantity or kind of material used for this purpose does not create welding difficulties or risk of galvanic corrosion.

c. It is suggested that the finished tank grade be crowned from the outer periphery to the center. A slope of 1 in. in 10 ft is suggested as a minimum. This crown will partly compensate for slight settlement which is likely to be greater at the center. It will also facilitate cleaning and the removal of water and sludge through openings in the shell or from sumps situated near the shell. Because the amount of crown will affect the lengths of roof-supporting columns, it is essential that the tank manufacturer be fully informed of this feature sufficiently in advance.

d. If the tank bottom is built on a flat concrete slab, a similar type of finished grade is recommended so that it will act as a cushion and provide the proper contour for the slope of the bottom plates.

B.4 EARTH FOUNDATIONS

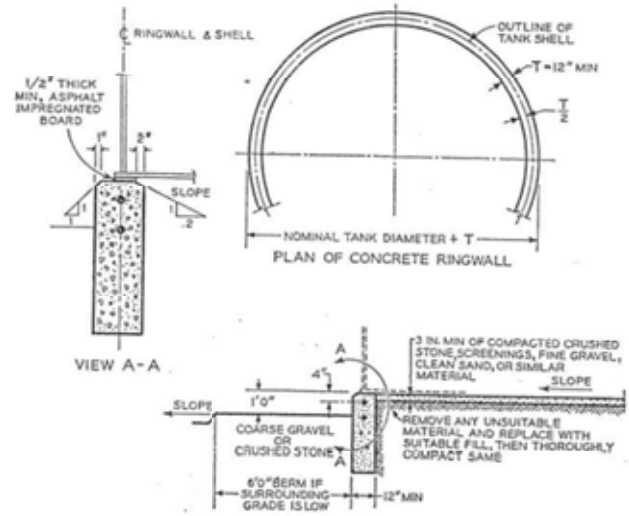
a. When an engineering evaluation of subsurface conditions, based on experience and/or exploratory work, indicates that it is unnecessary to construct a substructure to support the tank, suitable foundations may be constructed from earth materials. The performance requirements for an earth foundation are identical with those associated with more extensive foundations. Specifically, the foundation should:

1. Provide a stable plane for the support of the tank.
2. Limit overall settlement of the tank grade to values compatible with allowances provided in the design of connecting piping.
3. Provide adequate drainage.

b. While many satisfactory designs are possible, provided sound engineering judgment is used in their development, two common types are recommended herein on the basis of satisfactory long-term performance. Details of the two recommended designs (Earth Foundations with a Ringwall, and Earth Foundations without a Ringwall) are illustrated in Fig. B-1 and B-2.

B.4.1 Earth Foundations with a Ringwall

a. Large tanks and tanks with high shells impose substantial loads on the foundation under the shell. This is particularly important with floating-roof tanks with regard to shell distortion. In these or any other cases where the ability of an earth foundation to carry the shell loads directly is doubtful, it is recommended



Notes:

1. For reinforcement, see Par. B.4.1(c).
2. Top of concrete ringwall should be smooth and level. Strength of concrete shall be at least 3,000 psi after 28 days. Lap reinforcement splices to develop full strength in bond.

FIG. B-1—Example of Concrete Ringwall Foundation.

that a ringwall foundation be used. This type of construction has the following advantages over an earth foundation without a ringwall:

1. Will provide better distribution of the concentrated load of the shell to produce a more nearly uniform soil loading under the tank.
2. Will provide a level and solid starting plane for construction of the shell and for the application of insulation when required.
3. Will provide a better means for leveling the tank grade and preserving its contour during construction.
4. Will retain the fill under the tank bottom and prevent loss of material from erosion or adjacent tank excavation.
5. Will act as a moisture barrier.

b. When designing concrete ringwalls, it is desirable that they be so proportioned that the average unit soil loading under the wall will be approximately the same as under the confined earth at the same depth. It is recommended that the thickness of ringwalls be not less than 12 in. and that the center-to-center diameter equal the nominal tank diameter. The depth of the wall will depend upon local conditions; but there appears to be no need to construct the wall to any greater depth than the soil is disturbed in constructing the fill and grade under the tank, as it adds but little to the gross area and nothing to the sustaining capacity of the subsoil. The top of the wall should be smooth and level within $\pm 1/8$ in. in any 30-ft circumferential length. No point in the circumference of the wall should vary more than $\pm 1/4$ in. from the established elevation. Recesses should be provided in the wall for flush-type cleanouts,

RECOMMENDED PRACTICE FOR CONSTRUCTION OF FOUNDATIONS FOR API VERTICAL CYLINDRICAL OIL STORAGE TANKS

B.1 SCOPE

a. The following recommendations are intended to establish certain minimum basic requirements for the design and construction of foundations under vertical steel oil storage tanks with flat bottoms. They are offered as an outline of good practice and to point out some precautions which should be observed in constructing such foundations.

b. Because of the wide variety of surface, subsurface, and climatic conditions, it obviously is not practical to establish design data to cover all such situations. The allowable soil loading and the exact type of subsurface construction to use necessarily must be decided for each individual case after careful consideration. The same rules and precautions should be used in the selection of foundation sites as would be applicable in designing or building foundations for any other structure of comparable magnitude.

B.2 SUBSURFACE CONSTRUCTION

a. At any tank site, the nature of the subsurface conditions must be known in order to estimate the amount of settlement that will be experienced and the probable result. This information may be obtained by exploratory work, consisting of making deep borings and load and soil tests, and by review of experience and history of similar structures in the vicinity. The subgrade must be capable of sustaining the load of the tank and its contents. The total of final uniform settlement must not be sufficient to strain connecting piping or produce inaccuracies of gaging, nor should the settlement continue to a point where the tank bottom is below the surrounding ground surface.

b. Some of the many variations in conditions requiring special engineering consideration are:

1. Hillside sites, where part of a tank may be on undisturbed ground or rock and part on fill or other construction, or where the depth of required fill is variable.

2. Sites on swampy or filled ground, where layers of muck or compressible vegetation are at or below the surface, or where unstable or corrosive materials may have been deposited as fill.

3. Sites underlain by layers of plastic clay, which may temporarily support heavy loads but which will settle excessively over long periods of time.

4. Sites adjacent to water courses or deep excavations, where lateral stability of the ground is questionable.

5. Sites immediately adjacent to heavy structures, which distribute some of their load to the subsoil under the tank site, thereby reducing its capacity to carry the additional load without excessive settlement.

6. Sites where tanks may be exposed to flood waters, resulting in possible uplift, displacement, or scour.

c. If the subgrade is weak and inadequate to carry the load of the filled tank without excessive settlement, it should be recognized that shallow or superficial construction under the tank bottom will not much improve it. One or more of the following general methods will probably have to be used:

1. Remove the objectionable material and replace it with other suitable and compact material.

2. Compact the soft material with short piles or by preloading with an overburden of earth, suitably drained, or other material.

3. Compact the soft material by removal of the water content by drainage, if practicable.

4. Stabilize the soft material by chemical methods or injection of cement grout.

5. Support the load on a more stable material underneath the subgrade by driving bearing piles or constructing foundation piers down to it. This will involve construction of a reinforced slab on the piles to distribute the load of the tank bottom.

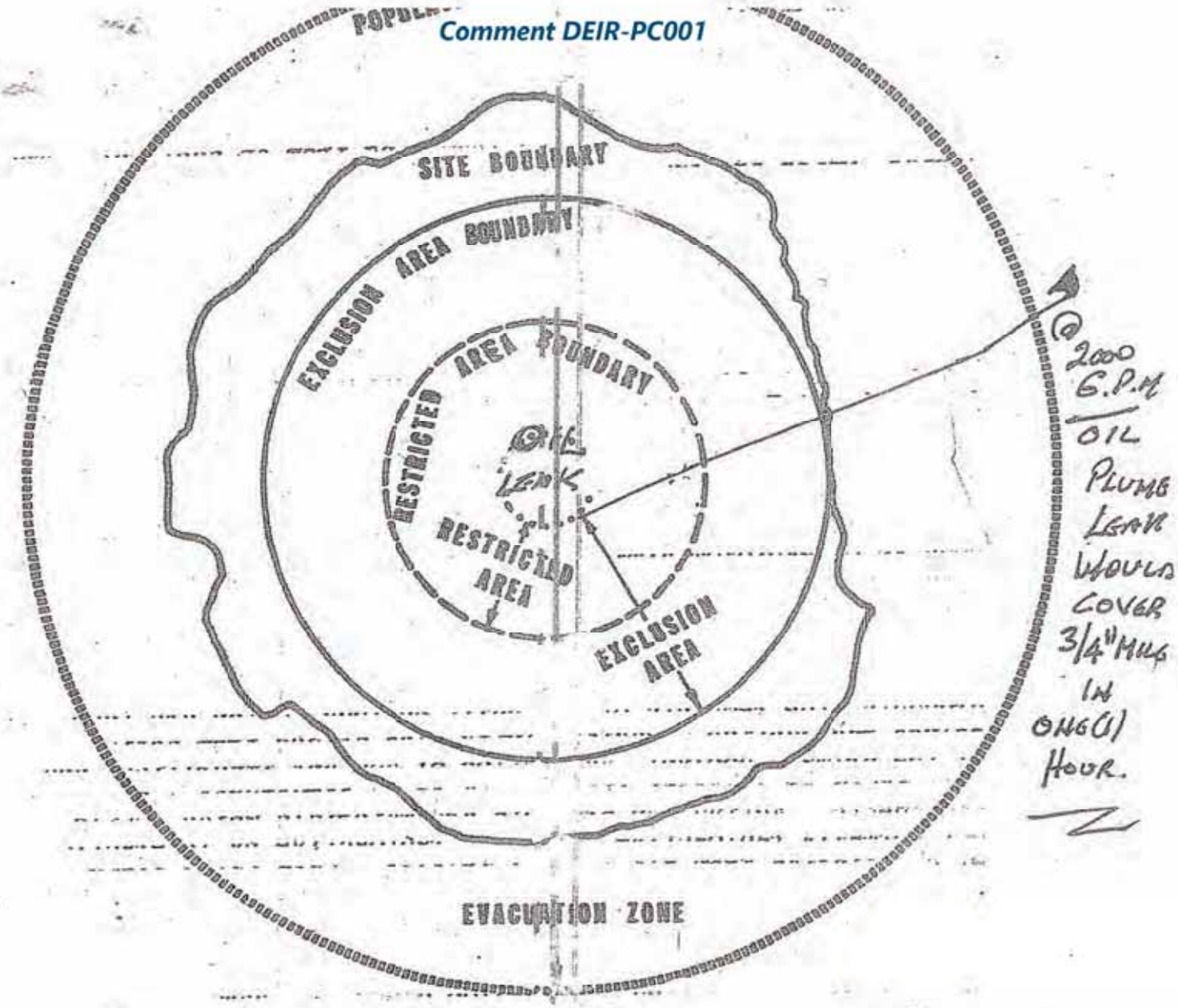
6. Construct a foundation of some type which will distribute the load over a sufficiently large area of the soft material so that the load intensity will be within allowable limits and excessive settlement will not occur.

d. The filling material used to replace muck or other objectionable materials or to build up the grade to suitable height should be sound and durable and at least equivalent to that used for fill in good highway practice. It should be free of vegetation and organic matter and should contain no cinders or other substances which would cause corrosion of the tank bottom. The fill should be thoroughly compacted by the best available means.

B.3 TANK GRADES

a. It is suggested that the grade or surface upon which the tank bottom will rest be constructed at least 1 ft above the surrounding ground surface. This will provide suitable drainage, will help keep the bottom dry, and will compensate for some small settlement which is likely to occur.

b. It is suggested that the top 3 in. or 4 in. of the finished grade consist of clean sand, gravel, crushed stone (not over 1 in. in maximum size), or some similar inert material which can be readily shaped to the



NOTE: IN SOME CASES, THE RESTRICTED AREA BOUNDARY, THE EXCLUSION AREA BOUNDARY AND THE SITE BOUNDARY MAY BE CONTIGUOUS.

SPECIAL SAFEGUARD SYSTEMS & SAFETY FEATURES BUILT INTO THE DESIGN OF FUEL TANKS? IN ORDER TO CONTAIN PROTECT PUBLIC. NEW CONTAINMENT DIKE WALLS ADDED TO EXISTING CONTAINMENT WALLS PLUS UPGRADES TO EXISTING FIRE SUPPRESSION SYSTEM.

6

SHOP MODULAR PREPARATION OF STEEL TANK COURSES

EACH COURSE SHOULD CONSIST OF SEVEN (7) ESTIMATED CUT & CURVATURE FORMED STEEL PLATES (8'0" x 34'-0" LONG) ESTIMATED

STEEL PLATE THICKNESS SHOULD RANGE FROM 1/4" THICK TOP COURSE TO 1 1/4" THICK BOTTOM COURSE (DEPENDING ON LOAD & STRESS CALCULATIONS)

SHOP PREP. ON PLATES

VERTICAL WELD JOINTS BETWEEN PLATES SHOULD BE BEVELLED TO 40 DEGREES. THRU' 2/3RDS OF PLATE THICKNESS.

EXCEPT

TOP COURSE & ROOF WELDS

A SQUARE EDGE SHOULD SUFFICE IN THOSE WELDS WITH ROOT GAP 1/8"

WELDERS SHOULD AIR-CARBON-ARC GOUGE BACKSIDE BEFORE WELDING SEAM.

FIELD ERECTION

COURSE // SHELL PLATES SHOULD BE JACKED & POSITION AROUND CONCRETE FOUNDATION, MAKING VERTICAL WELDS AND THEN WELDING CIRCUMFERENTIALLY TO JOIN COURSE/COURSE ABOVE.

TESTING

— AWWA D.100 / API.-620 (DESIGN, FABRICATION, TESTING.
— ALL BUTT WELDED JOINTS RADIOGRAPHED)
— LEAK / STANDING HYDROSTATIC TEST

PAINTING

— ?

PROJECT

ENSURE ALL BID CONTRACTORS, SUB-CONTRACTORS VISIT JOBSITE PRIOR TO SUBMITTING BIDS.

WORK SHOP FABRICATION IN PARALLEL WITH CIVIL CONCRETE @ JOBSITE.

FIELD

LAY CONCRETE FOUNDATION FOR DIKE WALLS

SHOP

FABRICATE STEEL-PLATE STANDPIPE BASE & ROOF IN LARGEST MODULAR DIMENSIONS TO ACCOMMODA SHIPMENT TO JOBSITE

FIELD

SINCE TANKS WILL BE ERECTED FROM TOP DOWN.

INSTAL BASE OF STEEL ON CONCRETE NEW DIKE-WALL FOUNDATION

NEXT PLACE BRACED HYDRAULIC RATCHET JACKS ON BASE PLATE & SET COMPLETED ROOF ATOP JACKS.

BETWEEN ROOF & BASEPLATE, THE CYLINDRICAL TANK SHELL ARE BUILT UP OF COURSES. (BEING MODULARIZED IN SHOP.) THUS AVOIDING USE OF SCAFFOLDING & LARGE CRANES

ERECTION SEQUENCE

JACK THE TOP (ROOF) TO THE HEIGHT OF ONE COURSE (RING) INSERT COURSE PLATE, TIE PLATES TOGETHER WITH VERTICAL WELDS THEN WELD CIRCUMFERENTIALLY TO JOIN COURSES SUCCESSIVE COURSES

WESCO
WORLDWIDE ENGINEERING SERVICES COMPANY

James Gilhooly

3451 TRUMBULL STREET
SAN DIEGO CA 92106
TEL (619) 223-9768
FAX (619) 223-8939

JOBSITE LIMITATIONS

TAKE UP 50% OF AVAILABLE AREA,
ORIGINAL FOOTPRINT → NUMEROUS
VS
NEW FOOTPRINT

COVER BALANCE OF AVAILABLE AREA.

TRAFFIC
ACCESS

SITE ADJACENT TO MAJOR
SUPPLY GATE.
HEAVY CONGESTION – 7A.M → 9A.M
3P.M → 5P.M

TIGHT SITE CONDITIONS WILL LIMIT FLEXIBILITY
FOR ACCESS, PARKING, LAYDOWN SPACE,
MATERIAL STORAGE, WAREHOUSES,
SANITARY FACILITIES, CONSTRUCTION &
WELDING EQUIPMENT.

IN FIELD CONSTRUCTION & ERECTION OF TANKS
(THIS SIZE 58 FT. X 58 FT. HIGH)
X SPACE HAS TO BE AVAILABLE FOR EFFICIENT LIFT
MOVING & LAYDOWN OPERATIONS; AS WELL AS
SHAKE-OUT AND CHECKING OF STEELWORK
TO ASSURE THAT ERECTION SCHEDULE DO
WITHOUT
INTERRUPTION

FUEL TANK FARM MODULARIZATION A

EQUIPMENT COSTS HAVE RISEN 68% SINCE YEAR 2017.

LINN BERGH
FUEL TANKS MODULARIZATION

THE TERM MODULARIZATION IS USED TO DEFINE A SERIES OF CONSTRUCTION TECHNIQUES THAT HAVE THE POTENTIAL FOR LOWERING OVERALL PROJECT COSTS, TRAFFIC CONJESTION & ENVIRONMENTAL PROBLEMS ON THE PROPOSED NEW TANK FARM COMPARED TO A CONVENTIONAL "STICK-BUILT" TANK FARM.

MODULAR DESIGN AND CONSTRUCTION TECHNIQUES DEVELOPED FOR OFFSHORE AND THE NORTH SHORE ALASKA HAVE BEEN SUBSEQUENTLY APPLIED TO NUMEROUS APPLICATIONS THROUGHOUT THE CONTINENTAL UNITED STATES WITH GREAT RESULTS.

STUDIES HAVE ESTABLISHED THAT MODULAR DESIGN AND SHOP ASSEMBLY CONCEPTS CAN IMPROVE THE OVERALL CONSTRUCTION SCHEDULE, REDUCE FIELD LABOR COSTS; REDUCE TRAFFIC & TRANSPORTATION ISSUES, IMPROVE OVERALL ENVIRONMENTAL CONDITIONS @ CONSTRUCTION SITE. LETS DISCUSS.

Jim Gilhooly

REGISTERED PROFESSIONAL ENGINEER JAMES GILHOOLY

AIR QUALITY MANAGEMENT PLAN

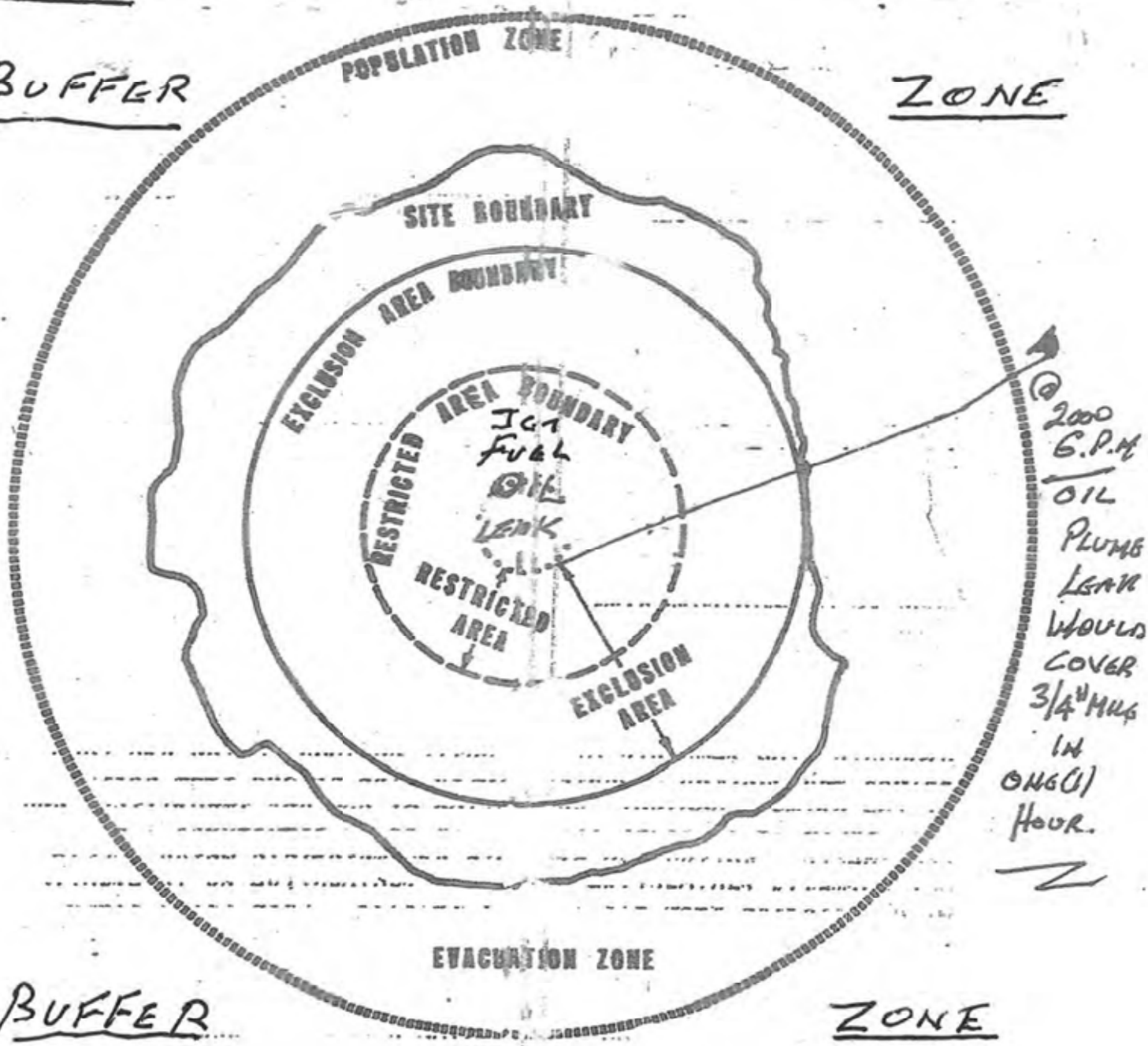
NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act of 1969 commonly referred to as NEPA, declares a natio environmental policy. This policy is a general comm ment by the Federal Government to "use all practica means" to conduct Federal activities in a way that promote the general welfare and that will be in "h mony with the environment."

The practical significance of NEPA is whether or a Federal agency, because of its permitting or licens authority, will be required to prepare an Environmer Impact Statement (EIS). This determination is gener made by the involved agency, although in many stances the Courts have either directed the agency prepare an EIS or held that an EIS was unnecessa The pivotal issue is: Does the activity of the invol agency constitute a major Federal action significan affecting the quality of the human environment?

In several instances during the past decade, so permit-issuing Federal agencies were reluctant to dertake the full-scale preparation of an EIS. In pl thereof, such agencies were willing to exercise one the following options: stand on a statutory exempt from the application of NEPA requirements; based the contents of the permit or license application, mak finding of no significant impact or a negative decla tion, explaining why the agency need not prepare EIS on a given action; endorse an EIS prepared another permit-issuing Federal agency; or endorse EIS prepared by a State agency for the same or simi activity.

ACMP — FUEL FARM FACILITY



NOTE: IN SOME CASES, THE RESTRICTED AREA BOUNDARY, THE EXCLUSION AREA BOUNDARY AND THE SITE BOUNDARY MAY BE CONTIGUOUS.

SPECIAL SAFEGUARD SYSTEMS & SAFETY FEATURES BUILT INTO THE DESIGN OF FUEL FARM? TO PROTECT PUBLIC.

CONCEPTUAL BOUNDARIES

SAN DIEGO INTERNATIONAL AIRPORT

ENVIRONMENTAL CONSIDERATIONS

Beyond the financial, technical, and geographical constraints to FUEL TK. FARM major consideration must be given to environmental limitations. These limitations, which evidence themselves in a complex licensing process, result from a series of key legislative actions designed to protect some facet of the environment. These include, but are not limited to, the National Environmental Policy Act (NEPA), the California Environmental Quality Act (CEQA), the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act (RCRA), the Endangered Species Act, the Historical and Archaeological Preservation laws, the California Coastal Act of 1976, and the Warren-Alquist Energy Resources Conservation and Development Act. This maze of regulations acts as a stifling constraint to the siting, WHICH ENCROACHES ON NUMEROUS SAN DIEGO COMMUNITIES AND NUMEROUS DENSELY POPULATED, EARTHQUAKE AREAS.

The major constraint posed by NEPA and CEQA is the requirement for the preparation of a complete Environmental Impact Statement to precede any new TANK construction or major modification of an existing TANK The process is time and resource consuming.

Jim Gilhooly

EMISSIONS SNAPSH

USD report to help develop better plans to battle climate

By Mike Lee
STAFF WRITER

Home energy consumption and use of personal vehicles generate roughly 60 percent of San Diego County's greenhouse gas emissions, putting the region's 3.1 million residents on the hook to do more to meet the state's goals for fighting global warming.

That was a central conclusion of a major study made public today by the University of San Diego. By offering the first detailed carbon footprint for the region, the report provides a baseline for scientists, elected officials, companies and nonprofit groups to develop better strategies against climate change.

It also outlines a 21-point plan for meeting California's legislative mandate to curtail the release of greenhouse gases.

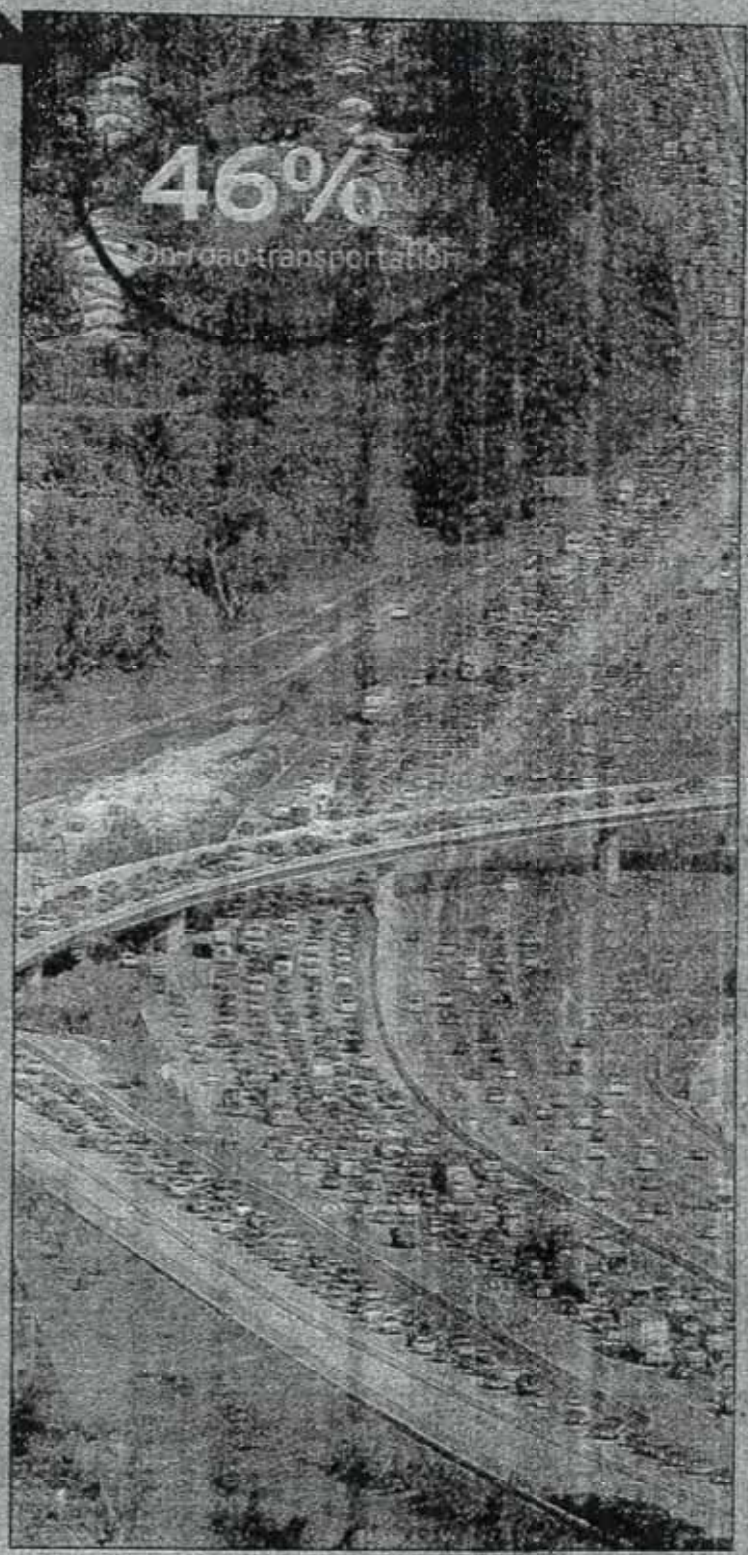
"No one sector of the economy can do it alone and contributions from every sector — no matter how small — will be necessary," said Scott Anders, director of the university's Energy Policy Initiatives Center.

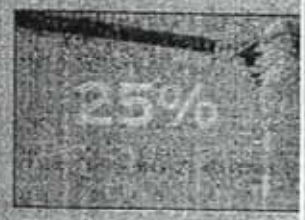
Several local and state agencies helped refine the study, which generally followed protocols that the California Air Resources Board established.

Yesterday, the air board issued its first economic and health assessments of strategies being proposed under Assembly Bill 32, the state's landmark global warming legislation from 2006.

SEE **Study, B8**

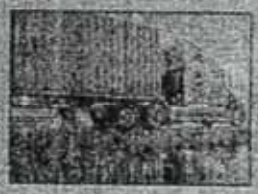
Online: To read the executive summary of the ity of San Diego's carbon report, go to com/more/documents





9%
Home and business use of natural gas

5%
Industrial processes and products



4%
Other fuel use

2%
Landfills and wastewater treatment plants

WESCO

AIR POLLUTION

Sources of Air Pollution

Stationary Combustion
Industrial, commercial, and household sources; including power plants, manufacturing plants, open burning dumps, home fireplaces and furnaces, incinerators, agricultural and forest waste disposal. Includes natural sources such as volcanoes, forest fires, etc.

Mobile Combustion
Confined to transportation industry and includes autos, trains, aircraft, ships, buses, which normally utilize internal combustion, steam-driven, or gas turbine engines. Also includes natural sources such as dust storms, electrical storms, etc.

Types of Air Pollutants

Gases and Vapors
Small size particles normally make these air pollutants difficult to remove. Methods include absorption, adsorption or incineration. Common polluting gases include sulfur dioxide and trioxide, hydrogen chloride, chlorine, and oxides of nitrogen. Vapors include hydrocarbons, trace metals, fluorine, and others.

Liquid Particulates
Easy to remove in above-3 micron size; below 3 microns and in sub-micron sizes, special equipment is required to remove particulates, normally at higher cost. Special problems can occur when liquids are highly flammable or corrosive. Common examples include sulfuric acids and other acids, organic compounds, and even water in some cases.

Solid Particulates
Same degrees of difficulty exist with solid particulates as with liquids, related to micron size. Soluble solids can be removed by adding water to dissolve and cause them to drain from filter mechanisms. Insoluble solids require other forms of control. Examples are fly ash, products of incomplete combustion, dust, chemical compounds, and minerals.

Odors
Odors are normally in gas or vapor forms. They cause irritation and undesirable reactions when perceived by the olfactory sensors. Common sources are chemical plants, paper mills, stockyards, slaughterhouses, and some food processing operations.

AIR POLLUTION BECAME A MAJOR ISSUE ON NAVY POINT LOMA PROJECTS, PIPELINE/TRENCHING (FIELD WELDING, SANDBLASTING) ETC. OF NEW FUEL TANKS & CITY SEWAN FACILITY → ?

7

WESCO

Alternative Solutions To Water Pollution Control

WASTE WATER

Sources of Water Pollution

Floating materials

Oils, greases, foam and other solids lighter than water. They make streams unsightly; retard plant growth; interfere with natural reaeration of the stream; destroy natural vegetation; are toxic to fish and aquatic life. A fire hazard is also created when there are excessive amounts of oil on the surface.

Suspended matter

Insoluble materials such as particles of metal, coal, dust, sand, food, sludge, and chemical slurries which either wash up on the banks as unsightly slime and sludge, or slowly settle to the bottom of the stream. They smother useful purifying micro-organisms; ruin spawning and breeding grounds of fish; use up dissolved oxygen to produce noxious gases and odors.

Dissolved solids

Acids, alkalies, heavy metals, insecticides, cyanides and other toxics, make water undrinkable and destroy aquatic life, and cause objectionable taste and odor. Organic matter is attacked by oxygen-consuming microbes; oxygen is depleted by chemical reducing agents. Algae growth may be promoted and desirable. Fish and vegetation may die.

Types of Water Pollution

Temperature

Discharge of hot waste water raises temperature of receiving stream. This lowers solubility of oxygen in water and increases rate at which oxygen-consuming microbes attack organic waste. The result is accelerated depletion of dissolved oxygen and disruption of aquatic life. Problem is worst when stream flow is low, ambient temperature high.

Color

Color is mainly objectionable from an esthetic standpoint. Even though it isn't harmful for most water uses, color does interfere with biological activity by retarding transmission of sunlight into the stream. Color also indicates the presence of undesirable dissolved and suspended solids. For example, dissolved chromate ions are yellow; copper is blue.

Taste and odor

Odors are offensive when pronounced enough to pollute the air over a sizeable area. For most waters, taste and odor are important indicators of undesirable impurities. The waste water itself may contain the chemicals responsible, such as phenolic compounds or hydrogen sulfide. Odors also come from decomposition of organic wastes.

Radioactivity

Highly concentrated solid or liquid radioactive wastes are disposed of under carefully controlled conditions. But some dilute or low-level radioactive waste invariably reaches sewers and streams.

Alternative Solutions

Physical methods

- Sedimentation & settling
- Flotation
- Evaporation
- Centrifuging
- Screening
- Filtration
- Burial
- Deep well disposal
- Reverse osmosis
- Dialysis

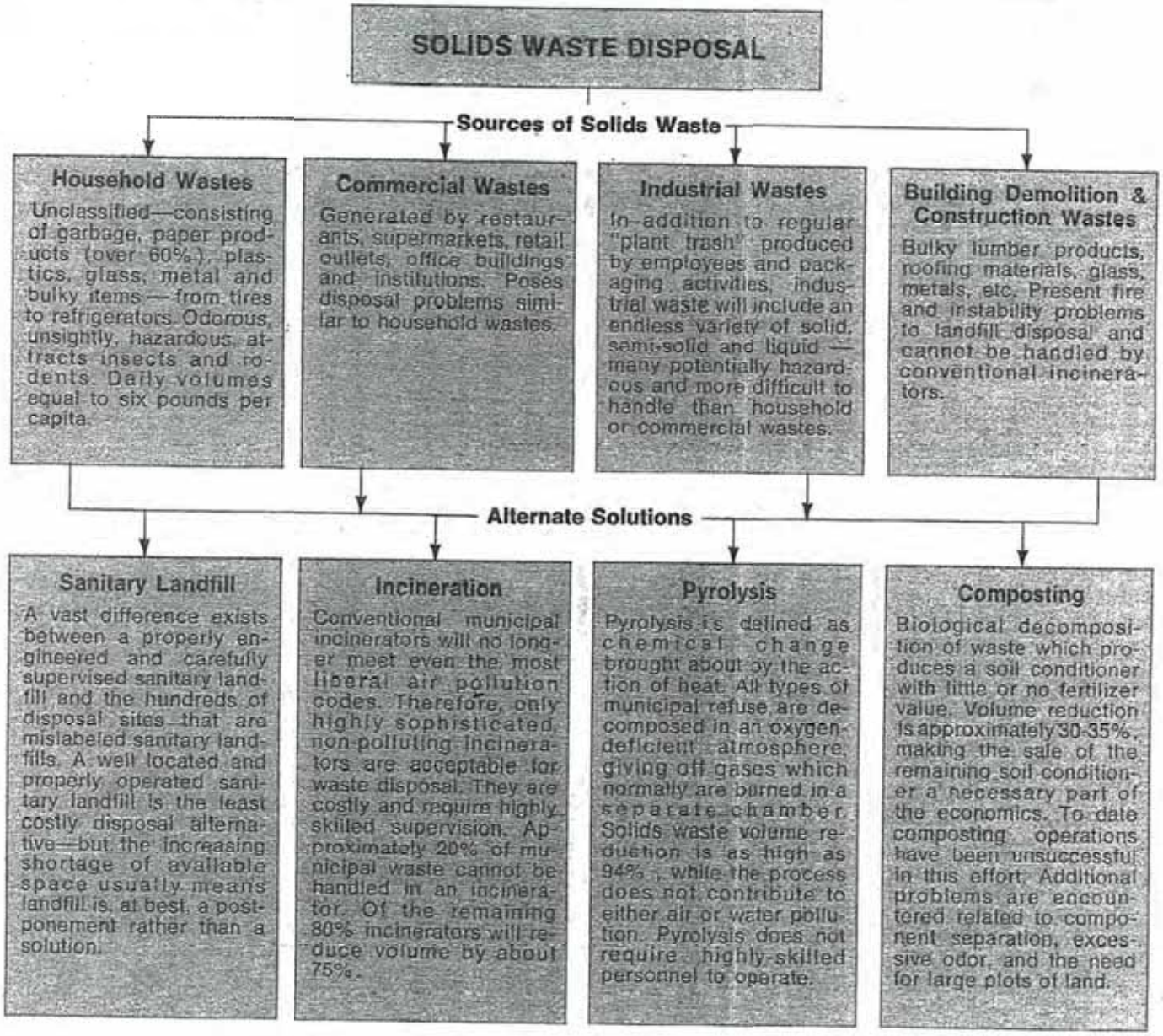
Chemical methods

- Coagulation and settling
- Neutralization
- Oxidation
- Reduction
- Adsorption
- Ion exchange
- Wet combustion
- Incineration

Biological methods

- Biological filtration
- Activated sludge
- Aeration
- Oxidation ponds
- Lagooning
- Anaerobic processes

Table 3: Alternative Solutions To Solids Waste Disposal



Alternatives in SOLIDS Pollution Control

When you ponder the fact that solid waste is accumulated at the mind-boggling rate of over 1.2 billion pounds per day, or approximately 6 pounds per person, you realize how acute the problem of disposal becomes as our population and consumption increase.

Existing facilities [illegible] the utmost. Moreover, some methods of disposal actually contribute to the environmental pollution they are supposed to alleviate.

New, more effective systems for solids waste management are available today; it is incumbent upon both government and industry to apply the best existing technologies on the broadest possible scale.

Alternative Solutions To Water Pollution Control

WASTE WATER

Sources of Water Pollution

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Sedimentation & settling
Flotation
Evaporation

Chemical methods

Coagulation and settling
Neutralization
Oxidation

Biological methods

Biolocical filtration
Activated sludge
Aeration

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SITE SELECTION REPORT

EXAMPLE DATA FOR TOTAL PROJECT

SITE SURVEY AND APPRAISAL

SITE DESCRIPTION - SOILS INFORMATION

SITE ADDRESS
NAME AND POPULATION OF, DISTANCE TO NEAREST TOWN
NAME AND POPULATION OF, DISTANCE TO NEAREST TOWN WITH OVERNIGHT ACCOMMODATIONS AND FULL SERVICES
SITE OWNER
SITE ELEVATION
GROUND WATER TABLE ELEVATION
NORMAL FROST PENETRATION
SITE PECULIARITIES
SITE OBSTRUCTIONS AND CONSTRUCTION INTERFERENCES
SITE HAZARDS
SITE CLEARING REQUIREMENTS
SITE LEVELING REQUIREMENTS
SITE DEWATERING REQUIREMENTS
SOIL CHARACTERISTICS
SOIL BORING RESULTS
SOIL BEARING VALUES
SOIL CONDUCTIVITY
SOIL CORROSIVITY
STRAY ELECTRICAL GROUND CURRENT INFORMATION
SEISMIC ZONE
EARTHQUAKE HISTORY
SOILS INVESTIGATING REPORT
SITE CONTOUR MAP
SITE ARRANGEMENT MAP
OVERALL TANK ARRANGEMENT MAP

REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

EXAMPLE DATA FOR TOTAL PROJECT

CLIMATIC CONDITIONS

MAXIMUM TEMPERATURE AND MONTH
MINIMUM TEMPERATURE AND MONTH
MAXIMUM RELATIVE HUMIDITY AND MONTH
AVERAGE RELATIVE HUMIDITY
MAXIMUM RAINFALL AND MONTH

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CLIMATIC CONDITIONS Con't

AVERAGE RAINFALL
MAXIMUM " " AND MONTH
AVERAGE " "
PERIOD
MAXIMUM WIND VELOCITY
PRIMARY WIND DIRECTION
HURRICANE, TYPHOON, TORNADO AND FLOOD HISTORY
CLIMATE EFFECT ON WORKING HABITS
NUMBER OF WORKING DAYS PER YEAR NORMALLY LOST DUE TO INCLEMENT WEATHER

UTILITY SERVICES

WATER
- Names of suppliers
- Rates
- Process Water
- Cooling Water
- Potable Water
- Fire Water
- Construction Water
- Bottled Water

ELECTRICITY
- Name of Supplier
- Rates
- Location of Main Panel or Transformer
- Maximum Available KVA
- Supply Voltage

FUEL
- Names of Suppliers
- Rates
- Natural Gas
- LPG

REGISTERED PROFESSIONAL ENGINEER
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UTILITY SERVICES Con'T

AIR

- Name of Supplier
- Locations of Supply Header Connections and Size
- Quality
- Quantity
- Pressure

TELEPHONE

- Name of Telephone Company
- Rates
- Number of Available Circuits

TRANSPORTATION FACILITIES - MATERIAL HANDLING

HOME OFFICE TO SITE DISTANCE AND BEST MEANS OF TRAVEL
NAMES OF LOCAL HIGHWAYS AND YEAR-AROUND USE INFORMATION
NAMES OF TOLL ROADS AND RATES
SITE PARKING FACILITY LOCATION AND CAPACITY
SITE-RELATED HAZARDS TO VEHICLES
NEAREST TRUCK LINE TERMINAL
~~NEAREST RAIL SWITCH POINT AND SPUR~~
NEAREST AIRPORT
NEAREST PORT
SERVING AND CONNECTING MOTOR TRUCK LINES AND RATES
SERVING AND CONNECTING RAIL LINES AND RATES
SERVING AND CONNECTING AIR LINES AND FREIGHT RATES
SERVING AND CONNECTING SHIPPING LINES AND RATES
HELICOPTER SERVICES
LOCATION OF TRUCK UNLOADING FACILITIES
~~LOCATION OF RAIL UNLOADING FACILITIES~~
TRUCK UNLOADING EQUIPMENT CAPACITY AND AVAILABILITY
~~RAIL UNLOADING EQUIPMENT CAPACITY AND AVAILABILITY~~
PORT UNLOADING EQUIPMENT CAPACITY AND AVAILABILITY
PORT DIRECT UNLOADING CAPABILITY
ROAD CLEARANCES, WEIGHT RESTRICTIONS, OTHER REGULATIONS AND FEES
RAIL CLEARANCES, WEIGHT RESTRICTIONS, OTHER REGULATIONS AND FEES

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JAMES GILHOOLY
No.
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TRANSPORTATION FACILITIES - MATERIAL HANDLING Con't

JUSTIFICATION FOR INTERMEDIATE POINT MARSHALLING
SITE INSIDE STORAGE LOCATION, CAPACITY, AND AVAILABILITY
SITE OUTSIDE STORAGE LOCATION, CAPACITY, AND AVAILABILITY

ENVIRONMENTAL CONSIDERATIONS

LEVELS OF EXISTING GROUND, AIR, AND WATER CONTAMINATION (Conduct Studies)
SITE TRASH DISPOSAL METHOD AND HAULER
SITE RESTROOM FACILITIES
DUST CONTROL REQUIREMENTS
RESPIRATOR REQUIREMENTS
PERMIT REQUIREMENTS

LIVING CONDITIONS - COMMUNITY FACTORS

AVAILABILITY OF PERSONNEL HOUSING
AVAILABILITY OF HOUSES OF WORSHIP
AVAILABILITY OF RECREATION FACILITIES
AVAILABILITY OF RESTAURANTS
AVAILABILITY OF ALCOHOL
AVAILABILITY OF MEDICAL AND DENTAL FACILITIES
AVAILABILITY OF PUBLIC TRANSPORTATION
AVAILABILITY OF EDUCATIONAL FACILITIES
IDENTIFIED HEALTH THREATS
LOCAL COMMUNITY ATTITUDE TOWARDS JOB SITE
LANGUAGE BARRIERS
LOCAL CUSTOMS AND HABITS
COST OF LIVING FACTOR
AVAILABLE COMMUNICATIONS MEDIA
REMOTENESS AND ISOLATION FACTOR
PRIMARY SOURCE OF INCOME FOR COMMUNITY OR REGION
QUALITY AND ATTITUDE OF LOCAL POLICE FORCE
LOCATION OF NEAREST TRAFFIC AND MISDEMEANOR COURT
LOCAL RACIAL ATTITUDES
LOCAL STANDARD OF LIVING

REGISTERED PROFESSIONAL ENGINEER
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GOVERNMENT REQUIREMENTS

APPLICABLE CODES AND STANDARDS
INSPECTIONS AGENCIES INVOLVED IN WORK APPROVALS
PERMITS REQUIRED
IMPORT AND CUSTOMS INFORMATION
REQUIREMENTS TO "BUY LOCAL" OR "BUY
APPROVAL PROCESS FLOW DIAGRAM
STATE AND LOCAL INCOME TAX INFORMATION
STATE AND LOCAL SALES TAX INFORMATION
TAX EXEMPTIONS

A/E AND GENERAL CONTRACTOR REQUIREMENTS AND ASSISTANCE

SIZE OF FIELD TEAMS
DEGREE OF CONTROL, MONITORING AND INTERFACES DURING PERFORMANCE OF WORK
DEGREE OF INVOLVEMENT IN LABOR NEGOTIATIONS
DEGREE OF INVOLVEMENT IN ESTABLISHING WORKING HOURS
SMOKING RESTRICTIONS
DRUG TESTING POLICY
HOT AND COLD WORK PERMIT CONTROL
DEGREE OF CONTROL FOR MATERIALS RECEIVED AND MATERIALS MOVEMENT
DEFINITION OF GATES AND FENCING
ORGANIZATION OF FIRE PROTECTION, SAFETY AND SECURITY SERVICES
SITE ACCESS AND CONTROL AND PERSONNEL IDENTIFICATION
TRAINING REQUIREMENTS
EQUIPMENT AND MATERIAL CODING SYSTEM
USE OF PERMANENT PLANT FACILITIES
ASSISTANCE IN OBTAINING PERMITS AND UTILITY SERVICES
TURNOVER REQUIREMENTS
COMMUNICATIONS PROCEDURES
REPORTING REQUIREMENTS

CONSTRUCTION MATERIAL SOURCES

REGISTERED PROFESSIONAL ENGINEER
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CONSTRUCTION MATERIAL SOURCES Con't

LUMBER
STRUCTURAL STEEL
STEEL PLATE
BRICK AND CONCRETE
BLOCK
LAGGING
INSULATIONS
FASTENERS
PIPE, TUBING AND FITTINGS
CONDUIT
WIRE, CABLE, AND CONNECTORS
LUBRICANTS
WELDING ROD AND GASES
PAINT
ASPHALT

CONSTRUCTION EQUIPMENT SOURCES

HAND TOOLS
SHOP TOOLS
WELDING MACHINES
PIPE AND CONDUIT BENDING MACHINES
PIPE THREADING MACHINES
CRANES
EARTH MOVING EQUIPMENT
MATERIAL HAULING EQUIPMENT
FORK LIFTS
MAN LIFTS
SCAFFOLDING
OFFICE TRAILERS
OFFICE SUPPLIES
ELECTRICAL TESTING EQUIPMENT

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LOCAL SHOP FACILITIES

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LOCAL SHOP FACILITIES Con't

ELECTRONIC REPAIR SHOPS
ELECTRIC REPAIR SHOPS
PAINT SHOPS

LOCAL SUBCONTRACTORS

SITE PREPARATION
MECHANICAL
ELECTRICAL
ERECTION
INSULATION
SHEET METAL
PAINTING
INSTRUMENTATION AND CONTROLS
LABOR BROKERS
CRANE SERVICE
HAULING SERVICES
CONCRETE WORK
HVAC

LOCAL ENGINEERING FIRMS - LABORATORIES

SOILS INVESTIGATION AND TESTING
SURVEY WORK
BUILDING
UTILITIES
MATERIALS TESTING
X-RAY AND OTHER NONDESTRUCTIVE TESTING
ANALYTICAL WORK

REGISTERED PROFESSIONAL ENGINEER
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CONSTRUCTION LABOR

AVAILABILITY OF LOCAL LABOR AND SKILLED CRAFTSMEN
AVAILABILITY AND SOURCE OF SUPERVISORS AND FOREMEN
TRAINING REQUIREMENTS

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CONSTRUCTION LABOR Con't

PREMIUMS TO ATTRACT WORKERS

TRADE UNION REPRESENTATION TO INCLUDE NAMES, ADDRESSES AND TELEPHONE NUMBERS OF BUSINESS AGENTS

OTHER PROJECTS ACTIVE OR PLANNED IN THE AREA AND TIMES OF PEAK EMPLOYMENT

LABOR PRODUCTIVITY

RESTRICTIONS FOR "IMPORTED LABOR (RESTRICTIONS FOR IMPORT LABOR) & MATERIALS.

LABOR UNREST AND STRIKE POTENTIAL

REGISTERED PROFESSIONAL ENGINEER
JAMES GILHOOLY
No. 17[illegible]
Exp.
STATE OF CALIFORNIA

CONFIDENTIAL

ATTENTION

TED ANASIS
MANAGER – AIRPORT PLANNING

CONFIDENTIAL

WWESCO
WORLDWIDE ENGINEERING SERVICES COMPANY

DATE:

TO:

FROM: J. Gilhooly

SUBJECT: Erection of FUEL TANKS by Others

DOC: JG91116

CC:

GENERAL

When companies perform Field Erection of FUEL TANKS outside the Scope or Control of AIRPORT, a split responsibility situation is created and this paves the way for conflicts, backcharges and confusion.

Based on some twenty-six (26) years plus experience, this split responsibility condition seldom works out to the satisfaction of all parties involved. This was the situation at PT. LOMA with the erection contractor (———), who apparently obtained the Erection Contract through the customer, and as a result is attempting to "nickel and dime" NAVY on what THEY termed Additional Work on such things as:

Jobsite Receiving
Erection Sequence Delays
Supplier Quality Control
API ASME Requirements
etc., etc.

For all of the above categories, I would recommend that avoid entering into Contracts of this type unless (AIRPORT) are protected by Specifications, Written Agreements, etc.

If such Contracts are unavoidable, I would recommend that AIRPORT interface and draft a Specification to cover the following areas of the Erection Contract in order that achieve cost effectiveness and viability on the overall contract:

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Are You Ready for a Construction Claim?

There is a 75 percent probability that someone on your next construction project will file a claim for additional payment or extra work. Too many contractors are bitterly disappointed when they become involved with a claim because they are totally unprepared. This short, painless quiz is designed to demonstrate essential procedures that should be followed so that you can present or defend a claim effectively should the occasion arise.

The Quiz

1. Are site inspections (along with photographs and detailed notes) made prior to bidding every job? Site inspections are usually a contract requirement. Documenting the condition of the site will be necessary if your claim is based on changes in site conditions.
2. Do estimates clearly identify all assumptions, manhours, direct costs, overhead, and profit? The original estimate may be the basis for proving that cost overruns were caused by actions of other parties.
3. When your bid is successful, do you carefully compare the contract documents (plans and specifications) with the documents that were used to bid the job, to insure there are no changes between the bid documents and contract documents? The bid and contract documents should be filed carefully for future reference.
4. Are all agreements made during contract negotiations (reduced price, services provided by the other party, work exclusions, etc.) documented by letter and included in the contract?
5. Are field personnel thoroughly familiar with the work covered by the original bid? Or, are they performing extra work assuming it was covered by the original scope?
6. Do cost reports identify increased costs associated with changes in scope or disputed work?
7. Are all of the progress schedule requirements called for in the specifications properly satisfied? Is the progress schedule used to evaluate job progress?
8. Are the owner's and engineer's responsibilities (approvals, access to site, inspection, etc.) clearly shown on the schedule?
9. Are there procedures established to record actual job history in accordance with the original progress schedule?
10. Are all shop drawings and samples transmitted with a letter or transmittal form? Are all key dates of transmittal and approval recorded in a shop drawing log?
11. Do you require field personnel to prepare daily progress reports showing all pertinent information relating to the day's work (weather, manpower, work accomplished, problems, deliveries, etc.)? The progress report is one of the most useful documents in presenting or defending a claim.
12. Are all job agreements and decisions documented in letter form? Are all letters from other parties responded to carefully?
13. Are photographs taken of the job on a daily or weekly basis and properly marked as to date, photographer, and description?
14. Are all photographs carefully filed (prints in one place, negatives in another) for future reference? There is no need to take photographs if you can't find them when you need them.
15. Are minutes of meetings (prepared by others) carefully reviewed and changed if incorrect?

16. Are daily progress reports prepared and submitted daily by the Resident Engineer or the Owner's Representative on the project? A progress report form should be developed for your particular type of construction effort. A daily report form for waste water treatment plant would not work well on a shopping center.

17. Are photographs taken throughout the project and then properly filed along with notes and dates for each photo? Three or four progress photographs per month is not sufficient for the average project. A more worthwhile number would be 20 per week.

18. Are Minutes of meetins prepared and distributed promptly? If the Minutes are prepared by someone other than yourself, do you review them carefully and respond in writing to any errors in the Minutes?

20. Are all documents and correspondence properly filed so that they can be found two or three years after the project has been completed? Proper filing of documents is extremely important and should not be left to chance.

21. Are you aware that failure to consider the possibility of a construction claim during the design and construction phase will almost surely guarantee that you will end up on the way to the Court House steps?

WWESCO
WORLDWIDE ENGINEERING SERVICES COMPANY

CONSTRUCTION CLAIMS CAN BE PREVENTED by WWESCO

The last activity that the Owner and Architect/Engineer used to worry about on a construction project was the finalization of the punch list. In today's Construction Industry it is becoming more and more common to have the resolution of construction claims replace the punch list as the last activity on the project. No matter how difficult it is to resolve a punch list, the resolution of a construction claim can be far more expensive and time consuming. This short, but painless quiz (the real pain is inflicted when the Judge tells you that you lost the case because you had not taken the proper steps throughout the construction process) is designed to demonstrate the essential procedures that can be used to avoid the possibility of construction claims, or at least be more fully prepared, as an Owner or Architect/Engineer, to defend them.

Design Phase

1. Has the Owner (user of the facility) carefully considered his objectives and specific requirements of the facility and communicated them clearly to the designer? Early planning reduces the need for design changes and change orders during the construction process, as well as the time delays that can be associated with these changes.
2. Is there sufficient time and funding allowed for the design effort or are a lot of design details left to be worked out during the construction phase? Time "saved" during design may result in more costly construction and in some cases, an even longer construction period.
3. Are adequate investigations made of the site (both subsurface and existing facilities), so that the designer can prepare correct drawings and the bidder can prepare an intelligent bid with a minimum of guessing as to what he will find at the site? Pennies spent for site investigation can save dollars in the Contractor's bid price and reduction of claims.

Contract Preparation

4. Are the contract drawings and specifications reviewed by an individual experienced in field construction practices or is it left to the Contractor to figure out a way to build something that is clearly unbuildable? Are architectural, structural, and mechanical and electrical drawings coordinated and cross checked during the design phase?
5. Are the contract documents (Supplemental, Conditions, General Conditions, Detailed Specs, Standard Drawings, etc.) prepared and reviewed for each particular project, or are they simply "dusted off" from a previous project?
6. Does the construction contract assign responsibilities to both the Contractor, and the Owner or his agent, or is it designed to be so one-sided as to avoid any responsibility for anything on the part of the Owner or his agent? Such one-sided contracts tend to result in higher bid prices and are often not enforceable when a dispute goes to Court.
7. Do you realize that placing risk for underground conditions, design review responsibility, etc., with the contractor usually results in a higher bid price? One cannot have an insurance policy without paying a premium to the insurance company. Furthermore, the insurance policy may not be collectable.
8. Do you realize that much of the exculpatory (God save the Owner and the Engineer) language is often not enforceable when a dispute goes to Court? Exculpatory language would include contract clauses such as "don't rely on the subsurface investigations done by the Engineer" or "drawings are not complete, but the contractor should bid it as if they were complete", etc.
9. Are existing conditions of buildings and structures adjacent to the contemplated construction site carefully documented with photographs and other methods? Failure to do so may result in numerous claims for damages to those structures as a result of blasting or pile driving operations.
10. Is there consistant contract language between the Architect/Engineer, Owner and Contractor relating to the resolution of disputes by arbitration? If the language relating to disputes is not consistant relating to arbitration or Court, you may wind up in two separate forums trying to resolve disputes.

Project Scheduling

11. Is the allotted time for construction of the project selected with care after taking into consideration the scope of the work and complexity of the project, or is it arbitrarily picked because somebody would like to have it done at that point in time? Selecting a contract construction period that is not reasonable will result in higher bid prices or a lack of bidding interest.
12. Is sufficient time allowed for the bidding contractors to estimate the project? Is there a site inspection where all bidders are allowed to see the site at the same time to fully understand the scope of the work?
13. Does the contract require the Contractor to prepare a progress schedule within a reasonable time of starting the project, and is the type of schedule consistant with the complexity of the project? A computerized critical path schedule for a small renovation is probably a burden on the Contractor and not worth the effort. On the other hand, a simple bar chart for a complex, multi-million dollar project is not sufficient for adequate control.
14. Does the contract require periodic (perferably monthly) updating of the schedule, and are the schedules looked at seriously by all parties? Too often the schedules are updated simply to please someone and show completion dates that will make all parties happy. This can end in a real disaster.

Construction Documentation

15. If the project is delayed and the Contractor submits a request for a time extension, is it acted on promptly and fairly? Failure to grant a valid time extension in a prompt fashion can be construed to be acceleration of a project with a claim for the costs associated with the acceleration.

continued over

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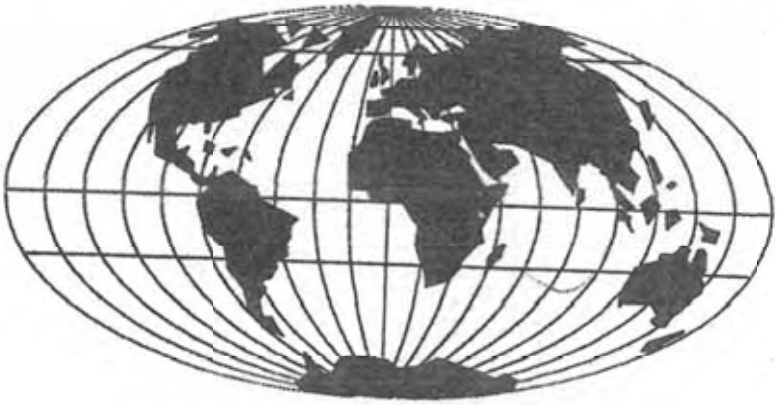

Prepared For Use In Your Seminar

By:

WORLDWIDE ENGINEERING SERVICES COMPANY

WWESCO

JAMES GILHOOLY
Presidente

INGENIERA • INSPECCION • EVALUACION • TRANSPORTACION

PLAYAS DE ROSARITO • BAJA CA
FROM US 1 619-223-9758 • FAX 1 619 223-6939

Comment DEIR-PC002

From: Janet Holland <hollandxyz@sbcglobal.net>
Sent: Thursday, December 19, 2019 5:37 PM
To: Airport Planning
Subject: Opposition to addition of 3 new 1 million gallon fuel tanks (Attention: Ted Anasis)

Attn: Ted Anasis

I oppose the implementation of adding three new, 1 million gallon fuel tanks, at the fuel farm on the N.E. quadrant of the San Diego International Airport. I request that the noise mitigation measures being considered in the Part 150 and Flight Plan and Procedures studies funded by the SDCRAA and FAA along with the required health studies be completed before work begins on tripling SDIA's fuel capacity. 1

Thank you.

Janet Holland

4376 Coronado Ave.

San Diego, CA 92107

Comment DEIR-PC003

From: Alan Gordon <agordonnoise@gmail.com>
Sent: Friday, December 20, 2019 4:13 PM
To: Airport Planning
Subject: Additional Fuel Tanks Draft Environmental Impact Report SDCAA #EIR-19-01

Dir Sirs,

After reviewing the Draft Environmental Impact Report (EIR) SDCAA #EIR-19-01 for the additional fuel tanks at the airport I still think there has not been adequate analysis of the size of the containment dike which is still insufficient if there is a failure to multiple fuel tanks. *1* The EIR also has not adequately addressed the impact of rising water levels due to climate change and how to prevent fuel from enter the bay when the water level contacts the fuel tanks. *2* The excessive heights of the fuel tanks has also not been addressed adequately. *3*

I request that an additional EIR be performed to address these issues. *4*

Sincerely,
Alan Gordon
4404 Alhambra ST.
San Diego, CA 92107

Sent from Mail for Windows 10

DEC 20 2019

BY: .....