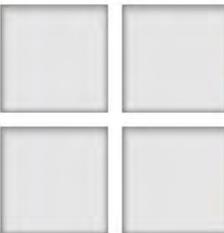


CITY OF HERMOSA BEACH

OIL DRILLING & RECOVERY COST BENEFIT ANALYSIS



SEPTEMBER 2014



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<p>The analyses, projections, assumptions, rates of return, and any examples presented herein are for illustrative purposes and are not a guarantee of actual and/or future results. Project pro forma and tax analyses are projections only. Actual results may differ materially from those expressed in this analysis.</p>

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<p>The analyses, projections, assumptions, rates of return, and any examples presented herein are for illustrative purposes and are not a guarantee of actual and/or future results. Project pro forma and tax analyses are projections only. Actual results may differ materially from those expressed in this analysis.</p>

Notice Regarding Final CBA

This Cost Benefit Analysis (“CBA”) has been prepared by Kosmont Companies and oil and gas industry sub-consultant CGEOIL, LLC for the City of Hermosa Beach. This document is the “*Final*” CBA, and includes analysis and explanations to the Draft CBA originally circulated to the public in February of 2014.

This CBA also includes a summary of (i) well log information for a vertical well drilled at the Project Site in 1955, (ii) pre-trial expert testimony from prior litigation activities pertaining to prior forms of the proposed Project reviewed subsequent to the circulation of the Draft CBA, as well as (iii) direct responses to questions and comments to the Draft CBA from various stakeholders. A discussion of supplemental information reviewed is provided in Section 16.0, and public comments and responses to the same are provided in Appendix J.

For an abundance of clarity, the Authors neither support nor oppose the proposed Project. In the Authors' opinion, this report presents a neutral and unbiased perspective of the potential costs and benefits of the proposed Project to the City.

Additional questions and comments to this CBA may be addressed by the Authors during the appropriate public hearings and/or sessions scheduled by the City.

<p>The analyses, projections, assumptions, rates of return, and any examples presented herein are for illustrative purposes and are not a guarantee of actual and/or future results. Project pro forma and tax analyses are projections only. Actual results may differ materially from those expressed in this analysis.</p>

1.0 Executive Summary

The City of Hermosa Beach ("City") is in the process of evaluating a proposal by E&B Natural Resources ("E&B", "Applicant") to develop an oil drilling and recovery project ("Project") within the City. In addition to the preparation of the Environmental Impact Report (certified by the City on July 8, 2014, "EIR") as required under the California Environmental Quality Act ("CEQA"), the City desired to have two additional studies completed. The two studies, a Health Impact Assessment ("HIA") and this Cost Benefit Analysis ("CBA") are intended to provide information and analysis to the residents of Hermosa Beach that is not required as part of the EIR under CEQA. Ultimately City residents will have the opportunity to vote whether or not to approve the Project.

This CBA is intended to help estimate potential financial benefits and costs to the City, whether the Project is approved or not, primarily from the perspective of the City as a municipal organization. Figures contained in this document are estimates of the order of magnitude of some of the potential and projected financial costs and benefits. Additional discussion of the context of estimates and sources of uncertainty in projections are provided in detail in this report. Additional information on the Project is available in the EIR and HIA.

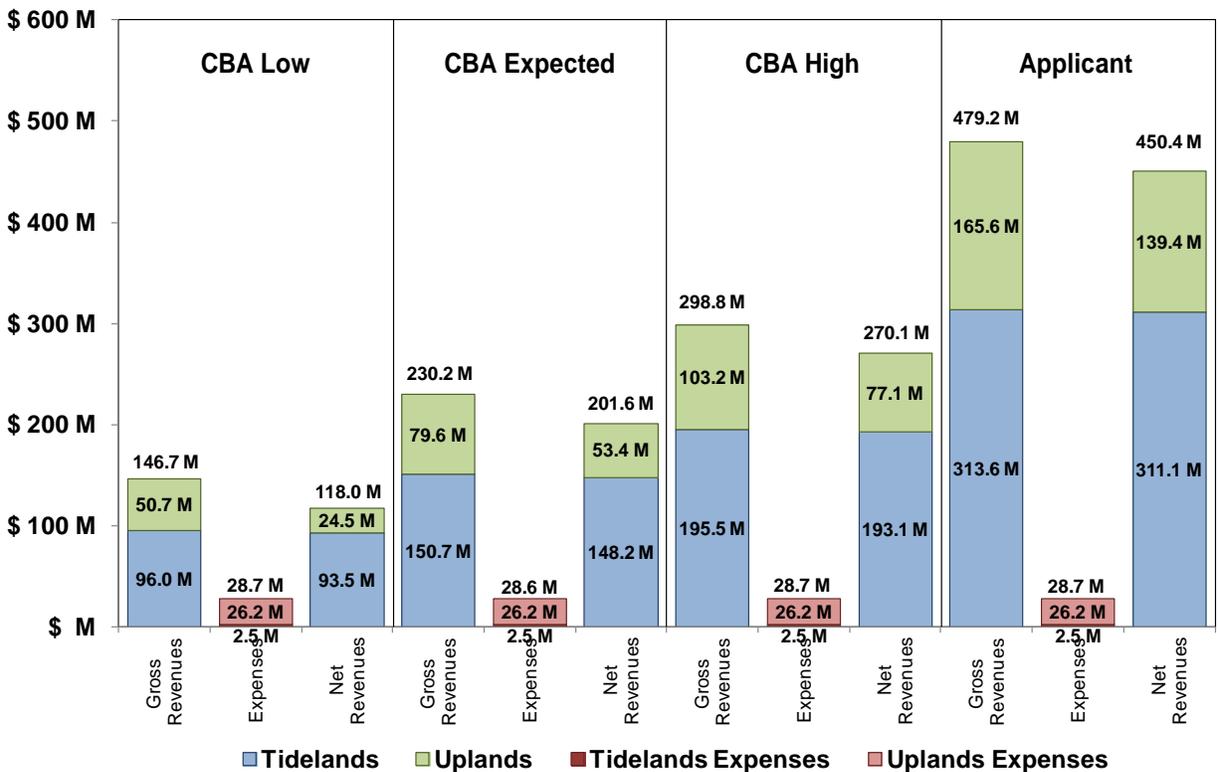
Should the Project not be approved by voters, the City will pay E&B a settlement payment of \$17.5 million. The City currently has approximately \$6.0 million or more in reserves set aside to fund City obligations related to the Project. Assuming the City would allocate these funds to the settlement payment, it may need to borrow the remaining \$11.5 million of the obligation. As discussed in detail herein, depending on the financing structure utilized, the cost of borrowing \$11.5 million is estimated to range from approximately \$825,000 per year for 30 years, to approximately \$1.1 million per year for 20 years. These financing costs could be paid through an allocation of existing City revenues, or supplemental taxes on City residents.

Should the Project be approved by the voters and the City issues a drilling permit, the City would likely pay E&B a settlement payment of \$3.5 million, temporarily relocate the City's maintenance yard, and then permanently relocate the City's maintenance yard. Under this scenario, and considering other assumptions discussed herein, the Authors anticipate that the City may have to pursue a \$7.5 million (\$2017) financing to complete the required improvements. Estimated bond payments of \$560,000 per year could likely be timed to match anticipated oil and gas revenues.

If approved, the City would be entitled to royalty revenues from oil and gas produced under the Project. Based on production estimates completed as part of this CBA, the Authors estimate that the over the 35 year life of the Project the City would realize net revenues of approximately \$118 to \$270 million (\$2014). Of this total, approximately \$25 to \$77 million (net, 21 - 29%) is estimated to accrue to the City's General Fund, and the balance to the City's Tideland Fund. Utilizing production estimates from the Applicant rather than those from this CBA, the Authors estimate that the City would realize net revenues of approximately \$450 million (\$2014), of which it is estimated that \$139 million (net, 31%) would accrue to the City's General Fund.

For reference and scale, the City's Fiscal Year 2013-14 budget is approximately \$30 million. Potential restrictions on revenues that flow either into the City's General Fund or Tidelands Funds are discussed in detail herein. A table summarizing estimated gross City Revenues, City costs, and net City revenues under the scenarios evaluated in the CBA follows in Figure 1 below.

Figure 1: Estimated Gross City Revenues, Expenses & Net Revenues (Tidelands & Uplands)



A number of alternative production revenue estimates, and additional potential City revenue and cost considerations are discussed herein.

With respect to potential revenues for the Hermosa Beach City School District, based on production estimates completed as part of this CBA, the Authors estimate that the School District would receive net revenues of approximately \$1.2 - 2.2 million (\$2014) over the life of the Project, or, assuming the production estimates from the Applicant, \$3.8 million (\$2014) over the life of the Project.

A brief description of each section of this document follows.

2.0 Background - An introduction to this report, and general information on the proposed Project.

-
- 3.0 Relevant Documents** - A summary of background documents pertinent to this analysis.
- 4.0 Potential Project Scenarios** - A summary of the primary Project related outcomes.
- 5.0 Oil & Gas Volume Estimates** - A review of the estimates of recoverable oil and gas in the oil field underlying the City of Hermosa Beach and extending out to sea one nautical mile from the mean high tide line (“Reservoir”), including prior studies, and the analysis completed as part of this CBA.
- 6.0 Oil & Gas Pricing** - A summary of oil and gas pricing projections, and values used herein. This section includes a table that assists the reader in making adjustments for potential changes in oil prices.
- 7.0 City Oil & Gas Revenues** - A series of estimates of the potential revenue that would accrue to the Uplands (City General Fund) and Tidelands funds should the Project be approved. A discussion of potential restrictions on revenues is also provided in this section.
- 8.0 Other Direct Revenues** - A discussion of other revenues the City and School District might receive should the Project be approved, including property tax on the value of the Reservoir, and the School District's net royalty revenue.
- 9.0 Direct City Costs** - A summary of the City's cost whether the Project is or is not approved, including Settlement Agreement, maintenance yard relocation, and City staffing costs
- 10.0 City Financing Considerations** - A discussion of the City's credit rating and potential financing options whether the Project is or is not approved.
- 11.0 Net City Cashflow** - A summary of the net revenues the City might expect whether the Project is or is not approved.
- 12.0 Private Property Values** - A discussion of the potential for impairment of private property values proximate to the Project Site if the Project is developed.
- 13.0 Other Potential Considerations** - A primarily qualitative discussion of other considerations including homeowner insurance rates, the City's ability to obtain green grants, and tourism in the City.
- 14.0 Economic Activity Benefits** - A brief analysis of the potential economic impacts related to the construction and operation of the Project.
- 15.0 Potential Hazard Events** - A broad discussion on the potential financial implications and considerations related to potential Project hazards.

16.0 Supplemental Document Review – A summary discussion of information and documents made available and reviewed subsequent to the preparation of the Draft CBA.

2.0 Background

As previously introduced, the City of Hermosa Beach is in the process of evaluating a proposal by E&B to develop the Project within the City. As part of the City's evaluation, the City retained Kosmont Companies ("Kosmont") and sub-consultant CGEOIL, LLC (collectively "Kosmont Team", or "Authors") to prepare this report to evaluate the potential financial costs and benefits to the City of the Project. A general introduction to this report, information that serves as a primer for the reader, and a description of the overall Project follows. A list of definitions and defined terms is provided in Appendix A.

2.1 Purpose of Report

This Cost Benefit Analysis ("CBA") is intended to provide the reader with an estimate of the potential financial costs and benefits of the Project to the City of Hermosa Beach, primarily based on whether voters of the City approve, or do not approve the Project. Within these two potential outcomes a series of alternative scenarios are evaluated and discussed. While this report does not quantify every potential financial impact, it does attempt to quantify the factors that could have a significant impact on City revenues and expenditures. In some cases quantification of potential costs or benefits are beyond the scope of this document, however, some qualitative discussion is provided for consideration. An overview of context of this CBA, and general Project information follows.

2.2 Project History

The currently proposed Project and financial terms related thereto are primarily the result of a legal settlement between the City, Macpherson Oil Company ("MOC"), and E&B Natural Resources Management Corporation. The Authors provide the following excerpt from the March 2012 Settlement Agreement as an introduction mutually agreed upon by MOC, E&B, and the City.

"A. Macpherson and City entered into an oil and gas lease in 1986 and subsequently entered into an amended and restated oil and gas lease in 1992, the Lease that, among other things added the City-owned Tidelands to the leased lands, all in order to allow Macpherson to engage in a directional well oil drilling project that would be conducted from an urban drill site to be installed and located on the City maintenance yard property (the "Oil Project"). The City certified an Environmental Impact Report for the Oil Project in 1990. The City secured the approval of the Lease from the California State Lands Commission in 1992, and the reapproval of the Lease from the California State Lands Commission in 1994. The City issued Conditional Use Permit No. 93-5632 to Macpherson for the Oil Project in 1993, and at the same time certified an addendum to the previously-certified Environmental Impact Report to accommodate several minor changes to the Oil Project. Macpherson also obtained all of the necessary Permits to Construct for the Oil Project from the South Coast Air Quality Management District. In November, 1995 the residents of the City passed City Measure E, an initiative measure that banned oil drilling in the City. In early 1998, and notwithstanding the passage of

Measure E, the California Coastal Commission authorized issuance of Coastal Development Permit No. E-96-28 to Macpherson for the Oil Project, subject to conditions. Later in 1998 the City Council made a determination that the Oil Project as then constituted posed an unacceptable public safety risk.

B. Macpherson filed a cross-complaint for breach of the Lease seeking monetary damages against City in late 1998 in the case entitled *Hermosa Beach Stop Oil Coalition et. al. v. City of Hermosa Beach Los Angeles County Superior Court Case No BC172546* (the "Action"). The California Court of Appeal ruled in the Action that Measure E both applied to the Oil Project and that its passage entitled Macpherson to sue the City for monetary damages. The Los Angeles County Superior Court in 2008 subsequently ruled that City's adoption of Measure E constituted a breach of the Lease and scheduled a trial to determine the amount of Macpherson's damages. The Court of Appeal thereafter ruled that the City's 1998 determination that the Oil Project as then constituted posed an unacceptable public safety risk may constitute a defense to Macpherson's damages claim if the evidence presented at trial satisfies the limitations upon the defense set forth by the Court of Appeal. The trial on Macpherson's cross-complaint is now scheduled to commence in early April 2012. At trial Macpherson will be seeking damages against City in excess of \$700 Million.

C. E&B is an unrelated third-party oil company that has investigated the Oil Project and wishes to pursue it. EB has approached the City and Macpherson with a plan to settle the Action between the City and Macpherson and provide E&B with a potential opportunity to proceed with a state-of-the-art directional well oil drilling project conducted from an urban drill site located on City's maintenance yard property. E&B proposes a settlement payment to Macpherson to compensate Macpherson for an assignment to E&B of Macpherson rights to the Oil Project and termination of the Action in return for (1) the opportunity to persuade City electorate that a state-of-the-art directional well oil drilling project conducted from City maintenance yard can be accomplished safely and with financial benefits to all of the Parties and (2) for full or partial repayment to E&B by the City of a portion of the settlement payment E&B makes to Macpherson. Due to technology and operational advancements in the past 15 years made by the oil and gas industry related to safety and efficiency of oil and gas production it is E&B's strong belief that both the residents of City and E&B can greatly benefit by allowing for the development of the oil and gas reserves under the lease(s) assigned to E&B.

D. City is willing to place on the ballot a measure that would afford its electorate the opportunity to consider whether to resurrect a directional well oil drilling project from City's maintenance yard, in exchange for termination of the Action and payment to E&B of certain amounts contingent on the outcome of the ballot measure and establishing the ongoing potential for a very substantial revenue stream to be generated for City and the Hermosa Beach School District as a result of the payment to City and School District of royalties in association with the production of oil and gas reserves by E&B. Macpherson is willing to settle the Action and assign to E&B its rights to the Oil Project in return for the settlement payment together with the royalty interest to be assigned by the City to Macpherson and the overriding royalty interest to be reserved to Macpherson from its assignment to E&B, all as set forth below in this Agreement.

E. Settlement of the Action would serve to eliminate the risks and costs associated with continued protracted litigation and would return to the electorate the question of whether the public interest would be best served by either approval of the oil drilling project or payment of a settlement."

2.3 Overview of Areas Evaluated in CBA

As introduced, this CBA focuses on the major financial costs and benefits to the City with and without the Project. Primary areas evaluated are as follows:

- If the Project is approved
 - A settlement payment
 - Costs associated with the temporary and permanent relocation of the City maintenance yard
 - Property tax revenues based on the value of the Reservoir (defined subsequently)
 - City oil and gas royalty and drill site lease payments
 - Potential decreases in property tax revenues from properties proximate to the Project Site
 - Indirect impacts
 - Other qualitative considerations
- If the Project is not approved:
 - A settlement payment

2.4 Limitations of Analysis

The City revenues estimated herein are primarily tied to the potential production of oil and gas from the oil field underlying the City of Hermosa Beach and extending out to sea one nautical mile from the mean high tide line (“Reservoir”). Given (i) the general uncertainty of recovery rates for oil and gas projects, (ii) lack of precise test information available on the potential oil and gas Reservoir volume, and (iii) general variability in oil and gas prices, projections contained herein should be considered as order of magnitude estimates, rather than predictions of specific results.

Additionally, other areas of analysis are based on a variety of variables, projections, and estimates, which include assumptions that represent the Authors' best estimates. In some cases assumptions are based on limited information. In all cases the estimates contained herein should be considered as order of magnitude estimates. In areas where qualitative discussion is provided the reader may have to make its own conclusions, informed by this document, as to the potential impacts of the Project.

The reader is encouraged to review this CBA in its entirety to fully understand all assumptions and the complete context of information presented.

The information herein is presented in a manner to simplify interpretation. There are many technical nuances to the calculations and analyses applied. Notes about various assumptions and considerations required to complete the analyses are provided throughout the document.

2.5 CBA Terms and Concepts

Defined terms and concepts are utilized throughout this report. An introduction to the most pertinent terms follows, and a full reference list of defined terms and acronyms is provided in Appendix A.

Financial Terms

Cashflow – Generally, a positive or negative amount of money received or expended at or over a particular point in time.

Discount Rate – Used in discussion and calculation of the present value of a future cashflow. A discount rate is often applied to a series of future cashflows that are projected to result from an investment *today*. The discount rate is usually expressed as an annualized percentage, and generally represents the value to an individual or entity of a dollar *today* (current dollar value) versus a dollar at a future point in time (future value). The discount rate for a given entity varies based on a number of factors including that entity's borrowing costs, the perceived or actual risks of a particular investment, the amount of time that capital will be inaccessible, and/or the amount of time over which an investment is expected to generate cashflow. For the purposes of estimating the present value of potential future City revenues and expenditures, the Authors assumed a discount rate of 3%, which was assumed to be generally in line with the rate of inflation over the next approximately 35 years.

Future Value – (“FV”) Generally, the sum or total value of one or a series of cashflows in the future, expressed in (nominal) dollars at that future point in time.

Nominal Dollars – Values expressed in nominal dollars that are not adjusted for the impacts of inflation.

Present Value – (“PV”) Present value is the current value of one or more (typically) future cashflows. Generally, the impacts of inflation or a required return on investment make a dollar *today* worth more than a dollar in the future. The present value of a series of cashflows is the sum of the present value of a given future cashflow calculated based on an applicable discount rate.

Real Dollars – Given the impacts of inflation, the purchasing power of a dollar tends to decline over time. Values expressed in real dollars are actual (“Nominal”) historic or projected future dollar amounts adjusted to eliminate the historic, or future projected impacts of inflation. In essence, when a figure is expressed in \$2014 herein, that figure represents the estimated present value of a one or more future cashflows.

Rounding Errors – In this document figures are often rounded to differing levels of significant digits for ease of reading. When rounded sums are added they may not equal the rounded sum of the unrounded values. Calculations herein are based on unrounded values from the same data sets, but results of calculations are often presented as rounded values that may not

precisely match based on differing levels of rounding (i.e. rounded to the nearest thousand versus to the nearest ten-thousand).

Geologic Terms

Gas - Within the context of this document gas refers to natural gas expected to be produced from the Reservoir. The term gas as used herein does not refer to gasoline.

Reservoir – The oil field underlying the City of Hermosa Beach and extending out to sea one nautical mile from the mean high tide line.

2.6 Project Description

As proposed, the Project is comprised of the drilling and operation of up to 30 oil wells and up to four water injection wells at the location of the City's existing maintenance yard. For an abundance of clarity, based on discussions with the City it is the Authors' understanding that the Project does not include the extraction process commonly referred to as "fracking". The Project would include four distinct phases. A detailed description of each phase of the Project can be found in Section 2.0 of the Environmental Impact Report ("EIR") and summary description of each phase follows below.

Phase 1: Site Preparation

The primary activities of Phase 1 of the Project include the temporary relocation of the City maintenance yard to a location adjacent to City Hall, clearance of the Project Site, and installation of perimeter fencing, a well cellar, and a 32 foot sound attenuation wall at the Project Site. Phase 1 is expected to last approximately six to seven months.

Phase 2: Drilling & Testing

During Phase 2 a drill rig would be set up on the Project Site, and temporary production equipment would be installed. In addition, during this phase three test wells and one water injection well would be drilled. For reference, some production of oil from the wells would be expected during this phase. Information collected from the test wells would be used to estimate Reservoir volumes, and potential recovery rates. With this information E&B would decide whether or not to proceed with additional drilling, and if so, what areas of the Reservoir to drill in a subsequent phase. Drilling during Phase 2 is expected to last approximately three to four months, and testing during the phase is expected to last approximately seven to nine months. In this report it is assumed that drilling in Phase 2 would begin in 2016.

Phase 3: Final Design & Construction

If E&B determines that it is economically viable to proceed with drilling additional wells, E&B would proceed with the construction of permanent site and production improvements. Phase 3

Figure 3: Project Site and New City Yard Site Location



The Project as proposed would be developed on the existing City maintenance yard at 555 6th Street ("Project Site"). The Project Site is located at the northwest corner of the intersection of 6th Street and Valley Drive, and is approximately 1.3 acres. As part of the Project, the City's existing maintenance yard would be temporarily relocated to the City Hall property at 1315 Valley Drive. If E&B decides to proceed with Phase 4, a permanent facility is proposed to be constructed immediately south of City Hall on City owned property at 552 11th Place ("New City Yard Site"). For reference, the New City Yard Site is currently leased to a self storage operator.

Project Site – The Project Site is a 1.3 acre portion of the ~1.6 acre (~69,200 square feet) property currently underlying the City maintenance yard, which is the proposed location for the Project. The Project Site is located at 555 6th Street in the City, and is identified by Los Angeles County Office of the Assessor ("LACO") Assessor Parcel Number ("APN") 4187-031-900. A parcel map identifying the footprint of the proposed Project Site follows in Figure 4 below.

Figure 4: Project Site Parcel Map



New City Yard Site – The New City Yard Site is located immediately south of City Hall. It is currently utilized for a self storage operation, and is the proposed location for the permanent relocation of the City maintenance yard under the Project. The New City Yard Site is located at 552 11th Place, in the City, and is primarily comprised of the 34,897 square foot parcel identified by the LACOA APN 4187-020-907, as well as an approximately 10,350 square foot portion (~150' x 69') of LACOA APN 4187-020-904. A map illustrating the lot is provided in Figure 5 below.

Figure 5: New City Yard Parcel Map



3.0 Relevant Documents

A number of legal agreements and other reports provide framework for the evaluation of potential fiscal costs and benefits of the Project. Documents most pertinent to this CBA are identified below, and a brief discussion of terms relevant to this analysis is provided for each. Additional documents are referenced in specific discussions herein when relevant.

3.1 Legal Agreements

A summary of pertinent legal agreements follows. For abundance of clarity, the CBA Team is not a law firm and does not provide legal counsel. The interpretation of documents by the CBA Team should not be considered legal advice and/or conclusions of law.

Oil Lease

The Oil Lease between the City and Windward Associates, L.P., and GLG Energy, L.P. (dated January 14, 1992, "Oil Lease") provides general terms related to the lease of the Project Site for oil production, as well as the City's royalty and drill site lease rights. Terms of the Oil Lease most pertinent to this CBA are as follows:

- Section (1)(b) – The Oil Lease shall not exceed 35 years
- Section (2)(b)(1) – A minimum royalty provision begins in the fourth year after the date of completion of the first well. Beginning the 13th year after the date of completion of the first well, the minimum royalty shall be based on 10% of the fair market value ("FMV") of the Project Site, adjusted annually
- Section (2)(b)(1)(a) – The FMV of the Project Site shall be evaluated based on the highest and best use of Project Site in an M-1 zone (other than for use in producing oil)
- Section (2)(b)(2) – A maximum credit against the minimum royalty of \$281,250 each year shall come from Tidelands royalties
- Section (3)(a) - Royalties are paid monthly
- Section (11) - Lessee (E&B) is responsible for paying possessory interest taxes
- Section (12) - City shall temporarily relocate the maintenance yard during test drilling, and permanently relocate it if there will be long-term production
- Section (12)(f) - Lessee is restricted to no more than 30 (oil and gas) wells
- Section (13)(a) - Lessee shall advance the City \$21,000 to evaluate the relocation of the maintenance yard
- Section (13)(c) - Lessee shall advance the City \$75,000 for the temporary relocation of the maintenance yard, and monthly rent of up to \$2,500 per month for temporary facilities
- Section (13)(c)(1) – The City shall remove and remediate the underground storage tank on the Project Site
- Section (13)(d) - Lessee shall advance \$500,000 for the permanent relocation of the maintenance yard

-
- Section (13)(d)(4) – Advances are loaned at the lower of 12% or the prime rate, with interest calculated as simple interest, and solely to be repaid from royalties, paid first from Tidelands royalties as permitted by law. 50% of the City's royalty share shall be allocated to pay off any advance until repaid in full
 - Section (13)(d)(5) - If the lease is terminated, any unpaid advances have to be repaid, but repayment is capped by all royalties actually received by the City
 - Section (18)(a) - Lessee is liable for damage to the Reservoir
 - Section (18)(b) - Lessee shall provide and maintain liability insurance of not less than \$5,000,000 per occurrence
 - Section (18)(c) - City shall pay 1/2 of costs of defense against use of non-Tidelands royalties to pay back advances, City shall pay 100% of costs related to defense against claims related to the use of Tidelands royalties
 - Section (18)(d)(1) - An Emergency Trust Fund of up to \$6,000,000 shall be established, funded by both parties within 10 years after the commencement of the obligation to pay into the Emergency Trust Fund
 - Section (18)(d)(2) - Lessee shall contribute 5% of net profits received each month to the Emergency Trust Fund until it reaches \$4,000,000, but allocation shall begin no later than four years after the commencement of the Development and Production phase (Phase 4)
 - Section (18)(d)(3) - City shall contribute 5% of net profits received each month to the Emergency Trust Fund until it reaches \$2,000,000, but allocation shall begin no later than four years after the receipt of royalty payments (other than minimum royalty)
 - Section (20)(e) - If environmental remediation of existing contamination on the Project Site costs in excess of \$50,000, then Lessee shall have the right to pay up to \$50,000 to remediate the Project Site. If costs exceed the combined \$100,000 then the additional cost may be provided as an advance by Lessee

Settlement Agreement

The Settlement Agreement and Release between Macpherson Oil Company, Windward Associates, E&B Natural Resources Management Corporation, and the City of Hermosa Beach (dated March 2, 2012, "Settlement Agreement") discusses the terms of the legal settlement between the parties. Pertinent elements of the Oil Lease are provided below; additional references are provided in this document.

- Section 4.3(c) - E&B provides an advance of \$17.5 million to the City to fund the City's \$17.5 million contribution to the overall \$30 million settlement with MOC (E&B pays the balance)
- Section 4.4(b) - Generally, should voters approve the Project, upon issuance of a drilling permit for the Project E&B shall forgive \$14 million of its \$17.5 million advance to the City for the settlement payment. If the City cannot issue a drilling permit as the sole result of action or inaction taken by and under the control of E&B then E&B shall also forgive \$14 million of the \$17.5 million.
- Section 4.6(b) - Should voters approve the Project, the City will owe to E&B a settlement payment of \$3.5 million generally payable from City oil and gas revenues

-
- Section 12.3 - 345 days remain in the Primary Term of the Oil Lease and the Primary Term is, generally, suspended until all approvals required for drilling are obtained. For reference, under Section 1(c) of the Oil Lease the Primary Term shall not exceed two years. In application to production estimates, the Authors generally interpret this to mean that the Oil Lease will remain in effect for 34 years from the commencement of drilling.
 - Municipal Corporation Grant Deed ("MOC Grant", Mineral Rights Only) - In general, City provides to MOC a 3.33% royalty on Royalty Substances produced from the Project Site.

CSLC MOU

The Memorandum of Understanding between the City and the California State Lands Commission (dated May 11, 1993, "CSLC MOU") provides prior acknowledgement of the Oil Lease terms by the CSLC. Some of the key provisions follow below; additional references are provided in this document.

- Paragraph 3 – The CSLC acknowledges the allocation of portions of Tidelands royalties to Uplands funds as drill site lease payments
- Paragraph 7 - The CSLC acknowledges repayment of advances based on a 70/30 allocation of royalty revenues from the Tidelands / Uplands respectively
- Paragraph 9 – The CSLC acknowledges funding of the Emergency Trust Fund based on a 70/30 allocation of royalty revenues from the Tidelands / Uplands respectively

3.2 Other Reports & Documents

Temporary City Yard Relocation Cost Estimate

The City of Hermosa Beach City Relocation Yard Study Interim Corporate Yard Relocation Opinion of Cost & Schedule (Jacobs & Yuang, Inc., prepared January 3 2014, "Temporary City Yard Relocation Cost Estimate") provides an evaluation of the potential cost of temporarily relocating the City's maintenance yard to the City Hall site at 1315 Valley Drive during Phase 1 of the Project.

Permanent City Yard Relocation Cost Estimate

The City of Hermosa Beach City Relocation Yard Study (Jacobs & Yuang, Inc., prepared November 2, 2013, revised November 26, 2013, Permanent City Yard Relocation Cost Estimate) is an evaluation of the potential cost of permanently relocating the City's maintenance yard to the New City Yard Site immediately south of City Hall.

School District Oil Lease

The Authors understand that an oil lease exists between Hermosa Beach City School District ("School District") and Macpherson Oil Company ("School District Oil Lease"). The Authors did

not review this document, however understand that the rights and obligations of this lease have been assigned from MOC to E&B, and that the lease provides that the School District shall receive a royalty of 12.5% of its prorated share (based on land ownership) of all oil and gas produced in the Uplands.

School District Oil Lease Amendment

The Amendment to Subsurface Oil & Gas Lease between the Hermosa Beach City School District and Macpherson Oil Company (dated August 6, 1991, "School District Oil Lease Amendment") amends the School District Lease to increase royalty revenues for the School District. The Authors understand that the rights and obligations of this lease have been assigned from MOC to E&B. Under the School District Oil Lease Amendment the School District is to receive, in addition to the royalties under the School District Lease, a barrel tax of \$0.20 per barrel of oil produced.

BRG Report

The Potential Impact of a Proposed Oil & Gas Development Project on the City of Hermosa Beach Phase I Report (dated March 2013, "BRG Report") was prepared by the Berkley Research Group on behalf of E&B. As potential conflict of interest may be relevant to readers of that document, BRG provided the following statement (on page two):

"We were retained by E&B to conduct this analysis. The authors of this report, however, are not allied with E&B, and take no position on whether the voters of Hermosa Beach should approve the proposed project. Our sole objective in preparing this report is to help voters and other residents better understand the proposed project's likely economic and fiscal consequences. When we were retained to perform this analysis, E&B gave us full control over the methodology we used and the analytical framework we employed, and our findings and conclusions are in no way affected by E&B's sponsorship of the proposed project. Nor do our findings and conclusions necessarily reflect E&B's views."

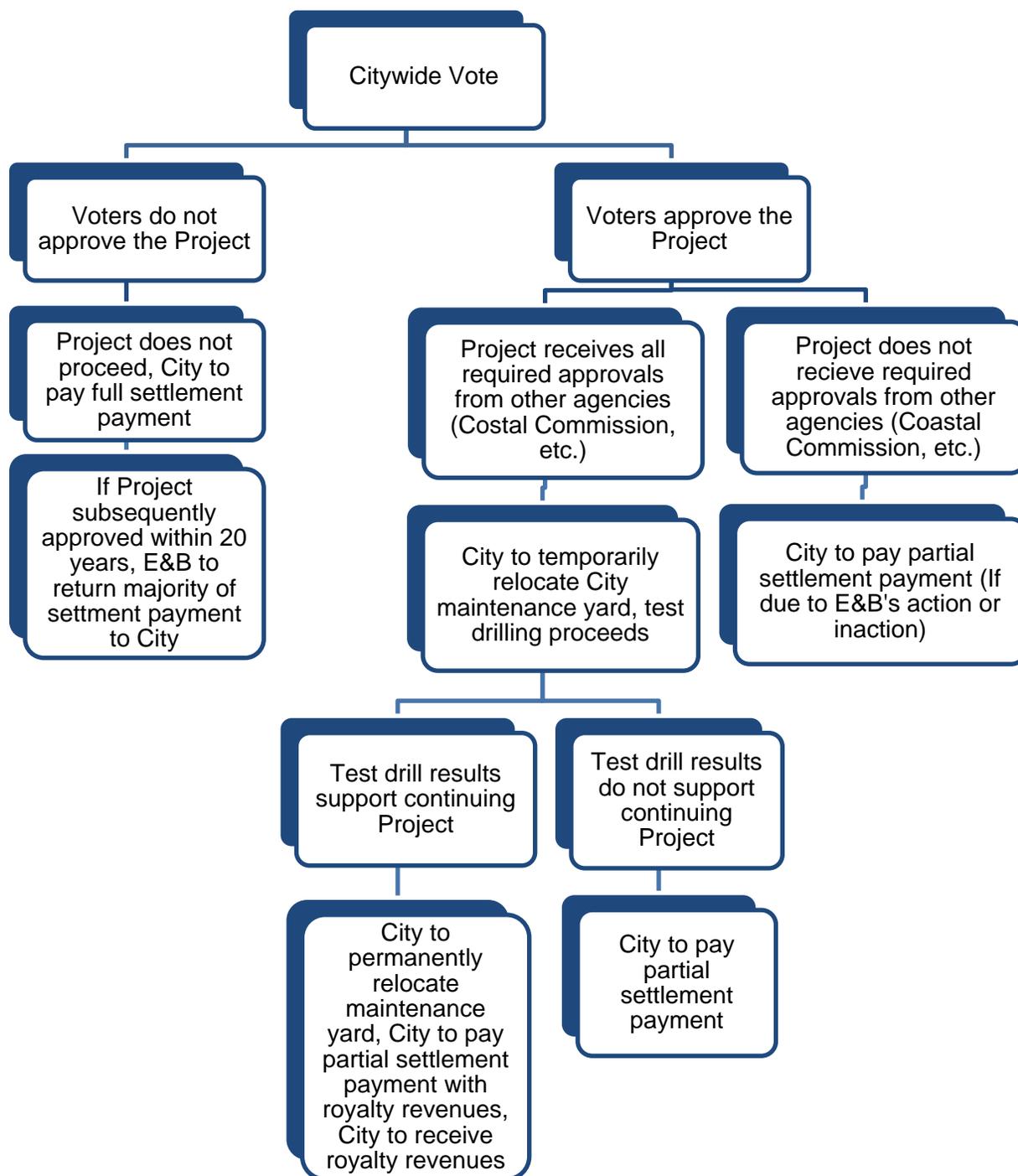
The Authors assume that the BRG Report is not prejudiced. Certain differences in methodology, assumptions and conclusions exist between this CBA and the BRG Report, however, the Authors conclude that these differences do not represent discrepancies of fact.

4.0 Potential Project Scenarios

At the highest level, whether or not the Project proceeds is subject to a citywide vote. Generally, should voters not approve the Project, the City will pay \$17.5 million to E&B. Generally, if within 20 years voters subsequently approved the proposed Project, E&B would return to the City \$14.0 million of the \$17.5 million settlement payment.

Should voters approve the Project, E&B will first have to secure approvals, and agree to any conditions of approval from other regulatory bodies, including the California Coastal Commission, Division of Oil, Gas and Geothermal Resources ("DOGGR"), South Coast Air Quality Management District ("SCAQMD"), and CSLC. Should E&B receive all required permits, the City will independently secure approvals from regulatory bodies including the California Coastal Commission, and temporarily relocate the City maintenance yard to a location adjacent to the existing City Hall. E&B will then proceed to install temporary improvements on the Project Site and drill three test wells and one water injection well to evaluate the potential volume of recoverable oil and gas in the Reservoir. If based on the results of the test drilling, E&B decides to continue with the Project, the City will then permanently relocate the City maintenance yard to the New City Yard Site adjacent to City Hall, and complete the environmental remediation of contamination that currently exists on the Project Site and on the New City Yard Site. E&B will then install permanent production facilities on the Project Site, and complete the drilling of 30 additional wells (for a total of 34 wells including the four water injection wells). The Project will then shift into ongoing production, and would be expected to generate oil and gas royalty revenues for the City over 34 years following the completion of the first test well. A summary of the primary scenarios evaluated herein are presented in the flowchart in Figure 6 below. The potential outcomes presented in Figure 6 are summary in nature. Additional potential outcomes and iterations of outcomes are discussed in greater detail throughout this document.

Figure 6: Flowchart of Primary Potential Outcomes



5.0 Oil & Gas Volume Estimates

As part of this CBA, the Authors reviewed existing information on the Reservoir, and prepared an estimate of the volume of recoverable oil and gas. Estimates are based on the professional opinion of a licensed geologist at CGEOIL, LLC on the Kosmont Team. A discussion of the information reviewed, estimation methods utilized, and resulting estimates of recoverable oil and gas follows.

5.1 Prior Reports Reviewed

A number of estimates of the potential oil and gas production volumes recoverable from within the Reservoir have been prepared over the years. The Authors utilized underlying data and information from these reports to generate the production volume estimates contained herein. For an abundance of clarity, the estimates of potential Reservoir volume and production in this CBA are the Authors own independent conclusions reached by an analysis of data, and as such, do not rely on the opinions or conclusions included in other reports. Reports reviewed in the preparation of this CBA include:

- Hacker (1984)
- Hacker and Hacker (1986)
- Hacker and Hacker (1988)
- Morris (1993)
- Intera (1996)
- Intera (1997)

References to these reports are made throughout this document, typically by reference to the author and year. A discussion of additional documents reviewed subsequent to the preparation of the Draft CBA can be found in Section 16.0.

5.2 Geologic Setting

Pursuant to Hacker (1984) the geologic setting of the City is generally described as follows:

"The City of Hermosa Beach lies on the northwestern end of the Wilmington Torrance Redondo Beach structural trend which is sub-parallel to the Newport Inglewood right lateral fault. This trend consists of a southeast plunging anticline feature which is more than 20 miles in length and as much as 3 miles in width at its maximum in the Wilmington Oil Field Area. The City of Hermosa Beach overlies the northwesterly extension of this geological trend.

The three major zones of oil production in the Torrance Oil field are the Upper Main, the Lower Main, and the Del Amo zones. The Upper Main zone conformably overlies the Lower Main zone and underlies the variable thickness of the Repetto and 'poker chip

shale' beds of Upper Miocene age. The uppermost part of the upper Main zone consists of interbedded thin sands and shales. The remainder of the Upper Main zone consists of fractured Puente shale.

The Lower Main zone overlies the Del Amo zone and consists of similar sediments as the lower part of the Upper Main zone – thin bedded fine grained sand layers and fractured shales.

The Del Amo consists of dark brown, fractured shale with thin interbeds of limestone and dolomite and some thin sands. Oil production is from the fractures and some of the thin sand beds."

Limitations of Data

All the reports evaluated are based on very limited information of the geology underneath the City. In determining the geology and the possible oil reserves accessible within the City, information from adjacent wells in the City of Redondo Beach was utilized. Some additional wells surrounding the City exist, though they have not been instrumental in defining the geology. Additionally, the information obtained on the nearby wells in the City of Redondo Beach has been limited. Well log information, initial production rates, and some ditch samples exist, but no core description, core analysis, or additional logging information (Gamma, Neutron, etc.) could be located. With these limitations, some of the parameters used in the previous reports were reviewed for reasonableness and are assumed to be correct and utilized in this report as additional information was not available.

Well Course - Directionally drilled wells such as the ones drilled offshore of the City of Redondo Beach utilize a directional report to determine the location of the well. Measurements are taken down the well to determine lengths and angles along the well path to create the report. The use of declination (using magnetic north rather than true north) is a critical factor in the final report. Many of the wells offshore of Redondo Beach utilized a 16 degree declination for calculating well location. Declination has been shown to change with time, and as an example, the declination factor for the offshore area of Redondo Beach is now close to 14 degrees. Though many of the wells offshore Redondo Beach should be recalculated with a different declination factor, thereby changing their well courses somewhat, this was not accomplished. Not all of the declination factors could be located for each of the wells utilized in this analysis.

Faulting - Previous reports have shown some geologic faulting, especially the location of the Newport Inglewood Fault zone on the far western edge of the Project. Due to a general lack of information, the complexities of determining faulting, and the concept that the faulting would ultimately not change the volumetric model significantly, faults were not incorporated.

CBA Volume Estimate Assumptions

This report makes the following assumptions:

- The structure of the Torrance field carries into the City of Hermosa Beach
- The sands in the Upper Main, Lower Main, and Upper Del Amo zones that are present under the City of Redondo Beach continue north into the City of Hermosa Beach
- Some reservoir pressure exists
- Reservoir pressure will be an issue with the thin sand layers and lack of pressure support. Oil production performance will decline if pressure decreases sufficiently to form gas caps in the reservoir.
- Faulting is not complex and has not confined the area into small reservoirs
- Drainage from the Reservoir under the City to the south (i.e. towards Redondo Beach) has not been significant

5.3 PRMS Classification System

The Society of Petroleum Engineers, American Association of Petroleum Geologists, World Petroleum Council and other organizations have standardized and determined a petroleum resources management system ("PRMS") in an effort to provide a consistent approach to estimating petroleum quantities, evaluating development projects, and presenting results within a comprehensive classification framework. The PRMS classifies the major categories of chance of commerciality, with the most certain being classified as "Reserves". The decreasing certainties of commerciality are "Contingent Resources", "Prospective Resources", and "Unrecoverable". The description of each from the PRMS is listed below.

Reserves - Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must further satisfy four criteria: they must be discovered, recoverable, commercial, and remaining (as of the evaluation date) based on the development project(s) applied. Reserves are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by development and production status.

Contingent Resources - Contingent Resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies. Contingent Resources may include, for example, projects for which there are currently no viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their economic status.

Prospective Resources - Prospective Resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both an associated chance of discovery and a chance of development. Prospective Resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity.

Unrecoverable - Unrecoverable is that portion of Discovered or Undiscovered Petroleum initially in place which is estimated, as of a given date, not to be recoverable by future development projects. A portion of these quantities may become recoverable in the future as commercial circumstances change or technological developments occur; the remaining portion may never be recovered due to physical / chemical constraints represented by subsurface interaction of fluids and reservoir rocks.

5.4 Classification of City Reservoir

It is the Authors' conclusion that the oil and gas in the Reservoir should be categorized as Contingent Resources. A number of criteria are missing to consider classifying the oil and gas under the City of Hermosa Beach as Reserves. Most notably, the criteria of "Evidence that legal, contractual, environmental and other social and economic concerns will allow for the actual implementation of the recovery project being evaluated" has not been met. However, the hydrocarbons under the City are part of the Torrance Oil Field which has proven in the past and continues to be a commercial success. Additionally, the continuation of the geologic structure, the sands, and the same oil / gas type is present north of the City of Redondo Beach. Even with very little information present, the oil and gas under the City of Hermosa Beach would not be considered a Prospective Resource since it is still part of the same oil field as is in the City of Redondo Beach.

5.5 Reservoir Estimate Probability

Typically, evaluations require an application of a set of forecast conditions (costs, prices, etc.) that are consistent to estimate quantities recovered. The PRMS states in part that:

"In many cases, a combination of approaches is used. Use of consistent terminology promotes clarity in communication of evaluation results. For Reserves, the general cumulative terms low/best/high estimates are denoted as 1P/2P/3P, respectively. While the categorization criteria are proposed specifically for Reserves, in most cases, they can be equally applied to Contingent and Prospective Resources conditional upon their satisfying the criteria for discovery and/or development. For Contingent Resources, the general cumulative terms low/best/high estimates are denoted as 1C/2C/3C respectively.

- *There should be at least a 90% probability (P90 or 1C) that the quantities actually recovered will equal or exceed the low estimate.*

-
- *There should be at least a 50% probability (P50 or 2C) that the quantities actually recovered will equal or exceed the best estimate.*
 - *There should be at least a 10% probability (P10 or 3C) that the quantities actually recovered will equal or exceed the high estimate."*

This report has taken into account the uncertainty in resource estimates and has reported a range of potential results based on the assumptions as stated for 1C, 2C, and 3C.

5.6 Volume Estimating Process

In preparing the volume and production estimates utilized herein, the Authors completed the following process:

- Input well name, well API number, well surface location, Kelly height
- Input well directional survey
- Scan well log information and calibrate
- Determine well marker information (Top Main, Lower Main, Del Amo, and Lower Del Amo)
- Construct structure maps
- Determine gross thickness maps
- Determine oil sand pay in each well
- Construct oil sand pay maps
- Determine volumetrics of Top Main, Lower Main, and Upper Del Amo zones
- Determine possible well production by time

5.7 Reservoir Volumetrics

Both the Intera (1996) and the Morris (1993) reports utilized the mapping from the Hacker reports (Hacker 1984, Hacker and Hacker 1986 and 1988) to determine the volumetrics of oil in the Reservoir. This CBA utilized the raw data available to create maps to determine volumetrics. It should be noted that the Intera (1997) report of volumetrics of the Torrance oil field under the Tidelands area of the City of Redondo Beach used the available production information to construct a material balance model. The inclusion of historical production rates by well to determine a material balance and the resulting reserve estimate was reviewed as a check against simply utilizing volumetric mapping. For reference, Intera reduced the net/gross ratios from 0.3 for all the zones to the following:

"Original oil in place (OOIP) – layer net/gross ratios were adjusted to obtain the initial oil in place indicated by the material balance studies performed by Intera...the net/gross ratios for the three zones were 0.14, 0.17, and 0.06 for the Upper Main, Lower Main, and the Del Amo respectively."

The original OOIP (in stock tank barrels / 1,000,000) for the 1996 Intera report, a recalculated volume based on the net/gross numbers from the 1997 Intera report and the volumetrics from

this report are provided in Table 1: Original Oil in Place for Each Major Zone below, and additional discussion of interpretation follows.

The approximation of oil volumes in the Reservoir can be accomplished in a variety of ways. The Intera reports relied on a net/gross percentage to determine the amount of oil sands in each layer. A more rigorous procedure is to determine each sand layer in the reservoir and the oil/water contact for each sand layer. This CBA relied on summing each of the oil sands shown on the electrical log for each of the three zones. Without actual cores or core photographs to baseline an electric log, the process is only an approximation since some electric log responses will mimic an oil sand, but could instead be a calcareous hard layer, diatomaceous layer, or other similar non-oil bearing layer.

As previously introduced, the 1997 Intera report included a material balance model of the offshore Redondo Beach wells, but to match production amounts and calculated OOIP, the models net/gross ratios had to be reduced from the parameters used in the 1996 Intera volumetric based report. In the Intera 1996 report, one of the variables used to determine OOIP for each of the major zones appears to be mislabeled, the value of the variable is not correct, or the variable was not used properly. The logic of determining OOIP within the Intera reports was maintained in Table 1 below, but cannot be agreed with at this time. As such, the Intera 1996 volumes were decreased accordingly (recalculated) using the 1997 net/gross ratios.

The results of this recalculating, as well as the baseline OOIP from the analysis completed for this CBA follows in Table 1.

Table 1: Original Oil in Place for Each Major Zone (Million Stock Tank Barrels)

	Intera 1996			Intera 1996 (Recalculated)		
	Tidelands	Uplands	Total	Tidelands	Uplands	Total
Upper Main	70.06	7.52	77.58	33.82	4.26	38.08
Lower Main	105.00	7.30	112.31	41.74	2.90	44.65
Del Amo	28.70	0.07	28.77	4.89	0.01	4.90
Total	203.76	14.89	218.65	80.45	7.18	87.63

	This CBA		
	Tidelands	Uplands	Total
Upper Main	33.32	15.27	48.59
Lower Main	71.25	15.59	86.83
Upper Del Amo	10.37	1.04	11.41
Total	114.93	31.90	146.83

Note to Table 1: Table 1 above shows the amount of oil in place as estimated in this CBA, as well as the results of the Intera 1996 report and recalculations of the Intera 1996 report performed by the Authors. The information from the Intera report is included as it was utilized by the Authors as a cross check to the Authors independent calculations. Only the estimates completed by the Authors are included in this CBA. For an abundance of clarity the three sets

of figures above do not relate to the CBA Low, Expected, and High scenarios discussed subsequently.

A determination of the oil volumes in the Lower Del Amo and the Schist were not accomplished. The complexities for both zones and the complete lack of information as to the reservoir types, type of fracture system, determination of sands if any, aerial extent, existence of oil water contacts, and lack of other information did not allow for a determination of an oil volume. Additional discussion is provided in the note to Table 3 on page 27.

5.8 Recovery Factor

The recovery factor is the total amount of oil that can be recovered from the Reservoir relative to the overall Reservoir volume. The recovery factor is a theoretical percentage based on known engineering / geological relationships. The actual amount of oil produced from an oil field is constrained by many variables, though the key ones are capital investment costs (well, facilities, etc.), cost of operations (taxes, personnel, lifting fluid to surface, processing, etc.) and the return on the investment (price of oil, oil production, etc.). The operator will bear all capital and most operational costs for this Project.

The Wilmington oil field currently has a recovery factor of about 30% (approximately three billion barrels produced of the nearly nine billion barrels of the OOIP). Though the Torrance and the Wilmington oil fields have the same types of sands, the numerous massive sand units that are in the Wilmington oil field do not exist in the Torrance oil field. Additionally, most of the Wilmington oil field is operated with a massive water flood that increases recoveries and mitigates issues with subsidence.

The conclusion of the 1997 Intera report stated:

"Based on analogy with the Redondo Beach accumulation, Hermosa Beach can be developed effectively by a limited number of horizontal wells. The oil recovery by a horizontal well drilling program could be as high as 21% of the initial oil in place compared to the 8.6% recovery with [that] was obtained in the Redondo Beach offshore reservoir using vertical and slanted wells."

The base recovery used in this report is 8.6%. Even with newer technology, it is considered very optimistic to escalate the recovery factor to almost 2-1/2 times the base recovery factor as shown in the 1997 Intera report. Horizontal wells may improve recovery if used, though with the thinner sands units, a high angle well contacting multiple sand units may yield a better result. Considering some water flooding, newer technologies used, and some understanding of the adjacent oil field, a high case of 17.2% (twice the base) was utilized, with an expected case of 12.9% (half way between the base and the high case).

5.9 Estimated Reservoir Production

Based on the previous discussions in this section, the Authors estimate the production from the Reservoir as follows:

Table 2: Estimated Reservoir Production (Million Stock Tank Barrels)

	Low Case			Expected Case			High Case		
	Tidelands	Uplands	Total	Tidelands	Uplands	Total	Tidelands	Uplands	Total
Upper Main	2.87	1.31	4.18	4.30	1.97	6.27	5.73	2.63	8.36
Lower Main	6.13	1.34	7.47	9.19	2.01	11.20	12.25	2.68	14.94
Upper Del Amo	0.89	0.09	0.98	1.34	0.13	1.47	1.78	0.18	1.96
Total	9.88	2.74	12.63	14.83	4.11	18.94	19.77	5.49	25.25
	(8.60% Recovery Factor)			(12.90% Recovery Factor)			(17.20% Recovery Factor)		
(Split)	78.3%	21.7%		78.3%	21.7%		78.3%	21.7%	

Note to Table 2: The estimated distribution of the Reservoir between the Uplands and Tidelands calculated in Table 2 (78.3% Tidelands and 21.7% Uplands) is used for the allocation of City royalty and revenue calculations herein, though the actual distribution could vary. A discussion of the potential impact to revenues of alternative distributions is provided in Section 7.2.

A comparison of the various production estimates from analyses that included production curve information (discussed below) follows in Table 3 below.

Table 3: Comparison of Production Estimates (Barrels of Oil)

	Est. Production
CBA Low	10,900,000
CBA Expected	17,100,000
CBA High	22,200,000
Applicant	35,600,000

Note to Table 3: Throughout this document the terms CBA Low, CBA Expected, and CBA High are used and reference the low, expected, and high cases from the Reservoir production analysis in this CBA (please see Table 2 above). Applicant figures follow the production estimates provided by the Project applicant, and utilized in the EIR.

The Authors assume the figures from the Applicant include production assumptions for the Lower Del Amo and Schist zones. Pursuant to information in the BRG Report, Hacker (1988) "noted the possibility of developing substantial reserves from the 'Nodular Shale' and the Schist Conglomerate sections of the City's underground oil and gas reservoir." As discussed in Section 5.7 above, a determination of the oil volumes in the Lower Del Amo and the Schist were not accomplished as part of this CBA. The complexities for both zones and the complete lack of information as to the reservoir types, type of fracture system, determination of sands if any, aerial extent, existence of oil water contacts, and lack of other information did not allow for a determination of an oil volume. For reference and scale, pursuant to Table 1 of the BRG

Report, Hacker (1988) estimated that approximately 10.3 million barrels of a total 30.4 million barrels could come from the Schist Conglomerate Zone (33.9% of total).

5.10 Well Production Curve

Oil wells will have an initial rate of production and then decline from that initial rate. The decline amount(s) are dictated by many factors, though based on multiple historical well production records, this rate of decline, a “type well” curve can be estimated. Some of the offshore wells in the Torrance oil field in the City of Redondo Beach were used to determine a type well production curve to be used in calculating oil and gas production over time. Figure 7 below shows the historical well production information; the black line is an attempt to mimic that historical production. A two decline method was utilized comprised of a steep initial decline followed by more gradual decline over the life of the well. Table 4 below shows the calculated type well factors for the low, expected and high cases.

Figure 7: Type Well Curve

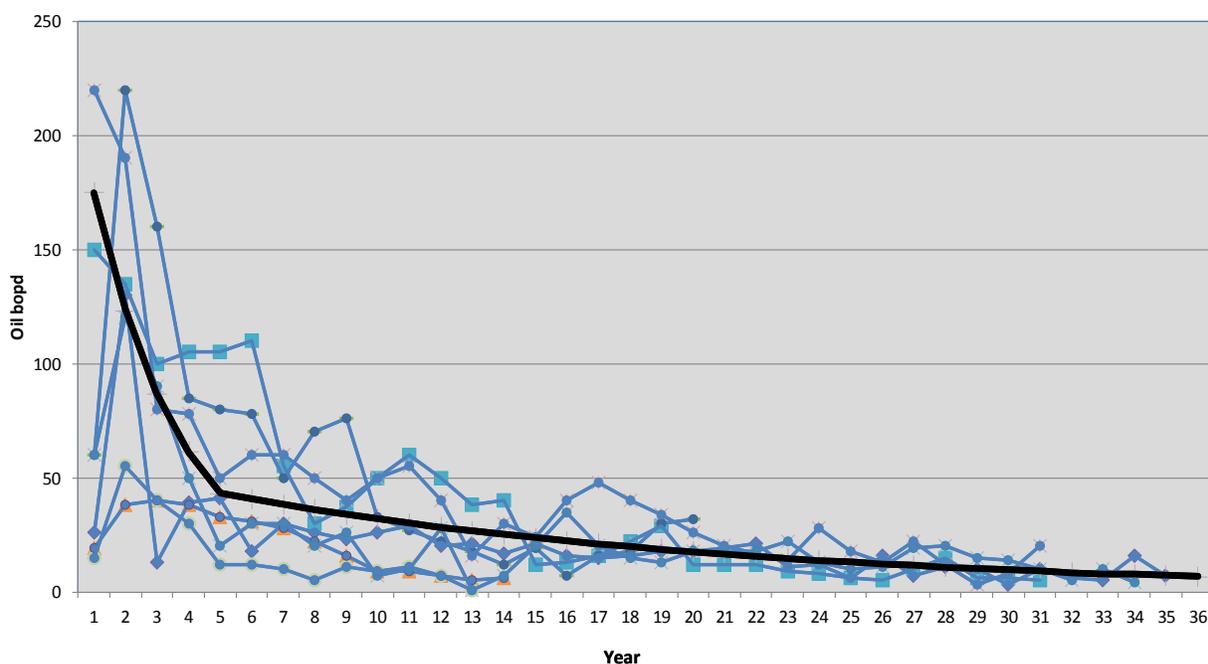


Table 4: Type Well Factors by Case

	Low	Expected	High
Decline 1	26%	25%	23%
Decline 2	5%	5%	4%
Decline 1 Years	5	4	3.5
Redrills	5	12	20

Expectations are that technology improvements (horizontal wells, highly deviated wells, water injection, etc.), and redrills will improve the recovery and change the natural decline of oil

production from that experienced in Redondo Beach. With respect to redrills, under the EIR, up to 30 redrills may be accomplished over the life of the Project. A redrill is the utilization of an existing well that has previously been drilled, completed, and has been on production or injection. The existing well is abandoned and redrilled to either the same or new location. Redrills in the models are assumed to be accomplished in the following manner:

- They may be a replacement for existing wells not performing up to expectations, including wells drilled at the beginning of a drilling campaign. Such redrills will have no impact/change on production expectations
- Not all redrills will perform per type well

5.11 Projected Well Production Curve

Based on the discussion above, a production curve was prepared, and is illustrated in Figure 8 below. The spikes in future years for the CBA Expected and CBA High cases represent redrills that result in increased production. The timing and the number of redrills for the CBA Expected and the CBA High cases differ, resulting in slightly different production curve estimate profiles. A comparison against the Applicant’s estimate is also provided in Figure 9 below.

Figure 8: CBA Oil Production Curve Estimates (Barrels Per Year)

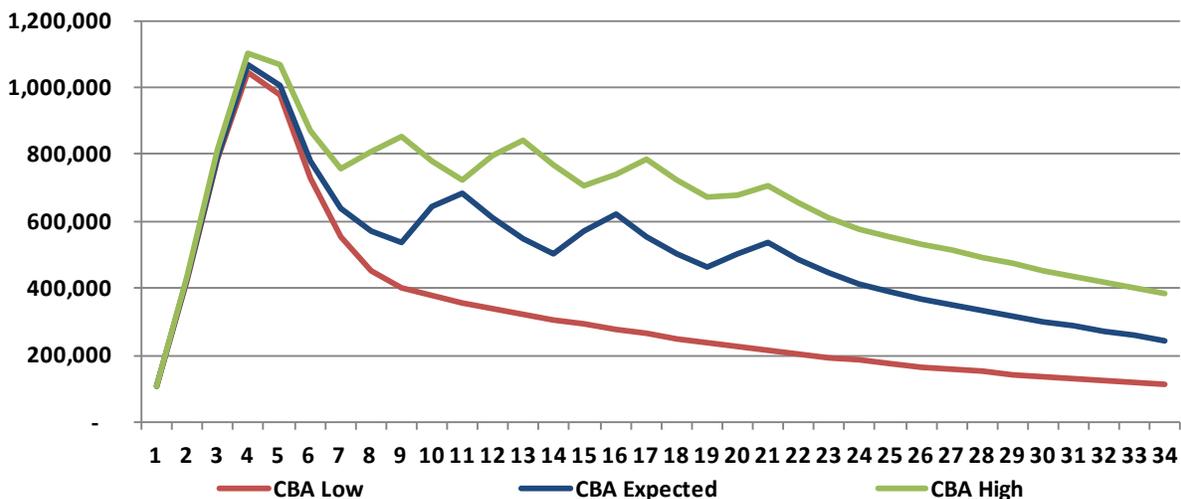
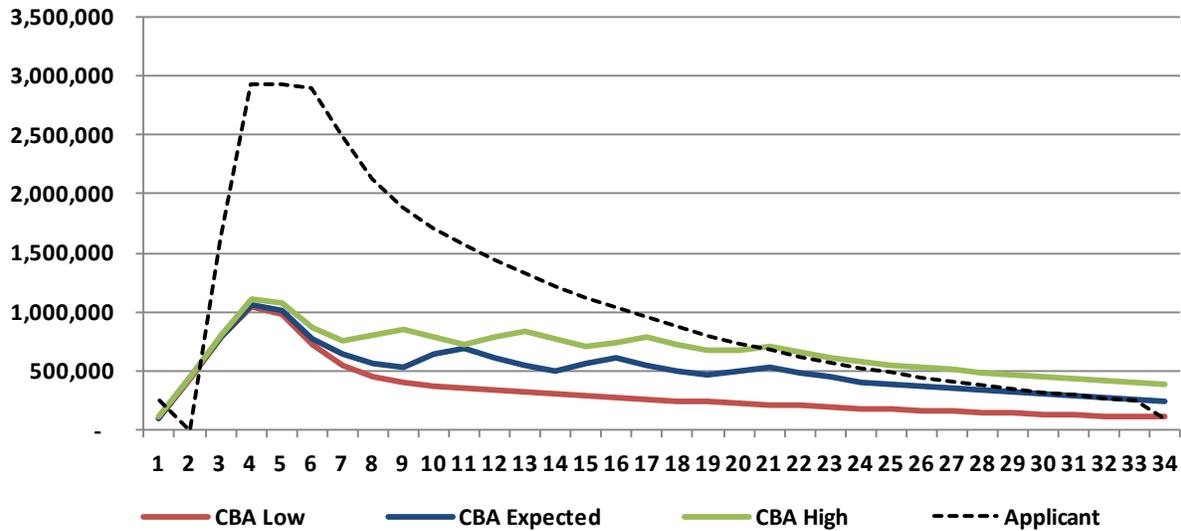


Figure 9: CBA & Applicant Oil Production Curve Estimates (Barrels Per Year)



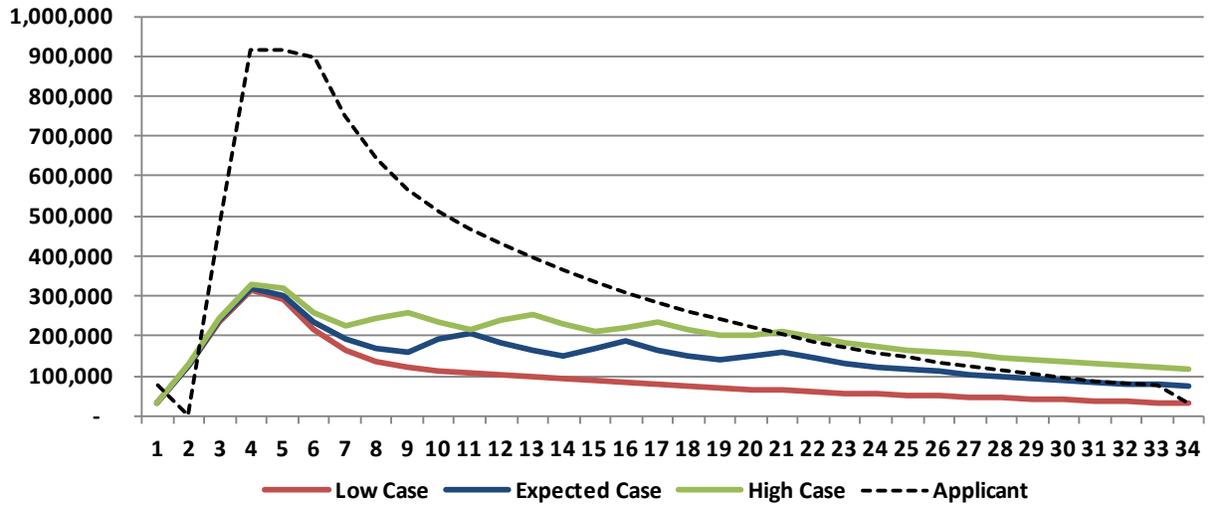
5.12 Projected Gas Production

In addition to producing oil, Project wells are expected to produce natural gas. Production estimates of natural gas are expected to follow oil production estimates at a ratio of 300 cubic feet of gas per barrel of oil produced, or one thousand cubic feet ("MCF") per 3.33 barrels of oil. Based on this ratio, the total projected volume of natural gas to be recovered under each scenario/analysis follows in Table 5 below. Additionally, a comparison of production curves follows in Figure 10 below.

Table 5: Comparison of Production Estimates (MCF of Natural Gas)

	Est. Production
CBA Low	3,300,000
CBA Expected	5,100,000
CBA High	6,700,000
Applicant	10,700,000

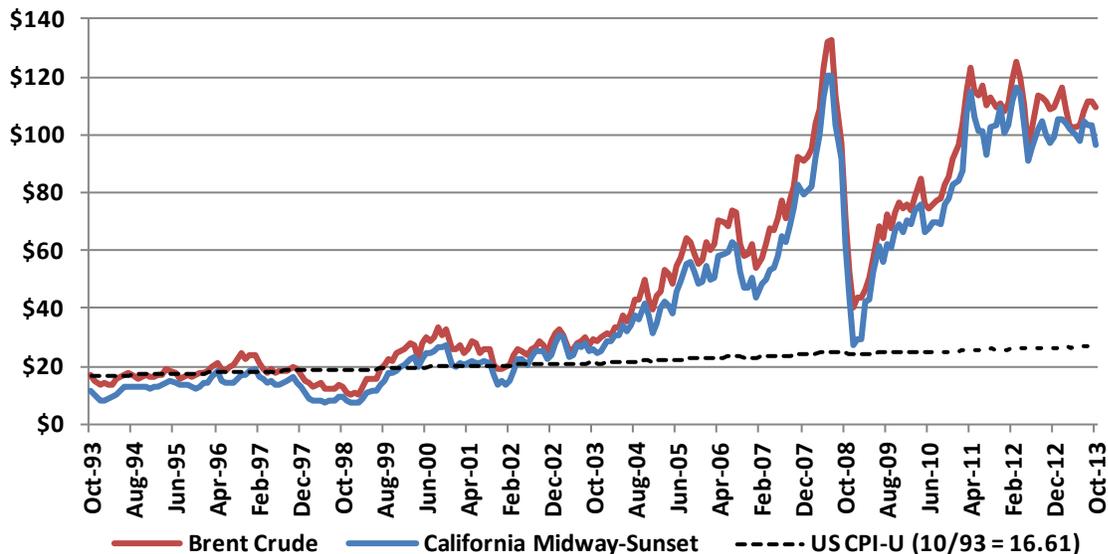
Figure 10: CBA & Applicant Natural Gas Production Curve Estimates (MCF Per Year)



6.0 Oil & Gas Pricing

Given estimates of the volume of Reservoir oil and gas production, potential oil and gas revenue can be estimated by applying estimated oil and gas prices to the production rates. However, there are a myriad of factors that impact pricing including supply, demand, substitution, and geopolitical considerations. As such, projecting future oil and gas prices with relatively any degree of accuracy is elusive. In this CBA future pricing is based on either (i) real dollar price estimates from the U.S. Energy Information Administration ("EIA") adjusted for the type of oil expected to be produced from the Reservoir, or (ii) fixed values based on current oil prices. For reference, fixed values are often used in the industry given the variable nature of pricing, and are utilized in figures in this report unless noted otherwise. At different points in time, the price of oil has decreased in real dollars, however, in recent history oil prices have increased far faster than inflation (nominal dollars), as shown in Figure 11 below.

Figure 11: Historic Brent Crude and California Midway-Sunset Price (Dollars Per Barrel, Monthly)



6.1 Oil Type

In addition to a volatile pricing history for Brent Crude, oil produced from different oil fields have different properties, and different relative values in the market. Oil produced from the Reservoir is expected to be classified as Wilmington Crude. While Wilmington Crude prices are not posted by area refineries, the price of Wilmington Crude is now calculated based on California Midway-Sunset ("CMS") pricing. As shown in Figure 11 above, California Midway-Sunset pricing is highly correlated to Brent Crude ("Brent") prices, though it does not perfectly track Brent Crude prices. Additional information showing the historic relationship between CMS and Brent is provided in Figure 12 and Table 6 below.

Figure 12: Historic Brent Crude and California Midway-Sunset Prices (Dollars Per Barrel, Annual)

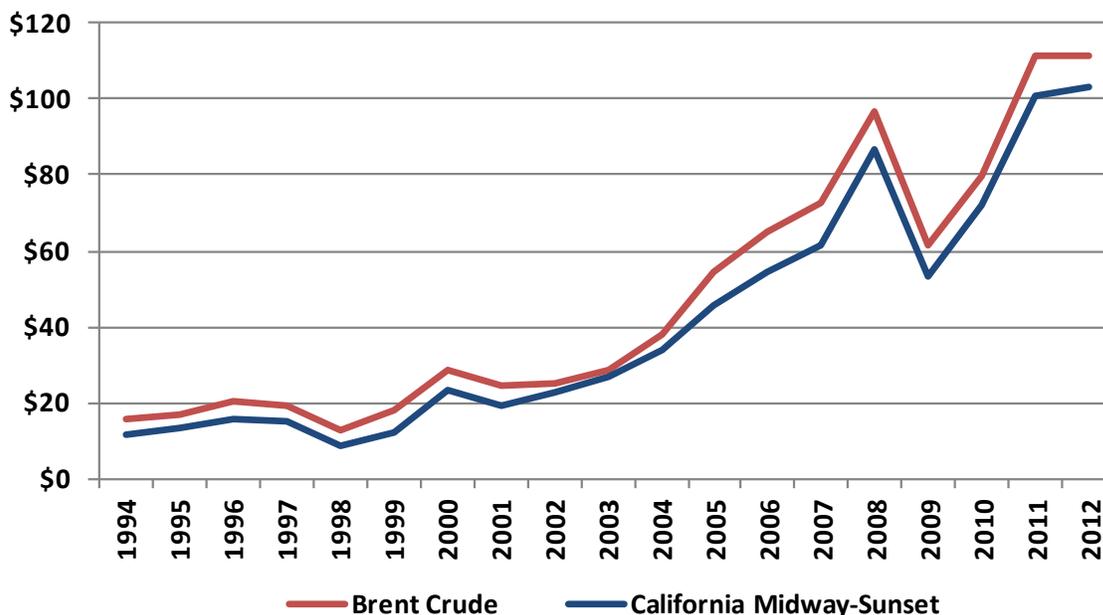


Table 6: Historic Relationship Between Brent Crude and California Midway-Sunset Prices

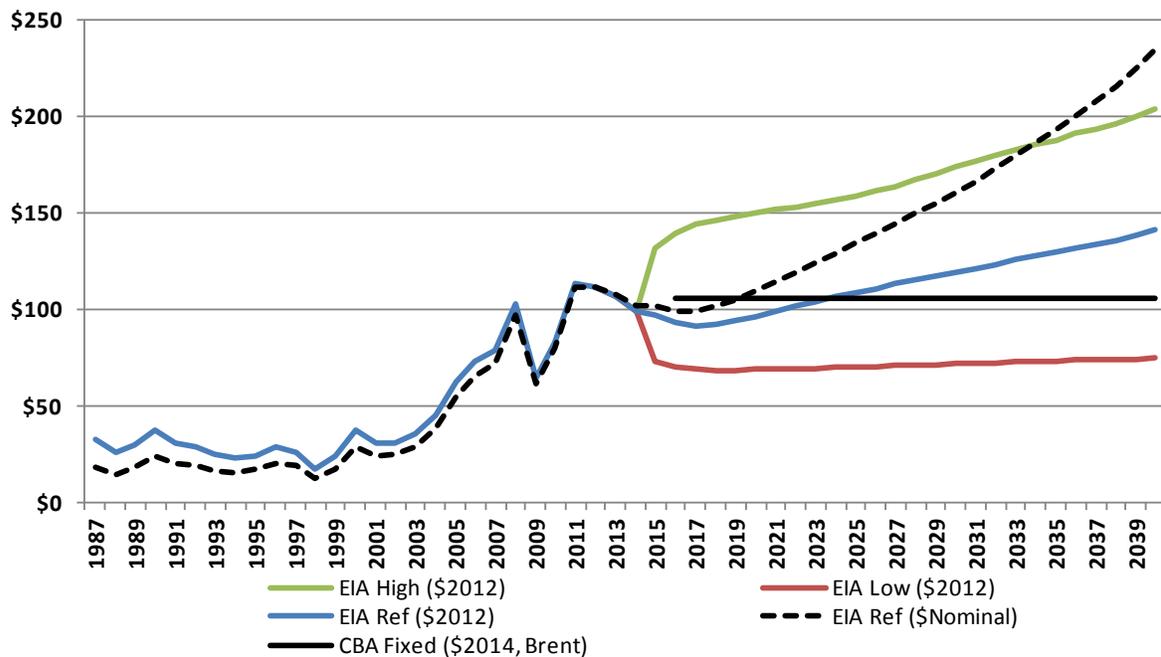
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Brent	15.86	17.02	20.64	19.11	12.76	17.90	28.66	24.46	24.99	28.85	38.26	54.57	65.16	72.44	96.94	61.74	79.61	111.26	111.63
CMS	11.79	13.37	15.70	14.88	8.48	12.22	23.56	19.50	22.81	26.67	33.74	45.93	54.59	61.62	86.92	53.00	72.26	100.96	103.05
% Diff	74%	79%	76%	78%	66%	68%	82%	80%	91%	92%	88%	84%	84%	85%	90%	86%	91%	91%	92%

In this report it was assumed that the price of a barrel of CMS would be 89.9% of the price of a barrel of Brent Crude; the average ratio for the last five years.

6.2 Oil Price Projections

As introduced above, projecting oil prices with any reasonable degree of accuracy is elusive. However, the EIA does provide long-term projections as reference, low, and high estimates. While the EIA does not project CMS pricing, it does project Brent pricing. In this report variable future oil prices were projected based on EIA projected Brent prices with an adjustment factor (89.9%) to estimate CMS prices. EIA data utilized herein from the early release of the 2014 Annual Energy Outlook ("2014 AEO") which data is provided in 2012 dollars. For the purposes of this report, these values were escalated to estimated 2014 dollars by applying a 1.5% inflation rate over two years. The unadjusted 2014 AEO projections follow in Figure 13 below.

Figure 13: Historic and Projected Brent Crude Price Projections (Dollars Per Barrel)



Fixed Price Projections

For fixed price based revenue projections herein, the projected price of CMS was assumed to be \$95 per barrel (\$2014), in line with its price over approximately the last year.

During the period subsequent to the completion of the draft CBA, CMS pricing increased marginally and then recently receded. The CBA has consistently conveyed the conclusion that oil pricing can fluctuate greatly. Accordingly, the temporary spike in pricing could represent a coming term trend, or merely a short term reaction to geopolitical or other factors. To the extent that CMS prices attained (\$2014) are greater than the assumed \$95, the City’s revenues would increase, and vice-versa if pricing decreases. For an abundance of clarity, unless otherwise noted, future increases in oil prices at the rate of inflation are considered in the estimates provided in this CBA.

Estimates of gross City Tidelands & Uplands revenues under differing base price assumptions are provided in Table 7 below. For reference, as of the drafting of this CBA the most current information from the EIA (June 2014) suggested a price of \$101.87 per barrel of CMS. As of September 18, 2014 Chevron’s posted price for CMS was \$90.21 per barrel. Current information can typically be found on the internet using the search term “California Midway Sunset price”.

Table 7: Summary of Gross City Revenues Given Changes in (\$2014) Oil Prices

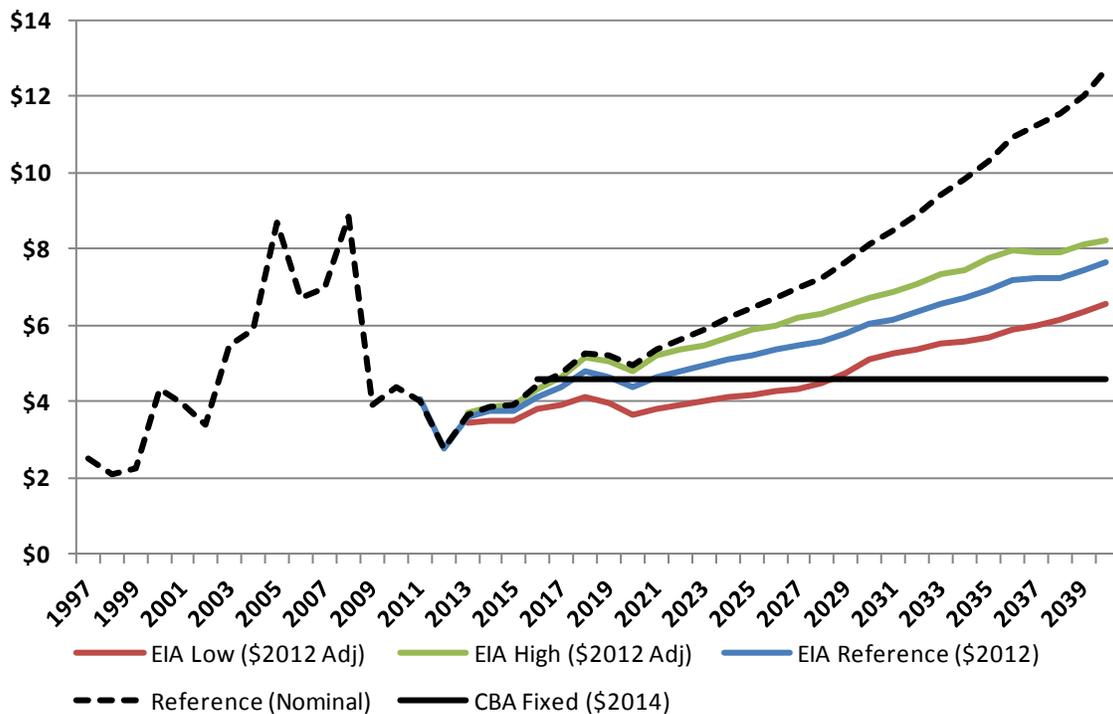
City Rev - Tidelands (\$2014)	\$ 85.00	\$ 90.00	\$ 95.00	\$ 100.00	\$ 105.00	\$ 110.00
CBA Low	\$ 86,000,000	\$ 91,000,000	\$ 96,000,000	\$ 101,000,000	\$ 106,000,000	\$ 111,000,000
CBA Expected	135,000,000	143,000,000	151,000,000	158,000,000	166,000,000	174,000,000
CBA High	175,000,000	185,000,000	196,000,000	206,000,000	216,000,000	226,000,000
Applicant	281,000,000	297,000,000	314,000,000	330,000,000	346,000,000	362,000,000
City Rev - Uplands (\$2014)	\$ 85.00	\$ 90.00	\$ 95.00	\$ 100.00	\$ 105.00	\$ 110.00
CBA Low	\$ 45,000,000	\$ 48,000,000	\$ 51,000,000	\$ 53,000,000	\$ 56,000,000	\$ 59,000,000
CBA Expected	71,000,000	75,000,000	80,000,000	84,000,000	88,000,000	92,000,000
CBA High	93,000,000	98,000,000	103,000,000	109,000,000	114,000,000	119,000,000
Applicant	148,000,000	157,000,000	166,000,000	174,000,000	183,000,000	191,000,000
City Rev - Total (\$2014)	\$ 85.00	\$ 90.00	\$ 95.00	\$ 100.00	\$ 105.00	\$ 110.00
CBA Low	\$ 131,000,000	\$ 139,000,000	\$ 147,000,000	\$ 154,000,000	\$ 162,000,000	\$ 170,000,000
CBA Expected	206,000,000	218,000,000	230,000,000	242,000,000	254,000,000	266,000,000
CBA High	268,000,000	283,000,000	299,000,000	314,000,000	330,000,000	345,000,000
Applicant	429,000,000	454,000,000	479,000,000	504,000,000	529,000,000	554,000,000

6.3 Natural Gas Pricing

Like oil, natural gas produced from different fields has different properties, and British Thermal Unit ("BTU") value and content. Gas information could not be located on the wells located in Redondo Beach to help determine BTU value and content, however, it was assumed that natural gas produced from the Reservoir would attain pricing in line with the Henry Hub Spot Price ("HHSP"). HHSP is quoted in dollars per MMBTU; to convert from MCF of natural gas produced, MCF projections for the Reservoir were multiplied by 1.023.

In addition to projecting Brent prices, the EIA also projects natural gas prices, and the HHSP. In Figure 14 below, the historic HHSP, as well as EIA projections for the HHSP are provided (early release 2014 AEO data, in \$2012). The reference case is the EIA's baseline projection, the low case is EIA's projection assuming low economic growth, and the high projection assumes high economic growth. For the purposes of this report, these values were escalated to estimated 2014 dollars by applying a 1.5% inflation rate over two years. The figures in Figure 14 are unadjusted 2013 AEO projections.

Figure 14: Historic and Projected Natural Gas HHSP (per MMBTU)



At the time of the preparation of the Draft CBA, the HHSP was approximately \$4.50, and a fixed price of \$4.60 per MCF ($\$4.50 \text{ per MMBTU} \times 1.023$) was assumed in estimating City gas royalty revenues. As of September 15, 2014 the HHSP was approximately \$3.92, or approximately \$4.01 per MCF. As prices can fluctuate throughout the year, and are often higher in the winter than in the summer, the assumed price utilized in fixed price projections herein remains at \$4.60 per MCF. For reference and scale, gas royalty revenues are estimated to comprise 1.43% of total estimated oil and gas revenues under the fixed oil and gas price assumptions.

7.0 City Oil & Gas Revenues

7.1 City Revenue Formula

The City is entitled to a royalty share of any oil and gas produced from the Reservoir. The calculation of the royalty is based on whether the oil and gas is produced in the Uplands or Tidelands, and then the City's royalty share of produced volumes from each area. The allocation of production between Tidelands and Uplands is based on the recoverable oil volumes in Table 2 on page 27, which estimates that 78.3% of production will be from the Tidelands, and the remaining 21.7% will be from the Uplands. The City's royalty share from the two areas is primarily dictated by the Oil Lease, with deductions based on the Settlement Agreement. An overview of the calculation follows, and a sample calculation is provided in Figure 17 on page 40.

Note: Calculations in this section have been substantially changed from those in the Draft CBA.

The figures herein are based on the opinion of CSLC staff in a letter dated September 16, 2014 expressing the staff's concern about deducting Macpherson's 3.33% non-participating royalty from oil and gas revenues produced from the Tidelands. Alternative analyses of the documents and regulations applicable to the Project allowing such a deduction as an expenditure related to administration of the Tidelands are provided in Appendix B. This CBA does not purport to express a legal opinion as to which view of the use of Tidelands revenues is correct.

Tidelands Revenue

Under the Oil Lease, the City's Tidelands royalty is 18-2/3% of all oil and gas produced from the Tidelands. In addition, the Oil Lease stipulates, and the CSLC MOU appears to endorse, that 37.50% of City Tidelands royalty shall go to the City's General Fund as a drill site lease payment.

Uplands Revenue

The City is to receive a share of the oil and gas produced in the Uplands based on the City's prorated land ownership in the Uplands. Calculations of the City's share of mineral rights ownership is based on the distribution in Figure 15 below. To the extent that the City's ownership share of land is increased or reduced, its share of Uplands royalties would shift proportionately.

Figure 15: Assumed Land Ownership Distribution

Owner	Acres Owned	% of Total
City	43.83	23.83%
School District	5.35	2.91%
Other	134.77	73.26%
	183.95	

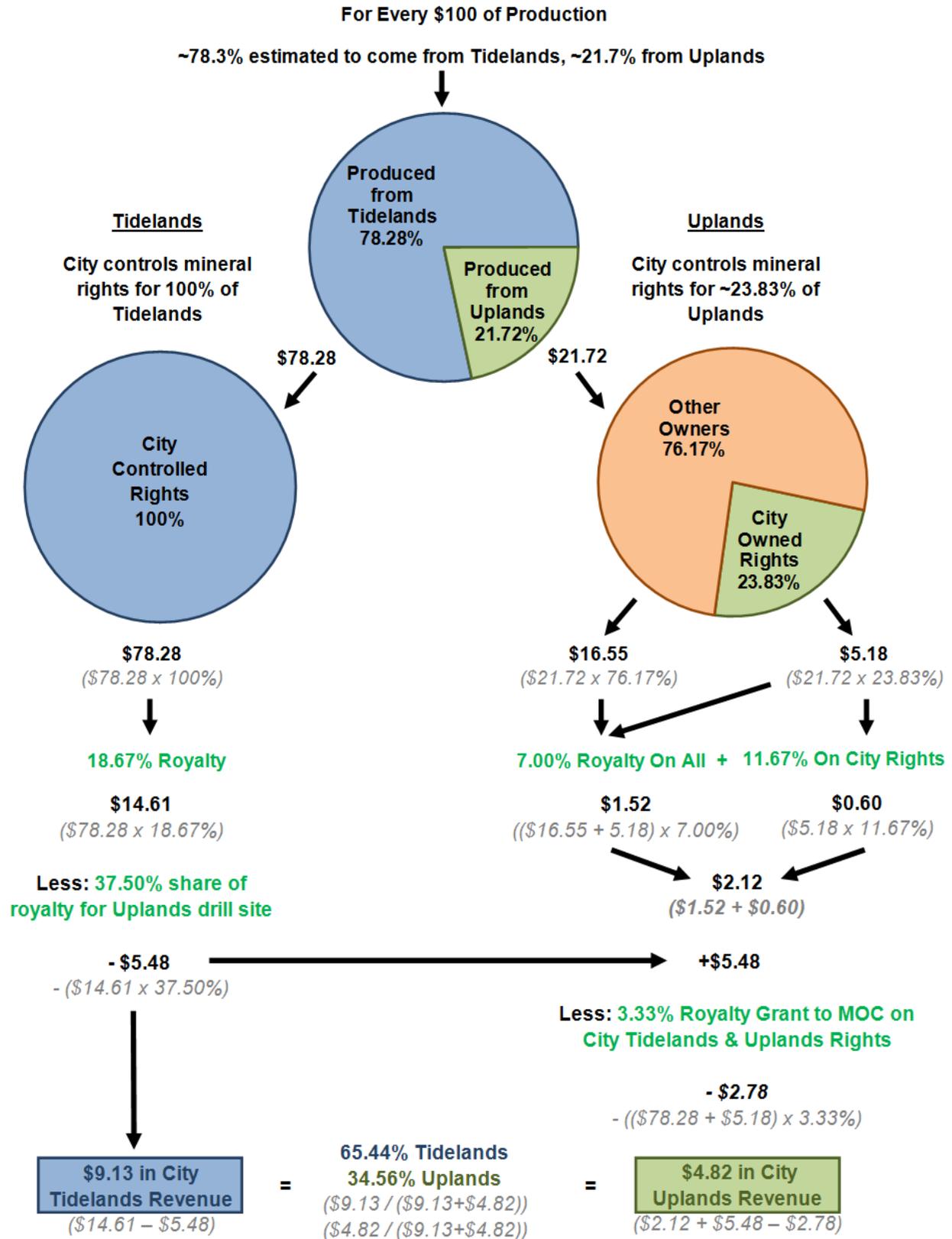
Under the Oil Lease the City's (Uplands) royalty is 11-2/3% of the City's prorated share (23.83%) of all oil and gas produced from the Uplands.

In addition to the City's Uplands royalty, under the Oil Lease, the City is entitled to a 7% royalty on all oil and gas produced in the Uplands (a total of 18-2/3% including the 11-2/3% royalty discussed above, before the MOC Grant) as a lease payment for use of the Project Site for oil recovery.

As introduced above, under the MOC Grant in the Settlement Agreement, the City granted to MOC a 3-1/3% royalty on the City's share of oil produced from the Project Site. Based on CSLC guidance, the Authors interpret this provision to mean that under the MOC Grant the City's 11-2/3% Uplands royalty is reduced by 3-1/3% to 8-1/3%. Further, the 18-2/3% Tidelands royalty is effectively reduced by 3-1/3% to 15-1/3%, however, this portion of the MOC Grant must be paid from Uplands revenues.

A flow chart of the calculation of City royalties and revenues is provided in Figure 16 below. Additionally, a sample calculation of total City royalties and revenues from Uplands oil and gas production is provided in Figure 17 below.

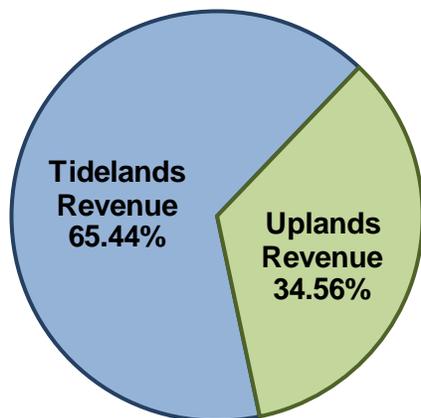
Figure 16: Flowchart of City Royalty Calculations



City Revenue Calculations				For every \$100 Produced	For Every \$100 in City Revenues
For Every \$100 Produced					
Produced from Tidelands	78.28%		Produced in Tidelands (\$100 x 78.28%)	\$ 78.28	
Produced from Uplands	21.72%		Produced in Uplands (\$100 x 21.72%)	21.72	
City - Tidelands					
City Tidelands Royalty	18.67% of all Oil & Gas Produced in Tidelands	<i>(\$100 x 78.28% x 18.67%)</i>		\$ 14.61	104.71
Less: Drill Site Lease Payment to Uplands	-37.50% of City Tidelands Royalty	<i>-(\$100 x 78.28% x 18.67% x 37.50%)</i>		(5.48)	(39.27)
Subtotal City Tidelands				\$ 9.13	\$ 65.44
City - Uplands					
City Share / City Land Ownership	23.83%				
City Uplands Royalty	11.67% of City Share of Oil & Gas Produced in Uplands	<i>(\$100 x 21.72% x 23.83% x 11.67%)</i>		0.60	4.33
Drill Site Lease - Uplands Payment	7.00% of all Oil & Gas Produced in Uplands	<i>(\$100 x 21.72% x 7.00%)</i>		1.52	10.90
Drill Site Lease - Tidelands Payment	37.50% of City Tidelands Royalty	<i>(\$100 x 78.28% x 18.67% x 37.50%)</i>		5.48	39.27
Less: Royalty to Macpherson Oil Company	-3.33% of City Share of Oil & Gas Produced	<i>-(\$100 x 78.28% x 3.33%) - (\$100 x 21.72% x 23.83% x 3.33%)</i>		(2.78)	(19.93)
Subtotal City Uplands				\$ 4.82	\$ 34.56
Total City Revenue				\$ 13.95	\$ 100.00

As illustrated in Figure 17, for every \$100 of oil and gas produced, the Authors estimate that approximately 78% will be produced from portions of the Reservoir in the Tidelands, and approximately 22% will be produced from portions of the Reservoir in the Uplands. However, based on the calculation and allocation of gross revenues and royalties between the Tidelands and Uplands, approximately 65% of City oil and gas revenues are estimated to flow to the Tidelands fund, and approximately 35% are estimated to flow to the Uplands funds. A visual depiction of the split of estimated gross City Tidelands and Uplands revenues follows in Figure 18.

Figure 18: Gross City Tidelands & Uplands Gross Revenue Split



7.2 Impact of Production Location on Revenue Calculations

The split of City Tidelands and Uplands revenues would vary if the actual production of oil and gas from the Tidelands and Uplands differed from the underlying 78.28% / 21.72% allocation estimated in Table 2 on page 27. A summary of the impact to the split between Tidelands and Uplands revenues under various distributions of oil production between the Tidelands and Uplands follows in Table 8.

Table 8: City Revenue under Varying Distributions of Uplands Versus Tidelands Production

65% Tidelands / 35% Uplands			75% Tidelands / 25% Uplands		
Per \$100 in City Revenue		City Revenue Per \$100 of Production	Per \$100 in City Revenue		City Revenue Per \$100 of Production
Tidelands	Uplands		Tidelands	Uplands	
\$ 57.84	\$ 42.16	\$ 13.11	\$ 63.65	\$ 36.35	\$ 13.75

85% Tidelands / 15% Uplands			95% Tidelands / 5% Uplands		
Per \$100 in City Revenue		City Revenue Per \$100 of Production	Per \$100 in City Revenue		City Revenue Per \$100 of Production
Tidelands	Uplands		Tidelands	Uplands	
\$ 68.96	\$ 31.04	\$ 14.38	\$ 73.81	\$ 26.19	\$ 15.02

A summary comparing the percent change in revenue from base case estimates of 78.28% of production coming from the Tidelands and 21.72% of production coming from the Uplands under alternative distributions follows in Table 9 below.

Table 9: City Revenue under Varying Distributions of Uplands Versus Tidelands Production

65% Tidelands / 35% Uplands			75% Tidelands / 25% Uplands		
Per \$100 in City Revenue		City Revenue Per \$100 of Production	Per \$100 in City Revenue		City Revenue Per \$100 of Production
Tidelands	Uplands		Tidelands	Uplands	
88%	122%	94%	97%	105%	99%

85% Tidelands / 15% Uplands			95% Tidelands / 5% Uplands		
Per \$100 in City Revenue		City Revenue Per \$100 of Production	Per \$100 in City Revenue		City Revenue Per \$100 of Production
Tidelands	Uplands		Tidelands	Uplands	
105%	90%	103%	113%	76%	108%

7.3 Projected City Revenues

Based on the production estimates discussed in Section 5.0, pricing estimates discussed in 6.0, and the City's royalty and revenue rights discussed above, the City's total estimated oil and gas revenue is shown in Table 10 below. For reference these tables include estimates of gross production revenue, the City Tidelands share, the City Uplands share, and the combined total. The figures in Table 10 include revenues from both oil and gas revenues with oil revenues generally comprising 98 - 99% of total revenues, and gas revenues comprising the remaining 1 -

2%. Additional details of revenue estimates by year are provided in Appendix C. For reference and scale, the City's Fiscal Year 2013-14 budget is approximately \$30 million.

Table 10: Gross City Oil & Gas Revenue Projections (Project Lifetime)

Gross Rev (\$2014)	EIA Low \$	EIA Base \$	EIA High \$	Fixed \$
CBA Low	\$ 740,000,000	\$ 1,160,000,000	\$ 1,720,000,000	\$ 1,050,000,000
CBA Expected	1,170,000,000	1,920,000,000	2,820,000,000	1,650,000,000
CBA High	1,520,000,000	2,540,000,000	3,720,000,000	2,140,000,000
Applicant	2,400,000,000	3,790,000,000	5,590,000,000	3,430,000,000
City Rev - Tidelands (\$2014)	EIA Low \$	EIA Base \$	EIA High \$	Fixed \$
CBA Low	\$ 67,000,000	\$ 106,000,000	\$ 157,000,000	\$ 96,000,000
CBA Expected	107,000,000	176,000,000	258,000,000	151,000,000
CBA High	139,000,000	232,000,000	339,000,000	196,000,000
Applicant	219,000,000	346,000,000	511,000,000	314,000,000
City Rev - Uplands (\$2014)	EIA Low \$	EIA Base \$	EIA High \$	Fixed \$
CBA Low	\$ 35,000,000	\$ 56,000,000	\$ 83,000,000	\$ 51,000,000
CBA Expected	56,000,000	93,000,000	136,000,000	80,000,000
CBA High	73,000,000	123,000,000	179,000,000	103,000,000
Applicant	116,000,000	183,000,000	270,000,000	166,000,000
City Rev - Total (\$2014)	EIA Low \$	EIA Base \$	EIA High \$	Fixed \$
CBA Low	\$ 103,000,000	\$ 162,000,000	\$ 241,000,000	\$ 147,000,000
CBA Expected	163,000,000	268,000,000	394,000,000	230,000,000
CBA High	212,000,000	355,000,000	518,000,000	299,000,000
Applicant	334,000,000	528,000,000	780,000,000	479,000,000

For reference, and adjustment of other exhibits that do not contain all of the scenarios evaluated in Table 10 above, a comparison table is provided in Table 11 below.

Table 11: Comparison of Scenario Revenue Projections

% of Expected, Fixed	EIA Low \$	EIA Base \$	EIA High \$	Fixed \$
CBA Low	45%	71%	104%	64%
CBA Expected	71%	117%	171%	100%
CBA High	92%	154%	225%	130%
Applicant	145%	230%	339%	208%

7.4 Restrictions on Use of Revenues

As discussed above, should the Project be approved, oil and gas is expected to be produced both from the Tidelands and Uplands areas of the City. A discussion of restrictions on revenues from each follows.

Uplands Restrictions

City revenues from oil and gas produced in the Uplands would accrue to the City's General Fund. Under current City Code Section 5.56.020, use of these revenues are currently restricted in use to the:

"acquisition, maintenance, and improvement of available excess school or other properties for open space and parkland purposes."

As advised by the City's legal counsel, it is the Authors' understanding that this provision was put in place through a ballot measure, and the City Council does not have the authority to modify this section of City Code. Further, the Authors' understand that a ballot measure on the proposed Project could include language to modify or remove this provision. It is the Authors' assumption that should the Project be approved, equitable fiscal policy would support the modification of this provision to, at a minimum, allow for the allocation of Uplands revenues to fund City Costs related to the permanent relocation of the City maintenance yard. To the extent that the City Code is not modified, the use of Upland revenues to fund permanent relocation of the City maintenance yard contemplated in Section 11.0 would require supplanting other General Fund revenues. In the event that existing sources of parkland funding within the City could be used for Project related costs, and new Uplands Project revenues used for parkland purposes, the net impact to the Uplands / General Fund would likely remain the same.

Tidelands Restrictions

City revenues from oil and gas produced from the Tidelands must be held in a Tidelands Trust Fund and could only be utilized in alignment with the City's Tideland Grant, and the Public Trust Doctrine as administered by the CSLC. The State Tidelands Grant to the City of Hermosa Beach in 1919 is provided in Figure 19 below.

Figure 19: Hermosa Beach Tidelands Grant - 1919

Ch. 479]	FORTY-THIRD SESSION.	941
CHAPTER 479.		
<i>An act granting to the city of Hermosa Beach the tidelands and submerged lands of the State of California within the boundaries of the said city.</i>		
[Approved May 25, 1919. In effect July 25, 1919.]		
<i>The people of the State of California do enact as follows:</i>		
SECTION 1. There is hereby granted to the city of Hermosa Beach, a municipal corporation of the State of California, and to its successors, all the right, title and interest of the State of California, held by said state by virtue of its sovereignty, in and to all the tidelands and submerged lands, whether within the present boundaries of said city, and situated below the line of mean high tide of the Pacific ocean, to be forever held by said city, and by its successors, in trust for the uses and purposes, and upon the express conditions following, to wit:		
(a) Said lands shall be used by said city and by its successors, solely for the establishment, improvement and conduct of a harbor and for the establishment and construction of bulkheads or breakwaters for the protection of lands within its boundaries, or for the protection of its harbor, and for the construction, maintenance and operation thereon of wharves, docks, piers, slips, quays, and other utilities, structures and appliances necessary or convenient for the promotion or accommodation of commerce and navigation, and the protection of the lands within said city, and said city, or its successors, shall not, at any time, grant, convey, give or alien said lands, or any part thereof, to any individual, firm or corporation for any purpose whatsoever; <i>provided</i> , that said city, or its successors, may grant franchises thereon, for a period not exceeding forty years, for wharves and other public uses and purposes, and may lease said lands, or any part thereof for a period not exceeding forty years, for purposes consistent with the trusts upon which said lands are held by the State of California and with the requirements of commerce or navigation at said harbor;		
(b) Said harbor shall be improved by said city without expense to the state, and shall always remain a public harbor for all purposes of commerce and navigation, and the State of California, shall have, at all times, the right to use, without charge, all wharves, docks, piers, slips, quays, and other improvements constructed on said lands, or any part thereof, for any vessel or other water craft, or railroad, owned or operated by the State of California;		
(c) In the management, conduct or operation of said harbor, or of any of the utilities or appliances mentioned in paragraph (a), no discrimination in rates, tolls, or charges, or in		

Tidelands granted to Hermosa Beach.

Use of lands.

Improvement of harbor.

Rates, tolls, etc.

Figure 19: Hermosa Beach Tidelands Grant - 1919 (Continued)

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<p>facilities, for any use or service in connection therewith shall ever be made, authorized or permitted by said city or by its successors. The absolute right to fish in the waters of said harbor, with the right of convenient access to said waters over said lands for said purpose, is hereby reserved to the people of the State of California.</p>		

Pursuant to the CSLC, the Public Trust Doctrine is set forth in common law, and several of its guiding principles are that:

"I. Lands under the ocean and under navigable streams are owned by the public and held in trust for the people by government. These are referred to as public trust lands, and include filled lands formerly under water. Public trust lands cannot be bought and sold like other state-owned lands. Only in rare cases may the public trust be terminated, and only where consistent with the purposes and needs of the trust.

II. Uses of trust lands, whether granted to a local agency or administered by the State directly, are generally limited to those that are water dependent or related, and include commerce, fisheries, and navigation, environmental preservation and recreation. Public trust uses include, among others, ports, marinas, docks and wharves, buoys, hunting, commercial and sport fishing, bathing, swimming, and boating. Public trust lands may also be kept in their natural state for habitat, wildlife refuges, scientific study, or open space. Ancillary or incidental uses, that is, uses that directly promote trust uses, are directly supportive and necessary for trust uses, or that accommodate the public's enjoyment of trust lands, are also permitted. Examples include facilities to serve visitors, such as hotels and restaurants, shops, parking lots, and restrooms. Other examples are commercial facilities that must be located on or directly adjacent to the water, such as warehouses, container cargo storage, and facilities for the development and production of oil and gas. Uses that are generally not permitted on public trust lands are those that are not trust use related, do not serve a public purpose, and can be located on non-waterfront property, such as residential and nonmaritime related commercial and office uses. While trust lands cannot generally be alienated from public ownership, uses of trust lands can be carried out by public or private entities by lease from this Commission or a local agency grantee. In some cases, such as some industrial leases, the public may be excluded from public trust lands in order to accomplish a proper trust use.

III. Because public trust lands are held in trust for all citizens of California, they must be used to serve statewide, as opposed to purely local, public purposes."

Further, as the Public Trust Doctrine is administered by the CSLC, the CSLC has some latitude in application of the Public Trust Doctrine as elaborated in the CSLC's Public Trust Policy as follows:

"The Commission implements the Public Trust Doctrine through careful consideration of its principles and the exercise of discretion within the specific context of proposed uses. Factors such as location, existing and planned surrounding facilities, and public needs may militate in favor of a particular use in one area and against the same use in another. The Commission applies the doctrine's tenets to proposed projects with consideration given to the context of the project and the needs of a healthy California society, to meet the needs of the public, business and the environment. The Commission may also choose among competing valid trust uses. The Commission must also comply with the requirements of other applicable law, such as the California Environmental Quality Act. In administering its trust responsibilities, the Commission exercises its discretionary authority in a reasoned manner, accommodating the changing needs of the public while preserving the public's right to use public trust lands for the purposes to which they are uniquely suited."

Additional guidance of potentially permissible uses can be found in common law. Pursuant to the City of Long Beach v. Morse, 31 Cal. 2d 254, (1947), while the City may receive a majority of its oil and gas royalties in the Tidelands funds, the City's use of such funds will likely be generally limited to uses that would be considered a benefit the State as a whole. In the opinion in Mallon v. City of Long Beach, 44 Cal. 2d 199 (1955) some guidance on what could be considered a benefit to the State as a whole versus the City was provided:

"we cannot hold that the construction and establishment by the city of Long Beach of storm drains, a city incinerator, a public library, public hospitals, public parks, a fire alarm system, off-street parking facilities, city streets and highways, and other expenditures that have been authorized to be made from the 'Public Improvement Fund', are of such general state-wide interest that state funds could properly be expended thereon. Such expenditures are for purely 'municipal affairs'."

These cases provide some guidance, however common law does evolve. Absent a court legal judgment, the CSLC generally provides a final determination of what is, or is not a permitted use of Tidelands funds. Further, circumstances in Hermosa Beach may not support the application of Mallon v. City of Long Beach given differences in geographic size and location between the cities. The Public Trust Doctrine from the CSLC can be found in Appendix D.

Excess Tidelands Revenues

In addition to limitations on use based on common law, some State Tidelands Grants (*not the City's*) provide that every three years, 85% of Tidelands fund balances in excess of \$250,000 shall be diverted to the California State General Fund, and the remaining 15% shall be retained by a city as a reserve. Funds being reserved for future capital improvement projects or bond payments are not typically considered excess revenues. To the extent that a city is unable to find appropriate uses for Tidelands oil and gas revenues, a significant portion of such funds may be diverted to the State. However, the City's Tidelands Grant does not include an excess revenue provision, and the addition of such a provision would require a modification of the City's Tidelands Grant through State legislative action.

CSLC Oversight of Capital Expenditures

In addition to excess revenue provisions, some State Tidelands Grants (not the City's) provide that any capital improvement projects utilizing Tidelands Trust Funds in excess of \$250,000 must be approved by the CSLC.

However, the Authors did not find provisions requiring CSLC approval of capital improvement projects that would apply to the City's Tideland Grant, or the City's use of Tidelands Trust Fund revenues.

7.5 Minimum Lease Payments

Section 2(b) of the Oil Lease establishes minimum royalty payments that would be paid to the City. In general, if City oil and gas revenues are less than minimum payments established under the minimum lease provisions, E&B would pay the established minimums regardless of actual oil and gas production. Minimum lease provisions go into effect four years after completion of the first well. For the purposes of analysis herein, the Authors assumed this to be in 2020. For the first 13 years the provision is in effect, minimum rent is set at \$500,000 per year. At the beginning of the 13th year (17th year after the completion of the first well) minimum lease payments are established as 10% of the fair market value of the Project Site, and it is adjusted annually thereafter to reflect any increase or decrease in the fair market value of the Project Site. The fair market value of the Project Site is to be evaluated at the highest and best use in an M-1 (light manufacturing) zone, other than use for production of oil and gas.

Further, pursuant to Section 2(b)(2) of the Oil Lease, and affirmed under Paragraph 5 CSLC MOU, no more than the lesser of actual City Tidelands revenues, or \$281,250 of any minimum lease payment shall be credited from Tidelands revenue sources.

Based on the City's oil and gas revenues projected herein, it is the Authors' conclusion that even under the CBA low case, the City's projected oil and gas revenues would be expected to exceed the minimum lease provisions under the \$500,000 hurdle for the first 13 years the minimum lease provision is in effect. Should production taper significantly in the later years of the lease term there could be a potential for the fair market value calculation to be a driver of minimum rent towards the end of the Oil Lease term. However, as will be discussed, the production curves evaluated herein did not result in the payment of minimum lease payments

Project Site Value

To estimate the potential for the fair market value component of the minimum lease provisions to trigger a minimum lease payment, the Authors completed a preliminary evaluation of the Project Site's potential value under an M-1 zoning designation. As part of this evaluation the Authors researched sales records through the real estate data service CoStar for commercial properties sold during or after 2012 within three miles of the Project Site. A total of 335 property sales records were identified, the majority of which were considered either exclusively commercial or residential in use. Of the entire group, six properties sold within the last two

years were found to be reasonably comparable. Of the six, four were considered good comparables. Each property included existing building improvements, making estimating the land value exclusive of improvements more difficult. For the purposes of the analysis herein the Authors utilized the ratio of assessed land value to total assessed value to estimate the land value of each property. Information on the six property sales is provided below in Table 12.

Table 12: Sample Project Site Comps

Address	City	Zoning	Use	Land Area SF	Bldg SF	Bldg Class	Age	Sale Date	Sale Price (*Estimated)
1 500 6th Street	HB	HBM	Industrial	2,800	900	C	53	7/1/2013	\$ 300,000
2 520-524 Cypress Ave	HB	HBM	Industrial	8,476	7,450	C	63	7/1/2013	1,300,000
3 530 Cypress Ave	HB	HBM	Industrial	3,484	2,400	C	54	7/1/2013	750,000 *
4 637 Cypress Ave	HB	M1YY	Industrial	2,996	1,950	C	45	9/7/2012	651,900
5 550-598 Meyer Ln	RB	RBI-2	Industrial	44,627	27,300	C	58	7/17/2013	2,950,000
6 2425-2477 Manhattan Beach Blvd	RB	RBPI	Industrial	191,690	103,200	C	54	7/31/2012	14,150,000

Address	Sale Price / Land SF	Sale Price / Bldg SF	A/V % Land	Implied Land Value / SF	Implied Improvement Value / SF	Notes
1 500 6th Street	\$ 107.14	333.33	85.8%	\$ 91.95	\$ 47.28	
2 520-524 Cypress Ave	153.37	174.50	60.6%	92.92	68.78	Same Owner for 1-3
3 530 Cypress Ave	215.27	312.50	50.0%	107.63	156.25	
4 637 Cypress Ave	217.59	334.31	87.7%	190.89	41.03	Inter-related Parties
5 550-598 Meyer Ln	66.10	108.06	40.4%	26.71	64.39	Inland
6 2425-2477 Manhattan Beach Blvd	73.82	137.11	49.2%	36.34	69.62	Large Distribution Facility

As shown above in Table 12, the comparable properties tended to be smaller than the Project Site. Adjustments to value based on lot size tend to depend on the minimum lot size required to achieve the highest and best use for a particular location. In example, in some cases land assembly yields a higher land value per square foot, while in other cases land subdivision yields a higher land value per square foot. Given development trends proximate to the Project Site, small industrial condominiums may achieve the highest value per square foot of land. Based on the implied land value of the best comparables and lot size considerations, the Authors assumed that the value of the Project Site could range between \$60 - 100 per square foot (\$2014). This would result in a low value of the Project Site of approximately \$3.4 million assuming \$60 per square foot of land and 1.3 usable acres (56,628 square feet), and a high value of approximately \$6.9 million assuming \$100 per square of land and approximately 1.6 usable acres (69,200 square feet).

To the extent that a more precise estimate of potential Project Site value is desired, the Authors recommend that the City retain the services of a licensed real estate appraiser. In general, under most circumstance when a public agency sells or acquires property an appraisal is required and/or used.

Minimum Lease Payment

In order to evaluate the minimum lease payment based on the fair market value of the Project Site, the low and high estimated Project Site values were escalated into future values using the

assumed inflation rate of 3%. The future projected Project Site value was then multiplied by 10% and compared to the City's projected Tidelands and Uplands revenues (based on fixed pricing escalated at 3% annually to adjust for inflation). Projected City Tidelands and Uplands royalty revenues were then compared to 10% of the fair market value, and a maximum credit of the lesser of actual City Tidelands revenues or \$281,250 (discussed above) was applied. To the extent that (i) City Uplands royalty revenues were less than (ii) the difference between 10% of fair market value less the maximum Tidelands credit, then a minimum lease payment was assumed to be due. The Authors conclude that the entire minimum lease payment calculated in this manner would go to the Uplands, and that the calculated payment is incremental / in addition to actual City Tidelands and Uplands royalty revenues. In applying this calculation to the revenue projections herein, under no scenario (production or royalty calculation) was a minimum rent payment determined to be due. Based on this finding, the Authors did not assume that the City would receive payments based on minimum lease terms in the aggregated estimates of City revenues.

8.0 Other Direct Revenues

8.1 Oil Lease Property Taxes

Should the Project proceed, the City is expected to receive additional revenue from property taxes levied essentially on the value of the Reservoir. Property taxes are levied based on the estimated net present value of the right to produce oil and gas from a particular reservoir. The total volume and production curve of recoverable oil and gas are first estimated, and the market value of recovered resources is then estimated over the life of production. Total costs associated with production are similarly estimated into the future, and the net annual cashflow is then discounted back to determine a present value as an initial assessed value. In each year of production that assessed value is decreased by the value of oil and gas produced during the prior years, and increased annually by up to 2% pursuant to Proposition 13.

Key variables in the calculations as applicable to the Project include the estimated Reservoir volume, estimated Project development and production costs, and the appropriate discount rate. The LACOA typically works with an oil lease owner to determine the estimated assessed valuation based on that owner's individual cost estimates, and discount rates utilized by that owner. Pursuant to discussions with the LACOA, discount rates typically range from 13% to 18% per year, with higher discount rates often assigned to more speculative projects, and operators with higher costs of capital. Higher discount rates result in a somewhat lower present assessed valuation, and lower property taxes. Additionally, pursuant to discussions with the LACOA, given the limited information on the potential Reservoir volume, an evaluation of the Project's assessed valuation would likely occur after the results from the test wells are obtained.

To provide an order of magnitude of potential incremental property tax revenue that may accrue to the City, the Authors utilized production estimates discussed herein, and revenue figures based on fixed sale values (per barrel of oil / MCF of gas). These revenues were then offset against an estimate of E&B's potential Project development costs and ongoing operating costs. The Authors assumed well completion costs of \$1.5 million (\$2014) per well drilled or redrilled, Project Site improvements of \$5.0 million (future value), equipment costs of \$323,750 per well (\$2009, from the EIA Oil and Gas Lease Equipment and Operating Costs 1994 Through 2009 survey), and ongoing operating costs of \$30 per barrel recovered (fixed, against fixed oil and gas sale values). The Authors included E&B's settlement payment as a cost of the Project, and assumed an 18% discount rate based on the speculative nature of the Project. Additional assumptions are provided in Table 13 and Table 14 below. For reference, the City receives approximately 20.3% of the base 1% general property tax levy (\$0.203 of every \$1.00 of the general levy).

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue													
Total Oil & Gas Sales	-	-	-	-	10,270,000	41,260,000	76,330,000	102,640,000	97,090,000	75,020,000	61,610,000	54,710,000	51,580,000
Other Revenues	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenues	-	-	-	-	10,270,000	41,260,000	76,330,000	102,640,000	97,090,000	75,020,000	61,610,000	54,710,000	51,580,000
Expenses													
Redrills	-	-	-	-	-	-	-	-	-	-	-	-	-
Well Completion & Redrill Costs	-	-	-	-	4,770,000	-	20,260,000	20,870,000	12,540,000	-	-	-	-
Site Improvements	-	-	-	1,000,000	1,000,000	3,000,000	-	-	-	-	-	-	-
Lease Equipment Costs	-	-	-	-	1,000,000	12,300,000	-	-	-	-	-	-	-
Ongoing Operating Costs	-	-	-	-	3,200,000	12,840,000	23,760,000	31,950,000	30,220,000	23,350,000	19,180,000	17,030,000	16,050,000
Settlement Agreement Payment to MOC	30,000,000	-	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	30,000,000	-	-	1,000,000	9,970,000	28,150,000	44,020,000	52,820,000	42,760,000	23,350,000	19,180,000	17,030,000	16,050,000
Net Cashflow	(30,000,000)	-	-	(1,000,000)	300,000	13,110,000	32,310,000	49,830,000	54,330,000	51,670,000	42,430,000	37,680,000	35,520,000
FV Adjustment to 2016	-	(35,400,000)	(41,770,000)	(49,290,000)	(59,340,000)	-	-	-	-	-	-	-	-
PV \$	143,690,000	-	-	-	(59,050,000)	11,110,000	23,210,000	30,330,000	28,030,000	22,580,000	15,720,000	11,830,000	9,450,000
Property Taxes													
Beginning Assessed Value	-	-	-	-	143,690,000	143,690,000	137,860,000	111,110,000	67,400,000	16,680,000	-	-	-
Less: Value of Oil & Gas Produced (FV)	-	-	-	-	-	(10,270,000)	(41,260,000)	(76,330,000)	(102,640,000)	(97,090,000)	(75,020,000)	(61,610,000)	(54,710,000)
Less: Value of Oil & Gas Produced (\$2016 @ Prc	-	-	-	-	-	(8,700,000)	(29,630,000)	(46,460,000)	(52,940,000)	(42,440,000)	(27,790,000)	(19,340,000)	(14,550,000)
Property Tax Growth (2%/Year)	-	-	-	-	-	2,870,000	2,870,000	2,760,000	2,220,000	1,350,000	330,000	-	-
Estimated Assessed Value	-	-	-	-	143,690,000	137,860,000	111,110,000	67,400,000	16,680,000	-	-	-	-
City Property Tax (FV)	-	-	-	-	290,000	280,000	230,000	140,000	30,000	-	-	-	-
City Property Tax (PV) \$2014	-	-	-	-	270,000	260,000	200,000	120,000	30,000	-	-	-	-

Table 14: Estimated Incremental Property Tax Revenues – Applicant Production Estimates

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue													
Total Oil & Gas Sales	-	-	-	-	23,520,000	-	155,520,000	282,200,000	282,200,000	279,910,000	240,640,000	205,610,000	182,550,000
Other Revenues	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenues	-	-	-	-	23,520,000	-	155,520,000	282,200,000	282,200,000	279,910,000	240,640,000	205,610,000	182,550,000
Expenses													
Redrills	-	-	-	-	-	-	-	-	-	-	-	-	-
Well Completion & Redrill Costs	-	-	-	-	4,770,000	-	20,260,000	20,870,000	12,540,000	-	-	-	-
Site Improvements	-	-	-	1,000,000	1,000,000	3,000,000	-	-	-	-	-	-	-
Lease Equipment Costs	-	-	-	-	1,000,000	12,300,000	-	-	-	-	-	-	-
Ongoing Operating Costs	-	-	-	-	7,320,000	-	48,410,000	87,840,000	87,840,000	87,130,000	74,900,000	64,000,000	56,820,000
Settlement Agreement Payment to MOC	30,000,000	-	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	30,000,000	-	-	1,000,000	14,090,000	15,300,000	68,670,000	108,710,000	100,380,000	87,130,000	74,900,000	64,000,000	56,820,000
Net Cashflow	(30,000,000)	-	-	(1,000,000)	9,420,000	(15,300,000)	86,860,000	173,500,000	181,830,000	192,790,000	165,740,000	141,610,000	125,730,000
FV Adjustment to 2016	-	(35,400,000)	(41,770,000)	(49,290,000)	(59,340,000)	-	-	-	-	-	-	-	-
PV \$	533,920,000	-	-	-	(49,920,000)	(12,970,000)	62,380,000	105,600,000	93,780,000	84,270,000	61,400,000	44,460,000	33,450,000
Property Taxes													
Beginning Assessed Value	-	-	-	-	533,900,000	533,900,000	524,650,000	535,330,000	451,160,000	316,310,000	201,980,000	104,620,000	33,120,000
Less: Value of Oil & Gas Produced (FV)	-	-	-	-	-	(23,520,000)	-	(155,520,000)	(282,200,000)	(282,200,000)	(279,910,000)	(240,640,000)	(205,610,000)
Less: Value of Oil & Gas Produced (\$2016 @ Prc	-	-	-	-	-	(19,930,000)	-	(94,660,000)	(145,560,000)	(123,350,000)	(103,690,000)	(75,540,000)	(54,700,000)
Property Tax Growth (2%/Year)	-	-	-	-	-	10,680,000	10,680,000	10,490,000	10,710,000	9,020,000	6,330,000	4,040,000	2,090,000
Estimated Assessed Value	-	-	-	-	533,900,000	524,650,000	535,330,000	451,160,000	316,310,000	201,980,000	104,620,000	33,120,000	-
City Property Tax (FV)	-	-	-	-	1,080,000	1,070,000	1,090,000	920,000	640,000	410,000	210,000	70,000	-
City Property Tax (PV) \$2014	-	-	-	-	1,020,000	970,000	970,000	790,000	540,000	330,000	170,000	50,000	-

As shown in Table 13 and Table 14 above, the Authors estimated the initial (2016) assessed value of E&B's oil rights to be approximately \$144 million based on the CBA Expected case, and up to approximately \$534 million based on the Applicants' production estimates in the EIR. For reference, these values are noticeably different as while the estimated production revenues are less under the CBA Expected scenario, the initial Project costs are not different.

Based on the calculations in Table 13 and Table 14 above, the present value (\$2014) of incremental City property tax revenues is estimated to be \$880,000 under the CBA Expected case, and approximately \$4.8 million under the Applicants' production estimates, with revenues accruing to the City as shown below in Table 15 below.

Table 15: Estimated Incremental Property Tax Revenues - Reservoir

	2016	2017	2018	2019	2020	2021	2022	2023	2024
CBA Expected	\$ 270,000	\$ 260,000	\$ 200,000	\$ 120,000	\$ 30,000	\$ -	\$ -	\$ -	\$ -
Applicant	1,080,000	1,070,000	1,090,000	920,000	640,000	410,000	210,000	70,000	-

Additional discussion of the potential net impact of the Project on City property tax revenues are provided in Section 9.9 and Section 12.0. At this time, given the uncertainty in the amount of property taxes to be generated from Reservoir value, and as will be discussed, the uncertainty of potential impacts to private property values, for the purposes of the analyses herein, the Authors assumed that the incremental property taxes and potential for decreases in property tax revenues would effectively cancel each other out.

8.2 Business License Taxes

Based on the City's current business license tax fee schedule the Authors conclude that applicable business license fees will be based on a fixed fee schedule of approximately \$175 (\$2011) per legal entity, and that absent a multitude of legal business entities related to the Project, annual business license taxes specific to the Project would be de minimus in the context of this document.

8.3 School District Revenues

Under the School District Oil Lease, and the School District Oil lease Amendment, the School District is entitled to a 12.5% royalty of oil and gas produced in the Uplands (estimated to be 21.73% of all oil and gas produced), prorated based on its share (2.91%) of land owned in the Uplands, as well as a \$0.20 barrel tax on every barrel of oil produced at the Project Site. A summary of the gross estimated School District oil and gas revenues is provided in Table 16 below.

Table 16: Gross School District Oil & Gas Revenue Projections (Project Lifetime)

School District Barrel Tax (\$2014)	Barrels	Rev (\$Nom)	Rev (\$2014)	\$/Barrel (\$2014)
CBA Low	10,900,000	\$ 2,180,000	\$ 1,520,000	\$ 0.140
CBA Expected	17,100,000	3,420,000	2,210,000	0.129
CBA High	22,200,000	4,440,000	2,790,000	0.126
Applicant	35,600,000	7,130,000	4,960,000	0.139

School District Royalty (\$2014)	EIA Low \$	EIA Base \$	EIA High \$	Fixed \$
CBA Low	\$ 580,000	\$ 920,000	\$ 1,360,000	\$ 830,000
CBA Expected	920,000	1,520,000	2,230,000	1,300,000
CBA High	1,200,000	2,010,000	2,930,000	1,690,000
Applicant	1,890,000	2,990,000	4,420,000	2,710,000

School District Total Rev (\$2014)	EIA Low \$	EIA Base \$	EIA High \$	Fixed \$
CBA Low	\$ 2,100,000	\$ 2,440,000	\$ 2,880,000	\$ 2,350,000
CBA Expected	3,140,000	3,730,000	4,440,000	3,520,000
CBA High	4,000,000	4,800,000	5,730,000	4,480,000
Applicant	6,850,000	7,950,000	9,380,000	7,670,000

Note to Table 16: The present value of the \$0.20 barrel tax declines over time as the barrel tax remains fixed, however, inflation is assumed to erode the present value of future barrel tax revenue.

While the School District is projected to receive the above revenues, as the School District is a "Local Control Funding Formula" district, the Authors conclude that under existing California school funding provisions, 50% of revenues received as a result of the Project would directly reduce revenues the School District receives from the State, and thus the School District would be expected to effectively receive net revenue equal to 50% of the figures projected above. A summary of the projected net revenues the school district would receive follows in Table 17, and a summary by year is provided in Appendix E.

Table 17: Net School District Oil & Gas Revenue Projections (Project Lifetime)

School District Net Rev (\$2014)	EIA Low \$	EIA Base \$	EIA High \$	Fixed \$
CBA Low	\$ 1,050,000	\$ 1,220,000	\$ 1,440,000	\$ 1,180,000
CBA Expected	1,570,000	1,870,000	2,220,000	1,760,000
CBA High	2,000,000	2,400,000	2,860,000	2,240,000
Applicant	3,430,000	3,970,000	4,690,000	3,840,000

9.0 Direct City Costs

In this section, the primary costs to the City should the Project be approved or not approved are discussed. The most significant of these factors include the settlement payment required under the Settlement Agreement, the City's cost to temporarily and permanently relocate the maintenance yard, and the cost to remediate the existing soil contamination on the Project Site and the New City Yard Site. Additional costs evaluated include the cost / benefit of the use of financial advances that may be provided by E&B, and incremental City service costs. A discussion of the quantification of hypothetical reductions in property tax revenues is also provided.

9.1 Settlement Agreement

Under the Settlement Agreement, should the residents of the City vote to allow the Project to proceed and the City issues a drilling permit, the City will owe to E&B a payment of \$3.5 million, to be repaid from oil and gas revenues. Should the voters not approve the Project the City will owe \$17.5 million to E&B. Additional details of each scenario follow.

Project Approved - \$3.5 million Settlement Payment

Under Section 4.6(b) of the Settlement Agreement, should the Project be approved by voters and the City issues a drilling permit, the City will owe E&B \$3.5 million to be paid through a deduction in City royalties equal to 1.5% of gross oil and gas revenues produced from the Reservoir. No interest will accrue on the \$3.5 million, and once the balance is paid in full, no diversion of City revenues will continue. For reference, pursuant to Section 4.4(b) if the City cannot issue a drilling permit as the sole result of action taken or not taken by E&B, the settlement payment will remain \$3.5 million (i.e. \$14 million will still be forgiven).

Project Not Approved - \$17.5 million Settlement Payment

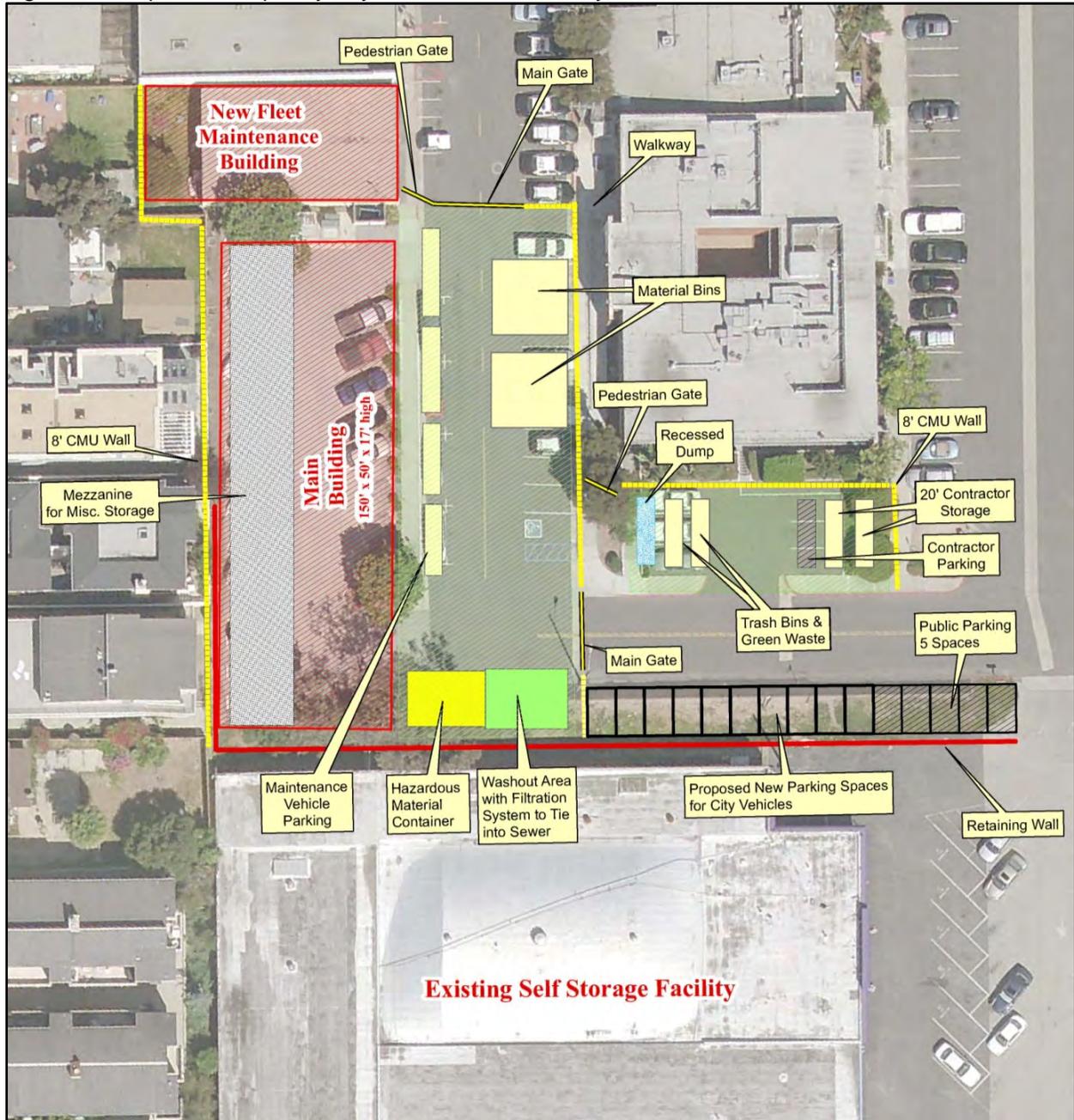
Should voters not approve the Project, the City will owe E&B \$17.5 million, and at the City's discretion, E&B shall (continue) to loan the City the \$17.5 million, but pursuant to Section 4.6(c) of the Settlement Agreement, the funds would be paid to E&B by the City under "commercially reasonable" terms to be mutually agreed to by the City and E&B. Alternatively, the City could seek outside funding sources to finance repayment of the settlement payment. A discussion of alternative financing options is provided in Section 10.0.

9.2 Temporary Relocation of Maintenance Yard

Should voters approve the Project the City will be required to temporarily vacate the City's maintenance yard currently on the Project Site. The current proposal evaluated under the EIR is to construct a temporary maintenance yard immediately southwest of the existing City Hall (on City property). A detailed discussion of the temporary relocation plan is provided in Section

2.5 of the EIR, and a graphic showing the proposed temporary layout adjacent to City Hall follows in Figure 20 below. Pursuant to the Temporary City Yard Relocation Cost Estimate the Authors assumed the cost of temporarily relocating the maintenance yard to be \$3.05 million (\$2014). Further, the Authors assumed that the relocation would take place only if voters approve the Project, and if so, construction would likely occur beginning in 2015.

Figure 20: Proposed Temporary City Maintenance Yard Layout



Note to Figure 20: From Figure 2.20 of the EIR

9.3 Permanent Relocation of Maintenance Yard

Should the results of the test drills completed during Phase 2 support continuing the Project, the City maintenance yard would be permanently relocated from the Project Site to the New City Yard Site. As described in Section 2.5 of the EIR, there are two proposed maintenance yard configurations being evaluated for the New City Yard Site. One of these options includes a below grade structure accommodating 97 parking spaces (net), the other does not. The Authors understand the estimated cost of the supplemental parking option is approximately \$18.8 million, and pursuant to the Permanent City Yard Relocation Cost Estimate, the option without supplemental parking is estimated to cost approximately \$10.0 million (\$2014, including New City Yard Site remediation).

As the Settlement Agreement only requires to the City to relocate the maintenance yard (and not to also provide supplemental parking beyond that which already exists) the Authors evaluated the cost of the option without supplemental parking. Further, the Authors assumed that the maintenance yard would be permanently relocated in 2016, but only if voters approve the Project and the test drills support continuing the Project. For reference, the Authors understand that the existing City maintenance yard is in need of upgrades and/or replacement regardless of whether the Project is approved or not.

Figure 21: Permanent Maintenance Yard Relocation Site Plan (No Supplemental Parking)



Note to Figure 21: From Figure 2.22 of the EIR

9.4 Displacement of Storage Site

The New City Yard Site identified for the permanent relocation of the City maintenance yard is owned by the City, but currently leased to a private self storage operation. The self storage user currently pays a ground lease of \$15,000 per month, or \$180,000 per year. Under the Second Amendment to the ground lease executed in 2012, the lease rate was reduced from \$16,374 per month to its current level. The Authors considered this a concession for adding a provision allowing the City to terminate the lease upon one year's notice. The original lease was executed in 1994, and it is the Authors assumption that absent a potential desire by the City to terminate the lease, the self storage tenant would desire to extend its lease into perpetuity, and the \$16,374 lease rate would have remained in effect. For the purposes of analysis herein the Authors assumed that the lease would be extended, and the original lease rate would be escalated by the assumed inflation rate (3% annually, compounded) every five years, with the next increase occurring in 2017. For reference, in the calculation of net City cashflow in Section 11.0, the rent forgone to provide the City's right to terminate the lease was considered a City cost, with the future value of forgone rent from 2012 - 2014 included in the cashflow calculations for 2015.

As a proxy on property value, is it generally possible to estimate the market value of an income producing property by capitalizing its income stream, in this case lease income, by an appropriate discount rate. The Authors estimate that an appropriate discount rate for the self storage use is between 7 – 9%. Based on this discount rate, and the original lease rate of \$16,374 per month, or \$196,488 per year, the market value of the New City Yard Site would be approximately \$2.18 - 2.80 million. This works out to approximately \$63 - 80 per square foot of land for the 34,897 square foot site. Assuming a land value for the New City Yard Site similar to the Project Site of \$60 - 100 per square foot of land area (as discussed in Section 48), the estimated land value of the approximately 34,897 square foot New City Yard Site would be approximately \$2.1 - 3.5 million. With respect to building improvements, assuming a value of \$50 - 75 per square foot for the approximately 28,052 square foot self storage building, the value of the improvements would be approximately \$1.4 - 2.1 million; a total of approximately \$3.5 - 5.6 million including the underlying land. Should the City maintenance yard not be relocated to the New City Yard Site, the City could conceivably sell this property to raise capital, if desired.

For reference, in the cashflow analysis in Section 11.1 the present value of rent forgone over the life of the Project through the relocation of the City maintenance yard was estimated to have a present value of approximately \$6.4 million. Rent forgone after the Project was not included as the Project Site will ultimately be returned to the City, and could essentially replace or exceed the lost income stream after the completion of the Project.

9.5 Advances Provided Under the Oil Lease

There are several provisions in the Oil Lease which impact the calculation of net City Tideland and Uplands Revenues. These provisions cover a series of advances (essentially loans) from E&B to be placed into a trust from which the City can make withdrawals for City costs to (i)

study maintenance yard relocation options, (ii) temporarily relocate of the yard, (iii) remediate existing soil contamination on the Project Site, and (iv) permanently relocate the maintenance yard. The general elements of each advance are first provided below, followed by a discussion of repayment provisions. For reference, it is the Authors' interpretation that the City can decide whether or not to utilize the advances, and could at its own discretion utilize outside funding sources to complete the required actions and improvements.

Yard Relocation Study Advance

Under Section 13(a) of the Oil Lease the Lessee (currently E&B) is to provide the City with an advance of \$21,000 to cover City costs for consultants to study options for the relocation of the Maintenance Yard. These funds have been provided to the City, and are currently held by the City in a trust account. However, the Authors understand that the funds have not been withdrawn by the City, and therefore are not accruing interest pursuant to the repayment provisions as will be discussed in greater detail below.

Temporary Yard Relocation Advance

Under Section 13(c) of the Oil Lease E&B is to provide the City with an advance of up to \$75,000 for the actual cost of temporarily relocating the Maintenance Yard. In addition, E&B shall advance to the City a Rent Reimbursement of up to \$2,500 per month to cover rent or other actual costs incurred by the City to temporarily relocate the Maintenance Yard. As introduced above, pursuant to the Temporary City Yard Relocation Cost Estimate the Authors assume the cost of temporarily relocating the maintenance yard is \$3.05 million (\$2014). Of this total, it was assumed that \$75,000 could be funded through an E&B advance. As the maintenance yard would be temporarily relocated to City property, the Authors did not assume the rental allowance would be utilized, although ongoing incremental costs associated with the temporary move may qualify for use of the Rent Reimbursement allowance / advance.

Environmental Remediation Advance

Some soil contamination currently exists on the Project Site, primarily under an existing City maintenance building (please see Figure 2.3 in Section 2.3 of the EIR). Under the Oil Lease, the City is required to remediate the Project Site as part of the relocation of the Maintenance Yard. Generally, under Section 13(c)(2) and Section 20(e) of the Oil Lease, the City is to fund the first \$50,000 of remediation costs, E&B the next \$50,000, and any amounts in excess of \$100,000 are to be provided to the City by E&B as an advance. The Applicant's Remedial Action Plan ("RAP") provides a cost estimate for their preferred RAP (Alternative 3) on page 20 of the RAP submitted with their application. Alternative 3 is estimated to cost \$3.7 million (\$2012) with a range of \$2.6 to \$5.5 million. For the purposes of cashflow and net revenue analyses herein, the Authors assumed remediation of the Project Site would cost \$3.7 million (\$2012, approximately \$3.8 million in \$2014). The Authors also estimate that of this total cost, approximately \$3.70 million (\$2014, total cost less the City's \$50,000 portion and E&B's \$50,000 portion) may be funded in the form of an advance. For reference, in subsequent calculations, it is assumed that remediation would be completed in 2017, at a future value / cost

of approximately \$4,165,000, resulting in an advance of approximately \$4,065,000 (total cost less \$50,000 from City and \$50,000 from Applicant).

Permanent City Yard Relocation

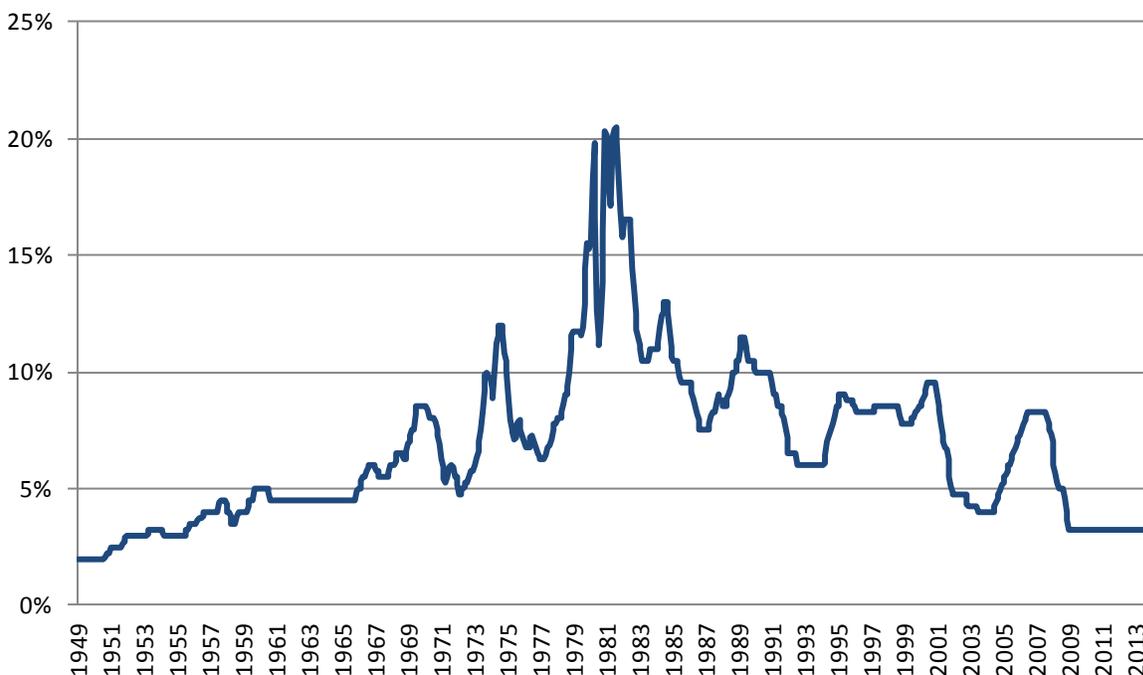
Under Section 13(d) of the Oil Lease, E&B is to provide an advance to the City of up to \$500,000 for the actual cost of permanently relocating the maintenance yard. As previously introduced, pursuant to the Permanent City Yard Relocation Cost Estimate, the Authors assume the cost of permanently relocating the City maintenance yard is \$10.0 million.

Repayment of Advances

Under Section 13(d)(4) of the Oil Lease, these advances accrue simple interest (rather than compounding interest) upon withdrawal from the trust by the City. Interest is based on the lesser of the prime rate, or 12% annually. Revenue the City would receive from oil and gas production is the sole required source of repayment of advances, and the advances are not considered general obligations of the City. Payments are based on 50% of City royalty revenues until all advances have been repaid, with payments allocated first to interest, and then to principal. To the extent that 50% of oil and gas revenues are not sufficient to repay the advances by the end of the Oil Lease, up to the remaining 50% of City oil and gas revenues would be utilized to repay the advances. To the extent that 100% of City oil and gas revenues are not sufficient to repay the advances, any unpaid portion would then be forgiven. A brief discussion of the prime rate and simple interest is provided below.

Prime Rate - The prime rate is generally described as the rate that a majority commercial banks charge their most credit worthy customers. The prime rate is currently 3.25%, has remained unchanged since January of 2009, and tends to follow the Federal Reserve's overnight lending rate, plus 300 basis points ("BP") or 3%. A chart showing the historic prime rate follows in Figure 22 below. For the purposes of the analysis herein, the Authors utilized projections of the prime rate based on Constant Maturity Treasury yields where calculations required estimates of future prime rates. Based on these projections, for the purposes of the analyses herein, the prime rate was assumed to grow from 3.5% in 2014 to 8% by 2021, and it was assumed to remain at this rate for the balance of the Oil Lease.

Figure 22: Historic Prime Rate (1949 – 2013)



Simple Interest - Simple interest is calculated as the original loan balance multiplied by the interest rate per period, multiplied by the number of periods money is loaned. In this case the interest rate is calculated based on annual interest payments, and years, or portion thereof that money is borrowed.

Section 13(d)(4) of the Oil Lease provides that City Tidelands revenues shall be allocated to the repayment of advances to maximum extent permitted by law. Under Paragraph 7 of the CSLC MOU, the CSLC acknowledges the City's intent to allocate 70% of City Tidelands oil and gas revenues and 30% of Uplands oil and gas revenues to the repayment of any advances. As such, in analyzing net City cashflows the Authors assumed a 70% / 30% allocation.

While the City may utilize the aforementioned advances to help fund the City's obligations under the Oil Lease and the Settlement Agreement, the Authors conclude that the City is not required to do so. Reasons the City's may choose to utilize the advances include the fact that the advances are not considered an obligation of the City's General Fund, interest is calculated based on a simple interest formula, the prime rate of interest may be lower than the City's alternative borrowing costs, and to the extent that oil and gas revenues are not sufficient to repay the advances, unpaid portions are forgiven. Reason's the City may choose not to utilize the advances include the required allocation of 50% of City oil and gas revenues to repay the funds, potential for future increases in the prime rate, and the potential ability to attain lower annual payments for required funds based on longer loan lengths and amortization periods. A sample evaluation of the City's net cashflow under the CBA Expected case utilizing the advances versus not utilizing the advances is provided in Section 11.0. In general, based on the assumptions contained herein, the Authors find that utilizing the advances has a net positive present value of approximately \$1.8 - 1.9 million (\$2014).

9.6 Emergency Trust Fund

Section 18(d) of the Oil Lease requires the City and E&B to establish an Emergency Trust Fund with portions of revenues from oil and gas production. The Emergency Trust Fund is to be funded through an allocation of oil and gas revenues up to \$6.0 million over not longer than a 10 year period, beginning four years after the commencement of Phase 4. Of the \$6.0 million total, \$4.0 million is to be funded by E&B through 5% of the net profits received by E&B, essentially after all Project development costs are recovered. The remaining \$2.0 million of the \$6.0 million total is to be funded by an allocation of 5% of the City's oil and gas revenues after (i) deduction for repayments of the potential advances discussed above, and (ii) recovery of the City of its costs of undertaking the lease. The Authors interpret (ii) to include unreimbursed costs associated with Project entitlements, the cost of temporarily and permanently relocating the City maintenance yard, and Settlement Agreement payments. The City is required to begin funding the Emergency Trust Fund within four years of receiving royalty revenues, and similarly has 10 years after that date to fully fund its share of the reserve. In the analysis herein, the Authors assumed that the City would begin funding the Emergency Trust Fund in 2020, and under the various scenarios evaluated, would take approximately one to four years to fully fund to \$2.0 million. At the end of the Oil Lease, should the Emergency Trust Fund not have been utilized, the City would have the right to remove its share of contributions. In the cashflow analysis in Section 11.1 the Authors assumed that the Emergency Trust Fund would not need to be used over the life of the Oil Lease, and that the funds would be distributed back to the Tidelands and Uplands on a 70/30 basis at the end of the lease. As funds in the trust are assumed to accrue interest (at 3.5% below the assumed prime rate, or generally a rate of 4.5%; 1.5% above assumed inflation for the majority of the term) the present value of the City's allocation of revenues to the Emergency Trust Fund is projected to have a present value of approximately \$540,000 to \$640,000 in the Tidelands and \$230,000 to \$260,000 in the Uplands (\$2014).

9.7 Fire Service

It is the Authors' understanding that pursuant to provisions of the EIR, E&B would be responsible for compensating the City for the cost of additional service capacity of the City's Fire Department and/or mutual aid agreements necessary as a result of the Project. Based on preliminary estimates from the City's Fire Department, supplemental costs would be expected to include the following:

- Upgrades to the City's existing fire dispatch system allow for integration with the Redondo Beach and Manhattan Beach Fire Departments - The estimated initial cost is \$120,000 (\$2014), and it is assumed that there would be a need to upgrade the system every 10 years
- An increase in staffing of approximately one full time equivalent ("FTE") position at a Fire Marshal / Inspector level - The estimated initial cost is \$200,000 per year (fully loaded, \$2014) for 35 years
- An allowance for annual training and practice of skills specific to potential Project hazards - The estimated initial cost is \$200,000 (\$2014, including travel, and backfill

staffing), and the assumed need for annual ongoing training is estimated to cost \$50,000 per year (\$2014)

The total of these incremental costs are estimated to result in initial costs of approximately \$520,000 and annual ongoing costs of \$250,000 (\$2014). Assuming implementation of supplemental services beginning in 2015, and continuing through the assumed termination of the Oil Lease in 2049 (a 35 year period), the present value of the cost of incremental fire service is estimated to be approximately \$16.5 million (\$2014).

Should the Project be approved, it is the Authors' understanding and assumption that under the mitigation measures in Section 4.6 of the EIR (FP-1c, and FP1-f) the Applicant would be responsible for reimbursing the City for these incremental costs, and as such these figures are provided for reference only and not included in the calculation of net City revenues.

9.8 Ongoing Project Monitoring

If the voters approve the Project additional City staff time would likely be required to perform oversight of the Project (in addition to increases in Fire Department services), monitoring of mitigation measures, conditional use permit compliance, and complete general reporting requirements. The Authors estimate that tasks would require services from various personnel (part of multiple employees FTE allocation). For the purposes of analysis herein the Authors assumed an annual incremental cost allocation of \$350,000 annually (\$2014, fully loaded, approximately 1.25 - 1.50 FTE, plus an allowance for outside consultant costs). Assuming implementation of Project oversight beginning in 2016, and continuing through the assumed termination of the Oil Lease in 2049 (a 34 year period), the present value of the cost of ongoing project monitoring is estimated to be approximately \$11.9 million.

Under Section 21(A) 2.13 of the City's current Oil Code"

"Any person who is an operator of any well shall pay a nonrefundable annual well permit fee as set forth by City Council resolution for each well operated and maintained by such person."

Generally, permit fees are based on a reasonable nexus between service costs and the activities granted under a given permit. For the purposes of the analysis herein the Authors assumed that the City's ongoing personnel costs related to the Project would be compensated through the annual well permit fee, and as such did not include these costs in the calculation of estimated net City revenues.

9.9 Property Tax Revenue

The proposed Project is located proximate to privately owned commercial and residential properties. To the extent that proximate property values are impaired due to the Project, the City's annual property tax revenues could potentially be reduced. As will be discussed in greater detail in Section 12.0, the Authors have not been able to find conclusive, credible

information to establish a reliable estimate of potential value impairment, if any. As such, in this section, the potential impact on City property tax revenues is evaluated based on the level of reduction in value that would be required to have a reasonably substantial impact on City property tax revenue.

The Authors reviewed LACOA data and evaluated the number and assessed value of properties near the Project Site. As of 2013, the City’s total Assessed Valuation (“A/V”) was approximately \$5.38 billion. Data available from the LACOA included roll values through 2012, and provides a total A/V of approximately \$5.28 billion. As shown in Table 18, of this total, approximately 1% of total City A/V is located within 250 feet of the Project Site, 3.4% within 500 feet, 11.8% within 1,000 feet, and 27.2% within 1,500 feet of the Project Site.

Table 18: Assessed Valuation by Distance from Project Site (\$2012)

Distance Range		Properties	Total AV	Residential AV	Cumulative %
-	50	12	\$ 3,700,000	\$ -	0.07%
51	100	3	800,000	-	0.08%
101	250	71	45,200,000	33,100,000	0.94%
251	500	172	127,500,000	115,800,000	3.35%
501	1,000	645	447,600,000	389,100,000	11.83%
1,001	1,500	983	814,400,000	702,600,000	27.24%
1,501	2,000	852	624,800,000	511,100,000	39.07%
2,001	2,500	737	518,200,000	354,800,000	48.88%
2,501	+	3,504	2,700,700,000	2,553,200,000	100.00%
(In Feet)		6,979	\$ 5,282,900,000	\$ 4,659,800,000	

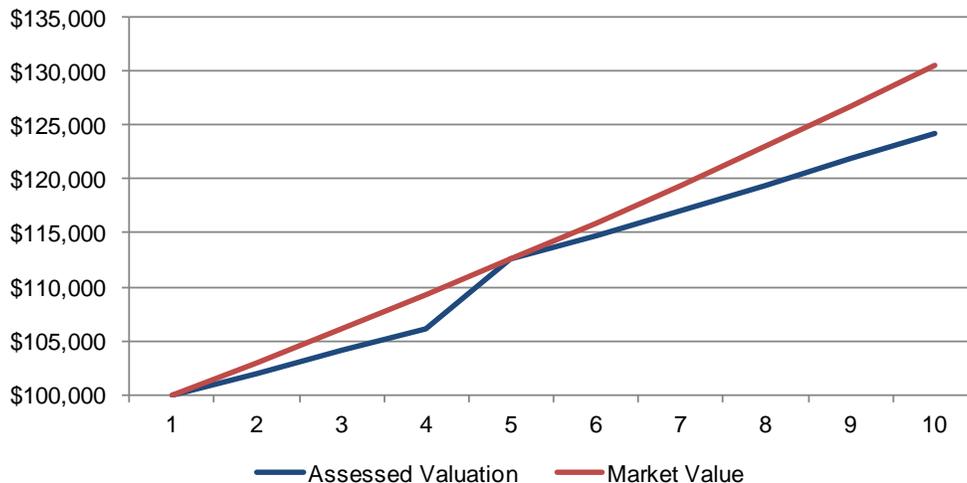
Pursuant to the City’s Comprehensive Annual Financial Report (“CAFR”) for the fiscal year ending June 30, 2012, in fiscal year 2011-12 the City received approximately \$11.6 million in property tax revenue. The approximate distribution of revenue by distance from the Project Site is shown in Table 19 below. As an example, of the approximately \$11.6 million in property tax revenue received by the City, approximately \$99,000 was generated by properties located between 101 – 250 feet of the Project Site.

Table 19: Proximate Property Information, City Property Tax Revenue (\$2012)

<u>Distance Range</u>	<u>Residential AV %</u>	<u>Avg. Last Sale</u>	<u>City Prop Tax</u>
- 50	0%	1999	\$ 8,000
51 100	0%	2004	2,000
101 250	73%	2003	99,000
251 500	91%	2004	280,000
501 1,000	87%	2003	983,000
1,001 1,500	86%	2004	1,788,000
1,501 2,000	82%	2004	1,372,000
2,001 2,500	68%	2004	1,138,000
2,501 +	95%	2003	5,929,000
(In Feet)	88%	2003	\$ 11,599,000

Table 19 above provides the average sale date of properties by distance from the Project Site. Sale date is relevant, as under Proposition 13 the assessed value of properties can only increase at a maximum rate of 2% per year, unless properties are purchased / sold, at which time the assessed valuation is generally set to the market price. As a result, property values are often greater than total assessed valuation. A visual depiction of this is provided in Figure 23 which shows how the market value and assessed value could vary assuming market price increases of 3% annually, assessed valuation increases of 2% annually, and a \$100,000 property purchased / sold in year one, and again in year five.

Figure 23: Hypothetical A/V versus Market Value Example



Based on residential property sales data, home prices (per square foot) have increased approximately 40% since 2003, and 24% since 2004 (through 2013). Under Proposition 13 limits, the assessed valuation of a home purchased in 2003 would have increased by a maximum of 22%, and 20% for a home purchased in 2004 (2% compounded annually, through 2013). Thus, from an existing valuation perspective, on average, values would have to decrease by an amount greater than approximately 4% (for 2004 sales) and approximately 18% (for 2003 sales) before potential value impairment would impact City property tax revenues. However, it

should be noted that potential impairment of future home sales values would impact the growth of City property tax revenues.

The historic growth in the City's assessed valuation (where 2004 = 100), market sales values (where 2004 = 100), and property inventory turnover rate (percentage of all properties sold in a year) are shown in Figure 24 and Table 20 below. For reference, citywide growth in assessed valuation can occur at a greater rate than market value growth, and even during periods of decreasing market values, due to the differential between assessed values and market values, when assessed values are essentially catching up to market values.

Figure 24: Historic A/V Growth / Sales Value Growth (Base 100), and Inventory Turnover

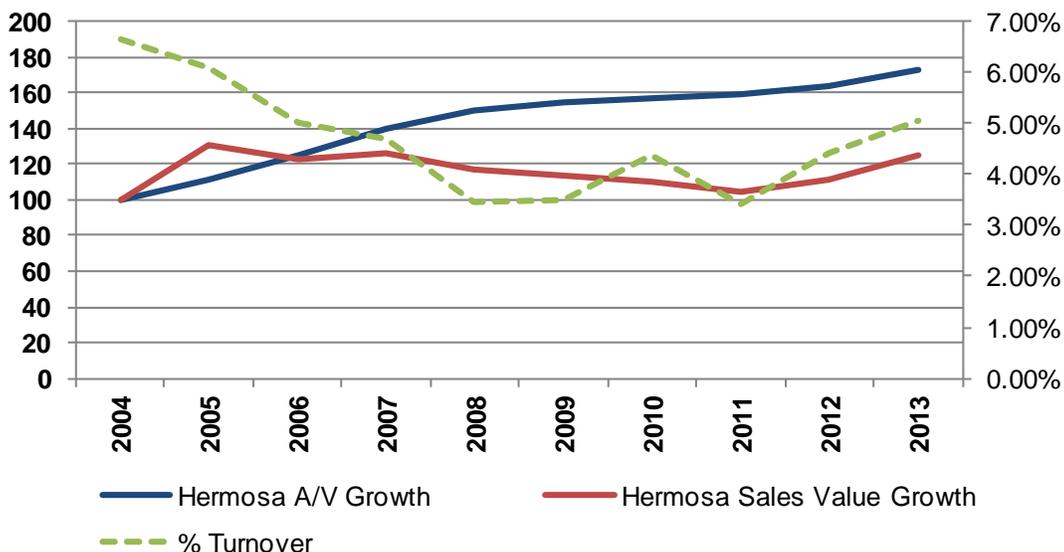


Table 20: Historic A/V Growth, Sales Value Growth, & Inventory Turnover

	2005	2006	2007	2008	2009	2010	2011	2012	2013
A/V Growth	11.5%	12.3%	11.9%	7.4%	3.0%	0.8%	1.7%	3.0%	5.6%
Sales \$/SF Growth	30.5%	-5.5%	2.5%	-7.6%	-2.7%	-2.9%	-5.1%	6.3%	11.9%
Intentory Turnover	6.1%	5.1%	4.5%	3.9%	3.5%	4.4%	3.5%	4.2%	4.9%

To provide a hypothetical quantification of the potential impacts of theoretical changes in property values, the Authors evaluated four hypothetical value impairment scenarios as listed below in Table 21. These hypothetical decreases in property values were then applied to the 2012 assessed valuation to evaluate the hypothetical impact to overall City property tax revenues, as well as estimate the present value of the impairment over a 35 year period. Based on these hypothetical scenarios, a reduction in City property tax revenue of approximately 0.2% would result under alternative A, 0.8% under alternative B, 2.1% under alternative C, and 4.1% under alternative D.

Table 21: Hypothetical Property Value Impairment Thresholds Evaluated

Distance Range		Alt A	Alt B	Alt C	Alt D
-	50	-10%	-15%	-20%	-25%
51	100	-10%	-15%	-20%	-25%
101	250	-5%	-10%	-15%	-20%
251	500	-5%	-10%	-15%	-20%
501	1,000	0%	-5%	-10%	-15%
1,001	1,500	0%	0%	-5%	-10%
1,501	2,000	0%	0%	0%	-5%
2,001	2,500	0%	0%	0%	0%
2,501	+	0%	0%	0%	0%

(In Feet)

Table 22: Impact to City Property Tax Receipts of Hypothetical Impairment Thresholds

Distance Range		Alt A	Alt B	Alt C	Alt D
-	50	\$ (800)	\$ (1,200)	\$ (1,600)	\$ (2,000)
51	100	(200)	(300)	(400)	(500)
101	250	(4,950)	(9,900)	(14,850)	(19,800)
251	500	(14,000)	(28,000)	(42,000)	(56,000)
501	1,000	-	(49,150)	(98,300)	(147,450)
1,001	1,500	-	-	(89,400)	(178,800)
1,501	2,000	-	-	-	(68,600)
2,001	2,500	-	-	-	-
2,501	+	-	-	-	-
(In Feet)		\$ (19,950)	\$ (88,550)	\$ (246,550)	\$ (473,150)
% of 2012 Rev		-0.2%	-0.8%	-2.1%	-4.1%
PV over 35 years		\$ (430,000)	\$ (1,900,000)	\$ (5,300,000)	\$ (10,170,000)

For additional context and discussion of the potential range of impacts to private property values please see Section 12.0. Based on the discussion provided in Section 12.0, and consideration of the discussion in Section 8.1 on property tax revenue that would likely be generated should the Project be developed, it is the Authors assumption that the potential gains in Project Site specific property tax revenues and potential losses in property tax revenues from properties proximate to the Project Site would cancel each other out.

9.10 Summary of Direct City Costs

A summary of the direct City costs discussed in this Section is provided below in Table 23.

Table 23: Summary of Direct City Costs

	\$2014	Offset	Net Cost	Notes
Settlement Payment	\$ 3,500,000	none	\$ 3,500,000	Paid through royalty revenues
Temporary Maintenance Yard	3,050,000	none	3,050,000	
Permanent Maintenance Yard	9,990,000	none	9,990,000	Superior to existing facility
Loss of storage Site Revenue	6,390,000	none	6,390,000	Average of estimated value range
Maintenance Yard Remediation	3,810,000	\$50,000	3,760,000	\$50k to be paid by Applicant
Emergency Trust Fund	2,000,000	100%	-	Funds are returned if not used
Fire Service	16,490,000	100%	-	Cost required to be paid by E&B
Ongoing Project Monitoring	11,900,000	100%	-	Recouped through Well Permit Fee
	<u>\$57,130,000</u>		<u>\$26,690,000</u>	

Note: These costs in Table 23 above do not include the potential cost of financing, or the use of advances pursuant to the Oil Lease. These additional considerations are evaluated and summarized in Section 11.0. Additional descriptions of the cost and offsets of each included item are provided in Sections 9.1 through 9.8 above.

10.0 City Financing Considerations

Whether voters approve the proposed Project or not, it is the Authors conclusion that the City will likely have to obtain financing to either (i) pay all or portions of the \$17.5 million settlement payment, or (ii) finance the costs associated with temporarily and permanently relocating the City maintenance yard. It is the Authors understanding that the City currently has approximately \$6.0 million or more in reserves set aside towards these potential expenses. Should the City desire to fully utilize these funds, it would likely need to raise approximately \$11.5 million if voters do not approve the Project. If voters approve the Project, the Authors estimate that the City will have to fund the relocation of the City maintenance yard totaling approximately \$3.1 million (\$2015), Project Site remediation totaling approximately \$4.1 million (\$2017, less E&B's \$50,000 share), and permanent relocation costs totaling approximately \$10.9 million (\$2017), less any use of E&B advances.

For the purposes of the analyses herein, the Authors assumed that should the Project be approved, the City would either (i) completely self fund the \$3.1 million (\$2015) temporary relocation of the maintenance yard, \$4.1 million (\$2017) remediation of the Project Site, and pursue financing to fund the permanent relocation of the maintenance yard or (ii) maximize the use of advances discussed in Section 9.5, self fund the balance of the temporary relocation of the maintenance yard and Project Site remediation costs, and pursue financing to fund the permanent relocation of the maintenance yard.

A discussion of the potential financing considerations, structures and amounts of potential borrowings follows in this section. For reference the overall City cashflow impacts of the financial structures discussed are provided subsequently in Section 11.0.

10.1 Credit Rating

The Authors completed a summary review of the City's financial metrics to estimate the City's potential credit rating in the public finance market. As a result of this analysis, the Authors preliminarily conclude that the City has reasonably strong financial metrics and may be able to achieve a AA credit rating on General Fund issued debt. To the extent that voters approve a General Obligation bond, the debt may be able to achieve a one "notch" improvement, or a AA+ rating, though such ratings have been difficult to achieve of late. A discussion of potential financing costs under various financing structures follows.

10.2 Financing Options

If cities desire to raise capital to fund projects, they typically have a number of financing options that can be utilized. These options typically include the issuance of Certificates of Participation ("COP's"), General Obligation bonds backed by a general property tax levy, a lease-leaseback loan, or other State or Federal government underwritten loans. A discussion of each of these traditional structures follows.

Certificates of Participation

COP's are bonds that can be issued by a city that are backed by that city's General Fund, and do not require a public vote to be issued. COP's are a common bond structure used by cities to issue debt and finance projects.

General Obligation Bond

A General Obligation bond is a municipal financing structure used to issue debt to be repaid through marginal increases in property tax. Issuance of a General Obligation bond requires a public vote and two-thirds (~66.67%) majority approval.

Parcel Tax

Another financing option is the issuance of a bond funded by a parcel tax. Implementation of a parcel tax requires a public vote and two-thirds (~66.67%) majority approval. Parcel taxes are typically allocated in an equal manner across all parcels, however, can be levied based on parcel improvements or other metrics.

Lease-Leaseback Loan

Through a Lease-Leaseback loan structure cities are able to borrow money under multi-year financial agreements. Lease-Leaseback loans structures are akin to a traditional loan, but structured to comply with the requirements of California law.

State or Federal Loan

In some circumstances, cities are able to obtain loans underwritten through State and/or Federal agencies. While no specific loan programs were evaluated herein, the Authors generally find that such programs are typically in line with financing costs similar to those of lower interest rate Lease-Leaseback structures.

10.3 Potential Borrowing Costs

Based on the above discussion the Authors estimated borrowing costs based on varying structures. For reference, figures denoted with +150 BP are estimates of future borrowing costs one to two years in the future, while those without are estimates based on recent market conditions. As shown in the table, borrowing costs for a \$10 million loan are estimated to range from approximately \$620,000 to \$970,000 depending on bond or loan term and amortization. The figures below are general estimates only; actual loan structures and terms would dictate annual payments and True Interest Cost ("TIC").

Table 24: Estimated Annual Financing Costs for Various Structures (\$10MM Principal/Loan)

Structure, Rate	TIC	Term (Yrs)	Amortization	Annual Payment
<i>COP, AA Rated, No DSRF</i>	4.42%	30 Yrs	30 Yrs	\$ 620,000
<i>COP, AA Rated, DSRF Surety</i>	4.42%	30 Yrs	30 Yrs	620,000
<i>COP, AA Rated, DSRF</i>	4.42%	30 Yrs	30 Yrs	660,000
<i>COP, AA Rated, No DSRF +150 BP</i>	5.96%	30 Yrs	30 Yrs	740,000
<i>COP, AA Rated, DSRF Surety +150 BP</i>	5.96%	30 Yrs	30 Yrs	740,000
<i>COP, AA Rated, DSRF +150 BP</i>	5.96%	30 Yrs	30 Yrs	790,000
<i>Lease-Leaseback</i>	4.50%	7 Yrs	20 Yrs	760,000
<i>Lease-Leaseback +150 BP</i>	6.00%	7 Yrs	20 Yrs	860,000
<i>Lease-Leaseback</i>	6.00%	20 Yrs	20 Yrs	860,000
<i>Lease-Leaseback +150 BP</i>	7.50%	20 Yrs	20 Yrs	970,000

Note: TIC is essentially the all in cost of a particular financing. "Term" is the length of a loan or financing. "Amortization" refers to the number of years over which a loan would be fully repaid or fully amortized at the established payment and rate. If the term is less than the amortization, then a financing has a lump sum payment of a remaining principal balance due at the end of the term.

10.4 City Financing if Project Approved

If the Project is approved, it was assumed that the City would utilize its existing approximately \$6.0 million set aside to (i) fund the temporary relocation of the maintenance yard, and if test drills are successful and the Project proceeds, (ii) fund the remediation of the existing contamination on the Project Site, and (iii) use the remaining funds to partially fund the permanent relocation of the maintenance yard. The balance of the cost of the permanent relocation of the City maintenance yard was assumed to be financed, and for the purposes of the analysis herein, the Authors assumed that the City would utilize a COP structure.

Pursuant to the estimated costs discussed in Section 9.0, it is assumed that the temporary relocation of the maintenance yard would cost \$3.05 million (\$2014), Project Site remediation would cost \$3.8 million (\$2014) and that the cost to permanently relocate the maintenance yard would be approximately \$9.99 million (\$2014, including New City Yard Site remediation). Assuming that the City's approximately \$6.0 million set aside would be allocated to these costs, and no use of advances from E&B, the Authors estimate that the City would have to borrow approximately \$12.2 million (\$2017). Assuming the use of advances from E&B, the estimated amount to be borrowed would be approximately \$7.5 million (\$2017).

Assuming a \$12.2 million borrowing, a AA credit rating, with a DSRF Surety (a third party insurance / guaranty) issued at recent market rates plus 150 basis points, the annual cost of debt service is estimated to be approximately \$900,000 per year, for 30 years. Assuming the lower \$7.5 million borrowing, a AA credit rating, with a DSRF Surety issued at recent market rates plus 150 basis points, the annual cost of debt service is estimated to be approximately \$560,000 per year, for 30 years. Debt service payments could likely be timed to match anticipated oil and gas revenues should the Project be approved.

Reduced Use of City Set Aside

Should the City elect, it could increase its utilization of financing for Project related costs and minimize the use of the City's approximately \$6.0 million set aside. The economic viability of the Project will be unknown until the test drills have been completed, and therefore the need to permanently relocate the City's maintenance yard would be uncertain until the completion of the test drills. As such, under this scenario the Authors assumed that the City would, at a minimum, fund the approximately \$3.05 million temporary relocation of the maintenance yard with a portion of the approximately \$6.0 million set aside, but finance the cost of remediation of the Project Site and permanent relocation of the maintenance yard. Such financing would also likely align the timing of debt service with expected City oil and gas revenues. Under this scenario, the City would likely borrow approximately \$15.0 million (\$2017) if the advances were not utilized, or \$10.5 million (\$2017) if the advances were utilized. Assuming a AA credit rating, with a DSRF Surety issued at recent market rates plus 150 basis points, the annual cost of debt service is estimated to be approximately \$1.1 million per year, and \$780,000 per year for 30 years respectively.

10.5 City Financing if Project Not Approved

As introduced above, should the Project not be approved, the Authors assumed that the City would partially fund the required \$17.5 million settlement payment with the approximately \$6.0 million in funds currently set aside, and seek to finance the remaining \$11.5 million balance. The Authors evaluated four scenarios for the City to finance the \$11.5 million: (i) the issuance of a AA rated COP with a DSRF Surety at 150 basis points above recent market rates, (ii) a General Obligation bond, (iii) a parcel tax funded bond, and (iv) a "commercial loan" with terms in line with a 20 year Lease-Leaseback borrowing at 150 basis points above recent market rates. A discussion of each follows.

COP

Assuming an \$11.5 million borrowing, a AA credit rating, with a DSRF Surety issued at recent market rates plus 150 basis points, the annual cost of debt service is estimated to be approximately \$850,000 per year, for 30 years. This amount would have to be funded by the City's General Fund. It is the Authors understanding that while it might constrain the City's General Fund, the City would likely be able to support this payment.

Supplemental Property Tax

Assuming an \$11.5 million borrowing financed through a General Obligation bond financed through a general property tax levy, the annual cost of debt service is estimated to be approximately \$825,000 per year for 30 years. Assuming a 2% escalation of the City's existing approximately \$5.38 billion assessed valuation in 2013 to \$5.49 billion in 2014, the initial annual

increase in property tax on a given property would be approximately 0.015%, or an additional approximately \$15 per \$100,000 in assessed valuation.

Parcel Tax

Assuming an \$11.5 million borrowing financed through a parcel tax backed bond, the annual cost of debt service is estimated to be approximately \$850,000 per year for 30 years. Based on the City's existing approximately 7,000 parcels the cost if applied equally to all parcels would be approximately \$122 per year per parcel.

Commercial Loan

As previously introduced, pursuant to Section 4.6(c) of the Settlement Agreement, if the Project is not approved, the City's settlement payment could be paid to E&B under commercially reasonable terms to be mutually agreed upon by the City and E&B. Assuming an \$11.5 million borrowing financed through a loan with commercially reasonable terms that are in line with the terms of a 20 year, fully amortizing Lease-Leaseback financing at approximately 150 basis points above recent market rates, the annual payment is estimated to be approximately \$1.1 million per year for 20 years. It is the Authors understanding that while it might constrain the City's General Fund, the City would likely be able to support this payment.

Reduced Use of City Set Aside

As introduced above, should the City elect, it could retain its approximately \$6.0 million set aside, and maximize the use of financing. In the scenario, were the Project not approved, the City could conceivably finance the entire \$17.5 million settlement payment. Assuming a \$17.5 million AA rating COP, with a DSRF Surety issued at recent market rates plus 150 basis points, the annual cost of debt service is estimated to be approximately \$1.29 million per year for 30 years. Assuming a \$17.5 million borrowing financed through a General Obligation bond supported by a general property tax levy, the annual cost of debt service is estimated to be approximately \$1.25 million per year for 30 years. Under a general property tax levy this would be equal to approximately 0.023%, or approximately \$23 per \$100,000 in assessed valuation. If funded through a parcel tax backed bond with similar rates, it would equal approximately \$185 per parcel. Utilizing a commercial loan in line with the terms of a 20 year, fully amortizing Lease-Leaseback financing at approximately 150 basis points above recent market rates, the annual payment is estimated to be approximately \$1.69 million per year for 20 years.

11.0 Net City Cashflow

In this section calculations of net projected City revenues are provided under various scenarios assuming the Project is approved, or the Project is not approved. These calculations are based on analyses throughout this document, and prior sections can be referred to for additional information and context.

Advances from the Applicant evaluated herein (as discussed in Section 9.5 on page 59) are estimated to total approximately \$4,661,000 (before simple interest), comprised of a \$21,000 Yard Relocation Study Advance, a \$75,000 Temporary Yard Relocation Advance, a \$500,000 Permanent City Yard Relocation Advance, and an approximately \$4,065,000 advance for remediation of the existing Maintenance Yard Site (total cost less \$50,000 from City and \$50,000 from Applicant).

The calculations in this section assume that if the Project is approved, the settlement payment required under the Settlement Agreement could be only paid from Uplands royalty proceeds. To the extent that the CSLC would permit funding of the settlement payment with both Tidelands and Uplands royalty revenues, a portion of settlement payment assumed herein to be paid exclusively from the Uplands fund, could be paid out of the Tidelands fund. This would result in an increase in net Uplands revenues of approximately \$1.7 million (\$2014), and a decrease in net Tidelands revenues by approximately the same amount.

For reference, if the proposed Project is approved, the Authors estimate that total production of approximately 5.6 million barrels of oil would be required for the Uplands fund to “breakeven” over the duration of the Project. Under such a scenario the Tidelands fund would realize net revenues of approximately \$47 million (\$2014).

11.1 Estimated Net City Cashflows If Project Approved

Summary calculations of net City revenues should the Project be approved are provided in Table 25 through Table 29. Additionally, in Table 30 a sample calculation of the annual cashflows for the CBA Expected Case is provided (assuming advances are utilized). In each case, the full use of the City's approximated \$6.0 million set aside was assumed.

Table 25: Estimated Net City Revenues - CBA Expected, Advances Utilized

	FV	PV (\$2014)
Tidelands Revenues		
Gross Tidelands Oil & Gas Revenues	\$ 250,050,000	\$ 150,650,000
Less: Settlement Agreement Payment	-	-
Less: Repayment of Advances (70% of Repayment)	(3,340,000)	(3,030,000)
Less: Allocation for Emergency Trust (70% of Funding)	3,370,000	560,000
Net Tidelands Revenues	\$ 250,080,000	\$ 148,190,000
Uplands Revenues		
Gross Uplands Oil & Gas Revenues	\$ 132,040,000	\$ 79,550,000
Less: Settlement Agreement Payment	(3,500,000)	(3,100,000)
Less: Repayment of Advances (30% of Repayment)	(1,430,000)	(1,300,000)
Less: Allocation for Emergency Trust (30% of Funding)	1,440,000	240,000
Net Uplands Revenues	\$ 128,550,000	\$ 75,390,000
Other Costs (Considered Uplands)		
Use of City Reserve for Temporary Relocation	(3,050,000)	(2,960,000)
Use of City Reserve for Project Site Remediation	(50,000)	(50,000)
Use of City Reserve for Permanent Relocation	(2,900,000)	(2,660,000)
Debt Service For Permanent Relocation (Approximate)	(16,690,000)	(9,980,000)
Less: Loss of Storage Site Revenues	(11,590,000)	(6,390,000)
Total Other Costs	\$ (34,280,000)	\$ (22,030,000)
Net Uplands Revenues After Other Costs	\$ 94,270,000	\$ 53,370,000
Net Tidelands & Uplands Revenues	\$ 344,350,000	\$ 201,550,000

Table 26: Estimated Net City Revenues - CBA Expected, No Use of Advances

	FV	PV (\$2014)
Tidelands Revenues		
Gross Tidelands Oil & Gas Revenues	\$ 250,050,000	\$ 150,650,000
Less: Settlement Agreement Payment	-	-
Less: Repayment of Advances (70% of Repayment)	-	-
Less: Allocation for Emergency Trust (70% of Funding)	3,370,000	560,000
Net Tidelands Revenues	\$ 253,420,000	\$ 151,210,000
Uplands Revenues		
Gross Uplands Oil & Gas Revenues	\$ 132,040,000	\$ 79,550,000
Less: Settlement Agreement Payment	(3,500,000)	(3,100,000)
Less: Repayment of Advances (30% of Repayment)	-	-
Less: Allocation for Emergency Trust (30% of Funding)	1,440,000	240,000
Net Uplands Revenues	\$ 129,980,000	\$ 76,690,000
Other Costs (Considered Uplands)		
Use of City Reserve for Temporary Relocation	(3,140,000)	(3,050,000)
Use of City Reserve for Project Site Remediation	(2,860,000)	(2,620,000)
Use of City Reserve for Permanent Relocation	-	-
Debt Service For Permanent Relocation (Approximate)	(27,050,000)	(16,170,000)
Less: Loss of Storage Site Revenues	(11,590,000)	(6,390,000)
Total Other Costs	\$ (44,640,000)	\$ (28,220,000)
Net Uplands Revenues After Other Costs	\$ 85,340,000	\$ 48,470,000
Net Tidelands & Uplands Revenues	\$ 338,760,000	\$ 199,680,000

Table 27: Estimated Net City Revenues - CBA Low, Advances Utilized

	FV	PV (\$2014)
Tidelands Revenues		
Gross Tidelands Oil & Gas Revenues	\$ 147,110,000	\$ 96,000,000
Less: Settlement Agreement Payment	-	-
Less: Repayment of Advances (70% of Repayment)	(3,340,000)	(3,030,000)
Less: Allocation for Emergency Trust (70% of Funding)	3,260,000	540,000
Net Tidelands Revenues	\$ 147,030,000	\$ 93,520,000
Uplands Revenues		
Gross Uplands Oil & Gas Revenues	\$ 77,680,000	\$ 50,690,000
Less: Settlement Agreement Payment	(3,500,000)	(3,100,000)
Less: Repayment of Advances (30% of Repayment)	(1,430,000)	(1,300,000)
Less: Allocation for Emergency Trust (30% of Funding)	1,400,000	230,000
Net Uplands Revenues	\$ 74,150,000	\$ 46,530,000
Other Costs (Considered Uplands)		
Use of City Reserve for Temporary Relocation	(3,050,000)	(2,960,000)
Use of City Reserve for Project Site Remediation	(50,000)	(50,000)
Use of City Reserve for Permanent Relocation	(2,900,000)	(2,660,000)
Debt Service For Permanent Relocation (Approximate)	(16,690,000)	(9,980,000)
Less: Loss of Storage Site Revenues	(11,590,000)	(6,390,000)
Total Other Costs	\$ (34,280,000)	\$ (22,030,000)
Net Uplands Revenues After Other Costs	\$ 39,860,000	\$ 24,500,000
Net Tidelands & Uplands Revenues	\$ 186,890,000	\$ 118,020,000

Table 28: Estimated Net City Revenues - CBA High, Advances Utilized

	FV	PV (\$2014)
Tidelands Revenues		
Gross Tidelands Oil & Gas Revenues	\$ 333,850,000	\$ 195,510,000
Less: Settlement Agreement Payment	-	-
Less: Repayment of Advances (70% of Repayment)	(3,330,000)	(3,030,000)
Less: Allocation for Emergency Trust (70% of Funding)	3,390,000	570,000
Net Tidelands Revenues	\$ 333,900,000	\$ 193,050,000
Uplands Revenues		
Gross Uplands Oil & Gas Revenues	\$ 176,290,000	\$ 103,240,000
Less: Settlement Agreement Payment	(3,500,000)	(3,100,000)
Less: Repayment of Advances (30% of Repayment)	(1,430,000)	(1,300,000)
Less: Allocation for Emergency Trust (30% of Funding)	1,450,000	240,000
Net Uplands Revenues	\$ 172,810,000	\$ 99,080,000
Other Costs (Considered Uplands)		
Use of City Reserve for Temporary Relocation	(3,050,000)	(2,960,000)
Use of City Reserve for Project Site Remediation	(50,000)	(50,000)
Use of City Reserve for Permanent Relocation	(2,900,000)	(2,660,000)
Debt Service For Permanent Relocation (Approximate)	(16,690,000)	(9,980,000)
Less: Loss of Storage Site Revenues	(11,590,000)	(6,390,000)
Total Other Costs	\$ (34,280,000)	\$ (22,030,000)
Net Uplands Revenues After Other Costs	\$ 138,530,000	\$ 77,050,000
Net Tidelands & Uplands Revenues	\$ 472,430,000	\$ 270,100,000

Table 29: Estimated Net City Revenues – Applicant Estimate, Advances Utilized

	FV	PV (\$2014)
Tidelands Revenues		
Gross Tidelands Oil & Gas Revenues	\$ 474,280,000	\$ 313,570,000
Less: Settlement Agreement Payment	-	-
Less: Repayment of Advances (70% of Repayment)	(3,490,000)	(3,100,000)
Less: Allocation for Emergency Trust (70% of Funding)	3,590,000	600,000
Net Tidelands Revenues	\$ 474,380,000	\$ 311,070,000
Uplands Revenues		
Gross Uplands Oil & Gas Revenues	\$ 250,440,000	\$ 165,580,000
Less: Settlement Agreement Payment	(3,500,000)	(3,120,000)
Less: Repayment of Advances (30% of Repayment)	(1,500,000)	(1,330,000)
Less: Allocation for Emergency Trust (30% of Funding)	1,540,000	260,000
Net Uplands Revenues	\$ 246,990,000	\$ 161,390,000
Other Costs (Considered Uplands)		
Use of City Reserve for Temporary Relocation	(3,050,000)	(2,960,000)
Use of City Reserve for Project Site Remediation	(50,000)	(50,000)
Use of City Reserve for Permanent Relocation	(2,900,000)	(2,660,000)
Debt Service For Permanent Relocation (Approximate)	(16,690,000)	(9,980,000)
Less: Loss of Storage Site Revenues	(11,590,000)	(6,390,000)
Total Other Costs	\$ (34,280,000)	\$ (22,030,000)
Net Uplands Revenues After Other Costs	\$ 212,710,000	\$ 139,360,000
Net Tidelands & Uplands Revenues	\$ 687,090,000	\$ 450,430,000

In Table 30 a below a sample calculation of the annual cashflows for the CBA Expected Case is provided (assuming advances are utilized).

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Tidelands Royalties																		
Gross Tidelands Oil & Gas Revenues	-	990,000	4,120,000	7,850,000	10,870,000	10,590,000	8,430,000	7,130,000	6,520,000	6,330,000	7,820,000	8,600,000	7,890,000	7,320,000	6,920,000	8,020,000	9,000,000	8,310,000
Less: Settlement Agreement Payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Less: Repayment of Advances (70% of Repayment)	-	(70,000)	(2,200,000)	(1,060,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Less: Allocation for Emergency Trust (70% of Funding)	-	-	-	-	-	(570,000)	(450,000)	(360,000)	-	-	-	-	-	-	-	-	-	-
Net Tidelands Revenues	-	920,000	1,920,000	6,780,000	10,870,000	10,020,000	7,980,000	6,770,000	6,520,000	6,330,000	7,820,000	8,600,000	7,890,000	7,320,000	6,920,000	8,020,000	9,000,000	8,310,000
Uplands Royalties																		
Gross Uplands Oil & Gas Revenues	-	530,000	2,170,000	4,140,000	5,740,000	5,590,000	4,450,000	3,760,000	3,440,000	3,340,000	4,130,000	4,540,000	4,170,000	3,860,000	3,650,000	4,240,000	4,750,000	4,390,000
Less: Settlement Agreement Payment	-	(160,000)	(680,000)	(1,290,000)	(1,370,000)	-	-	-	-	-	-	-	-	-	-	-	-	-
Less: Repayment of Advances (30% of Repayment)	-	(30,000)	(940,000)	(460,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Less: Allocation for Emergency Trust (30% of Funding)	-	-	-	-	-	(240,000)	(190,000)	(150,000)	-	-	-	-	-	-	-	-	-	-
Net Uplands Revenues	-	330,000	550,000	2,400,000	4,370,000	5,350,000	4,260,000	3,610,000	3,440,000	3,340,000	4,130,000	4,540,000	4,170,000	3,860,000	3,650,000	4,240,000	4,750,000	4,390,000
Other																		
Use of City Reserve for Temporary Relocation	(3,050,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use of City Reserve for Project Site Remediation	-	-	(50,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Use of City Reserve for Permanent Relocation	-	-	(2,900,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal Balance - Debt for Permanent Relocation	-	-	(7,510,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Service For Permanent Relocation (Approximate)	-	-	-	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)
Less: Loss of Storage Site Revenues	(70,000)	(20,000)	(200,000)	(230,000)	(230,000)	(230,000)	(230,000)	(230,000)	(260,000)	(260,000)	(260,000)	(260,000)	(260,000)	(310,000)	(310,000)	(310,000)	(310,000)	(310,000)
Total Other (Uplands)	(3,110,000)	(20,000)	(3,150,000)	(780,000)	(790,000)	(780,000)	(780,000)	(780,000)	(820,000)	(820,000)	(820,000)	(820,000)	(820,000)	(860,000)	(860,000)	(860,000)	(860,000)	(860,000)
Net Uplands Revenues After Other Costs	(3,110,000)	320,000	(2,600,000)	1,620,000	3,580,000	4,560,000	3,470,000	2,820,000	2,620,000	2,520,000	3,310,000	3,720,000	3,350,000	3,000,000	2,790,000	3,370,000	3,890,000	3,530,000
Net Tidelands & Uplands Revenues	(3,110,000)	1,240,000	(680,000)	8,400,000	14,450,000	14,580,000	11,450,000	9,590,000	9,140,000	8,850,000	11,120,000	12,320,000	11,240,000	10,320,000	9,700,000	11,400,000	12,900,000	11,840,000
Tidelands Royalties																		
Gross Tidelands Oil & Gas Revenues	7,750,000	7,340,000	8,260,000	9,090,000	8,460,000	7,950,000	7,560,000	7,370,000	7,210,000	7,050,000	6,900,000	6,750,000	6,610,000	6,470,000	6,330,000	6,190,000	6,060,000	
Less: Settlement Agreement Payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Less: Repayment of Advances (70% of Repayment)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Less: Allocation for Emergency Trust (70% of Funding)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Net Tidelands Revenues	7,750,000	7,340,000	8,260,000	9,090,000	8,460,000	7,950,000	7,560,000	7,370,000	7,210,000	7,050,000	6,900,000	6,750,000	6,610,000	6,470,000	6,330,000	6,190,000	6,060,000	
Uplands Royalties																		
Gross Uplands Oil & Gas Revenues	4,090,000	3,880,000	4,360,000	4,800,000	4,470,000	4,200,000	3,990,000	3,890,000	3,810,000	3,730,000	3,650,000	3,570,000	3,490,000	3,420,000	3,340,000	3,270,000	3,200,000	
Less: Settlement Agreement Payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Less: Repayment of Advances (30% of Repayment)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Less: Allocation for Emergency Trust (30% of Funding)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Net Uplands Revenues	4,090,000	3,880,000	4,360,000	4,800,000	4,470,000	4,200,000	3,990,000	3,890,000	3,810,000	3,730,000	3,650,000	3,570,000	3,490,000	3,420,000	3,340,000	3,270,000	3,200,000	
Other																		
Use of City Reserve for Temporary Relocation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Use of City Reserve for Project Site Remediation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Use of City Reserve for Permanent Relocation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Principal Balance - Debt for Permanent Relocation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Debt Service For Permanent Relocation (Approximate)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	(560,000)	
Less: Loss of Storage Site Revenues	(350,000)	(350,000)	(350,000)	(350,000)	(350,000)	(410,000)	(410,000)	(410,000)	(410,000)	(410,000)	(480,000)	(480,000)	(480,000)	(480,000)	(480,000)	(550,000)	(550,000)	
Total Other (Uplands)	(910,000)	(910,000)	(910,000)	(910,000)	(910,000)	(970,000)	(970,000)	(970,000)	(970,000)	(970,000)	(1,030,000)	(1,030,000)	(1,030,000)	(1,030,000)	(1,030,000)	(550,000)	(550,000)	
Net Uplands Revenues After Other Costs	3,180,000	2,960,000	3,450,000	3,890,000	3,560,000	3,230,000	3,030,000	2,920,000	2,840,000	2,760,000	2,610,000	2,530,000	2,460,000	2,380,000	2,310,000	2,720,000	4,680,000	
Net Tidelands & Uplands Revenues	10,930,000	10,310,000	11,710,000	12,980,000	12,020,000	11,170,000	10,590,000	10,290,000	10,050,000	9,810,000	9,520,000	9,290,000	9,070,000	8,850,000	8,640,000	8,910,000	15,490,000	

11.2 Estimated Net City Cashflows If Project Not Approved

As introduced in Section 10.5, should the Project not be approved, the City would likely need to finance approximately \$11.5 million of the \$17.5 million settlement payment. Depending on the type and structure of financing utilized, and based on future rates 150 basis points higher than recent market rates, the Authors estimate that the annual cost of debt service for an \$11.5 million financing would likely range from approximately \$850,000 under a 30 year COP bond to \$1.1 million under a 20 year lease-leaseback structure. Should the City desire to fully finance the \$17.5 million settlement payment, and retain its \$6.0 million set aside, the annual cost of debt service is estimated to range from approximately \$1.29 million under a 30 year COP bond to \$1.69 million under a 20 year lease-leaseback structure.

The cost of debt service under these scenarios would be expected to notably constrain the City's General fund; at least until the future value of the payments are eroded through expected inflation and traditional growth in City revenues. Impacts of constraints on a given city's cashflow typically result in reductions in city service levels (i.e. police, fire, and parks services) deferment of capital improvements (i.e. sewer and roadway improvements), the need to raise other fees, and/or difficulty maintaining quality staffing due to below market salary scales, etc.

Alternatively, should voters approve the issuance of a General Obligation bond backed by a property tax levy, or a parcel tax backed bond, the City's cashflow would not be impaired by the need to make the settlement payment.

Finally, as introduced in Section 9.4 in the calculation of net City cashflow, the rent forgone to provide the City's right to terminate the self storage lease was considered as a City cost. The Authors consider this a City cost whether or not the Project is approved. Should the Project not be approved the Authors assume the former lease rates would be reinstated in 2015, and total City cost would be equal to rent forgone between 2012 and 2014, or approximately \$51,000 (\$2014).

12.0 Private Property Values

The proposed Project is located proximate to privately owned commercial and residential properties. To the extent that proximate property values are impaired due to the Project, the City's property tax revenues could potentially be reduced. The Authors worked to identify prior evaluations of impairment to property values due to proximity to oil and gas production, but found limited analyses for projects similar in profile to the proposed Project. Additionally, the Authors evaluated existing projects within Los Angeles County and property information for proximate properties, but were unable to quantify potential impairment. A discussion of the Authors' findings follows.

For reference, a number of studies exist that evaluate the potential impacts to property values as a result of proximity to shale gas fracking operations. However, given the difference between fracking operations, and the proposed Project, the Authors concluded that these studies are not applicable to the evaluation of potential impacts to property values as a result of the Project.

12.1 Potential Property Impairment

There are components of the Project that may effectively reduce the desire of potential buyers to live within a certain proximity to the Project Site. Components or factors could include real or perceived potential health impacts, incremental sound levels, odor, visible appearance, concern over impacts from hazard events, concern over reduced value in the marketplace at time of subsequent sale, etc. The importance a buyer places on these factors, if any, is expected to vary significantly from one buyer to the next, however, given enough of a common perception of impairment, such factors could reduce potential buyer pool size or buyer interest. As a result of the potential reduction in buyer pool or buyer interest, these components could potentially impair the market value of properties within a given proximity of the Project Site. The relative reach or distance a given factor or Project component might be a concern would also be expected to vary on an individual basis. In addition, overall market conditions can impact buyer decisions - during a "seller's" market buyers often place less importance on certain features, or lack thereof, and vice-versa during a "buyer's" market.

Given the multitude of factors that influence buyer decisions, and wide variation in individual calculus, the value or impairment in value of a particular attribute is extremely difficult to predict. Market demand could result in little or no measurable impact to proximate property values. For example, even if a portion of the buyer pool considers proximate properties significantly impaired, there may be a large enough pool of individual buyers that do not consider proximity to the Project an impairment, and values would be maintained. Alternatively, the hyper-local area could be considered impaired by a significant enough majority of buyers as to incur a stigma, and property values could be noticeably impacted. As a result of the wide variety of considerations, and individual decision making processes, prediction and estimation of potential impacts to property values is extremely nuanced and bears a significant opportunity for error.

Despite these nuances, as will be discussed in the next sections, the Authors attempted to identify a relationship between proximity to existing oil production facilities and property values.

12.2 Los Angeles County Data

The Authors first attempted to quantify potential impacts to private property values by evaluating properties in Los Angeles County proximate to existing and proposed oil wells. The process (primarily using ArcGIS geospatial analysis software) was as follows:

- Map all existing and proposed oil wells within Los Angeles County
- Establish a buffer of 50 feet around mapped wells
- Merge well buffers to create a single polygon for each proximate well set
- Identify the closest well to each residential parcel
- Measure the distance between each residential property with a unique LACOA APN and the closest well set
- For homes proximate to the same well set, and sold in the same year, evaluate the relationship between cost per square foot and distance from the well set
- For homes in the same zip code, and for a given year, evaluate the relationship between cost per square foot and distance to a well set

Through this process the Authors identified approximately 56,700 properties sold between 2002 and 2012 within 2,500 feet of a well set. As (i) property values can change significantly from one year to the next, (ii) the LACOA assessed value in the dataset quickly loses relevance as a proxy to market value over time, and (iii) a large sample size is desired for data analysis, the Authors first evaluated the data for relationships based on Countywide data for a given year of sale. Thus, the assessed value in the year of sale (considered the market value) for properties in varying proximities to well sets were compared to the assessed value of properties located further from the well sets.

In the analysis, values per square foot and market value were compared to overall County averages. The resulting data was inconclusive and in many cases consistently yielded values higher than County averages for properties in close proximity to well sets. The Authors' conclusion is not that proximity to well sets are accretive to value, but rather that other factors must influence the results, such as well sets, on average, being located in communities with higher than average property values. The age of improvements was subsequently evaluated under the hypothesis that properties in proximity to well sets may have been built out more recently than others due to overall scarcity of development sites in the region. In general properties in proximity to well sets did have a lower effective age than overall averages, however, again the data proved not to be statistically reliable as related to market values. Further, location in superior neighborhoods could also correlate with higher market values and newer construction or more recent remodeling. As such the Authors conceded that this analysis was inconclusive.

Summary tables from this analysis are provided below for reader review and consideration in Table 31 through Table 34 below.

Table 31: Per Square Foot Values of Properties Proximate to Well Sets Versus County Average

Distance From Well		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
-	50	115.5%	114.1%	124.4%	135.5%	117.6%	123.0%	128.6%	121.8%	121.7%	120.8%	125.2%
51	100	102.9%	101.8%	98.4%	89.8%	102.4%	100.7%	107.0%	108.3%	102.1%	99.7%	118.8%
101	250	98.6%	97.2%	96.9%	96.3%	93.2%	99.1%	91.7%	103.3%	110.5%	100.1%	105.2%
251	500	100.6%	101.3%	105.9%	99.6%	102.5%	104.1%	102.5%	104.9%	120.0%	112.4%	111.5%
501	1,000	96.7%	103.8%	106.7%	105.3%	114.1%	115.3%	110.5%	117.6%	119.6%	115.2%	123.6%
1,001	1,500	98.1%	107.2%	104.7%	152.9%	116.8%	110.7%	117.2%	128.9%	151.0%	133.9%	147.3%
1,501	2,000	101.1%	103.2%	115.5%	116.4%	114.0%	122.7%	122.4%	125.4%	129.9%	131.1%	131.4%
2,001	2,500	104.9%	108.6%	110.6%	114.4%	116.4%	120.4%	118.8%	126.0%	126.7%	131.6%	131.4%

Table 32: Value of Properties Proximate to Well Sets Versus County Average

Distance From Well		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
-	50	108.6%	99.1%	107.0%	100.1%	94.1%	102.2%	115.1%	95.1%	103.8%	115.5%	115.7%
51	100	113.7%	130.8%	115.2%	108.8%	110.0%	113.9%	105.0%	109.7%	114.0%	114.4%	111.4%
101	250	109.3%	113.1%	102.1%	101.7%	94.4%	104.9%	96.3%	111.1%	121.0%	112.8%	115.6%
251	500	96.7%	99.5%	101.5%	93.7%	98.9%	100.3%	95.3%	100.0%	117.3%	111.9%	109.4%
501	1,000	94.7%	99.2%	104.5%	102.5%	111.9%	113.9%	108.4%	119.0%	119.2%	110.3%	120.8%
1,001	1,500	97.5%	104.8%	99.6%	162.4%	106.7%	111.2%	112.6%	118.2%	148.1%	133.2%	150.7%
1,501	2,000	96.4%	96.3%	109.8%	107.3%	106.7%	107.1%	111.9%	119.6%	120.2%	126.1%	127.0%
2,001	2,500	102.3%	100.6%	106.1%	108.9%	101.3%	109.9%	112.9%	119.2%	119.4%	129.9%	126.5%

Table 33: Effective Year of Improvements on Properties Proximate to Well Sets Versus County Average

Distance From Well		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
-	50	1977	1975	1972	1981	1975	1976	1976	1977	1984	1991	1982
51	100	1981	1982	1988	1981	1977	1980	1979	1980	1985	1984	1987
101	250	1974	1978	1974	1974	1971	1973	1972	1973	1976	1975	1974
251	500	1970	1971	1975	1970	1969	1972	1970	1972	1973	1974	1974
501	1,000	1962	1966	1965	1968	1969	1968	1968	1967	1966	1969	1968
1,001	1,500	1965	1962	1962	1964	1967	1964	1967	1971	1967	1966	1968
1,501	2,000	1958	1959	1963	1964	1962	1966	1966	1967	1962	1964	1964
2,001	2,500	1958	1965	1963	1963	1968	1966	1964	1964	1966	1965	1965
County Average		1963	1964	1964	1965	1964	1965	1965	1966	1966	1966	1966

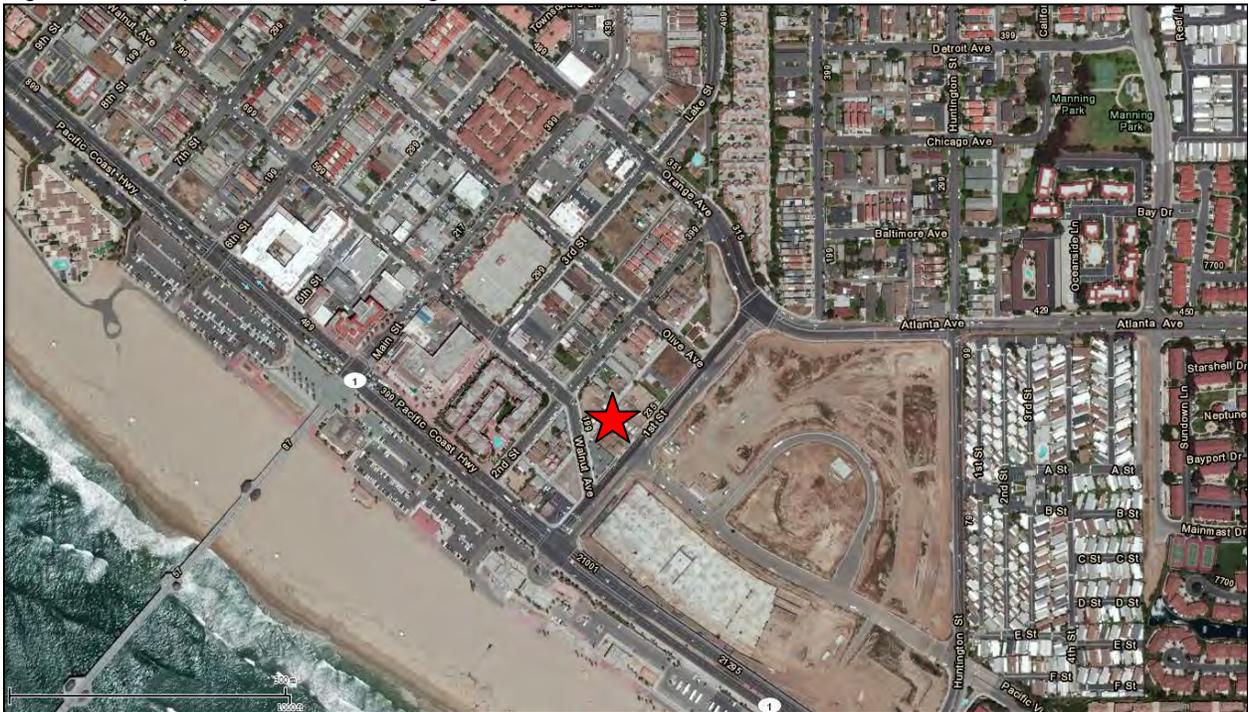
Table 34: Parcel Sample Size by Well Set Distance

Distance From Well		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
-	50	68	81	105	163	105	129	94	108	154	224	261
51	100	36	51	58	58	46	62	32	58	58	63	123
101	250	112	169	141	156	157	157	128	160	187	171	267
251	500	273	342	318	328	334	338	288	373	421	420	606
501	1,000	618	815	757	867	839	809	721	775	915	1,002	1,450
1,001	1,500	674	770	765	967	956	929	770	1,024	995	1,098	1,650
1,501	2,000	752	1,098	1,034	1,107	1,073	1,243	1,066	1,218	1,272	1,435	1,984
2,001	2,500	943	1,351	1,027	1,270	1,399	1,356	1,202	1,293	1,486	1,570	2,368

The next analysis attempted was on a zip code basis. The data set of properties sold in a given year within a given zip code proved too varied and too small of a sample size for confidence in analysis. The Authors attempted to adjust market values based on changes in average property sales values, to increase the effective size of the data set, but considered the resulting data set statistically unreliable and again inconclusive. As such the Authors concluded that analysis must, at a minimum, be done on a location specific basis. A discussion of the Authors attempt to evaluate values on a location specific basis follows.

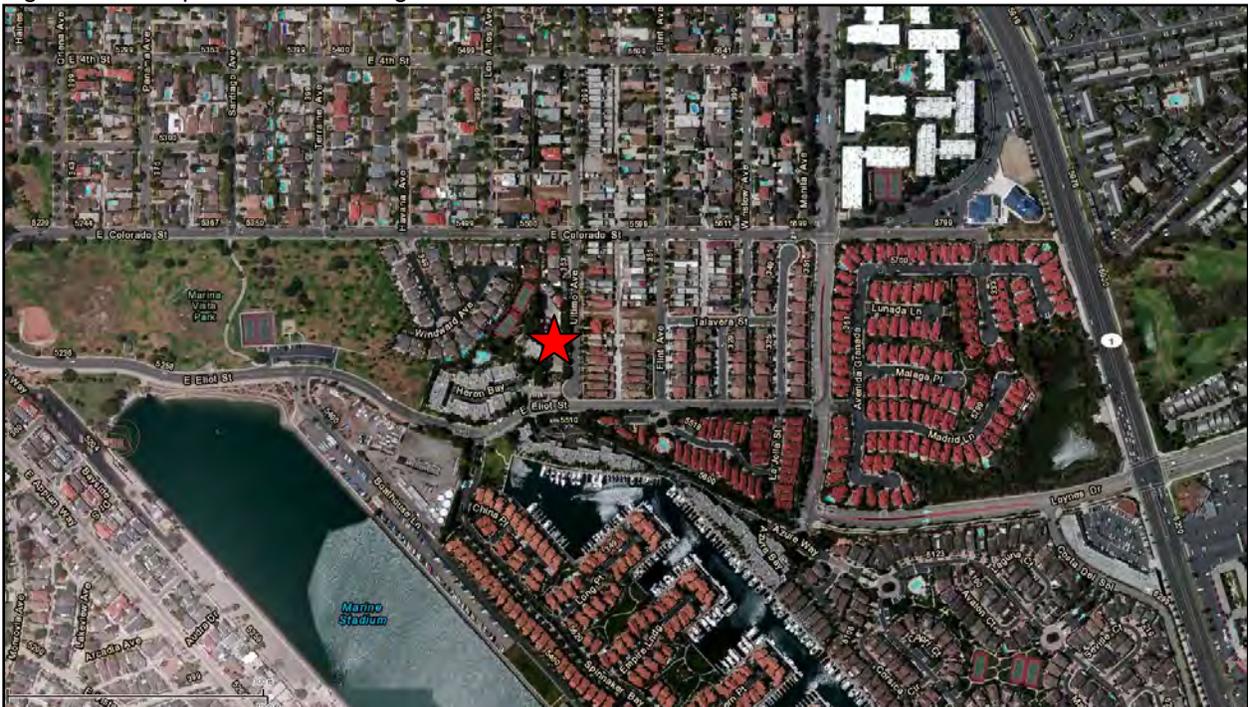
Huntington Beach - Multiple sites located proximate to the intersection of Walnut and 2nd Avenue

Figure 26: Sample Location - Huntington Beach



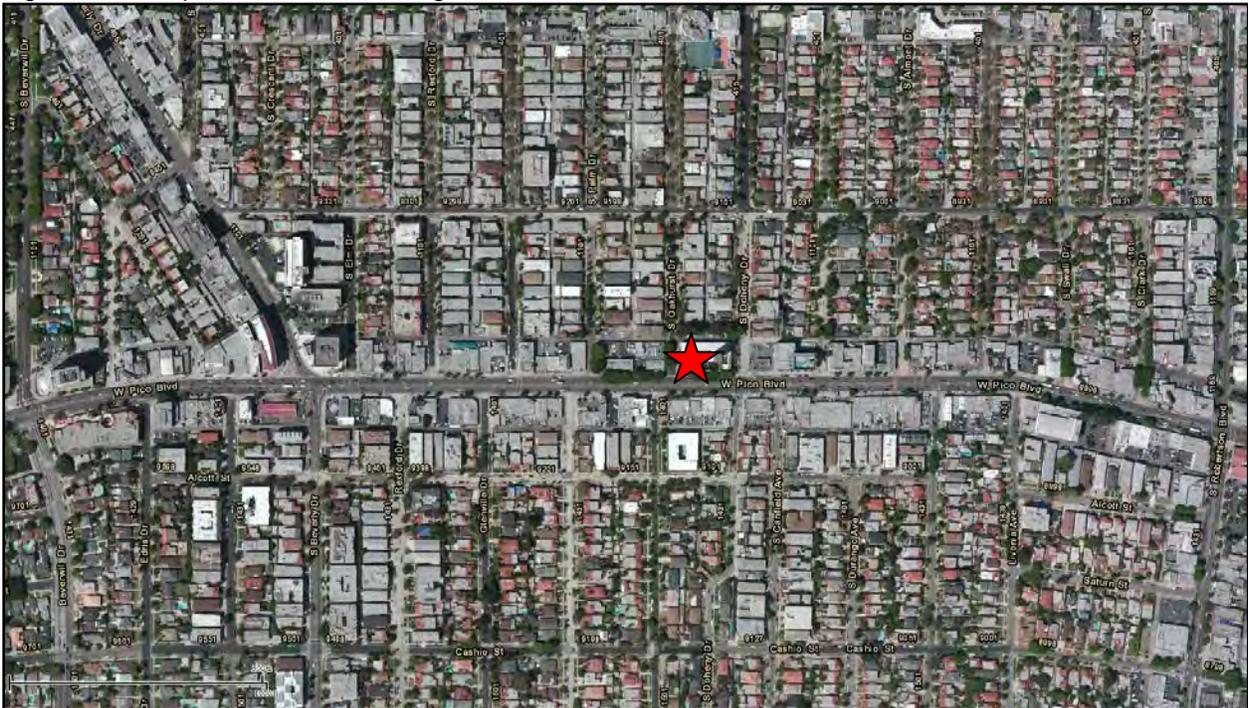
Long Beach - Located west of Ultimo Ave between East Colorado Street and East Eliot Street

Figure 27: Sample Location - Long Beach



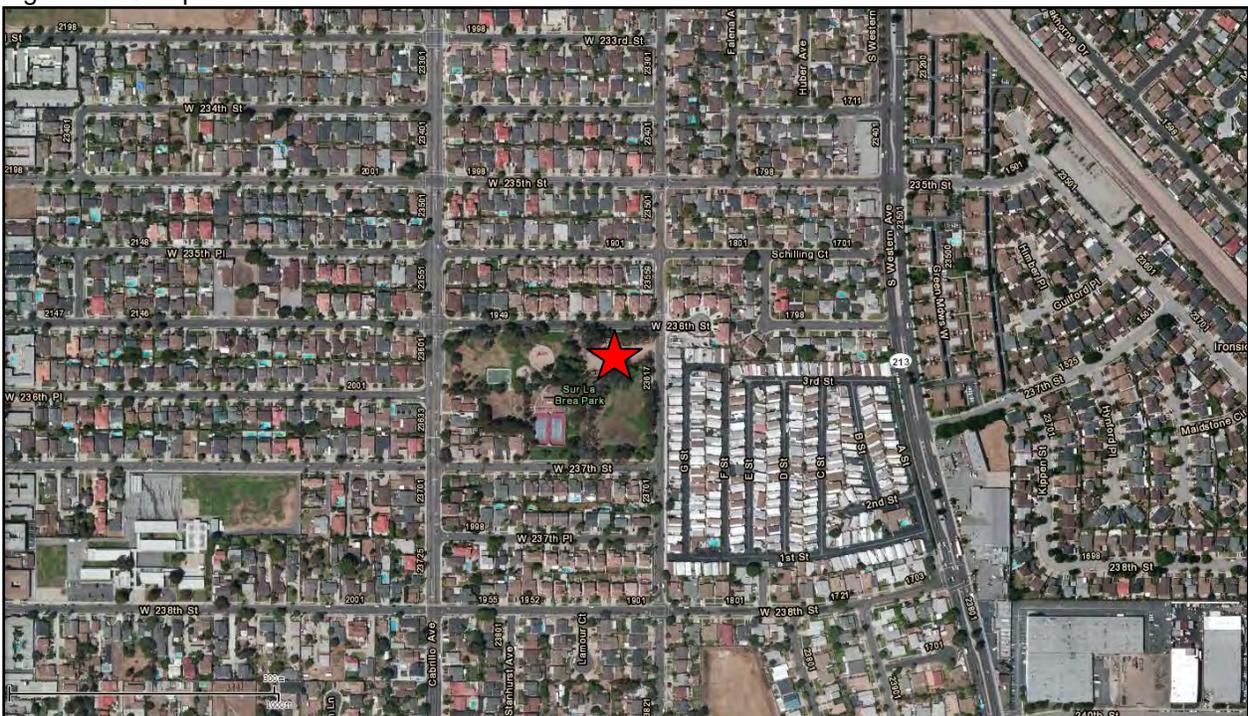
Los Angeles - Located on the north side of West Pico Boulevard between Cardiff Avenue and South Doheny Drive

Figure 28: Sample Location - Los Angeles



Torrance - Located in the northeast corner of Sur La Brea Park, at the southwest corner of the intersection of West 236th Street and Walnut Street

Figure 29: Sample Location - Torrance



12.4 Project Specific Considerations

As introduced, there are a number of potential Project components that could potentially impact market values as determined by potential buyers. In this section a summary of potential sources of impairment to value of properties proximate to the Project Site are discussed. In considering the potential impacts, the Authors generally consider the characteristics of Phase 4 to be most relevant in evaluating potential long-term impairment, and therefore potential impacts under Phase 4 are generally referenced herein. The following impacts are provided for reader consideration and evaluation.

Health Impacts

Pursuant to the analysis in Section 4.2.4.6 of the EIR, the mitigated Project is expected to marginally increase cancer risk, chronic health risk, and acute health risk. The HIA also provides information on potential health impacts of the Projects in greater detail, and should be reviewed by the reader.

Under the quantification of impacts in the EIR, the health impacts of the mitigated Project are not considered significant. However, some individuals may nevertheless choose not to reside proximate to the Project due to the marginal increase in risk. The various health impact contours from Figures 4.2-5, 4.2-6, and 4.2-8 of the EIR projected over proximate parcels as illustrated in Figure 30 below. For an abundance of clarity, the colored shading of parcels is based on parcel distance from the Project Site, and not the health impact contours.

Figure 30: Property Proximity to Project & Overlay of Potential Health Impacts



Note to Figure 30: Categorization of parcel distances are based on the closest point of a given parcel to the Project Site. Colored shading of parcels is based on parcel distance from the Project Site, and not the health impact contours. Letters in parcels denote property use, where C is commercial, M is manufacturing, and R is residential. A comprehensive discussion of the meaning of the Chronic Health Impact, Cancer Cases, and Acute Health Impacts metrics can be found in Section 4.2.4.6 of the EIR

Visual Impacts

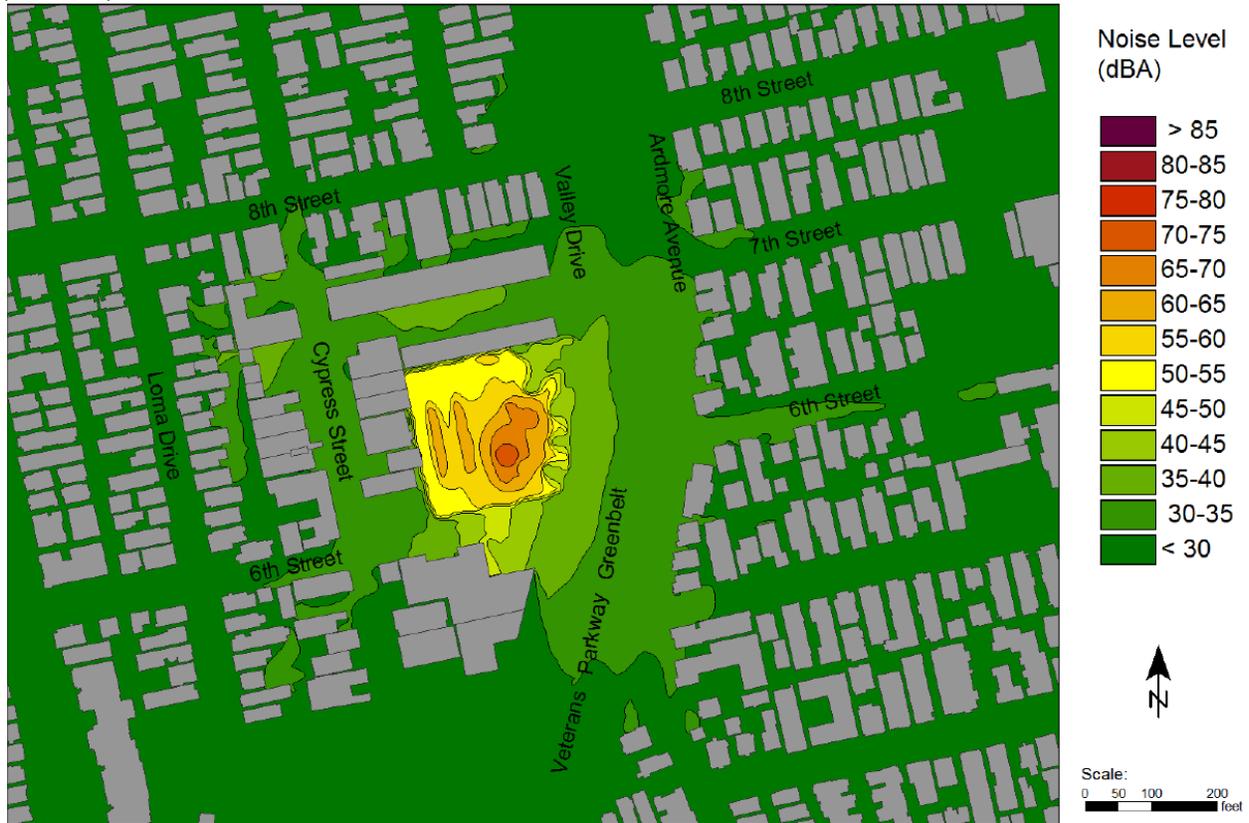
Individual buyers may consider visual impacts of the proposed Project to be an impairment to property values. While Project mitigations limit the ability to see most ongoing operations on the Project Site, individuals may have differing opinions on aesthetic appeal of the mitigated Project versus existing Project Site conditions. Images depicting the Project during various phases are provided in Appendix F for reader review and consideration.

Noise Impacts

Individual buyers may consider the noise impacts of the proposed Project to be an impairment to property values. While Project mitigations reduce the noise of ongoing operations on the

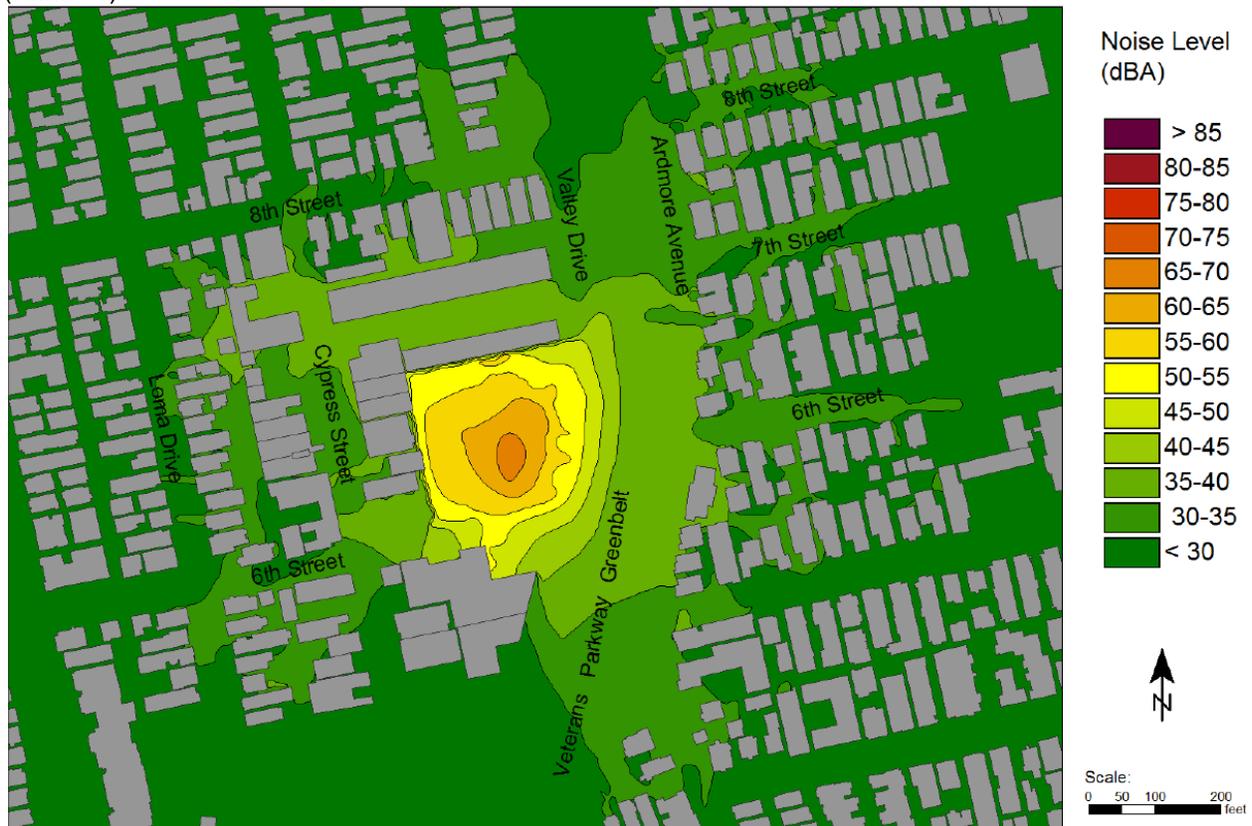
Project Site, individuals may have differing opinions on the acoustical nuisance, if any, of the mitigated Project versus existing Project Site conditions. Noise contours depicting the increase in sound level and a summary table of estimated sound levels with the Project during Phase 4 follow in Figure 31 and Table 35.

Figure 31: Leq Noise Contours During Long-Term Production with Mitigation for a Receiver Height of 5-ft (Phase 4)



Note to Figure 31: Figure is from Figure 4.11-40 of the EIR

Figure 32: Leq Noise Contours During Long-Term Production with Mitigation for a Receiver Height of 20-ft (Phase 4)



Note to Figure 32: From Figure 4.11-41 of the EIR

Table 35: Predicted Production Noise Impact with Mitigation Between 5 AM and 2 AM (Phase 4)

Location	Receiver Height (ft)	Noise Level (Leq, dBA)			
		Baseline (Lowest 1-hr Nighttime Leq)	Drilling + Production	Drilling + Production + Baseline	Increase in Noise Level (dBA)
Residential Uses North of Site on 8th Street	5	48.3	36.7	48.6	0.3
	20	48.3	38.4	48.7	0.4
Residential Uses Northwest of Site on Cypress Street	5	40.9	33.4	41.6	0.7
	20	40.9	38.7	42.9	2.0
Residential Uses East of Site on Ardmore Avenue	5	40.3	34.4	41.3	1.0
	20	40.3	37.9	42.3	2.0
Residential Uses West of Site on Loma Drive	5	40.0	35.5	41.3	1.3
	20	40.0	36.5	41.6	1.6
Veterans Parkway (Center)	5	41.0	34.5	41.9	0.9

Note to Table 35: Table data is from Table 4.11-34 of the EIR

Table 36: Predicted Production Noise Impact with Mitigation Between 2 AM and 5 AM (Phase 4)

Location	Receiver Height (ft)	Noise Level (Leq, dBA)			
		Baseline (Lowest 1-hr Nighttime Leq)	Drilling + Production	Drilling + Production+ Baseline	Increase in Noise Level (dBA)
Residential Uses North of Site on 8th Street	5	45.6	33.2	45.8	0.2
	20	45.6	34.6	45.9	0.3
Residential Uses Northwest of Site on Cypress Street	5	37.6	32.6	38.8	1.2
	20	37.6	35.1	39.5	1.9
Residential Uses East of Site on Ardmore Avenue	5	38.3	32.0	39.2	0.9
	20	38.3	32.7	39.4	1.1
Residential Uses West of Site on Loma Drive	5	39.9	32.1	40.6	0.7
	20	39.9	32.5	40.6	0.7
Veterans Parkway (Center)	5	35.6	32.5	37.3	1.7

Note to Table 37: Table data is from Table 4.11-35 of the EIR

Odor Impacts

As discussed in Section 4.2 of the EIR, it is expected that operational activities of the Project would generate emissions that produce offsite odor impacts. Individual buyers may place differing levels of significance, if any, on potential odor impacts to the Project.

12.5 Sample Case Studies

Adjacent vs. Non-Adjacent

As part of its evaluation of a relationship between proximity to oil production and property values the Authors reviewed an analysis completed by local appraiser Richard A. Neustein, MAI, CRE, FRICS and DeLane Matthews, SLREA. Their analysis, titled "Oil Well Lot Proximity Study", (provided in Appendix G) evaluated the potential impacts of adjacency to lots with oil wells on single family homes and small income properties in the Wilmington area between 1980 and 2007. For reference, in their analysis the Neustein and Matthews were evaluating values between (i) properties adjacent or cater-corner to oil well lots and (ii) properties with another lot essentially buffering the oil well lot. Thus, the analysis may not apply to overall area impacts, or impacts at greater distances from oil wells, but nonetheless provides some reference for immediately adjacent properties. As a result of their analysis the authors found:

"the pattern of discrimination against oil well lot proximity is strikingly consistent for single family residences. While home values rose from the \$100/SqFt in the mid-1980's to nearly \$500/SqFt twenty years later, the difference in value varied between \$5/SqFt and \$20/SqFt."

Thus the "discrimination" against oil lot adjacent lots was found to be roughly 5% (\$20 PSF at \$500 PSF). Neustein and Matthews concluded that:

"A single family home next to an oil well lot in this area may suffer a value decline, but it is relatively small, currently (January, 2008) on the order of \$20/SqFt of gross living area. Small income properties, on the other hand, exhibit no consistent discrimination against being next to an oil well lot. We conclude that they do not suffer a value decline from proximity to oil well lots."

The Authors provide this as a reference point, though different communities may value proximities differently.

Proximate vs. Non-Proximate

An additional resource on potential value impairment is an analysis completed by AECOM as part of the EIR prepared for the Whittier Main Oil Development Project. In its analysis AECOM evaluated potential impacts to property values primarily based on impairment due to noise and visual impacts from the project. Based on its analysis, depreciation for noise impacts were estimated to be 0.6% for each one decibel increase in background noise, and AECOM estimated that homes with noise impacts could experience property depreciation of 1.3% under a low scenario, and 2.4% under a high scenario. With respect to visual impacts, AECOM estimated that homes with visual impacts could experience property depreciation of 3% under a low scenario, and 6% under a high scenario. It should be noted that the project evaluated in the AECOM report was more suburban in nature, private property was located further from production facilities, and impacts were different from those under the proposed Project. Excerpts from AECOM's study are provided in Appendix H.

Based on the estimated noise impacts during long-term production and estimated value impacts of 0.6% for each one decibel increase in noise from the AECOM study, the implied impacts to property values proximate to the Project were estimated as follows below in Table 37.

Table 37: Implied Value Impacts at 0.6% Per dBa During Long-Term Production (5 AM to 2 AM)

Location	Receiver Height (ft)	Increase in Noise Level (dBA)	Implied Value Impact at 0.6% per dBa
Residential Uses North of Site on 8th Street	5	0.3	0.18%
	20	0.4	0.24%
Residential Uses Northwest of Site on Cypress Street	5	0.7	0.42%
	20	2	1.20%
Residential Uses East of Site on Ardmore Avenue	5	1	0.60%
	20	2	1.20%
Residential Uses West of Site on Loma Drive	5	1.3	0.78%
	20	1.6	0.96%
Veterans Parkway (Center)	5	0.9	0.54%

Note to Table 37: From Table 4.11-34 of the EIR

Table 38: Implied Value Impacts at 0.6% Per dBa During Long-Term Production (5 AM to 2 AM)

Location	Receiver Height (ft)	Increase in Noise Level (dBA)	Implied Value Impact at 0.6% per dBa
Residential Uses North of Site on 8th Street	5	0.2	0.12%
	20	0.3	0.18%
Residential Uses Northwest of Site on Cypress Street	5	1.2	0.72%
	20	1.9	1.14%
Residential Uses East of Site on Ardmore Avenue	5	0.9	0.54%
	20	1.1	0.66%
Residential Uses West of Site on Loma Drive	5	0.7	0.42%
	20	0.7	0.42%
Veterans Parkway (Center)	5	1.7	1.02%

Note to Table 38: From Table 4.11-35 of the EIR

12.6 Conclusion on Value Impacts

As a result of the information reviewed in this section, subject to a property by property evaluation, the Authors consider a 0 - 10% reduction in property values possible for properties proximate to the Project Site.

13.0 Other Potential Considerations

In this section a discussion of various other considerations of interest to stakeholders are provided. Some of these considerations are subjective in nature.

13.1 Property Insurance

Stakeholders requested information on whether the proposed Project might impact their ability to get property insurance, and/or property insurance rates. Based on discussions with insurance providers and a review of typical underwriting processes, while the Authors are not insurance brokers or underwriters, it is the Authors' conclusion that the Project should not impact an individual's ability to retain insurance, or rates of property insurance. Examples of the primary drivers of property insurance include structure age, structure materials, fire department distance and response time, community crime rates, and installed security devices. Risks associated with the Project to third party property are assumed to be the responsibility of E&B, for which E&B would be required to maintain liability insurance.

13.2 Tourism & Special Events

Hermosa Beach is a destination for many tourists, and home to many special entertainment events. Whether or not the implementation of the Project would have an impact on tourism rates is subjective, however, the Authors consider it unlikely that a significant number of tourists, if any, would not visit the City should the Project be implemented. Further, should the Project be approved, the City would be expected to receive Tidelands revenues that could only be utilized for improvements and services that are generally in alignment with tourism.

However, should there be a major hazard event as a result of the Project, tourism and special events could theoretically be impacted on a temporary or even a long-term basis, though the Authors conclude such impacts are unlikely. As will be discussed in Section 15.0, the area of potential hazard risks is considered primarily limited to locations proximate to the Project Site. Thus even should there be a hazard event it would be expected to occur away from the primary drivers of tourism in the City such as the beach, area hotels, and the entertainment and retail corridors along Pier Avenue and Hermosa Avenue. Therefore, the Authors conclude that absent an unforeseen major incident that impacted tourist areas of the City it is unlikely that tourism and special events would be impacted by the Project.

13.3 Use of Proximate City Facilities and Parklands

There are three public parks / City open spaces proximate to the Project Site: (i) the Greenbelt which runs across Valley Drive fronting the site, (ii) South Park approximately 250 feet to the south, and (iii) Clark Field approximately 600 feet to the north. Pursuant to the EIR, small portions of the Greenbelt are (i) within the 0.05 Acute Health Impact contour (please see Section 4.2 and Figure 4.2-5 of the EIR), (ii) within contours where serious injury, fatality, and

overpressure damage could occur under certain hazard events (please see Section 4.8 and Figure 4.8-6 of the EIR), and (iii) within increased noise contours (please see Section 4.11 of the EIR). Further, South Park is (i) within contours where overpressure damage could occur under certain hazard events (please see Section 4.8 and Figure 4.8-6 of the EIR), and (iii) marginally within increased noise contours for some Project phases (please see Section 4.11 of the EIR). Finally, Clark Field is within contours where overpressure damage could occur under certain hazard events (please see Section 4.8 and Figure 4.8-6 of the EIR). While some individuals may choose not to utilize these City facilities due to their proximity to the Project Site, the Authors did not consider this a quantifiable financial cost or benefit to the City.

13.4 City Receipt of Green / Sustainability Grants

The City has recently received a number of "green and sustainability grants". Recent awards include a 2014 \$100,000 Coastal Conservancy Coastal-Improvement Climate Ready Grant to evaluate City infrastructure for vulnerability to climate changes, and a \$112,750 grant from the California Coastal Commission to prepare and obtain a certified Local Coastal Program with special emphasis in addressing the impacts of climate change and sea-level rise. In 2012, the City received a \$410,000 grant from the California Strategic Growth Council to update the City's General Plan/Coastal Land Use Plan with a focus on sustainability and a low or no-carbon future, and a \$25,000 Green Region Grant from SCAG to prepare a road map for carbon neutral municipal operations.

A question from stakeholders is whether the City's ability to obtain green and sustainability grants might be impaired if the Project were approved. The Authors have historically reviewed a number of grant applications and have not seen circumstances where oil production within a City would preclude or impact an applicant's opportunity to secure a grant. As such the Authors conclude that should the Project be approved, it is unlikely that it would impact the City's ability to secure green and sustainability grants from public agencies.

13.5 Potential Carbon offsets

In Section 4.2.4.5 of the EIR greenhouse gas ("GHG") emissions estimated to be generated by the Project are evaluated. The evaluation therein includes GHG produced through the development and operation of the Project, but does not consider the GHG emission *potential* of the oil and gas expected to be produced should the Project be approved.

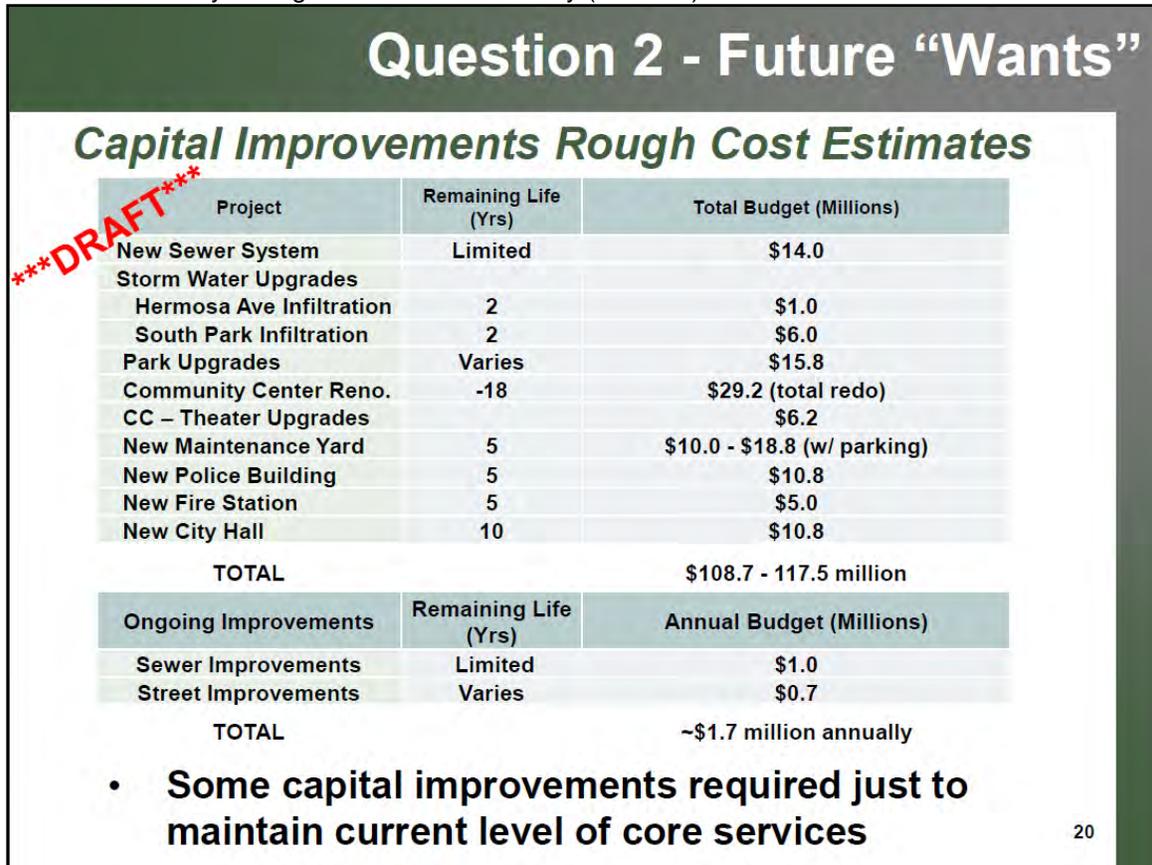
According to estimates from the Environmental Protection Agency, a barrel of oil is generally assumed to produce approximately 0.43 Metric Tons of CO₂ ("MTCO₂"), among other GHG's. Under the CBA Expected case scenario, a total of approximately 17.1 million barrels of oil would be produced. Under the Applicants' production estimates, approximately 35.6 million barrels of oil would be produced. Assuming a ratio of 0.43 MTCO₂ per barrel of oil, under the CBA Expected scenario production estimates, a total of approximately 7.36 million MTCO₂ would be produced through the combustion of such production, and under the Applicants' production estimates approximately 15.3 million MTCO₂.

Allowances (essentially the right to release one MTCO₂) are currently being traded in California Air Resource Board ("CARB") auctions. On August 18, 2014 the CARB held its eighth auction, where a total of approximately 16.6 million allowances were sold at a market clearing price of \$11.50 per allowance. While allowance prices may fluctuate and are expected to increase in the future, for reader reference and scale, if stakeholders desired to purchase offset credits for oil produced through the Project, under current pricing, the allowances would be estimated to cost approximately \$84.6 million assuming the CBA Expected Case, and approximately \$176.2 million under the Applicants' production estimates. Alternative ways to offset the carbon potential of the oil that would be recovered through the Project are discussed in Section 4.2.4.5 of the EIR. For an abundance of clarity the purchase of offset credits for GHG emission *potential* of oil produced through the proposed Project is not required.

13.6 Deferred City Capital Improvements

As part of an update to its General Plan, the City is completing a Community Dialog process to identify the values and long-term goals of Hermosa Beach. This effort included a high level review by a Finance Subgroup of existing and desired City facilities and infrastructure. Based on City cost estimates, the group found that a total investment of approximately \$109 - 118 million in City infrastructure and facilities may be necessary, or desirable in the near future to maintain existing City service levels. A slide illustrating the estimated cost of capital improvements from the Community Dialog Fiscal Team's summary presentation follows in Figure 33 below. For reference, the estimated cost of the permanent relocation of the City maintenance yard contemplated in the proposed Project is included in the \$109 - 118 million estimate (with and without a supplemental parking deck).

Figure 33: Community Dialog Fiscal Team Summary (Slide 20)



Note to Figure 33: From Slide 20 of the Community Dialog Fiscal Team summary presentation.

Another question raised by stakeholders pertains to the cost of fully financing these necessary or desired City improvements. Given the potential size of the desired financing, a property tax backed General Obligation bond would likely be the most viable financing structure.

Assuming a \$110.0 million borrowing financed through a General Obligation bond, supported by a general property tax levy the cost of debt service is estimated to be approximately \$7.9 million per year for 30 years.

Under a general property tax levy this would be equal to approximately 0.144% of property value annually, or approximately \$144 per \$100,000 in assessed valuation. Assuming a similar cost for a bond funded through a parcel tax, it would equal approximately \$1,150 per parcel.

14.0 Economic Activity Benefits

Should the Project be implemented, the construction of site improvements, drilling activity, and ongoing Project operation would result in economic activity within the City and region. To estimate economic impacts, the Authors utilized an econometric input/output model known as IMPLAN (IMpnact analysis for PLANning) to quantify the economic impact of the Project and permanent job wages and business expenditures within Los Angeles County ("County"). While the model utilizes the overall County as the functional region over which impacts are evaluated, some of the benefits are expected to occur within the City, and within the surrounding communities. The model estimates the economic impacts on various industries based on known economic inputs such as budgetary expenses or estimates of Project costs. The model estimates direct, indirect and induced impacts expressed in terms of increased economic activity ("output") and job creation.

14.1 Direct, Indirect & Induced Impacts

Direct Impacts - Direct impacts refer to the change in total output and employment resulting from direct final demand changes in expenditures and/or production values. Direct benefits include expenditures made related to Project development for construction activities necessary to build the Project, as well as the jobs created to carry out these construction activities, and ultimately impacts from ongoing Project related expenditures and employment.

Indirect Benefits - Indirect benefits refer to the impacts resulting from changes in inter-industry purchases as they respond to demands of the industries directly affected by the Project's construction activities. Indirect benefits include industries affected by the ongoing operations and building of a Project such as wholesale trade, architectural, and engineering services.

Induced Impacts - Induced benefits are the changes in local spending resulting from household income increases (i.e. for those households employed directly or indirectly in affected sectors). Individuals who are directly or indirectly employed as related to ongoing operation and construction activities will generate additional economic activity based on their personal expenditures proximate to the Project.

Projection of Permanent Jobs and Wage Related Impacts - Permanent jobs are estimated by utilizing industry and user type-specific employment ratios which typically estimate the number of employees based on ongoing operational expenditures. Using the IMPLAN model, the analysis additionally estimates the wages created by these jobs measured by direct, indirect and induced impacts. Job figures are expressed in one-year FTE values. In example, if a project was expected to create 25 jobs over a four year period, the estimated employment under the IMPLAN model would be 100 one-year FTE jobs. Estimated job counts include estimates of employment both at the Project Site, as well as off-site employment, and are not tied to job estimates in the EIR.

14.2 Construction, Drilling & Production Equipment

Economic impacts in the City and region over the life of the Project related to construction activities, drilling activities, and production equipment were estimated based on Project expenditures discussed in Section 8.1, totaling approximately \$86.0 million (\$2014). In the IMPLAN analysis, of this total, \$57.0 million was allocated to "Mining" industry expenditures, \$4.0 million in general "Construction" industry expenditures, \$20.0 million to "Wholesale Trade" industry expenditures, \$3.0 million to "Professional and Scientific" industry expenditures, and \$2.0 million to "Management" industry expenditures. The resulting estimate of employment, labor income, and total economic output follows in Table 39.

Table 39: IMPLAN Estimated Direct, Indirect, & Induced Impacts of Project Construction, Drilling and Production Equipment Expenditures (\$2014)

	Employment	Labor Income	Output
Direct Effect	221	\$23,800,000	\$86,000,000
Indirect Effect	97	7,200,000	21,000,000
Induced Effect	115	6,400,000	18,100,000
Total Effect	433	\$37,400,000	\$125,100,000

14.3 Ongoing Operations

Economic impacts in the City and region over the life of the Project related to ongoing operations were estimated based on ongoing Project operating costs discussed in Section 8.1, averaging approximately \$11.9 million per year (\$2014). In the IMPLAN analysis, of this total, \$11 million was allocated to "Mining" industry expenditures, \$200,000 to "Wholesale Trade" industry expenditures, \$200,000 million to "Professional and Scientific" industry expenditures, and \$500,000 to "Management" industry expenditures. The resulting estimate of annual employment, labor income, and total economic output follows in Table 40.

Table 40: IMPLAN Estimated Direct, Indirect, & Induced Impacts of Ongoing Operations (\$2014, annual)

	Employment	Labor Income	Output
Direct Effect	18	\$2,800,000	\$11,900,000
Indirect Effect	12	900,000	2,800,000
Induced Effect	14	700,000	2,100,000
Total Effect	44	\$4,400,000	\$16,800,000

Note to Table 40: Employment FTE in this table are on an annual basis

15.0 Potential Hazard Events

While the mitigation measures proposed in the EIR and ultimately enforced through the CUP or Development Agreement attempt reduce the probability of and minimize the impacts of hazard events, the chance for events to occur remains. In this section potential hazard events and financial protections are discussed.

15.1 Insurance Requirements

Should a hazard event occur, an operator can typically self fund remediation costs, or if costs are excessive, rely on insurance policies to fund remediation costs.

Under Section 18(b) of the Oil Lease, should the Project be approved, E&B would be required to provide proof of insurance coverage of a minimum of \$5 million per occurrence for damages to third parties and third party property from its operations under the Oil Lease. Additionally, the City would be required to be named as an additional insured.

It is the Authors understanding that E&B carries a \$25 million umbrella policy, and a \$40 million Control of Well insurance policy for wells in the Los Angeles basin. Umbrella policies typically provide excess coverage of other specific policies (i.e. auto and general insurance policies). Control of Well policies typically cover third party liability and costs of cleanup as a result of a blowout, accidental seepage, pollution, evacuation expenses and other related liabilities.

Additionally, under the Oil Lease E&B and the City are to jointly fund a \$6 million Emergency Trust Fund, of which E&B is to fund \$4 million, and the City the remaining \$2 million. The trust fund is to provide coverage to remedy third party liability or contamination hazards, pollution, subsidence, or the cost of abandonment of wells. Interest on funds in the Emergency Trust Fund must remain in the trust, and no funds can be removed until / unless if at the end of the Oil Lease no purposes (i.e. coverage for abandonment of wells) for the trust remain.

It should be noted that under the Oil Lease E&B is not required to begin funding its portion of the Emergency Trust Fund until four years after the commencement of Phase 4, and then generally based on an allocation of 5% of its net profits after operating costs, and Project costs. Regardless of net profits, E&B must fund its portion of the Emergency Trust Fund within 14 years of the commencement of Phase 4.

15.2 City Insurance

The City self insures, or directly pays for certain claims against it up to a certain threshold. City protections against claims above that threshold are covered under an excess coverage provider; the Independent Cities Risk Management Authority (“ICRMA”). Through the ICRMA, the City and 21 other member cities pay into a risk pool to fund essentially excess coverage insurance. Should the Project be approved the Authors anticipate that the City will work with its

excess coverage provider to ensure that the insurance endorsements provided by E&B offer adequate protection for potential claims against the City and that indemnification agreements and provisions are appropriate.

15.3 Potential Hazards

A complete discussion of potential Project Hazards can be found in Section 4.8 of the EIR. The reader is encouraged to review the information in the EIR to understand the context and nature of the potential hazards and their potential ramifications. The following information from the EIR is provided for reference in discussion. A summary of evaluated Project risks follows in Table 41.

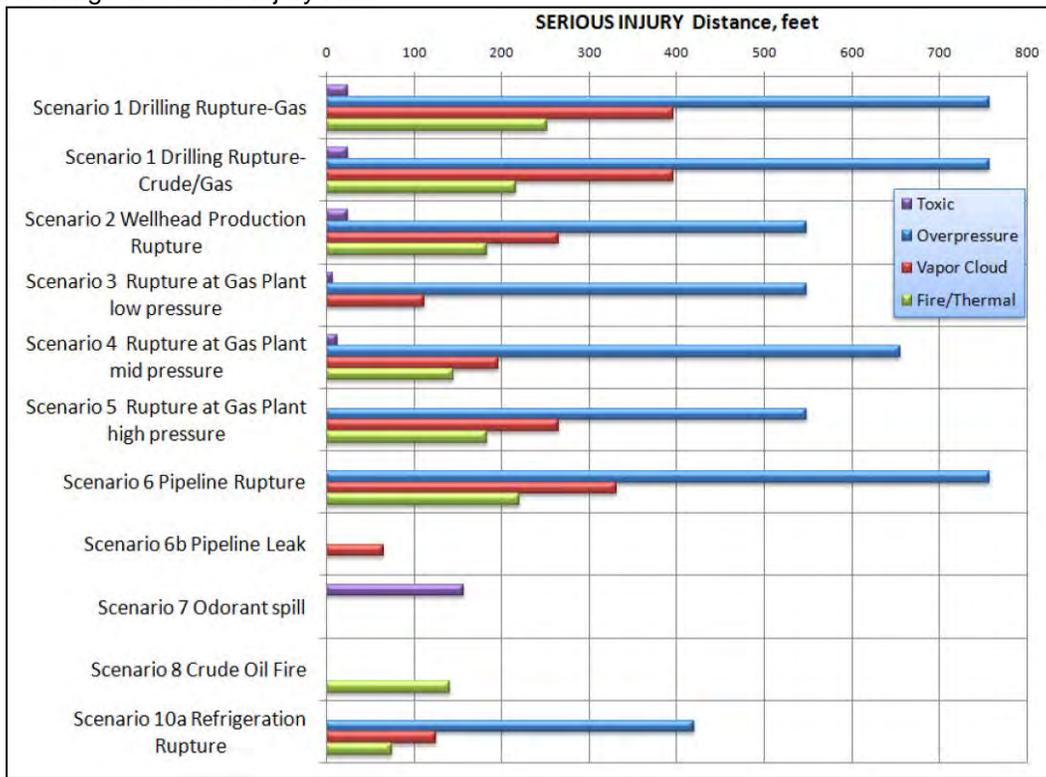
Table 41: Scenario Failure Rates

Scenario	Annual Odds of a Failure	Failure Once in X Years
<i>Scenario 1</i> Wellhead Area Rupture during drilling: blowout	0.00309598	323
<i>Scenario 1b</i> Wellhead area leak during drilling	0.04166667	24
<i>Scenario 2</i> Wellhead Area Rupture during production	0.00000166	604,127
<i>Scenario 2b</i> Wellhead area leak during production -pressurized and non-pressurized wells	0.00173611	576
<i>Scenario 3</i> Rupture at Gas Plant separators, scrubbers to compressors - low pressure	0.00010172	9,831
<i>Scenario 3b</i> Leak at Gas Plant through inlet scrubbers to compressors - low pressure	0.00084746	1,180
<i>Scenario 4</i> Rupture at Gas Plant LTS, scrubbers and compressors - mid pressure	0.00008057	12,412
<i>Scenario 4b</i> Leak at Gas Plant LTS, scrubbers and compressors - mid pressure	0.00099602	1,004
<i>Scenario 5</i> Rupture at Gas Plant compressors 2nd stage - high pressure	0.00004170	23,980
<i>Scenario 5b</i> Leak at Gas Plant compressors 2nd stage - high pressure	0.00073206	1,366
<i>Scenario 6</i> Rupture at natural gas pipeline along Valley Dr and at meter	0.00011031	9,065
<i>Scenario 6b</i> Leak at natural gas pipeline along Loop Road and at meter	0.00011879	8,418
<i>Scenario 7</i> Loss of Containment from odorant storage/transfer	0.07142857	14
<i>Scenario 8</i> Release of Crude Oil and Subsequent Fire	0.00027322	3,660
<i>Scenario 9</i> Release of Crude Oil Storage/Pumping with subsequent spill outside containment	0.00000016	6,421,148
<i>Scenario 10a</i> Rupture at refrigeration system	0.00003515	28,448
<i>Scenario 10b</i> Leak at refrigeration system	0.00040355	2,478
Combined Facility Gas Rupture during drilling	0.00346021	289
Combined Facility Gas Leak during drilling	0.04761905	21
Combined Facility Gas Rupture: no Drilling	0.00037106	2,695
Combined Facility Gas Leak: no Drilling	0.00483092	207

Note to Table 41: From Table 4.8-12 of the EIR

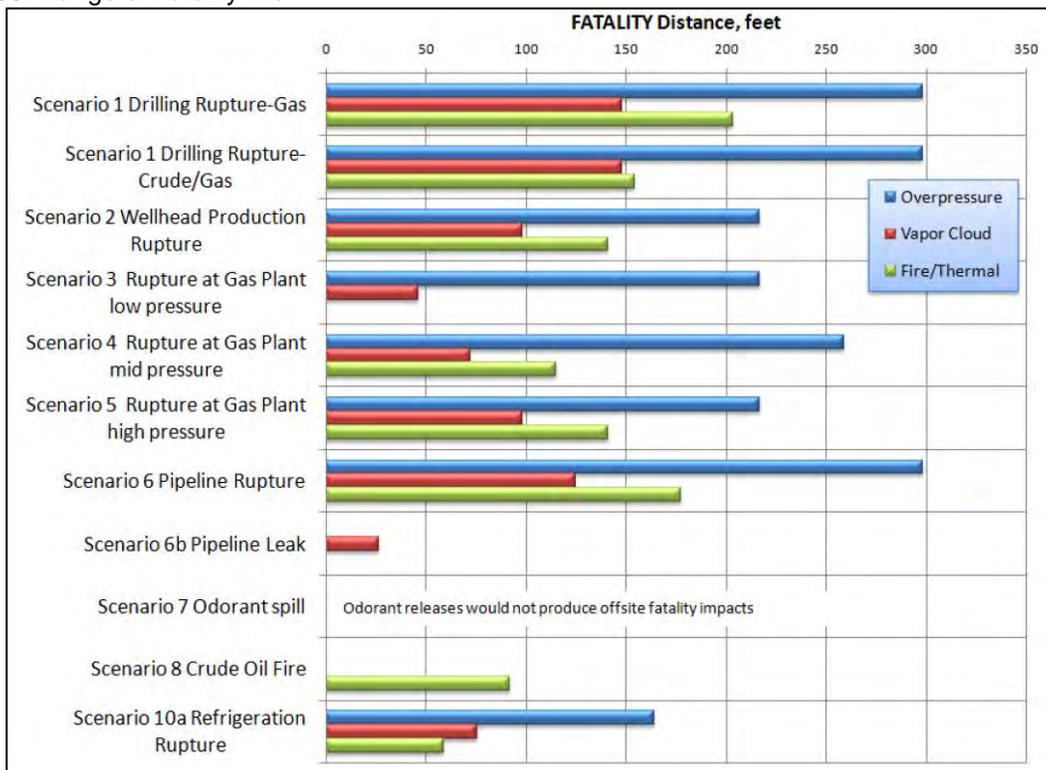
As shown in Table 41 above, the likelihood of a given hazard scenario occurring is statistically low. However, the potential consequences of certain hazard scenarios could be high. The estimated range of serious injury and/or fatality under various scenarios is provided in Figure 34 and Figure 35 below.

Figure 34: Range of Serious Injury Risk



Note to Figure 34: From Figure 4.8-5 of the EIR

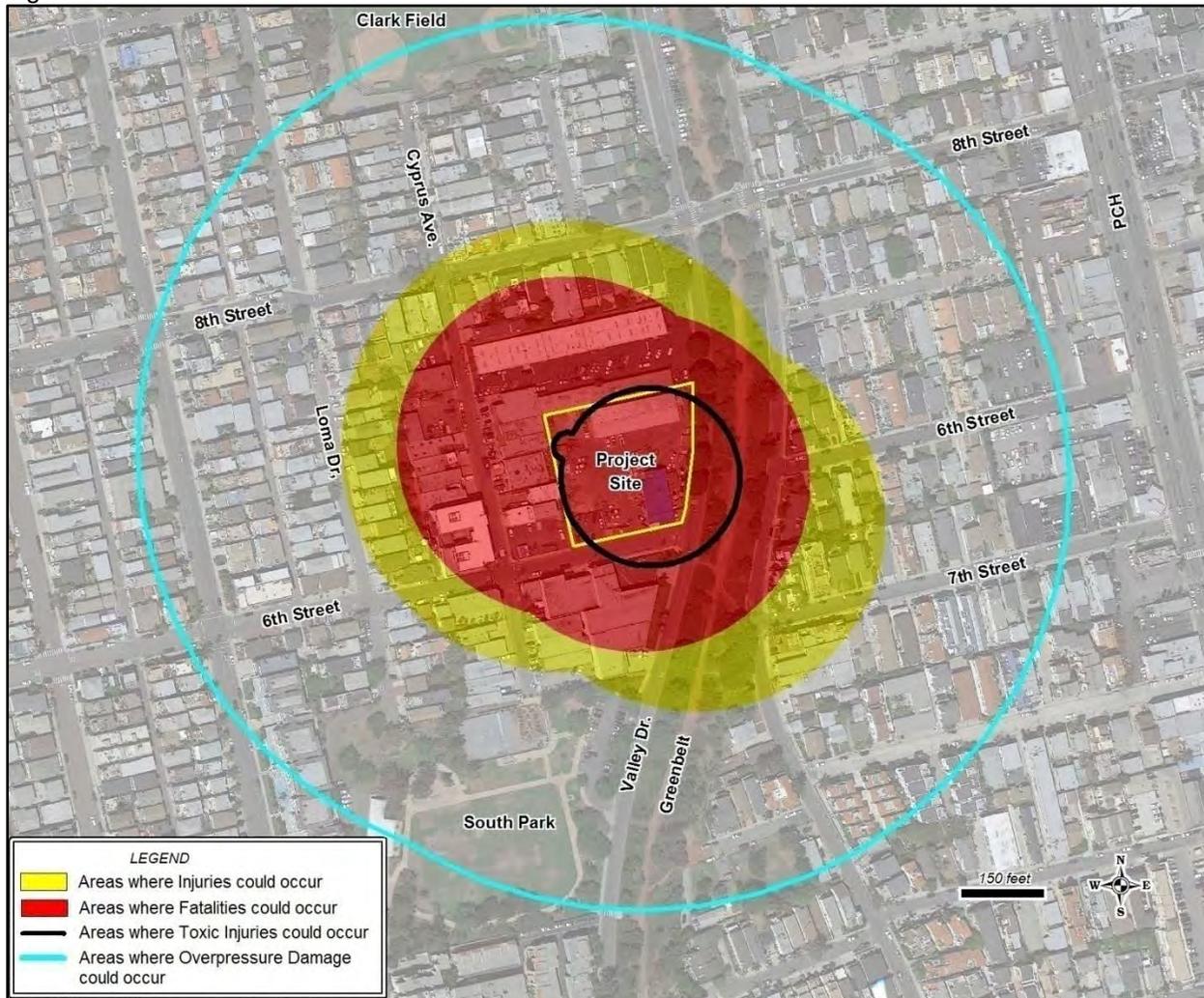
Figure 35: Range of Fatality Risk



Note to Figure 35: From Figure 4.8-5 of the EIR

Additionally, in Section 4.8 of the EIR, the area of potential risks expressed as areas where injuries, fatalities, toxic injuries, and overpressure damage could occur in relation to the Project Site were evaluated. A summary map showing the range contours of each is provided in Figure 36 below.

Figure 36: Area of Potential Risks



Note to Figure 36: From Figure 4.8-6 of the EIR, Zones show areas that could potentially be impacted and do not indicate the frequency that an event could occur. Overpressure radius based on a 0.3 psi threshold “which could cause some injuries if a person is impacted by fragments”.

The financial implications and costs of a given hazard event depend on a multitude of factors that are difficult to predict. Despite the potential for hazard events such as a wellhead area rupture during drilling or production, or a pipeline rupture to have substantial financial consequences, given the low statistical chances of occurrence, risk adjusted financial impacts can be low. As an example, a hazard event with an estimated financial cost of \$50 million and a annual probability of 0.0005 could have a theoretical risk adjusted value of \$25,000 on an annual basis (\$50 million x 0.0005).

To assist the reader in evaluating potential financial implications of hazard events on private property, the assessed value of property within risk distance ranges identified in the Figure 34 and Figure 35 are provided below in Table 42. Obviously the cost of any human injury or fatalities could also be significant, and irreversible.

Table 42: Total and Cumulative Property Assessed Valuation by Distance

Distance Range		Properties	Total AV	Residential AV	Cumulative Total AV	Cumulative Residential AV	Avg. Last Sale
-	50	12	\$ 3,700,000	\$ -	\$ 3,700,000	\$ -	1999
51	100	3	800,000	-	4,500,000	-	2004
101	150	10	7,200,000	-	11,700,000	-	2003
151	200	33	21,300,000	20,000,000	33,000,000	20,000,000	2003
201	250	28	16,700,000	13,100,000	49,700,000	33,100,000	2003
251	300	20	9,200,000	9,000,000	58,900,000	42,100,000	2002
301	400	64	42,200,000	41,500,000	101,100,000	83,600,000	2004
401	500	88	76,000,000	65,400,000	177,200,000	148,900,000	2005
501	600	116	84,200,000	74,000,000	261,400,000	222,900,000	2006
601	700	97	62,100,000	54,900,000	323,500,000	277,800,000	2003
701	750	49	35,000,000	33,300,000	358,500,000	311,100,000	2003
750	+	6,459	4,924,400,000	4,348,700,000	5,282,900,000	4,659,800,000	2003
(In Feet)		6,979	\$ 5,282,900,000	\$ 4,659,800,000			

Note to Table 42: Values provided are assessed values, and not market values. A discussion of order of magnitude conversion adjustments from assessed valuation to market value is provided in Section 9.9.

In conclusion, while the probability of significant financial implications of a hazard event are estimated to be statistically remote, and risk adjusted costs low, there may exist scenarios where the financial cost of a hazard event could be substantial. While extraordinary, such costs could in theory be in excess of insurance coverage levels, and ultimately recovery of financial burdens could have to be pursued outside of recourse through insurance providers. It may not be possible to completely mitigate potential financial implications of hazard events.

16.0 Supplemental Document Review

Subsequent to the preparation of the Draft CBA, the City requested that the Authors look at additional information and documentation related to the Project. This information included (i) well log information for a vertical well drilled at the Project Site in 1955, and (ii) pre-trial expert testimony from prior litigation activities pertaining to prior forms of the proposed Project. A brief discussion of the Authors' review of these documents follows below.

For reference, the Authors were also asked by the City to review public comments and provide responses to public comments. These public comments and responses are provided in Appendix J. Where appropriate the Authors have also added additional and/or clarifying comments within this report as a result of these comments.

16.1 Hermosa Well Log Data

The Authors reviewed the well log data for the test well drilled at the Project Site in 1955, and no changes to the conclusions of this CBA were warranted or made based on this data. The well log data provided matched data available in other reports reviewed, and thus contained information that was already evaluated in the preparation of the Draft CBA.

16.2 Pre-Trial Testimony

The Authors reviewed pre-trial expert testimony provided to it by the City. No changes to the conclusions of this CBA were warranted or made based on this testimony and additional documentation. The testimony and documents were prepared as part of the case of Hermosa Beach Stop Oil Coalition, etc. et al (Plaintiff) vs. City of Hermosa Beach, etc. et al (Defendants); Winward Associates, etc. et al (Real Parties in Interest and related cross-action). The documents reviewed were essentially related to the establishment of value of potential damages to Winward Associates (an entity closely related to MOC) due to the passage of Measure E by the voters of the City in November of 1995 that banned oil drilling in the City subsequent to the City's approval of rights for MOC to drill for oil in the City. Additional background on the case is provided in Section 2.2. A brief summary of the depositions (order alphabetically by experts' last name) and documents reviewed follow, and are provided for reference only.

Brian P. Brinig, Esq.

- Mr. Brinig essentially provided testimony about the costs to the then date incurred by MOC and Winward Associates, as well as the legal structure of the two entities.
- Deposition taken on August 10, 2009; 173 pages
- Brinig exhibits 3000 – 3018; 564 pages

Clarke (no deposition)

- 16 maps / plots
- One partially complete PowerPoint presentation (30 slides)
- Various notes, billing history, article titled “Oil and Gas Development in an Urban Environment”; 15 pages

Wayman T. Gore

- Mr. Gore essentially provided testimony about his analysis of the Reservoir, well technology, lost profits, fair market value, and discount rates.
- Deposition taken on August 13, 2009; 203 pages
- Deposition taken on August 14, 2009; 188 pages
- Gore exhibits 3100 – 3109; 94 pages
- Gore exhibits 3110 – 3134; 535 pages

George C. Hite

- Mr. Hite essentially provided testimony about potential uncertainties about the Reservoir and the impact of uncertainty on value.
- Deposition taken August 13, 2009; 178 pages
- Hite exhibits 400 – 402; 11 pages

R.E. Hilty (no deposition)

- Various documents including a summary of previously completed reports on the Reservoir; 8 pages
- Of note are pages “HILTY09752 – 09755” which include a summary of oil estimate reports prepared at various points in history. The relevant pages follow below in Figure 37.

Figure 37: Hilty Document List

TECHNICAL DOCUMENTS REVIEW BY R.E. HILTY

**KEY: RB = Redondo Beach
HB = Hermosa Beach**

DATE	AUTHOR	ESTIMATED RECOVERABLE OIL RESERVES OFFSHORE	MESSAGE	NOTE
1925	E.H. Musser		Anticlinal Trend to NW	
1946	J. Lloyd White		Schist discussion	
11/30/55	E.K. Soper		Oil production possible under RB & HB & the sea based on geology, nearby production & Torrance/Wilmington trend	Prior to RB offshore drilling include maps and X-section
1956	R.E. Crowder		Contour Map Top of Main	
1955-1961	Shell/Conoco	1957 – 48,000,000 BBLS 1959 – 15,000,000 BBLS	Shell outbid 3 other groups of companies by paying \$500,000 to COHB with commitment to pay more bonus & substantial royalty when the repeal to anti-drilling ordinance was effective. Shell also shot seismic offshore COHB, Manhattan Beach. And El Segundo. Shell bought for \$200,000 all Signal data from Redondo Beach offshore.	Shell & Conoco terminated this contract in 1961. COHB did not repeal the anti-drilling ordinance.
03/1961	Calif. State DOG		Geologic study of Redondo Beach offshore.	Map
1/1977	R. Paul, J. Todhunter, I Ershaghi to SLC	Production through 8/76 31 wells- 156,000/well 8 line – 146,000/well	RB offshore westerly extension of Torrance field	After RB offshore drilling Maps & X-section
3/1980	R.L. Smith	RB production through 1980 6,677,184 BO	RB ordinances summary, etc.	Map & X-section
7/10/84	R. Hacker to C of HB	HB 20 wells, 10 A/C wells, 100-300,000 BO/Well	Drainage occurred. HB offshore/20 wells up to 6 MM BO	Map & X-section
9/11/84	R. Hacker to C of HB		RB offshore oil production map Drainage!	Map

1

HILTY09752

Please see note to Figure 37

Figure 37: Hilty Documents

DATE	AUTHOR	ESTIMATED RECOVERABLE OIL RESERVES OFFSHORE	MESSAGE	NOTE
7/3/85	R. Hacker to C of HB		Drainage occurring & will continue 10 wells within 660' of HB line	
10/4/85	J. Lough to J. Frey		Drainage	
2/1986	R. Hacker		Drainage est. – for 10 years	
1986	E. L. Schaefer (SLC)	8 line wells 1,170,000 BO = 146,000 BO/well	Drainage Defined limits – west permeability CH 102 & 103 good shows	
1988	R. & P. Hacker for MOC	HB on & offshore 30,000,000 BO max 19,250,000 in 3 formations	Est. of recoverable reserve for HB – UM, LM, DA	4 maps & X-sections Geology & first detailed maps
4/1988	Triton		Sales brochure	
10/18/88	R. Hester to C of HB	HB – comparable to RB offshore	HB 210,000 BO/well x 30 = 6.3 MM BO 10-20 AC/well drainage updip from Stinnett undrained	Map
5/7/90	C. Williamson to MOC	30 wells x 195,000 BO/well = 5,850,000 BO & gas		
1/1/92	Netherland & Sewell	10 wells 1.75 MM BO proved 10 wells 1.75 MM BO probable		
2/5/92	M. Wright to C of HB		Reviewed Hacker & Hester Drainage occurring – 680 BO/day	Map Faults in C of RB
1993	Morris		Geology/Seismic	Schist Map
1994	Paul Hacker		Hermosa Geology	Engineering Consultant
3/4/94	D. Hallinger to SLC		Drainage – no credible evidence of current drainage because no current production. “Rocks are more permeable to water than to oil or gas.”	
3/16/94	L. Morton (Stocker) to G. Armstrong	12.25 to 14.25 MMBO	Engineering and Geologic Study	
1995	Morris	1.1 Million BO	Oil Volumes	Horizontal Wells

Please see note to Figure 37

Figure 37: Hilty Documents (Continued)

DATE	AUTHOR	ESTIMATED RECOVERABLE OIL RESERVES OFFSHORE	MESSAGE	NOTE
2/9/95	MOC to C of HB		Measure P & royalty calculation	
10/24/95	D. Hallinger to R. Fogg	HB 4,910,000 BO	Compares Hacker, R 1984 to Hacker, R. & P. 1988 1984-HB would be marginal at best 1984-HB production would be poorer 1984-RB cumulative prod. 50-75, 000 BO/well 1984-Hallinger agrees with '84 for HB rec. oil of 4,910,000 BBL 1988-Typical of an in-house report (inflated)	Different purposes & information for '84 & '88
10/28/96	P. Hacker to D. Gautschy		Alternative location 1 ¼ mi. east Increased drilling costs by \$4.9 million Unrecovered reserves 4,400,000 BO	
3/7/97	P. Hacker to D. Gautschy	MMS-50-75 B/AC ft. Hacker-40-50 B/AC ft.	Alternative drill site	
5/5/97	D. Gautschy to J. Petrillo		Alternative drill site not cost effective for C of HB Use maintenance yard Loss of recoverable oil & gas	Success of MOC in best interest of people of California
8/1997	Cal Resources	HB 19,000,000 BO 22,000,000 incl. gas	Thorough appraisal of HB	RB recovery was only 8%
1/2/98	Ryder Scott to Windsor- Hermosa Beach	Proved undeveloped oil- 3,546,000 BBLS Probable Undevelopment oil - 4,299,000 BBLS Possible undeveloped oil- 6,744,000 BBLS Total = 14,589,000 BBLS		
9/1998	P. Hacker to MOC		Decline curves used to est. ultimate production	Graphs
9/10/98	P. Hacker to J. Pomerene		Schist production in surrounding fields	Field list

Please see note to Figure 37

Figure 37: Hilty Documents (Continued)

DATE	AUTHOR	ESTIMATED RECOVERABLE OIL RESERVES OFFSHORE	MESSAGE	NOTE
10/1996	Intera/CalResources	16,300,000 BBLS offshore; 17,490,000 BBLS offshore and onshore	RB OOIP offshore 92,000,000 BBLS; cum 7,900,000 BBLS; 8.6% recovery factor HB OOIP offshore 204,000,000 BBLS; using HB recovery factor = 16,300,000 BBLS	Field Assessment Study
08/1997	Intera/Aera	42,840,000 BBLS offshore	Recovery in RB could have been more than doubled with better development practices; recovery in HB could be as high as 21% of OOIP (42,840,000 BBLS)	Reservoir Simulation Study
8/12/97	Aera	43,000,000 BBLS	OOIP 219,000,000 BBLS	Update on Technical work

Please see note to Figure 37

Note to Figure 37: The Authors are aware of the studies listed in the exhibit, and provide the following comment: A number of reports have been prepared at (i) different points in time, (ii) assuming a variety of well technologies as then available, (iii) for different clients or purposes, (iv) with differing levels of probability thresholds, (v) using different estimation techniques, and (vi) importantly, typically relying on the same underlying set of data. The estimates in this CBA represent the Authors independent evaluation of the underlying data, and estimates of Low, Expected and High production scenarios as described herein utilizing well technology currently available. As described in Table 3 the Authors estimated production of 10.9 million barrels of oil as possible under the CBA Low scenario, 17.1 million barrels under the CBA Expected scenario, and 22.2 million barrels under the CBA High scenario. Further, given a lack of reliable information these figures do not assume any production from the Lower Del Amo of Schist zones. A detailed discussion of the Authors estimates is provided in Section 5.0.

Phillip E. Sorbet

- Mr. Sorbet essentially provided testimony about oil field valuation methods, and the potential valuation of the Reservoir.
- Deposition taken December 19, 2011; 181 pages
- Sorbet exhibits 4000 – 4011; 153 pages

Dr. Robert W. Wunderlich

- Dr. Wunderlich essentially provided testimony questioning the value of claims based on alternative discount rates in valuations, and quantity of recoverable oil within the Reservoir.
- Deposition taken on December 19, 2011; 266 pages
- Deposition taken on January 12, 2012; 209 pages
- Wunderlich exhibits 1, 338, 341, 352, 356, 368, 369, 372, 382; 385 pages
- Wunderlich exhibits 403 – 415; 151 pages
 - Of note is exhibit 410 which includes a summary of some of the oil estimate reports prepared at various points in history. The relevant page follows below in Figure 38.

Figure 38: Wunderlich Exhibit 410

B1

Examples of Estimated Reserves/Projected Recovery - Hermosa Beach
(millions of barrels)

Zone/Area	Hacker 1984	Hacker 1988	Hester 1988	Macpherson 1990	Macpherson 1990	NSAI (Proved) 1992	NSAI (Possible) 1992	Hallinger 1995	Ryder (Proved) 1998	Ryder (Possible) 1998	Macpherson 1998	Macpherson 1998	Aera (Mean) 1998	Gore 2009
Main Zone	2.0 - 6.0	17.1	5.0											
Del Amo	probably not productive	2.2						not proven productive in vicinity						
Schist		10.3		assumed not to be productive	assumed to be productive			not proven productive in vicinity			no schist encountered	schist encountered		
On-Shore	not expected to be highly commercial	0.9	2.2 - 4.4											
Total	2.0 - 6.0	30.4	7.2 - 9.4	5.5 - 6.5	11.1 - 12.7	1.8	5.3	5.0	3.5	14.6	19.3	28.7	16.1	22.3
Reference	(1)	(2)	(3)	(4)	(4)	(5)	(5)	(6)	(7)	(7)	(8)	(9)	(10)	(11)

(1) Hacker 1984, 20 wells at 100,000 to 300,000 bbls/well, MOC043201 - 209
 (2) Hacker 1988, MOC043219 - 224
 (3) Hester 1988, MOC043210 - 43218
 (4) Macpherson 1990 MOC043103 - 106
 (5) NSAI for GLG 1992 NSAI65-71, Possible includes Proved Undeveloped, Probable & Possible
 (6) Hallinger 1995 MOC042944 - 946
 (7) Ryder Scott for Windsor Energy 1998 MOC48128 - 130, Possible includes Proved Undeveloped, Probable & Possible
 (8) Macpherson 1998 MOC42083
 (9) Macpherson 1998 MOC42028
 (10) Aera 1998 AER5412
 (11) W. Gore 2009 Deposition Exhibit 3131

Note to Figure 38: The Authors are aware of the studies listed in the exhibit, and provide the following comment: A number of reports have been prepared at (i) different points in time, (ii) assuming a variety of well technologies as then available, (iii) for different clients or purposes, (iv) with differing levels of probability thresholds, (v) using different estimation techniques, and (vi) importantly, typically relying on the same underlying set of data. The estimates in this CBA represent the Authors independent evaluation of the underlying data, and estimates of Low, Expected and High production scenarios as described herein utilizing well technology currently available. As described in Table 3 the Authors estimated production of 10.9 million barrels of oil as possible under the CBA Low scenario, 17.1 million barrels under the CBA Expected scenario, and 22.2 million barrels under the CBA High scenario. Further, given a lack of reliable information these figures do not assume any production from the Lower Del Amo of Schist zones. A detailed discussion of the Authors estimates is provided in Section 5.0.

17.0 Conclusion

In conclusion, should the Project not be approved by voters, the City will pay E&B a settlement payment of \$17.5 million. The City currently has approximately \$6.0 million or more set aside to fund City obligations related to the Project. Assuming the City would allocate these funds to the settlement payment, it may need to borrow the remaining \$11.5 million of the obligation. Depending on the financing structure, the cost of borrowing \$11.5 million is estimated to range from approximately \$825,000 per year for 30 years, to approximately \$1.1 million per year for 20 years. These financing costs could be paid through an allocation of existing City revenues, or supplemental taxes on City residents.

Should the Project be approved by the voters and the City issues a drilling permit, the City would likely pay E&B a settlement payment of \$3.5 million, temporarily relocate the City's maintenance yard, and then permanently relocate the City's maintenance yard. Under this scenario, and considering other assumptions discussed herein, the Authors anticipate that the City may have to pursue a \$7.5 (\$2017) million financing to complete the required improvements. Estimated bond payments of \$560,000 per year could likely be timed to match anticipated oil and gas revenues.

If approved, the City would be entitled to royalty revenues from oil and gas produced under the Project. Based on production estimates completed as part of this CBA, the Authors estimate that over the 35 year life of the Project the City would realize net revenues of approximately \$118 to \$270 million (\$2014), of which an estimated \$25 to \$77 million (net, 21 - 29%) would accrue to the City's General Fund. Utilizing production estimates from the Applicant rather than those from this CBA, the Authors estimate that the City would realize net revenues of approximately \$450 million (\$2014). It is estimated that \$139 million (net, 31%) of this total would accrue to the City's General Fund.

A summary table showing the CBA estimated Low, Expected, High, and Applicant based financial costs and benefits to the City are summarized below in Table 43. As discussed previously, there may be potential restrictions on the use of funds in either the City's General Fund, or the Tidelands Funds.

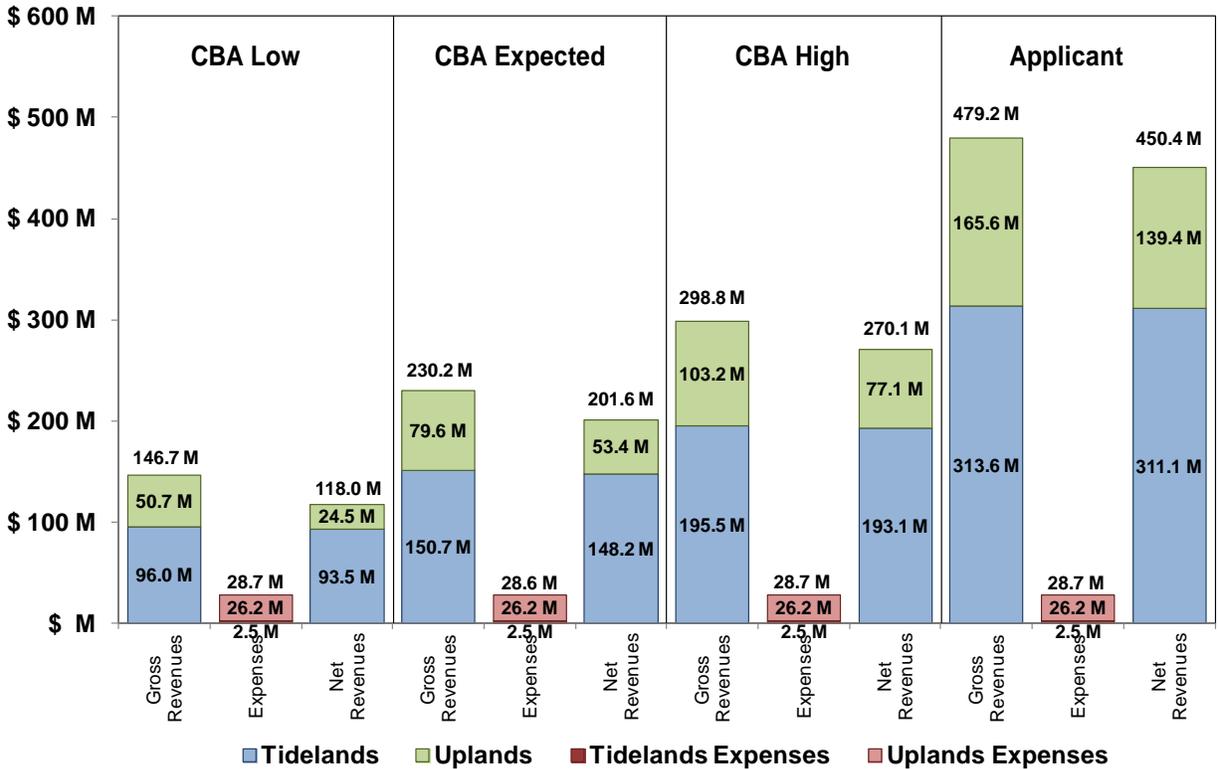
Table 43: Summary of Net Projected City Revenues with Project

	Low <u>CBA Low</u>	CBA Expected	CBA High	High <u>Applicant</u>
Tidelands Royalties				
Gross Tidelands Oil & Gas Revenues	\$ 96,000,000	\$ 150,650,000	\$ 195,510,000	\$ 313,570,000
Less: Settlement Agreement Payment	-	-	-	-
Less: Repayment of Advances (70% of Repayment)	(3,030,000)	(3,030,000)	(3,030,000)	(3,100,000)
Less: Allocation for Emergency Trust (70% of Funding)	540,000	560,000	570,000	600,000
Net Tidelands Revenues	\$ 93,520,000	\$ 148,190,000	\$ 193,050,000	\$ 311,070,000
Uplands Royalties				
Gross Uplands Oil & Gas Revenues	\$ 50,690,000	\$ 79,550,000	\$ 103,240,000	\$ 165,580,000
Less: Settlement Agreement Payment	(3,100,000)	(3,100,000)	(3,100,000)	(3,120,000)
Less: Repayment of Advances (30% of Repayment)	(1,300,000)	(1,300,000)	(1,300,000)	(1,330,000)
Less: Allocation for Emergency Trust (30% of Funding)	230,000	240,000	240,000	260,000
Net Uplands Revenues	\$ 46,530,000	\$ 75,390,000	\$ 99,080,000	\$ 161,390,000
Other				
Use of City Reserve for Temporary Relocation	\$ (2,960,000)	\$ (2,960,000)	\$ (2,960,000)	\$ (2,960,000)
Use of City Reserve for Project Site Remediation	(50,000)	(50,000)	(50,000)	(50,000)
Use of City Reserve for Permanent Relocation	(2,660,000)	(2,660,000)	(2,660,000)	(2,660,000)
Debt Service For Permanent Relocation (Approximate)	(9,980,000)	(9,980,000)	(9,980,000)	(9,980,000)
Less: Loss of Storage Site Revenues	(6,390,000)	(6,390,000)	(6,390,000)	(6,390,000)
Total Other (Uplands)	\$ (22,030,000)	\$ (22,030,000)	\$ (22,030,000)	\$ (22,030,000)
Net Uplands Revenues After Other Costs	24,500,000	53,370,000	77,050,000	139,360,000
Net Tidelands & Uplands Revenues	118,020,000	201,550,000	270,100,000	450,430,000

Note to Table 43: Figures are in \$2014, and assume use of advances from E&B, and use of the City's approximately \$6.0 million set aside to fund Project related City obligations.

A graphical summary of the estimated City's gross revenues, expenses, and net revenues follows in Figure 39 below.

Figure 39: Estimated Gross City Revenues, Expenses & Net Revenues (Tidelands & Uplands)



As discussed herein, additional potential financial costs and revenues include Reservoir property tax revenues, a reduction in other City property tax revenues, and the value of the Project Site at reversion to the City at the end of the Oil Lease.

With respect to potential revenues for the Hermosa Beach City School District, based on production estimates completed as part of this CBA, the Authors estimate that the School District would receive net revenues of approximately \$1.2 - 2.2 million (\$2014) over the life of the Project, or, assuming the production estimates from the Applicant, \$3.8 million (\$2014) over the life of the Project.

The analyses, projections, assumptions, rates of return, and any examples presented herein are for illustrative purposes and are not a guarantee of actual and/or future results. Project pro forma and tax analyses are projections only. Actual results may differ materially from those expressed in this analysis.

18.0 Appendices

Appendix: A

Acronyms, Defined & Industry Terms

2014 AEO - the early release of the 2014 Annual Energy Outlook (prepared by the EIA)

AEO - Annual Energy Outlook (prepared by the EIA)

Authors - Kosmont Companies, CGEOIL, LLC, and Green Tech Coast, LLC

APN - LACOA Assessor Parcel Number

Applicant - E&B Natural Resources Management Corporation

A/V – Assessed Valuation

BP - Basis Point(s) (.01%)

Brent - Brent Crude, a classification of oil that serves as a benchmark price

BTU - British Thermal Unit (a unit of energy; the amount of energy required to heat or cool one pound of water by 1^o Fahrenheit)

CAFR - Comprehensive Annual Financial Report (a standardized annual report of city budgets)

CARB - California Air Resource Board

CBA - Cost Benefit Analysis (this document)

CEQA - California Environmental Quality Act

City – The City of Hermosa Beach

CMS - California Midway-Sunset (type of oil)

COP - Certificates of Participation (a municipal finance structure)

County - Los Angeles County

CSLC – California State Lands Commission

CUP - Conditional Use Permit

DOGGR - Division of Oil, Gas and Geothermal Resources

DSRF – Debt service reserve fund (as it pertains to a bond issuance)

E&B - E&B Natural Resources Management Corporation

EIA - U.S. Energy Information Administration

EIR - Environmental Impact Report

FMV - Future Market Value

FV – Future Value

FTE - Full Time Equivalent

GHG - Greenhouse gas (in reference to emissions)

HHSP - Henry Hub Spot Price (a natural gas pricing benchmark)

HIA – Health Impact Assessment

ICRMA - Independent Cities Risk Management Authority (a joint powers insurance pool)

LACOA – Los Angeles County Office of the Assessor

MCF - Thousand Cubic Feet (used in quantifying natural gas volumes)

MMBTU - Million BTU

MOC - Macpherson Oil Company

MTCO₂ - Metric Ton of Carbon Dioxide

OOIP – Original oil in place

Project – Generally the drilling, production, and processing of oil and gas from the Reservoir on the Project Site

Project Site - Generally the existing location of the City's maintenance yard.

PRMS - Petroleum resource management system

PSF - Per Square Foot

PV – Present Value

RAP - Remedial Action Plan

Reservoir – the oil field underlying the City of Hermosa Beach and extending out to sea one nautical mile from the mean high tide line.

SCAQMD – South Coast Air Quality Management District (the air pollution control agency for Orange County and urban portions of Los Angeles, Riverside and San Bernardino counties)

School District - The Hermosa Beach City School District

TIC - True Interest Cost, essentially the effective interest cost of a financing

Appendix: B

Alternative City Royalty Revenue Calculations

The application of the City's royalty provisions contained in the Oil Lease, CSLC MOU, Settlement Agreement (and Municipal Corporation Grant Deed contained therein), could potentially be interpreted in a variety of ways. The estimates of distribution of revenues between the Tidelands and Uplands funds presented outside of this Appendix B follow guidance provided by the CSLC staff in a letter dated September 16, 2014. This CBA does not purport to express a legal opinion as to which view of the use of Tidelands revenues is correct. A discussion of alternative applications of the various provisions follows.

The primary areas of interpretation are:

1. Whether the 3-1/3% grant to MOC (i) reduces both the City's Tidelands royalty and the City's Uplands royalty by 3-1/3%, or (ii) reduces only City Uplands royalty by amount equal to 3-1/3% of Uplands and Tidelands production.
2. If the 3-1/3% grant to MOC does reduce both the City's Tidelands royalty and the City's Uplands royalty by 3-1/3% whether the City Tidelands drill site lease payment of 37.50% is applied (i) before or (ii) after the reduction in the City's Tidelands royalty.
3. Whether the 3-1/3% grant to MOC applies to (i) all oil produced from the Uplands, or (ii) just City Uplands oil rights, by operation of law (wherein an entity can only grant something that it has).

Applying the permutations of the three elements listed above results in six potential calculations of City Tidelands and Uplands revenues. As discussed above, the figures used in this CBA are based on guidance from CSLC staff as of the date of this report and do not take into account possible outcomes of actions or determinations that other regulatory agencies and/or any other parties or entities may take in the future, as those future possible events are speculative. The distribution of Tidelands and Uplands royalties evaluated in this document is shown as "CLSC Guidance" in Table 44 below. A summary of alternative calculations, the resulting possible share of Tidelands versus Uplands revenues, and total City revenue per \$100 of oil production also follows in Table 44 below.

Table 44: Matrix of City Revenue Calculation Alternatives

	MOC Grant Applies to Uplands / Tidelands	Drill Site Lease Based on Net or Gross Tidelands Royalty	MOC Grant Applies to City Only or All Uplands Production	Per \$100 in City Revenue		City Revenue Per \$100 of Production
				Tidelands	Uplands	
CSLC Guidance	Uplands	Gross	City Only	\$ 65.44	\$ 34.56	\$ 13.95
Alternative 1 & 1A	Both	Net	City Only	53.76	46.24	13.95
Alternative 2	Both	Net	All	55.97	44.03	13.40
Alternative 3	Both	Gross	City Only	46.74	53.26	13.95
Alternative 4	Both	Gross	All	48.67	51.33	13.40
Alternative 5	Uplands	Gross	All	68.14	31.86	13.40

As shown in above, the different applications of the royalty provisions can result in a notable shift in the distribution of City revenues between Tidelands and Uplands funds. For reference, Alternative 1 and Alternative 1A yield the same result, but are represented with different sub-category mathematical results. Further, Alternative 1A is the same as was presented in Figure 15 of the Draft CBA and was the base case for revenue distribution estimates in the Draft CBA. Sample calculations for the base case (“CSLC Guidance”) in this CBA are provided in Figure 17 above. Sample calculations for Alternative 1A through Alternative 5 follow in Figure 40 through Figure 45 below.

Note: Within this report the calculations in CSLC Guidance (shown in Figure 17 above) are used as the basis of City revenue estimates. Notwithstanding, as a matter of information, Table 44 above and the figures illustrating detailed calculations can be utilized to estimate the implications of the different calculation methods.

Calculation of City Royalty Revenues by Fund - Alternative 1

			For every \$100 Produced	For Every \$100 in City Revenues
City Revenue Calculations				
For Every \$100 Produced				
Produced from Tidelands	78.28%	Produced in Tidelands (\$100 x 78.28%)	\$ 78.28	
Produced from Uplands	21.72%	Produced in Uplands (\$100 x 21.72%)	21.72	
City - Tidelands				
City Tidelands Royalty (Net)	15.33% of all Oil & Gas Produced in Tidelands	<i>(\$100 x 78.28% x (18.67% - 3.33%))</i>	\$ 12.00	86.01
Less: Drill Site Lease Payment to Uplands	-37.50% of City Tidelands Royalty	<i>-\$100 x 78.28% x (15.33% x 37.50%)</i>	(4.50)	(32.25)
Subtotal City Tidelands			\$ 7.50	\$ 53.76
City - Uplands				
City Share / City Land Ownership	23.83%			
City Uplands Royalty (Net)	15.33% of City Share of Oil & Gas Produced in Uplands	<i>(\$100 x 21.72% x 23.83% x (18.67% - 3.33%))</i>	0.79	5.69
Drill Site Lease - Uplands Payment	7.00% of Non-City owned Oil & Gas Produced in Uplands	<i>(\$100 x 21.72% x 7.00% x (100% - 23.83%))</i>	1.16	8.30
Drill Site Lease - Tidelands Payment	37.50% of City Tidelands Royalty	<i>(\$100 x 78.28% x (15.33% x 37.50%))</i>	4.50	32.25
Subtotal City Uplands			\$ 6.45	\$ 46.24
Total City Revenue			\$ 13.95	\$ 100.00

Calculation of City Royalty Revenues by Fund - Alternative 1A

			For every \$100 Produced	For Every \$100 in City Revenues
City Revenue Calculations				
For Every \$100 Produced				
Produced from Tidelands	78.28%	Produced in Tidelands (\$100 x 78.28%)	\$ 78.28	
Produced from Uplands	21.72%	Produced in Uplands (\$100 x 21.72%)	21.72	
City - Tidelands				
City Tidelands Royalty	18.67% of all Oil & Gas Produced in Tidelands	$(\$100 \times 78.28\% \times 18.67\%)$	\$ 14.61	\$ 104.71
Less: Royalty to Macpherson Oil Company	-3.33% of all Oil & Gas Produced in Tidelands	$-(\$100 \times 78.28\% \times 3.33\%)$	(2.61)	(18.70)
Less: Drill Site Lease Payment to Uplands	-37.50% of Net City Tidelands Royalty	$-(\$100 \times 78.28\% \times (18.67\% - 3.33\%) \times 37.50\%)$	(4.50)	(32.25)
Subtotal City Tidelands			\$ 7.50	\$ 53.76
City - Uplands				
City Share / City Land Ownership	23.83%			
City Uplands Royalty	11.67% of City Share of Oil & Gas Produced in Uplands	$(\$100 \times 21.72\% \times 23.83\% \times 11.67\%)$	\$ 0.60	\$ 4.33
Less: Royalty to Macpherson Oil Company	-3.33% of City Share of Oil & Gas Produced in Uplands	$-(\$100 \times 21.72\% \times 23.83\% \times 3.33\%)$	(0.17)	(1.24)
Drill Site Lease - Uplands Payment	7.00% of all Oil & Gas Produced in Uplands	$(\$100 \times 21.72\% \times 7.00\%)$	1.52	10.90
Drill Site Lease - Tidelands Payment	37.50% of City Tidelands Royalty	$(\$100 \times 78.28\% \times (18.67\% - 3.33\%) \times 37.50\%)$	4.50	32.25
Subtotal City Uplands			\$ 6.45	\$ 46.24
Total City Revenue			\$ 13.95	\$ 100.00

Calculation of City Royalty Revenues by Fund - Alternative 2

			For every \$100 Produced	For Every \$100 in City Revenues
City Revenue Calculations				
For Every \$100 Produced				
Produced from Tidelands	78.28%		Produced in Tidelands (\$100 x 78.28%)	\$ 78.28
Produced from Uplands	21.72%		Produced in Uplands (\$100 x 21.72%)	21.72
City - Tidelands				
City Tidelands Royalty (Net)	15.33% of all Oil & Gas Produced in Tidelands	$(\$100 \times 78.28\% \times (18.67\% - 3.33\%))$	\$ 12.00	89.55
Less: Drill Site Lease Payment to Uplands	-37.50% of City Tidelands Royalty	$-(\$100 \times 78.28\% \times (18.67\% - 3.33\%) \times 37.50\%)$	(4.50)	(33.58)
Subtotal City Tidelands			\$ 7.50	\$ 55.97
City - Uplands				
City Share / City Land Ownership	23.83%			
City Uplands Royalty (Net)	15.33% of City Share of Oil & Gas Produced in Uplands	$(\$100 \times 21.72\% \times 23.83\% \times (18.67\% - 3.33\%))$	0.79	5.92
Drill Site Lease - Uplands Payment (Net)	3.67% of Non-City owned Oil & Gas Produced in Uplands	$(\$100 \times 21.72\% \times (7.00\% - 3.33\%) \times (100\% - 23.83\%))$	0.61	4.53
Drill Site Lease - Tidelands Payment	37.50% of City Tidelands Royalty	$(\$100 \times 78.28\% \times (18.67\% - 3.33\%) \times 37.50\%)$	4.50	33.58
Subtotal City Uplands			\$ 5.90	\$ 44.03
			Total City Revenue	\$ 13.40
				\$ 100.00

Calculation of City Royalty Revenues by Fund - Alternative 3

			For every \$100 Produced	For Every \$100 in City Revenues
City Revenue Calculations				
For Every \$100 Produced				
Produced from Tidelands	78.28%	Produced in Tidelands (\$100 x 78.28%)	\$ 78.28	
Produced from Uplands	21.72%	Produced in Uplands (\$100 x 21.72%)	21.72	
City - Tidelands				
City Tidelands Royalty	18.67% of all Oil & Gas Produced in Tidelands	(\$100 x 78.28% x 18.67%)	\$ 14.61	104.71
Less: Drill Site Lease Payment to Uplands	-37.50% of Gross City Tidelands Royalty	-($100 \times 78.28\% \times 18.67\% \times 37.50\%$)	(5.48)	(39.27)
Less: Royalty to Macpherson Oil Company	-3.33% of all Oil & Gas Produced in Tidelands	(\$100 x 78.28% x 3.33%)	(2.61)	(18.70)
Subtotal City Tidelands			\$ 6.52	\$ 46.74
City - Uplands				
City Share / City Land Ownership	23.83%			
City Uplands Royalty	11.67% of City Share of Oil & Gas Produced in Uplands	(\$100 x 21.72% x 23.83% x 11.67%)	0.60	4.33
Less: Royalty to Macpherson Oil Company	-3.33% of City Share of Oil & Gas Produced in Uplands	-($100 \times 21.72\% \times 23.83\% \times 3.33\%$)	(0.17)	(1.24)
Drill Site Lease - Uplands Payment	7.00% of all Oil & Gas Produced in Uplands	(\$100 x 21.72% x 7.00%)	1.52	10.90
Drill Site Lease - Tidelands Payment	37.50% of City Tidelands Royalty	(\$100 x 78.28% x 18.67% x 37.50%)	5.48	39.27
Subtotal City Uplands			\$ 7.43	\$ 53.26
Total City Revenue			\$ 13.95	\$ 100.00

Calculation of City Royalty Revenues by Fund - Alternative 4

			For every \$100 Produced	For Every \$100 in City Revenues
City Revenue Calculations				
For Every \$100 Produced				
Produced from Tidelands	78.28%	Produced in Tidelands (\$100 x 78.28%)	\$ 78.28	
Produced from Uplands	21.72%	Produced in Uplands (\$100 x 21.72%)	21.72	
City - Tidelands				
City Tidelands Royalty	18.67% of all Oil & Gas Produced in Tidelands	(\$100 x 78.28% x 18.67%)	\$ 14.61	109.02
Less: Drill Site Lease Payment to Uplands	-37.50% of Gross City Tidelands Royalty	-\$100 x 78.28% x 18.67% x 37.50%	(5.48)	(40.88)
Less: Royalty to Macpherson Oil Company	-3.33% of all Oil & Gas Produced in Tidelands	(\$100 x 78.28% x 3.33%)	(2.61)	(19.47)
Subtotal City Tidelands			\$ 6.52	\$ 48.67
City - Uplands				
City Share / City Land Ownership	23.83%			
City Uplands Royalty	11.67% of City Share of Oil & Gas Produced in Uplands	(\$100 x 21.72% x 23.83% x 11.67%)	0.60	4.51
Less: Royalty to Macpherson Oil Company	-3.33% of all Oil & Gas Produced in Uplands	-\$100 x 21.72% x 3.33%	(0.72)	(5.40)
Drill Site Lease - Uplands Payment	7.00% of all Oil & Gas Produced in Uplands	(\$100 x 21.72% x 7.00%)	1.52	11.35
Drill Site Lease - Tidelands Payment	37.50% of City Tidelands Royalty	(\$100 x 78.28% x 18.67% x 37.50%)	5.48	40.88
Subtotal City Uplands			\$ 6.88	\$ 51.33
Total City Revenue			\$ 13.40	\$ 100.00

Calculation of City Royalty Revenues by Fund - Alternative 5

			For every \$100 Produced	For Every \$100 in City Revenues
City Revenue Calculations				
For Every \$100 Produced				
Produced from Tidelands	78.28%	Produced in Tidelands (\$100 x 78.28%)	\$ 78.28	
Produced from Uplands	21.72%	Produced in Uplands (\$100 x 21.72%)	21.72	
City - Tidelands				
City Tidelands Royalty	18.67% of all Oil & Gas Produced in Tidelands	<i>(\$100 x 78.28% x 18.67%)</i>	\$ 14.61	109.02
Less: Drill Site Lease Payment to Uplands	-37.50% of Gross City Tidelands Royalty	<i>-(\$100 x 78.28% x 18.67% x 37.50%)</i>	(5.48)	(40.88)
Subtotal City Tidelands			\$ 9.13	\$ 68.14
City - Uplands				
City Share / City Land Ownership	23.83%			
City Uplands Royalty	11.67% of City Share of Oil & Gas Produced in Uplands	<i>(\$100 x 21.72% x 23.83% x 11.67%)</i>	0.60	4.51
Drill Site Lease - Uplands Payment	7.00% of all Oil & Gas Produced in Uplands	<i>(\$100 x 21.72% x 7.00%)</i>	1.52	11.35
Drill Site Lease - Tidelands Payment	37.50% of City Tidelands Royalty	<i>(\$100 x 78.28% x 18.67% x 37.50%)</i>	5.48	40.88
Less: Royalty to Macpherson Oil Company	-3.33% of all Oil & Gas Produced	<i>(\$100 x 3.33%)</i>	(3.33)	(24.87)
Subtotal City Uplands			\$ 4.27	\$ 31.86
Total City Revenue			\$ 13.40	\$ 100.00

Impact of Production Location on Revenue Calculations

As introduced in Section 7.2 above, the application of the royalty calculations would also vary if the actual production of oil and gas from the Tidelands and Uplands differed from the underlying 78.28% / 21.72% allocation estimated in Table 2 on page 27. A summary of the impact to the split between Tidelands and Uplands revenues, and overall City revenues under the various distributions of oil production between the Tidelands and Uplands follows in Table 45.

Table 45: Matrix of City Revenue under Varying Distributions of Uplands Versus Tidelands Production

	65% Tidelands / 35% Uplands			75% Tidelands / 25% Uplands		
	Per \$100 in City Revenue		City Revenue Per \$100 of Production	Per \$100 in City Revenue		City Revenue Per \$100 of Production
	Tidelands	Uplands		Tidelands	Uplands	
CSLC Guidance	\$ 57.84	\$ 42.16	\$ 13.11	\$ 63.65	\$ 36.35	\$ 13.75
Alternative 1 & 1A	47.51	52.49	13.11	52.29	47.71	13.75
Alternative 2	50.96	49.04	12.22	54.82	45.18	13.11
Alternative 3	41.31	58.69	13.11	45.47	54.53	13.75
Alternative 4	44.32	55.68	12.22	47.67	52.33	13.11
Alternative 5	62.04	37.96	12.22	66.73	33.27	13.11

	85% Tidelands / 15% Uplands			95% Tidelands / 5% Uplands		
	Per \$100 in City Revenue		City Revenue Per \$100 of Production	Per \$100 in City Revenue		City Revenue Per \$100 of Production
	Tidelands	Uplands		Tidelands	Uplands	
CSLC Guidance	\$ 68.96	\$ 31.04	\$ 14.38	\$ 73.81	\$ 26.19	\$ 15.02
Alternative 1 & 1A	56.64	43.36	14.38	60.63	39.37	15.02
Alternative 2	58.18	41.82	14.00	61.15	38.85	14.89
Alternative 3	49.25	50.75	14.38	52.72	47.28	15.02
Alternative 4	50.59	49.41	14.00	53.17	46.83	14.89
Alternative 5	70.83	29.17	14.00	74.44	25.56	14.89

A summary comparing the percent change in revenue from base case estimates of 78.28% of production coming from the Tidelands and 21.72% of production coming from the Uplands under alternative distributions follows in Table 46 below.

Table 46: Matrix of City Revenue under Varying Distributions of Uplands Versus Tidelands Production

	65% Tidelands / 35% Uplands			75% Tidelands / 25% Uplands		
	Per \$100 in City Revenue		City Revenue Per \$100 of Production	Per \$100 in City Revenue		City Revenue Per \$100 of Production
	Tidelands	Uplands		Tidelands	Uplands	
CSLC Guidance	88%	122%	94%	97%	105%	99%
Alternative 1 & 1A	88%	114%	94%	97%	103%	99%
Alternative 2	91%	111%	91%	98%	103%	98%
Alternative 3	88%	110%	94%	97%	102%	99%
Alternative 4	91%	108%	91%	98%	102%	98%
Alternative 5	91%	119%	91%	98%	104%	98%

	85% Tidelands / 15% Uplands			95% Tidelands / 5% Uplands		
	Per \$100 in City Revenue		City Revenue Per \$100 of Production	Per \$100 in City Revenue		City Revenue Per \$100 of Production
	Tidelands	Uplands		Tidelands	Uplands	
CSLC Guidance	105%	90%	103%	113%	76%	108%
Alternative 1 & 1A	105%	94%	103%	113%	85%	108%
Alternative 2	104%	95%	104%	109%	88%	111%
Alternative 3	105%	95%	103%	113%	89%	108%
Alternative 4	104%	96%	104%	109%	91%	111%
Alternative 5	104%	92%	104%	109%	80%	111%

Appendix: C Projected City Revenues by Year (Gross)

Estimated City Tidelands Revenues (Gross)				
	CBA Low	CBA Expected	CBA High	Applicant
2016	\$ 900,000	\$ 900,000	\$ 900,000	\$ 2,100,000
2017	3,700,000	3,800,000	3,800,000	-
2018	6,900,000	7,000,000	7,100,000	14,200,000
2019	9,200,000	9,400,000	9,700,000	25,800,000
2020	8,600,000	8,900,000	9,400,000	25,800,000
2021	6,400,000	6,900,000	7,700,000	25,600,000
2022	4,900,000	5,600,000	6,700,000	22,000,000
2023	4,000,000	5,000,000	7,100,000	18,800,000
2024	3,500,000	4,700,000	7,500,000	16,700,000
2025	3,300,000	5,600,000	6,900,000	15,000,000
2026	3,100,000	6,000,000	6,300,000	13,800,000
2027	3,000,000	5,400,000	7,000,000	12,700,000
2028	2,800,000	4,800,000	7,400,000	11,700,000
2029	2,700,000	4,400,000	6,800,000	10,700,000
2030	2,600,000	5,000,000	6,200,000	9,900,000
2031	2,400,000	5,400,000	6,500,000	9,100,000
2032	2,300,000	4,900,000	6,900,000	8,400,000
2033	2,200,000	4,400,000	6,400,000	7,700,000
2034	2,100,000	4,100,000	5,900,000	7,100,000
2035	2,000,000	4,400,000	5,900,000	6,500,000
2036	1,900,000	4,700,000	6,200,000	6,000,000
2037	1,800,000	4,300,000	5,800,000	5,500,000
2038	1,700,000	3,900,000	5,400,000	5,100,000
2039	1,600,000	3,600,000	5,100,000	4,700,000
2040	1,500,000	3,400,000	4,900,000	4,300,000
2041	1,500,000	3,200,000	4,700,000	3,900,000
2042	1,400,000	3,100,000	4,500,000	3,600,000
2043	1,300,000	2,900,000	4,300,000	3,300,000
2044	1,200,000	2,800,000	4,100,000	3,100,000
2045	1,200,000	2,600,000	4,000,000	2,800,000
2046	1,100,000	2,500,000	3,800,000	2,600,000
2047	1,100,000	2,400,000	3,700,000	2,400,000
2048	1,000,000	2,300,000	3,500,000	2,200,000
2049	1,000,000	2,200,000	3,400,000	900,000
	\$96,000,000	\$ 150,700,000	\$195,500,000	\$313,600,000

Estimated City Uplands Revenues (Gross)

	CBA Low	CBA Expected	CBA High	Applicant
2016	\$ 500,000	\$ 500,000	\$ 500,000	\$ 1,100,000
2017	2,000,000	2,000,000	2,000,000	-
2018	3,600,000	3,700,000	3,800,000	7,500,000
2019	4,900,000	4,900,000	5,100,000	13,600,000
2020	4,500,000	4,700,000	5,000,000	13,600,000
2021	3,400,000	3,600,000	4,000,000	13,500,000
2022	2,600,000	3,000,000	3,500,000	11,600,000
2023	2,100,000	2,600,000	3,800,000	9,900,000
2024	1,900,000	2,500,000	4,000,000	8,800,000
2025	1,700,000	3,000,000	3,600,000	7,900,000
2026	1,700,000	3,200,000	3,300,000	7,300,000
2027	1,600,000	2,800,000	3,700,000	6,700,000
2028	1,500,000	2,600,000	3,900,000	6,200,000
2029	1,400,000	2,300,000	3,600,000	5,700,000
2030	1,400,000	2,600,000	3,300,000	5,200,000
2031	1,300,000	2,900,000	3,400,000	4,800,000
2032	1,200,000	2,600,000	3,700,000	4,400,000
2033	1,200,000	2,300,000	3,400,000	4,100,000
2034	1,100,000	2,100,000	3,100,000	3,700,000
2035	1,000,000	2,300,000	3,100,000	3,400,000
2036	1,000,000	2,500,000	3,300,000	3,200,000
2037	900,000	2,300,000	3,000,000	2,900,000
2038	900,000	2,100,000	2,800,000	2,700,000
2039	900,000	1,900,000	2,700,000	2,500,000
2040	800,000	1,800,000	2,600,000	2,300,000
2041	800,000	1,700,000	2,500,000	2,100,000
2042	700,000	1,600,000	2,400,000	1,900,000
2043	700,000	1,500,000	2,300,000	1,800,000
2044	700,000	1,500,000	2,200,000	1,600,000
2045	600,000	1,400,000	2,100,000	1,500,000
2046	600,000	1,300,000	2,000,000	1,400,000
2047	600,000	1,300,000	1,900,000	1,300,000
2048	500,000	1,200,000	1,900,000	1,200,000
2049	500,000	1,100,000	1,800,000	500,000
	\$50,700,000	\$ 79,600,000	\$103,200,000	\$165,600,000

Estimated Total City Revenue (Tidelands & Uplands, Gross)

	CBA Low	CBA Expected	CBA High	Applicant
2016	\$ 1,400,000	\$ 1,400,000	\$ 1,400,000	\$ 3,300,000
2017	5,700,000	5,800,000	5,800,000	-
2018	10,500,000	10,700,000	10,900,000	21,700,000
2019	14,100,000	14,300,000	14,800,000	39,400,000
2020	13,200,000	13,500,000	14,400,000	39,400,000
2021	9,800,000	10,500,000	11,700,000	39,100,000
2022	7,500,000	8,600,000	10,200,000	33,600,000
2023	6,100,000	7,600,000	10,900,000	28,700,000
2024	5,400,000	7,200,000	11,500,000	25,500,000
2025	5,100,000	8,600,000	10,500,000	23,000,000
2026	4,800,000	9,200,000	9,700,000	21,000,000
2027	4,600,000	8,200,000	10,700,000	19,300,000
2028	4,300,000	7,400,000	11,300,000	17,800,000
2029	4,100,000	6,800,000	10,300,000	16,400,000
2030	3,900,000	7,600,000	9,500,000	15,100,000
2031	3,700,000	8,300,000	9,900,000	13,900,000
2032	3,500,000	7,500,000	10,600,000	12,800,000
2033	3,400,000	6,800,000	9,700,000	11,700,000
2034	3,200,000	6,200,000	9,000,000	10,800,000
2035	3,000,000	6,800,000	9,100,000	9,900,000
2036	2,900,000	7,200,000	9,500,000	9,200,000
2037	2,700,000	6,600,000	8,800,000	8,400,000
2038	2,600,000	6,000,000	8,200,000	7,700,000
2039	2,500,000	5,500,000	7,800,000	7,100,000
2040	2,300,000	5,200,000	7,500,000	6,600,000
2041	2,200,000	5,000,000	7,200,000	6,000,000
2042	2,100,000	4,700,000	6,900,000	5,500,000
2043	2,000,000	4,500,000	6,600,000	5,100,000
2044	1,900,000	4,300,000	6,300,000	4,700,000
2045	1,800,000	4,000,000	6,100,000	4,300,000
2046	1,700,000	3,800,000	5,800,000	4,000,000
2047	1,600,000	3,600,000	5,600,000	3,600,000
2048	1,600,000	3,500,000	5,400,000	3,400,000
2049	1,500,000	3,300,000	5,200,000	1,300,000
	\$146,700,000	\$ 230,200,000	\$298,700,000	\$479,200,000

Appendix: D

California State Lands Commission Public Trust Doctrine

I. Origins of the Public Trust

The origins of the public trust doctrine are traceable to Roman law concepts of common property. Under Roman law, the air, the rivers, the sea and the seashore were incapable of private ownership; they were dedicated to the use of the public.¹ This concept that tide and submerged lands are unique and that the state holds them in trust for the people has endured throughout the ages. In 13th century Spain, for example, public rights in navigable waterways were recognized in *Las Siete Partidas*, the laws of Spain set forth by Alfonso the Wise.² Under English common law, this principle evolved into the public trust doctrine pursuant to which the sovereign held the navigable waterways and submerged lands, not in a proprietary capacity, but rather “as trustee of a public trust for the benefit of the people” for uses such as commerce, navigation and fishing.³

After the American Revolution, each of the original states succeeded to this sovereign right and duty. Each became trustee of the tide and submerged lands within its boundaries for the common use of the people.⁴ Subsequently admitted states, like California, possess the same sovereign rights over their tide and submerged lands as the original thirteen states under the equal-footing doctrine.⁵ That is, title to lands under navigable waters up to the high water mark is held by the state in trust for the people. These lands are not alienable in that all of the public’s interest in them cannot be extinguished.⁶

II. Purpose of the Public Trust

The United States Supreme Court issued its landmark opinion on the nature of a state’s title to its tide and submerged lands nearly 110 years ago, and although courts have reviewed tidelands trust issues many times since then, the basic premise of the trust remains fundamentally unchanged. The Court said then that a state’s title to its tide and submerged lands is different from that to the lands it holds for sale. “It is a title held in trust for the people of the State that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing” free from obstruction or interference from private parties.⁷ In other words, the public trust is an affirmation of the duty of the state to protect the people’s common heritage of tide and submerged lands for their common use.⁸

But to what common uses may tide and submerged lands be put? Traditionally, public trust uses were limited to water-related commerce, navigation, and fishing. In more recent years, however, the California Supreme Court has said that the public trust embraces the right of the public to use the navigable waters of the state for bathing, swimming, boating, and general recreational purposes. It is sufficiently flexible to encompass changing public needs, such as the preservation of the lands in their natural state for scientific study, as open space and as wildlife habitat. The administrator of the public trust “is not burdened with an outmoded classification favoring one mode of utilization over another.”⁹

The Legislature, acting within the confines of the common law public trust doctrine, is the ultimate administrator of the tidelands trust and often may be the ultimate arbiter of permissible uses of trust lands. All uses, including those specifically authorized by the Legislature, must take into account the overarching principle of the public trust doctrine that trust lands belong to the public and are to be used to promote public rather than exclusively private purposes. The Legislature cannot commit trust lands irretrievably to private development because it would be abdicating the public trust.¹⁰ Within these confines, however, the Legislature has considerable discretion.

The Legislature already may have spoken to the issue of the uses to which particular tide and submerged lands may be put when making grants of these lands in trust to local government entities. Statutory trust grants are not all the same--some authorize the construction of ports and airports, others allow only recreational uses and still others allow a broad range of uses.

A further and often complicating factor is that granted and ungranted lands already may have been developed for particular trust uses that are incompatible with other trust uses or may have become antiquated. Some tidelands have been dedicated exclusively to industrial port uses, for example, and in these areas, recreational uses, even if also authorized by the trust grant, may be incompatible. Similarly, tidelands set aside for public beaches may not be suitable for construction of a cannery, even though a cannery may be an acceptable trust use. Piers, wharves and warehouses that once served commercial navigation but no longer can serve modern container shipping may have to be removed or converted to a more productive trust use. Historic public trust uses may have been replaced by new technologies. Antiquated structures on the waterfront may be an impediment rather than a magnet for public access and use of the waters. Public trust uses may and often do conflict with one another. The state and local tidelands grantees, as administrators of their respective public trust lands, are charged with choosing among these conflicting uses, with the Legislature as the ultimate arbiter of their choices.

For all these reasons, a list of uses or a list of cases without more may not be as useful as an analysis of public trust law applied to a specific factual situation.

III. The Leasing of Tidelands

A few principles established by the courts are instructive in analyzing under the public trust doctrine the leasing of public trust lands for particular uses. For example, it was settled long ago that tidelands granted in trust to local entities may be leased and improved if the leases and improvements promote uses authorized by the statutory trust grant and the public trust. Leases for the construction of wharves and warehouses and for railroad uses, i.e., structures that directly promote port development, were approved early in the 20th century.¹¹ Later, leases for structures incidental to the promotion of port commerce, such as the Port of Oakland's convention center, were held to be valid because although they did not directly support port business, they encouraged trade, shipping, and commercial associations to become familiar with the port and its assets.¹² Visitor-serving facilities, such as restaurants, hotels, shops, and parking areas, were also approved as appropriate uses because as places of public

accommodation, they allow broad public access to the tidelands and, therefore, enhance the public's enjoyment of these lands historically set apart for their benefit.¹³

These cases provide three guidelines for achieving compliance with the public trust when leasing tidelands for construction of permanent structures to serve a lessee's development project: (1) the structure must directly promote uses authorized by the statutory trust grant and trust law generally, (2) the structure must be incidental to the promotion of such uses, or (3) the structure must accommodate or enhance the public's enjoyment of the trust lands. Nonetheless, when considering what constitutes a trust use, it is critical to keep in mind the following counsel from the California Supreme Court: The objective of the public trust is always evolving so that a trustee is not burdened with outmoded classifications favoring the original and traditional triad of commerce, navigation and fisheries over those uses encompassing changing public needs.¹⁴

IV. Promotion of Trust Uses and Public Enjoyment of Trust Lands

Installations not directly connected with water-related commerce are appropriate trust uses when they must be located on, over or adjacent to water to accommodate or foster commercial enterprises. Examples include oil production facilities, freeway bridges and nuclear power plants.¹⁵ Hotels, restaurants, shops and parking areas are appropriate because they accommodate or enhance the public's ability to enjoy tide and submerged lands and navigable waterways. The tidelands trust is intended to promote rather than serve as an impediment to essential commercial services benefiting the people and the ability of the people to enjoy trust lands.¹⁶

Nevertheless, the essential trust purposes have always been, and remain, water related, and the essential obligation of the state is to manage the tidelands in order to implement and facilitate those trust purposes for all of the people of the state.¹⁷ Therefore, uses that do not accommodate, promote, foster or enhance the statewide public's need for essential commercial services or their enjoyment tidelands are not appropriate uses for public trust lands. These would include commercial installations that could as easily be sited on uplands and strictly local or "neighborhood-serving" uses that confer no significant benefit to Californians statewide. Examples may include hospitals, supermarkets, department stores, and local government buildings and private office buildings that serve general rather than specifically trust-related functions.

V. Mixed-Use Developments

Mixed-use development proposals for filled and unfilled tide and submerged lands have generally consisted of several structures, including non-trust use structures or structures where only the ground floor contains a trust use. While mixed-use developments on tidelands may provide a stable population base for the development, may draw the public to the development, or may yield the financing to pay for the trust uses to be included in the development, they ought not be approved as consistent with statutory trust grants and the public trust for these reasons. These reasons simply make the development financially attractive to a developer. Projects must have a connection to water-related activities that provide benefits to the public statewide,

which is the hallmark of the public trust doctrine. Failure to achieve this goal, simply to make a development financially attractive, sacrifices public benefit for private or purely local advantage. A mixed-use development may not be compatible with the public trust, not because it may contain some non-trust elements, but because it promotes a “commercial enterprise unaffected by a public use”¹⁸ rather than promoting, fostering, accommodating or enhancing a public trust use.¹⁹ That use, however, need not be restricted to the traditional triad of commerce, navigation and fishing. It is an evolving use that is responsive to changing public needs for trust lands and for the benefits these lands provide.²⁰

Moreover, commercial enterprises without a statewide public trust use may violate the terms of statutory trust grants. Typically, grants allow tidelands to be leased, but only for purposes “consistent with the trust upon which said lands are held.” This term is not equivalent to “not required for trust uses” or “not interfering with trust uses.” Since leases of tidelands must be consistent with statutory trust grant purposes, leases which expressly contemplate the promotion of non-trust uses rather than trust uses would not comply with the terms of the trust grants.

For these reasons, non-trust uses on tidelands, whether considered separately or part of a mixed-use development, are not mitigable. That is, unlike some environmental contexts where developments with harmful impacts may be approved so long as the impacts are appropriately mitigated by the developer, in the tidelands trust context, mitigation of a non-trust use has never been recognized by the courts. To the contrary, the California Supreme Court has said that just as the state is prohibited from selling its tidelands, it is similarly prohibited from freeing tidelands from the trust and dedicating them to other uses while they remain useable for or susceptible of being used for water-related activities.²¹

VI. Incidental Non-Trust Use

All structures built on tide and submerged lands should have as their main purpose the furtherance of a public trust use. Any structure designed or used primarily for a non-trust purpose would be suspect. Mixed-use development proposals, however, frequently justify non-trust uses as “incidental” to the entire project. The only published case in California in which a non-trust use of tidelands has been allowed focused on the fact that the real or main purpose of the *structure* was a public trust use and that the non-trust use would be incidental to the main purpose of the structure.²² In this context, the court noted that because the real or main purpose of the structure was to promote public trust uses, non-trust groups could also use the facility, but the non-trust uses must remain *incidental* to the main purpose of the structure.²³ This is the state of the law, and it is supported by good policy reasons as well. If the test for whether a non-trust use is incidental to the main purpose of a development were not applied on a structure-by-structure basis, pressure for more dense coastal development may increase as developers seek to maximize the square feet of allowable non-trust uses. Disputes may arise as to how to calculate the square footage attributable to the proper trust uses versus non-trust uses, with open waterways and parking garages likely being the dominant trust uses and structures being devoted to non-trust uses.

It is beyond contention that the state cannot grant tidelands free of the trust merely because the grant serves some public purpose, such as increasing tax revenues or because the grantee might put the property to a commercial use.²⁴ The same reasoning applies to putting tidelands to enduring non-trust uses by building structures on them. Accordingly, the only enduring non-trust uses that may be made of tidelands without specific legislative authorization are those incidental to the main trust purpose applied on a structure-by-structure basis. Each structure in a mixed-use development on tidelands must have as its primary purpose an appropriate public trust use. If its real or main purpose is a trust use, portions of the structure not needed for trust purposes may be leased temporarily to non-trust tenants, provided that the non-trust use is incidental to the main purpose of the structure.

VII. The Role of the Legislature

The Legislature is the representative of all the people and, subject to judicial review, is the ultimate arbiter of uses to which public trust lands may be put. The Legislature may create, alter, amend, modify, or revoke a trust grant so that the tidelands are administered in a manner most suitable to the needs of the people of the state.²⁵ The Legislature has the power to authorize the non-trust use of tidelands. It has done so rarely, and then on a case-specific basis.²⁶ Many of its actions have been a recognition of incidental non-trust uses or of a use that must be located on the tidelands. When these legislative actions have been challenged in court, the courts, understandably, have been very deferential, upholding the actions and the findings supporting them.²⁷

The Legislature has provided a statutory framework for the leasing of tidelands for non-trust uses by the cities of Long Beach and San Francisco grounded on findings that the tidelands are *not required for* (San Francisco) or *not required for and will not interfere with* (Long Beach) the uses and purposes of the granting statute.²⁸ Where, as in these two statutes, the Legislature has authorized in general terms the use of tidelands for non-trust purposes, the statutes' provisions must be interpreted so as to be consistent with the paramount rights of commerce, navigation, fishery, recreation and environmental protection. This means that the tidelands may be devoted to purposes unrelated to the common law public trust to the extent that these purposes are incidental to and accommodate projects that must be located on, over or adjacent to the tidelands. These non-trust uses are not unlimited, for there are limits on the Legislature's authority to free tidelands from trust use restrictions.²⁹

To ensure that the exercise of the Long Beach and San Francisco statutes is consistent with the common law public trust, the tidelands to be leased for non-trust uses must have been filled and reclaimed and no longer be tidelands or submerged lands and must be leased for a limited term. The space occupied by the non-trust use, whether measured by the percentage of the land area or the percentage of the structure, should be relatively small. Finally, any structure with a non-trust use should be compatible with the overall project. Findings such as these are necessary because legislative authorizations to devote substantial portions of tidelands to long-term non-trust uses have generally been considered by the courts as tantamount to alienation.³⁰

In several out-of-state cases, specific, express legislative authorizations of incidental leasing of publicly-financed office building space to private tenants solely for the purpose of producing

revenue have been subject to close judicial scrutiny, although they did not involve tidelands trust use restrictions.³¹ One case involved construction of an international trade center at Baltimore's Inner Harbor with public financing where legislation expressly permitted *portions* of the structure to be leased to private tenants for the production of income. Another was a condemnation case where the statute authorizing the New York Port Authority to acquire a site on which to build the World Trade Center was challenged on the basis that it allowed *portions* of the new structure to be used for no other purpose than the raising of revenue. In both cases, opponents of the projects argued that a publicly financed office building should not be permitted to have *any* private commercial tenants even though the respective legislatures had expressly allowed incidental private use of each building. The state courts in both Maryland and New York held that so long as the primary purpose of the office building was for maritime purposes connected with the port, legislation authorizing the leasing to private tenants was valid.³² Although both cases involve challenges to financing and condemnation statutes and do not involve the public trust, they are instructive because they demonstrate the importance to the courts, even in the context of public financing and condemnation, that when a portion of a structure is to be leased for the purpose of raising revenues to offset expenses, this incidental non-public leasing must have been legislatively authorized.

VIII. Exchanges of Lands

Situations where a local government or a private party acquires a right to use former trust property free of trust restrictions are rare.³³ In order for such a right to be valid, the Legislature must have intended to grant the right free of the trust and the grant must serve the purpose of the trust. Public Resources Code Section 6307 is an example of the rare situation where abandonment of the public trust is consistent with the purposes of the trust. Section 6307 authorizes the Commission to exchange lands of equal value, whether filled or unfilled, whenever it finds that it is "in the best interests of the state, for the improvement of navigation, aid in reclamation, for flood control protection, or to enhance the configuration of the shoreline for the improvement of the water and upland, on navigable rivers, sloughs, streams, lakes, bays, estuaries, inlets, or straits, and that it will not substantially interfere with the right of navigation and fishing in the waters involved." The lands exchanged may be improved, filled and reclaimed by the grantee, and upon adoption by the Commission of a resolution finding that such lands (1) have been improved, filled, and reclaimed, and (2) have thereby been excluded from the public channels and are no longer available or useful or susceptible of being used for navigation and fishing, and (3) are no longer in fact tidelands and submerged lands, the lands are thereupon free from the public trust. The grantee may thereafter make any use of the lands, free of trust restrictions.

In order for such an exchange of lands to take place, the Commission must find that the lands to be exchanged are no longer available or useful or susceptible of being used for navigation and fishing, taking into consideration whether adjacent lands remaining subject to the trust are sufficient for public access and future trust needs; that non-trust use of the lands to be freed of the public trust will not interfere with the public's use of adjacent trust lands; and that the lands that will be received by the state in the exchange not only are of equal, or greater, monetary value but also have value to the tidelands trust, since they will take on the status of public trust lands after the exchange. Only then can the Commission find that the transaction is in the best

interests of the state, that the exchange of lands will promote the public trust and that it will not result in any substantial interference with the public interest in the lands and waters remaining.

¹Institutes of Justinian 2.1.1.

²Las Siete Partidas 3.28.6 (S. Scott trans. & ed. 1932).

³*Colberg, Inc. v. State of California ex rel. Dept. Pub. Works* (1967) 67 Cal.2d 408, 416.

⁴*Martin v. Waddell* (1842) 41 U.S. (16 Pet.) 367, 410.

⁵*Pollards Lessee v. Hagen* (1845) 44 U.S. (3 How.) 212, 228-29.

⁶*People v. California Fish Co.* (1913) 166 Cal. 576, 597-99; *City of Berkeley v. Superior Court* (1980) 26 Cal.3d 515, 524-25.

⁷*Illinois Central R.R. Co. v. Illinois* (1892) 146 U.S. 387, 452.

⁸*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419, 441.

⁹*Marks v. Whitney* (1971) 6 Cal.3d 251, 259-260.

¹⁰*Illinois Central Railroad v. Illinois, supra*, at 452-53.

¹¹*San Pedro etc. R.R. Co. v. Hamilton* (1911) 161 Cal. 610; *Koyner v. Miner* (1916) 172 Cal. 448; *Oakland v. Larue Wharf & Warehouse Co.* (1918) 179 Cal. 207; *City of Oakland v. Williams* (1929) 206 Cal. 315.

¹²*Haggerty v. City of Oakland* (1958) 161 Cal.App.2d 407, 413-414.

¹³*Id.* at p. 414; *Martin v. Smith* (1960) 184 Cal.App.2d 571, 577-78.

¹⁴*National Audubon Society v. Superior Court, supra*, at p. 434.

¹⁵See *Boone v. Kingsbury* (1928) 206 Cal.148, 183; *Colberg, Inc. v. State of California ex rel. Dept. Pub. Work, supra*, at pp. 421-22; and *Carstens v. California Coastal Com.* (1986) 182 Cal.App.3d 277, 289.

¹⁶*Carstens v. California Coastal Com., supra*, at p. 289.

¹⁷Joseph L. Sax, *The Public Trust in Stormy Western Waters*, @ October 1997.

¹⁸*City of Long Beach v. Morse* (1947) 31 Cal.2d 254, 261.

¹⁹*Haggerty v. City of Oakland, supra*, at pp. 413-14.

²⁰*National Audubon Society v. Superior Court, supra*, at p. 434.

²¹ *Atwood v. Hammond* (1935) 4 Cal.2d 31, 42-43.

²² *Haggerty v. City of Oakland*, *supra*, at p. 413.

²³ *Ibid.*

²⁴ *National Audubon Society v. Superior Court*, *supra*, at p. 440.

²⁵ *City of Coronado v. San Diego Unified Port District* (1964) 227 Cal.App.2d 455, 474.

²⁶ For example, in Chapter 728, Statutes of 1994, the Legislature authorized tidelands in Newport Beach to continue to be put to non-trust uses for a limited term after it was determined that the tidelands had been erroneously characterized and treated as uplands by the city due to incorrect placement of the tidelands boundary.

²⁷ See, e.g., *Boone v. Kingsbury*, *supra*, at p. 183 and *City of Coronado v. San Diego Unified Port District*, *supra*, at pp. 474-75; but see *Mallon v. City of Long Beach* (1955) 44 Cal.2d 199, 206-07, 212.

²⁸ Ch. 1560, Stats. 1959; Ch. 422, Stats. 1975. These statutes also provide for, *inter alia*, the lease revenues to be used to further trust uses and purposes.

²⁹ *Illinois Central R.R. Co. v. Illinois*, *supra*, at pp. 452-54.

³⁰ *Atwood v. Hammond*, *supra*, at p. 42; see also *Illinois Central R.R. Co. v. Illinois*, *supra*, at pp. 454-53.

³¹ *Lerch v. Maryland Port Authority* (1965) 240 Md. 438; *Courtesy Sandwich Shop, Inc. v. Port of New York Authority* (1963) 12 N.Y.2d 379.

³² *Ibid.*

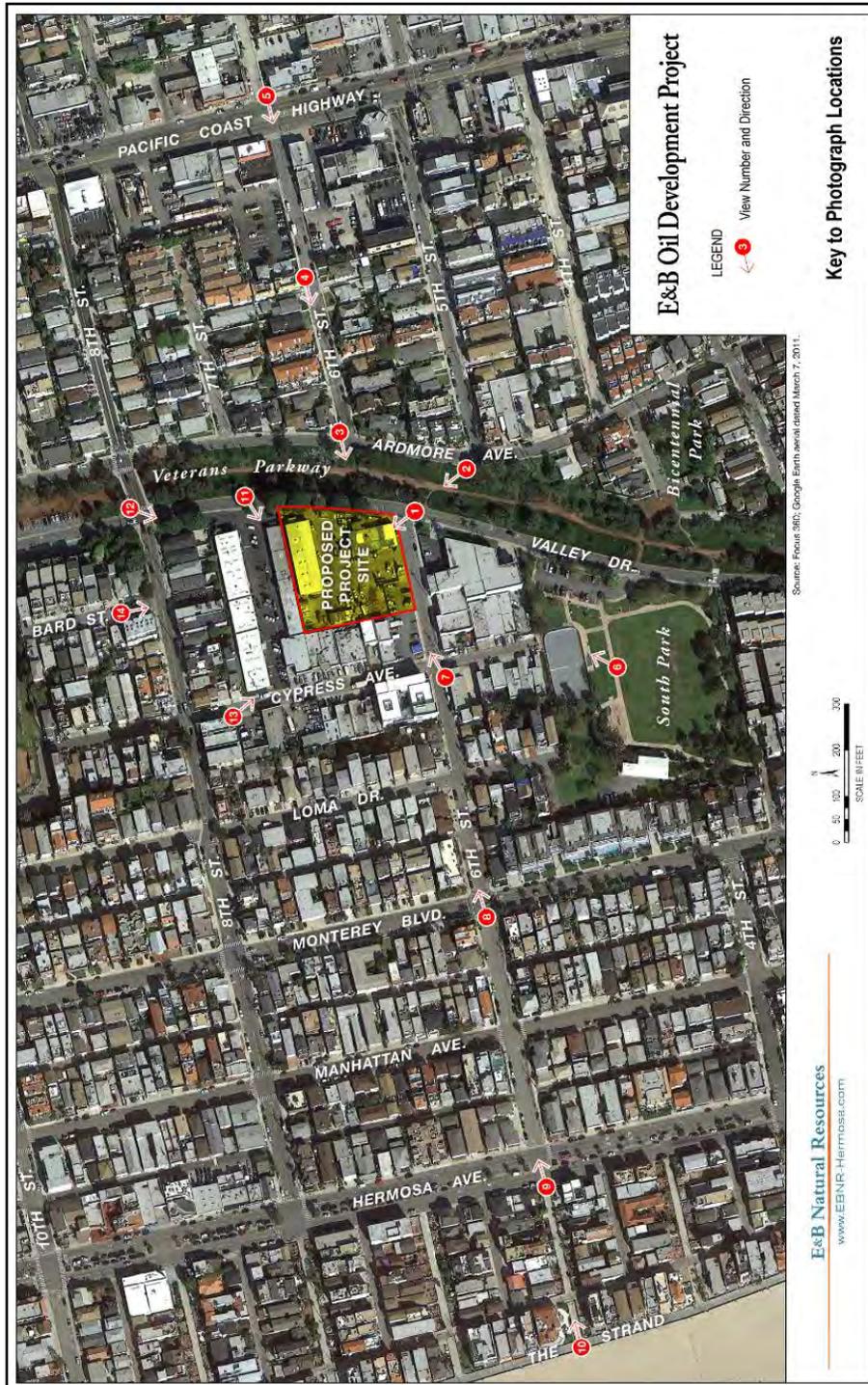
³³ *National Audubon Society v. Superior Court*, *supra*, at p. 440.

Appendix: E
Projected School District Revenues by Year (Net)

	Estimated School District Revenue			
	CBA Low	CBA Expected	CBA High	Applicant
2016	\$ 10,000	\$ 10,000	\$ 10,000	\$ 30,000
2017	60,000	60,000	60,000	-
2018	100,000	100,000	100,000	200,000
2019	130,000	130,000	140,000	360,000
2020	120,000	120,000	130,000	360,000
2021	90,000	90,000	100,000	350,000
2022	60,000	70,000	90,000	290,000
2023	50,000	70,000	90,000	240,000
2024	40,000	60,000	100,000	210,000
2025	40,000	70,000	90,000	190,000
2026	40,000	70,000	80,000	170,000
2027	40,000	60,000	80,000	150,000
2028	30,000	60,000	90,000	140,000
2029	30,000	50,000	80,000	120,000
2030	30,000	60,000	70,000	110,000
2031	30,000	60,000	70,000	100,000
2032	30,000	50,000	80,000	90,000
2033	20,000	50,000	70,000	80,000
2034	20,000	40,000	60,000	70,000
2035	20,000	50,000	60,000	70,000
2036	20,000	50,000	60,000	60,000
2037	20,000	40,000	60,000	60,000
2038	20,000	40,000	50,000	50,000
2039	20,000	40,000	50,000	50,000
2040	10,000	30,000	50,000	40,000
2041	10,000	30,000	40,000	40,000
2042	10,000	30,000	40,000	30,000
2043	10,000	30,000	40,000	30,000
2044	10,000	30,000	40,000	30,000
2045	10,000	20,000	40,000	30,000
2046	10,000	20,000	30,000	20,000
2047	10,000	20,000	30,000	20,000
2048	10,000	20,000	30,000	20,000
2049	10,000	20,000	30,000	10,000
	\$ 1,170,000	\$ 1,750,000	\$ 2,240,000	\$ 3,820,000

Appendix: F Renderings of Project Visual Impacts

The following renderings were provided by the Project Applicant. The original files submitted as part of the Project Planning Application can be retrieved from the City's website at: <http://www.hermosabch.org/index.aspx?page=718>. Please note that proportions of some images may have been marginally resized or cropped to fit within the formatting of this document. The reader is encouraged to review the images in their original format. An image key, and images depicting existing conditions, and Phase 4 conditions follow.



View 1 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 2 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 3 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 4 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 5 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 6 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 7 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 8 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 9 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 10 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 11 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 12 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 13 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



View 14 (Phase 4)

Existing Conditions



During Ongoing Operation



With Drill Rig Onsite



With Workover Rig During Maintenance



In order to ascertain whether the market makes any distinction about oil well lot proximity, we compiled sales information from public records, commercial data services, and MLS sources as far back as all those sources would go. Price per square foot of gross living area was used as the measure of value. We chose a relatively long time frame, 1980 – 2007, to see whether “good times” and “bad times” had any effect upon the market’s behavior. The sales compiled from these activities included:

- 491 Single Family Residences
- 167 2-Unit Properties
- 45 3-Unit Properties
- 55 4-Unit Properties

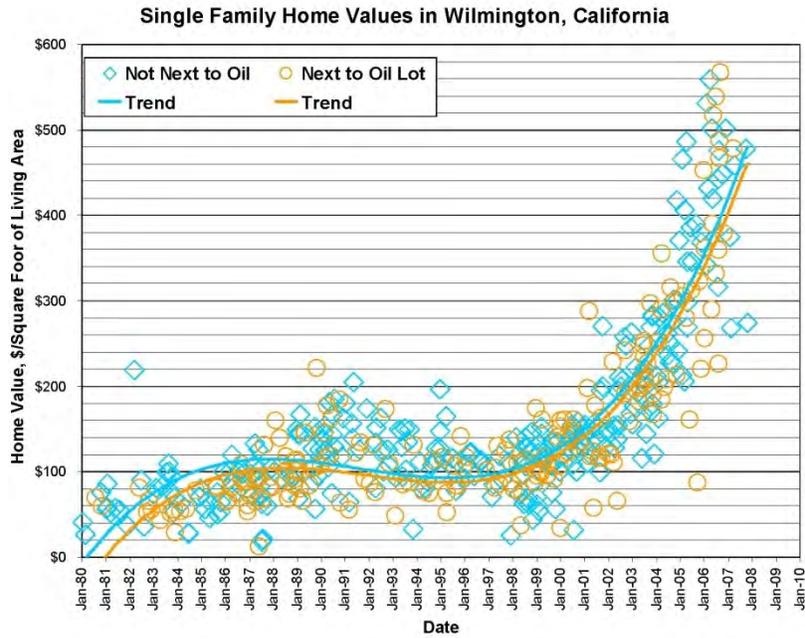
Each of these properties was studied to learn whether or not it was next to an oil well lot. This was the most time consuming part of the assignment.

Then graphic analysis was used to see if any patterns of consistent discrimination were present in the data. For each of the four property types above, the price per square foot was graphed, with separate data series for the lots next to oil well lots and for those that are not. Trend lines were added to aid in the analysis. The form of all the trend lines is a third order polynomial, because it is one of the best for depicting the succession of growth, decay, and then growth again, or vice versa. Open data points are used for single family and 2-unit properties in order to make their trend lines more evident against the large number of data points.

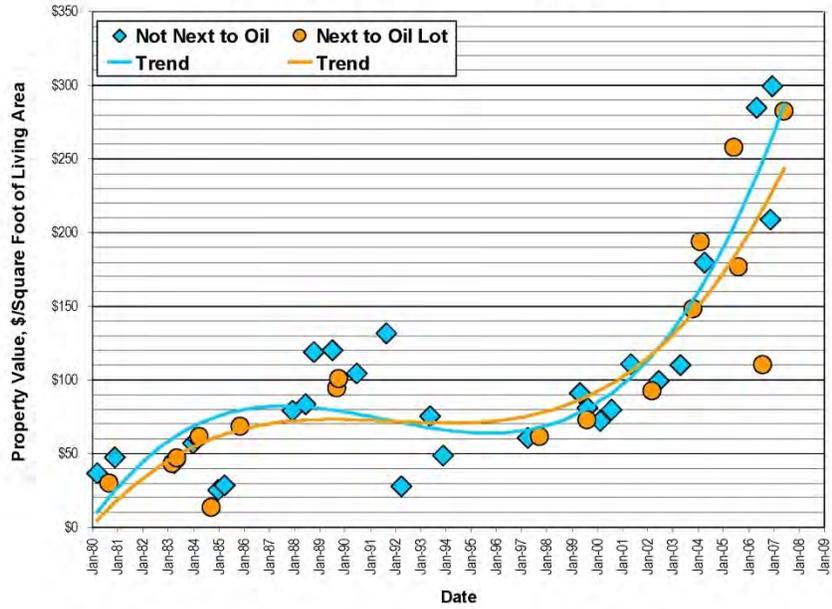
In the graphs on the following pages, the pattern of discrimination against oil well lot proximity is strikingly consistent for single family residences. While home values rose from the \$100/SqFt in the mid-1980’s to nearly \$500/SqFt twenty years later, the difference in value varied between \$5/SqFt and \$20/SqFt. Thus, while the market consistently exhibits discrimination against single family homes next to oil well lots, the amount of the value decline from that discrimination is consistently very small.

There is no clear pattern of discrimination against small income properties that are next to oil well lots. For 2-, 3- and 4-unit properties, the trend lines on their graphs show inconsistent value patterns. Sometimes, the properties next to oil well lots exhibit higher values and at other times they don’t. The difference for 2-unit properties is so small as to be negligible, until recent times. In a counterintuitive move, 2-unit properties next to oil well lots have exhibited higher values in the last six years or so. A similar pattern is exhibited by the 4-unit properties, while the opposite applies to 3-unit properties.

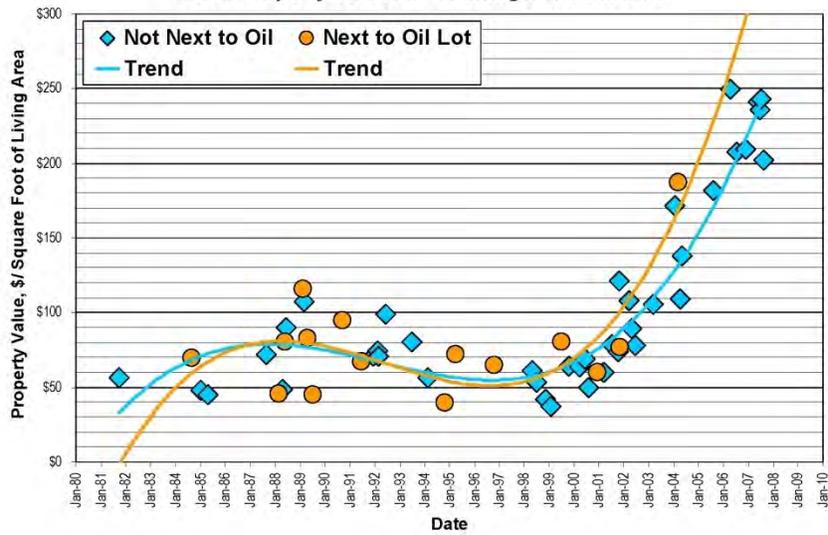
Conclusion: A single family home next to an oil well lot in this area may suffer a value decline, but it is relatively small, currently (January, 2008) on the order of \$20/SqFt of gross living area. Small income properties, on the other hand, exhibit no consistent discrimination against being next to an oil well lot. We conclude that they do not suffer a value decline from proximity to oil well lots.

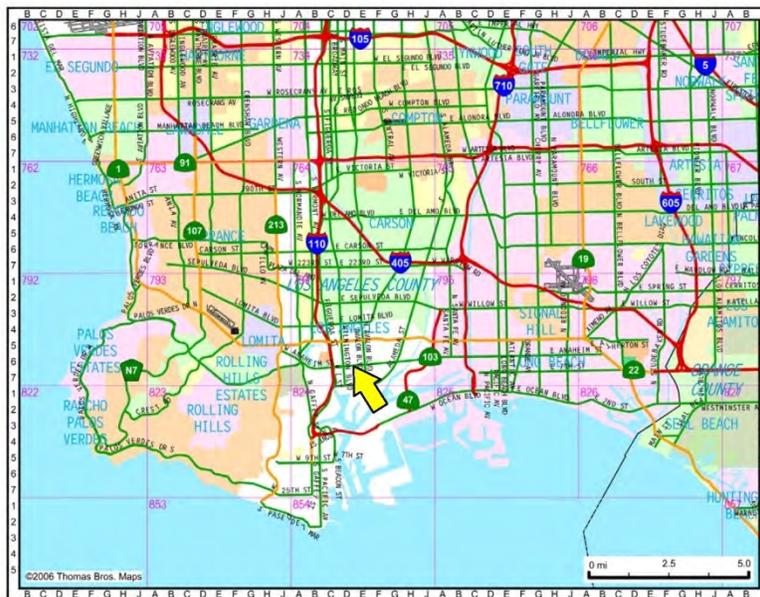


3-Unit Property Values in Wilmington, California



4-Unit Property Values in Wilmington, California





Regional Location Map
for
Wilmington, California Oil Well Lot Proximity Study Area



Closeup Aerial Photo Showing Five Oil Lots Among Homes
in
Portion of Wilmington, California Study Area

Appendix: H

Excerpts from AECOM Report

Excerpts from the AECOM Draft Project Report Socioeconomic Analysis for Whittier Main Oil Development Project follow. The document in its entirety was retrieved from: <http://www.cityofwhittier.org/civica/filebank/blobdload.asp?BlobID=4195>.

IV. Case Studies on Potential Price Depreciation

It is important to note that the actual effect of the proposed Project on residential home values is unknown and will ultimately depend on numerous factors that will change on a parcel-by-parcel basis. However, the following literature review and local case studies will help present a realistic range of potential impacts that can be used to evaluate the proposed Project and its potential effect on local property values.

National Literature Review

The following literature review presents a summary of recent academic studies that help qualify the effect of various nuisances on residential property values. The following is not a comprehensive review of all nuisance studies, but rather a select number of studies that we have chosen based on their applicability to the proposed Project. In most cases, we have tried to select the most recent study for each particular nuisance, as it often refers to and incorporates past studies to inform its analysis.

All of the selected studies use a "hedonic" pricing method to help quantify the impacts of the examined nuisances on residential property values. Hedonic price models treat each house as a number of characteristics. Hedonic pricing can be generally summarized as follows:

In order to isolate a given hedonic price from the various housing characteristics, it is necessary to statistically control for these influences on property values, such as the structural features of the housing unit (e.g., numbers of bedrooms and bathrooms, interior square footage, quality of construction, design of the house, etc.), merits of the neighborhood, quality of local schools, crime rates, governmental services, average commute time, and so forth. Some of these characteristics will vary little within a given data set, and separate measurement is not required to explain the observed variation in property values. By holding constant the impact of structural characteristics of the home as well as other neighborhood attributes, one can examine the independent influence of a particular nuisance on the sale price of the property.

Stated another way, let us assume that two residential properties are identical in all respects except that one house is located under an aircraft flight path, and the other is not. The effect of the noise nuisance associated with the flight path on the property value for the first house will result in a market value that is lower than the market value of the second house. This will occur because there will be less demand from potential buyers for the first house relative to the second house, reflecting the discounted value of the costs of the annoyance.

The selected case studies use the hedonic pricing to control a data set and adjust for the inherent differences so that each house can be statistically similar (as per the illustrative example above) and the effect of the particular nuisance can be evaluated.

Table 14: Summary of Major Findings

Author	Year	Key Findings	Nuisance (Origin)
Nelson	2008	Median Airport Noise Depreciation is 0.74 per dB Median Traffic Noise Depreciation is 0.54 per dB	Noise (Airport and Traffic)
Saphores & Aguilar-Benitez	2005	Property Value Depreciation of up to 3.4% within 1,320 Feet	Odor (Various)
Bond	2006	Property Value Depreciation of 2.0% within 656 Feet	Visual, Health (Cell Towers)
Chalmers	2009	Property Value Depreciation usually within 3.0%- 6.0% within 300 Feet	Visual, Health (High-Voltage Transmission Lines)
Hoen, et. al	2009	No Impact	Visual (Wind Farm)
Boxall, et. al	2005	Property Value Depreciation of 4.0%-8.0% within 13,200 Feet (2.5 Miles)	Noise, Visual, Health (Oil & Gas Facilities)
Davis	2010	Property Value Depreciation of 3.0%-7.0% within 10,560 Feet (2.0 Miles)	Health/Visual (Power Plant)

Source: Cited Case Studies

Select Case Studies

Jon Nelson, "Hedonic Property Value Studies of Transportation Noise: Aircraft and Road Traffic," 2008

Nelson presents a summary review of key research regarding the effect of transportation noise (aircraft and road) on residential home values. According to Nelson by the year 2007 there were approximately 40 hedonic price studies for the effect of airports in Canada and the US on residential property values, and probably an equal number for non-North American airports. Nelson also reviewed nine empirical studies covering 14 different housing markets in Canada and the US regarding the hedonic price literature on road traffic noise.

The findings are presented in a noise depreciation index (NDI). The NDI quantifies the relative effect of the noise in respect to the depreciation of residential real estate value. For example, assuming a NDI of 0.50%, a given property located at 55 dB would sell for 10 percent less if it was located at 75 dB, all other things held constant. Stated differently, a \$200,000 house would sell for \$20,000 less, which yields a hedonic price of \$1000 per dB.

Based on Nelson's literature review of previous research, the NDI was between 0.50% and 0.70% per decibel (dB) for airport noise. In contrast, road traffic related research suggested a range between 0.40% and 0.60% per dB. NDI values reported in Nelson's analysis were combined to yield more recent estimates of noise valuations. For aircraft noise, the estimates yield an unweighted mean value of 0.92% and a median value of 0.74% per dB. For traffic noise, the estimates yield an unweighted mean value of 0.55% and a median value of 0.54% per dB.

Jean-Daniel Saphores & Ismael Aguilar-Benitez, "Smelly Local Polluters and Residential Property Values: A Hedonic Analysis of Four Orange County (California) Cities," 2005

The authors analyzed the micro level impacts of local smelly pollutant emissions on the price of single-family homes in four cities (Seal Beach, Huntington Beach, Costa Mesa, and Newport Beach) located in Orange County, California. Using GIS software to incorporate spatial information (complaints) into a hedonic pricing model, the report assesses the impact of polluters on housing prices. The complains were issued by local residents in regards to organic odors emanating from several businesses, including oil firms, boat building and repairs, manufactures, auto paint shops, and metal finishing companies.

Previous research reviewed by the authors indicates that homes adjacent to landfills could see its property value reduced by approximately 12 percent, falling to 6 percent for houses approximately a mile away. Another study reported a 6 percent drop in value for houses sold one or more years after the opening of a landfill. Finally, odors originating from large-scale hog-operations result in value decrease up to 9 percent for the closest and most affected houses.

Based on the authors' research of transactional data from 7,726 residential sales they found a statistically significant decrease in value of neighboring housing up to 3.4 percent within one-quarter mile from the business responsible for the odor. The impact is higher in areas with a high concentration of polluters, and it appears to quite strong for car paint shops. Furthermore, the study suggests that the results may undervalue the true costs of smelly pollutants because the exposed population may not have full information about the potentially serious health risks of these pollutants.

Sandy Bond, "Using GIS to Measure the Impact of Distance to Cell Phone Towers on House Prices in Florida," 2006

The siting of cellular phone transmitting antennas, their base stations and the towers that support them is a public concern due to fears of potential health hazards from the electromagnetic fields that these devices emit. Negative media attention to the potential health hazards has fuelled the perception of uncertainty over the health effects. The unsightliness of these structures and fear of lowered property values are other regularly voiced concerns about the siting of these towers.

However, the extent to which such attitudes are reflected in lower property values affected by tower proximity is controversial.

Bond presents the results of a study carried out in Florida in 2004 (based on market transaction data of single-family homes that sold in Orange County, Florida between 1990 and 2000) to show the effect that tower proximity has on residential property prices. The study involved an analysis of residential property sales transaction data. Both GIS and multiple regression analysis in a hedonic framework were used to determine the effect of actual distance of homes to towers on residential property prices. The results showed that while a tower has a statistically significant effect on prices of property located near a tower, this effect is minimal. The price of properties within 200 meters (656 feet) decreased, on average, by just over 2%.

Bond suggests, however, that every location is unique as evidenced by the difference in results from studies in the US and abroad. These observed differences are partly due to the various factors that influence the degree of negative reaction to towers. Residents' perceptions and assessments of risk vary according to a wide range of processes including psychological, social, institutional, and cultural. In addition to the potential health, aesthetic, and property value impacts from towers, other factors that may impact on the degree of negative reaction from residents living near these structures and that may be reflected in price are listed below:

- The kinds of health and other risks residents associate with towers, and the level of risk perceived;
- The height, style, and appearance of the towers, how visible these are to residents and how they perceive such views;
- The marketability of homes near towers;
- The extent and frequency of negative media attention to towers;
- The socio-economic make-up of the resident population; and
- The distance from the towers residents feel they have to be to be free of concerns.

James A Chalmers, "High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects" 2009

In this study, over 1,200 home sales in 1998–2007 were aggregated into four study areas with a 345-kilovolt transmission line. Data was collected on the sale properties relative to proximity to and

visibility of transmission line towers, and the extent of encumbrance by a transmission line easement. A multiple regression model is used to test whether the sale prices are affected by line proximity, tower visibility, or property encumbrance. In both continuous distance and distance zone models, the proximity and visibility variables typically fail to be statistically significant. The only variable that appears to have any systematic effect is the encumbrance variable; however, its magnitude is generally small.

Over the past twenty-five years, a vast number of studies have been undertaken using large databases and statistical tools to investigate the effect of transmission lines on property values. Sixteen of these studies form the core of the available literature and are widely quoted and cross-referenced one to the other. The results of these studies can be generally summarized as follows:

- Over time, there is a consistent pattern with about half of the studies finding negative property value effects and half finding none;
- When effects have been found, they tend to be small; almost always less than 10% and usually in the range of 3-6 percent;
- Where effects are found, they decay rapidly as distance to the lines increases and usually disappear at about 200 feet to 300 feet (61 meters to 91 meters); and
- Two studies investigating the behavior of the effect over time find that, where there are effects, they tended to dissipate over time.

Ben Hoen, et. al "The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis," 2009

In response to community concerns that wind turbines hurt property values, the Department of Energy commissioned a study to better understand the potential impacts of wind power projects on residential property values in the United States (US). The report claims to be the most comprehensive and data-rich analysis on the subject in the US or abroad.

Specifically, researchers collected data on 7,500 sales of single-family homes situated within ten miles of 24 existing wind power facilities in 9 different states, for the period between 1996 and 2007. The analysis used eight hedonic pricing models, as well as both repeat sales and sales volume models. None of the eight models uncovered any conclusive evidence of the existence of any widespread property value effects that might be present in communities surrounding wind farms. Specifically, neither the view of wind turbines nor the distance of homes to turbines was found to have any consistent, measurable or significant effect on the selling prices of the homes. As such, the

authors concluded that there is no “widespread, statistically observable” impact of wind turbines on the sale of homes in the US.

Peter Boxall, et. al , “The impact of oil and natural gas facilities on rural residential property values: a spatial hedonic analysis,” 2005

Despite the importance of this issue in the US and Canada there have been few studies that examine the effects of oil and gas production facilities on property prices although there are obvious potential hazard and amenity implications. Boxall’s report attempts to determine the impact of proximity to small to medium oil and gas production facilities on rural residential property values. Spatial hedonic methods were used in this analysis.

The initial sample contained information on the sale of 612 residential properties that ranged in size from 1 to 40 acres. The acreage limitation essentially ensured that the property was rural but also residential in that it did not have commercial agricultural value. The results of this analysis strongly suggest that the presence of oil and gas facilities can have significant negative impacts on the values of neighboring rural residential properties. The presence of wells, especially sour gas wells, was found to depress property values but the number of pipelines carrying sour gas variable did not have a significant coefficient. At the mean level of industry facilities within 4 kilometers, property values are estimated to be reduced between four and eight percent. It should be noted that that the applicability of this study to the Project and City is limited due to its focus on rural residential property values and difference in terms of overall operations particularly in regard to sour gas, which has significant safety implications that would not be applicable to this Project.

Lucas Davis, “The Effect of Power Plants on Local Housing Values and Rents,” 2010

Davis’ paper uses restricted census microdata to examine housing values and rents for neighborhoods in the United States where 92 large power plants were opened during the 1990s. Compared to neighborhoods with similar housing and demographic characteristics, neighborhoods within two miles of plants experienced 3-7 percent decreases in housing values and rents with some evidence of larger decreases within one mile and for large capacity plants. In addition, there is evidence of “taste-based sorting” with neighborhoods near plants associated with modest but statistically significant decreases in mean household income, educational attainment, and the proportion of homes that is owner occupied. Overall, however, the analysis suggests that the total local impact from power plant openings during the 1990s was relatively small because plants tended to be opened in locations where the population density is low.

Local Case Studies

The following examines existing comparable operations to determine what effect they have had on local property values in the region. AECOM examined three sites, two located in the City located at 12515 Honolulu Terrace (Matrix) and directly east of the intersection of Workman Mill Road and Sycamore Canyon Road (Sycamore) and one located at 214 Canada Sombre Road in La Habra Heights (La Habra Heights).

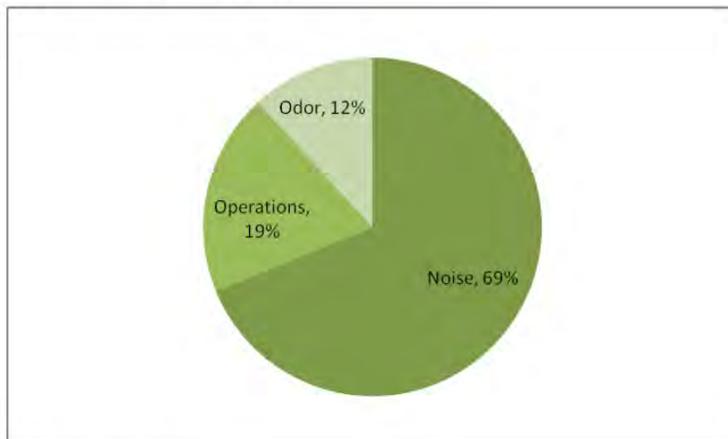
Resident Complaints Regarding Matrix Oil Operations at Honolulu Terrace

The following summarizes residential complaints for Matrix Oil operations located at 12515 Honolulu Terrace. Between August 19th 2005 and February 19th 2009 there were 93 residential complaints called in regarding operations. The complaints, however, originated from 11 unique addresses. As such, a relatively small number of people were responsible for the majority of the various complaints.

AECOM examined the complaint log to better understand the nature of the complaint, the timing of the complaints, and the relative distance the complaints in relation to the operations. Complaints were coded into three categories: noise, odor, and operations. While the complaints associated with noise and odor are very specific, operations is a catch-all category that included general complaints associated with on-going facility activity. In total, the majority (69%) of all complaints were associated with noise, while 19 percent were associated with operations, and 12 percent were associated with odor.

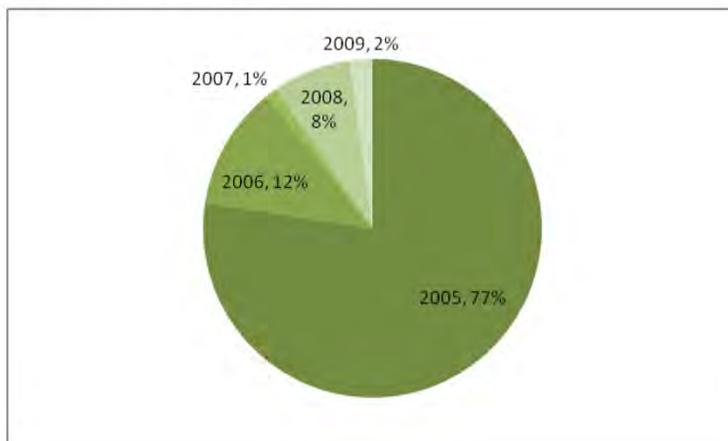
Over the examined the time period of the complaint log, the majority of complaints occurred in 2005 (77%), with fewer logged in the following years. AECOM has not reviewed the production schedule associated with operations at 12515 Honolulu Terrace, but even accounting for repeat complaints (issued by one individual), after 2005 when 72 resident complaints were logged, there were only 11 in 2006, 1 in 2007, 7 in 2008, and 2 in 2009. This suggests that complaints were highly related to the operations in 2005 or people became less aware or accustomed to the issues in subsequent years.

Figure 20: Complaints by Type



Note: N = 93 (2005 – 2009)
Source: Matrix Oil

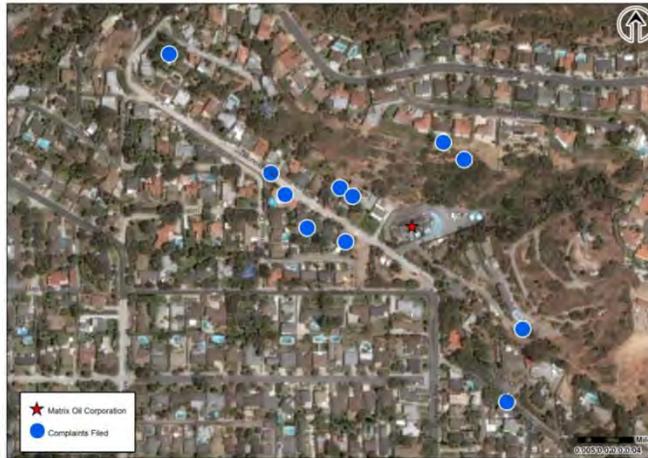
Figure 21: Complaints by Year



Note: N = 93 (2005 – 2009)
Source: Matrix Oil

The locations of the complaints lodged against Matrix Oil Corporation from the Honolulu Terrace operation were mapped using ArcGIS. As noted above and shown on the map below, the 93 complaints filed between 2005 and 2009 originate from 11 discrete sources:

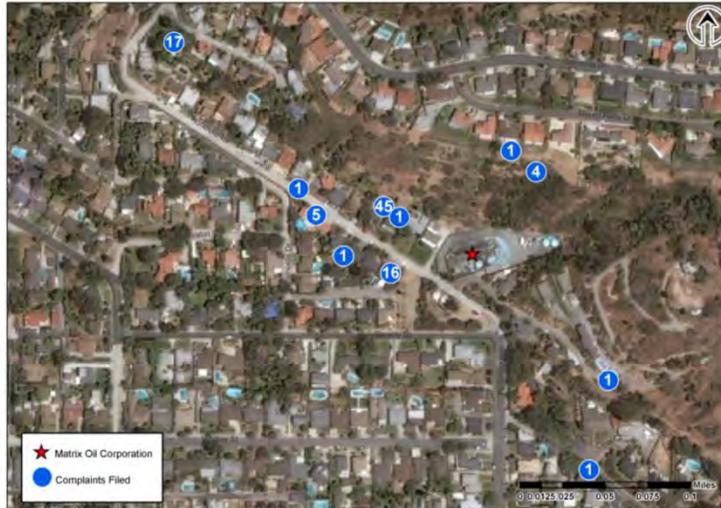
Figure 22: Location of Complaints Lodged against Matrix Oil Corporation



Source: Matrix Oil and ArcGIS

The distribution of complaints lodged from each location is very uneven, with nearly half of the complaints coming from a single address:

Figure 23: Distribution of Complaints Lodged against Matrix Oil Corporation



Source: Matrix Oil; AECOM; and ArcGIS

Using the “Desire Lines”⁷ tool under Business Analyst, straight distance lines were calculated between the site of each complaint and the oil rig site. The average distance between the origin of the complaint and the oil rig site is approximately 495 feet (from the oil rig site).

⁷ Desire lines, also known as spider diagrams, are a series of rays (lines) drawn from each complaint point to the Site. Desire lines graphically illustrate the direction of pull in the based on the frequency of the complaints. See diagram below:

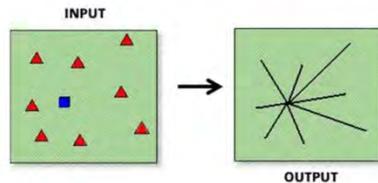
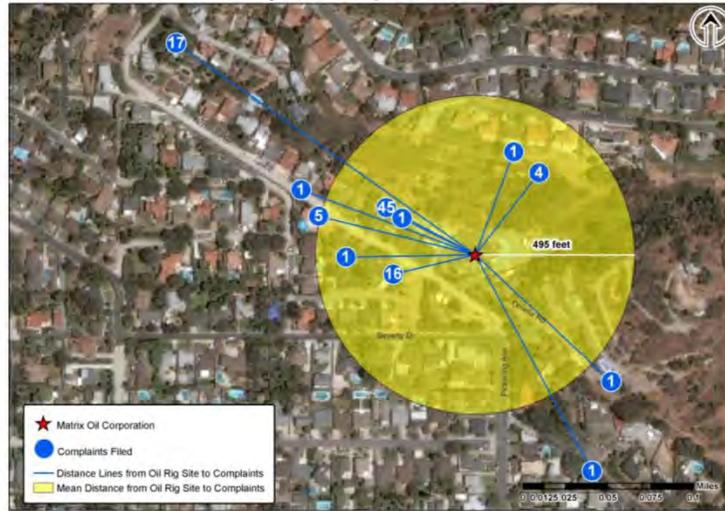


Figure 24: Distance of Complaints Lodged from Oil Rig Site



Source: Matrix Oil; AECOM; and ArcGIS

Based on the GIS analysis of the complaints lodged, the following conclusions have been drawn. First, the location of the complaint does not directly correlate with the volume of complaints originating from that source. For example, 17 complaints were lodged from a resident who lives the furthest from the site of the oil rig. Second, most of the complaints (68 percent) are from residents who live immediately adjacent to the oil rig site. Finally, the source of the complaints appear to come from residents who are either immediately adjacent to the oil rig site or have views of the oil rig from their home, rather than from residents with homes within a specific radius of the oil rig. For example, two sources of complaints (who have lodged 1 and 4 complaints respectively) are located along Mount Holly Drive, away from the oil rig site, but have backyards with overlooks onto the site. Residents living similar distances from the site, southwest of the oil rig, who cannot see the oil rig due to other homes, have not lodged complaints.

Local Real Estate Broker Interviews

AECOM interviewed a number of local real estate agents^a to better understand the effect, historically, of the selected three site locations where oil and gas operations are active in regards to near-by residential home values. It is important to note that no analytic research was conducted by the interviewees. The purpose of our discussions was to ascertain their feel for market conditions in proximity to the active oil wells under consideration. In general, those brokers we interviewed believed that home values most affected by the oil operations (in close proximity) were depressed by approximately 10 percent. A couple individuals also suggested that these same homes typically took twice as long to sell.

The number of homes or reach of the assumed price depreciation was not known. Brokers tended to believe that adjacent houses or homes that had significant view sheds obstructed by operations were most affected by the operations. Agents also noted since oil drilling is pervasive throughout Southern California potential buyers are typically accustomed to and not concerned with oil facility aesthetics as long as they are not immediately adjacent to operations. However, nuisances such as noise, visual or health concerns do affect potential buyers' decisions making and are thus important considerations when determining the overall marketability of a home.

Analytical Evaluation of Local Case Studies

Using the complaint information provided by Matrix Oil and national case studies, AECOM has analyzed real estate transaction within close proximity of each of the three subject sites. Due to the facilities operations, natural topography, housing variations, and relative noise contours the areas affecting neighboring residential properties will differ in each case study. For the purposes of this study, however, we have decided to take a 500 and 1,000 foot radius as the primary area of influence to evaluate historic real estate transaction data to determine the potential effects of the existing operations on residential home values.

^a Four residential real estate agents were contacted on multiple occasions.

Potential Effect on Residential Real Estate Values

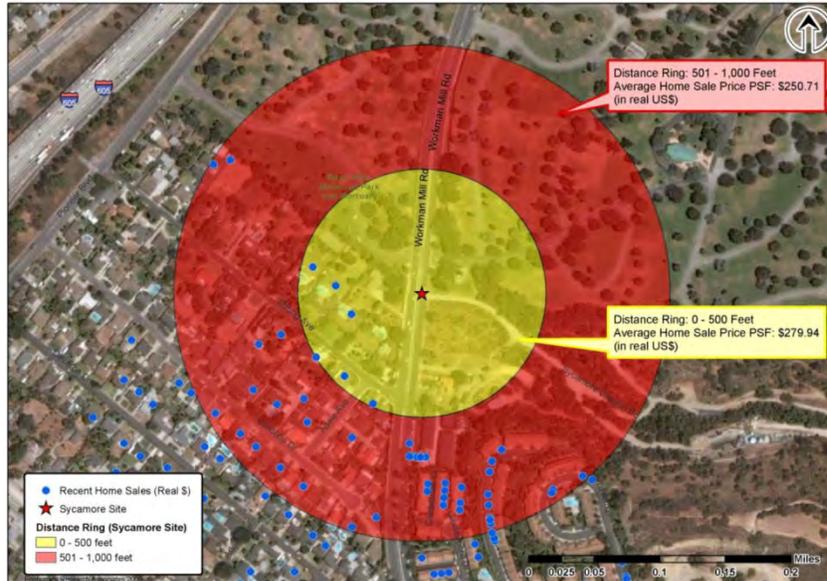
Using residential home sales data provided by CollateralDNA for transactions occurring between 2000 and 2009, we have evaluated the resale of homes within 500 and 1,000 feet of operations at the Matrix, Sycamore, and La Habra Heights sites. Homes that were in the 0 – 500 feet ring (from the rig) and 501 – 1,000 feet ring (from the rig) were isolated from the data set. We then exported the data to Excel and examined the minimum, maximum, median, and average of the home sale prices and price per SF for just those two geographies. AECOM found that that homes within 500 feet of the rig sold for a higher price per square foot than homes in the 501 – 1,000 feet ring.

Initially we thought the data points near the La Habra Height site, which has fewer data points in the rings and higher home sale prices and prices per square foot was effecting the data, but even when those home sales near the La Habra Heights site are removed the same trend holds true. As such, based on this analysis we could not determine any negative effect the three sites had on residential home prices. This is not to suggest that there are none, but the data did not reflect that conclusion based on our research.

The reliability of this information is limited because there were a limited number of homes within 500 feet of the operations, limited transaction data, and no isolation of home differences (beyond total square feet). However, based on the information presented in the following figures, beyond 500 feet there does not appear to be any notable negative impact to home values in comparison to the larger City and County trends.

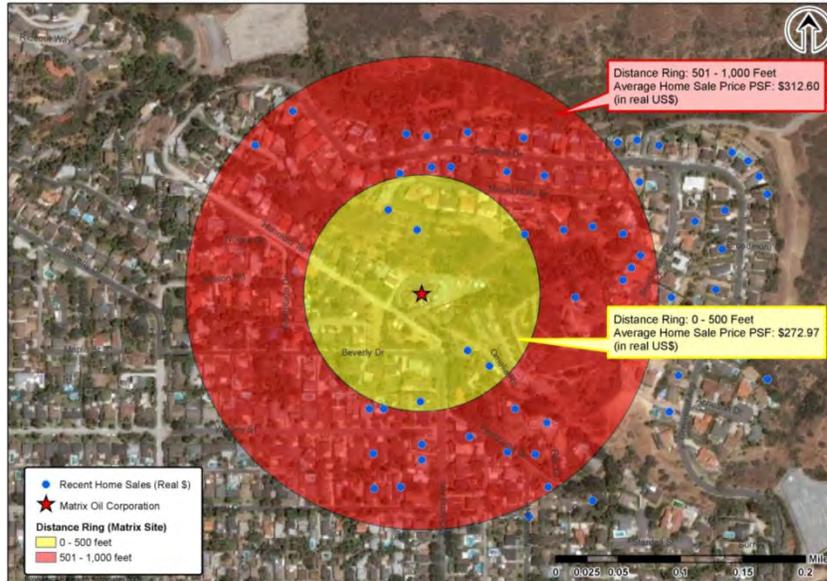
One notable finding from the data is the lack of transactions within 500 feet of operations after 2006. An argument has been made that any discount associated with an external factor (e.g. noise, odor, visual, etc.) could be affected by the general housing market conditions for that particular area. For example, the presence of a strong demand for housing in a “hot” market can compensate for the general acceptability of a particular nuisance. In Southern California the development of residential housing in areas with conflicting land uses occurred regularly between 2003 and 2006. Because home values continued to appreciate at record rates the buyers were less concerned with external housing factors that could potential affect resale values. Similarly, now that the housing market has “cooled” buyers are more sensitive to any external factors that might adversely affect future resale value of their home.

Figure 25: Sycamore Site Home Sales (Constant 2009 Dollars)



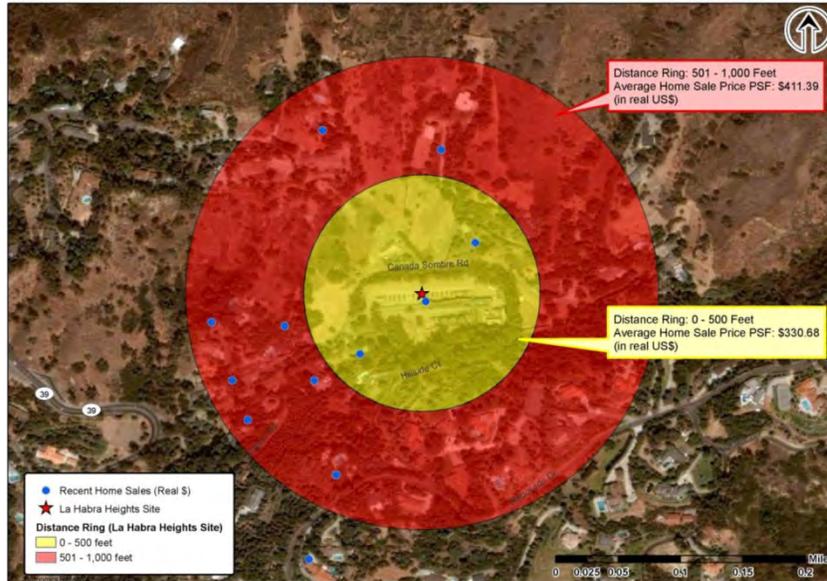
Source: CollateralDNA (Data Express); AECOM; and ArcGIS

Figure 26: Honolulu Terrace Matrix Site Homes Sales (Constant 2009 Dollars)



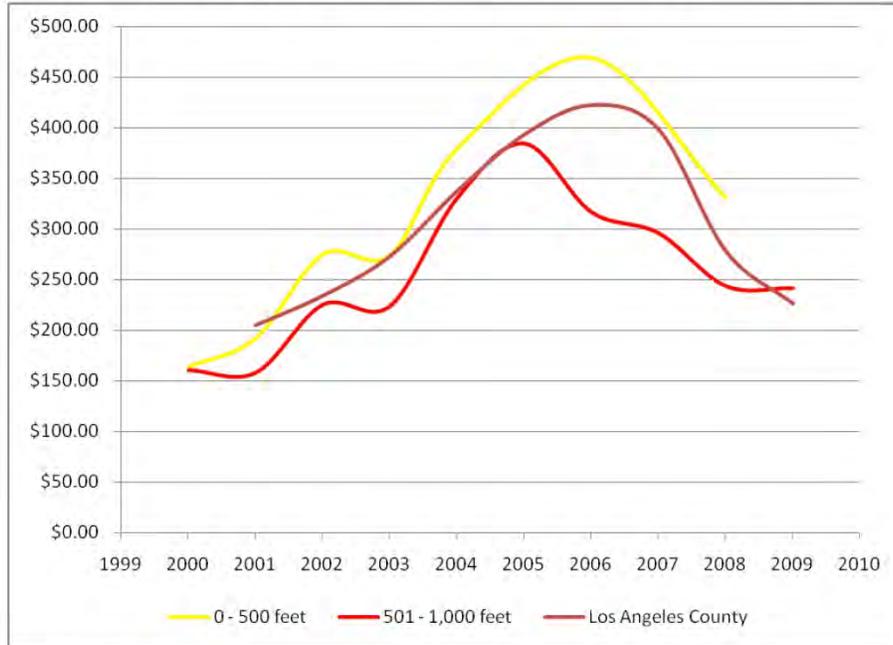
Source: CollateralDNA (Data Express); AECOM; and ArcGIS

Figure 27: La Habra Site Home Sales (Constant 2009 Dollars)



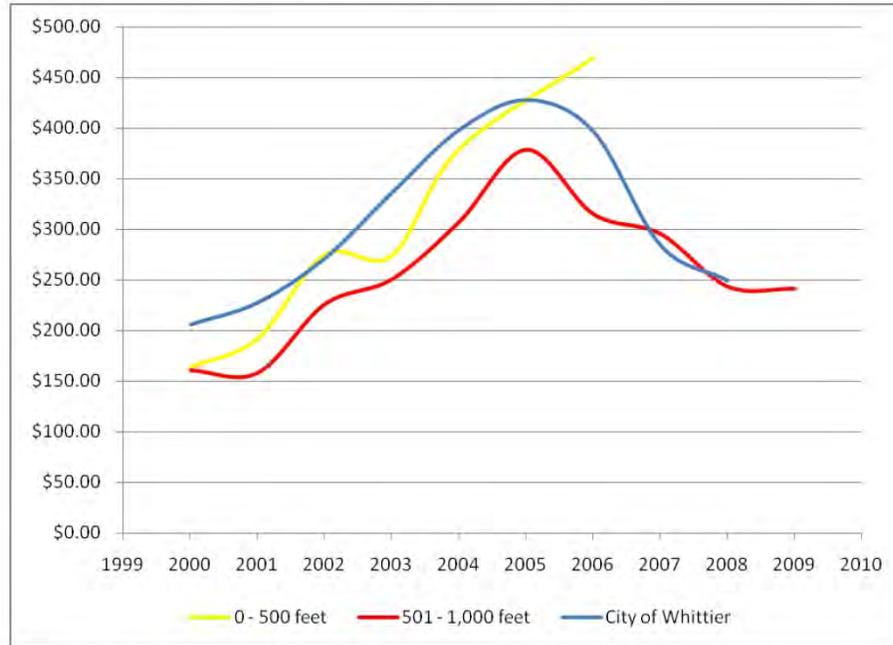
Source: CollateralDNA (Data Express); AECOM; and ArcGIS

Figure 28: Median Sales Price per Square Foot for all Sites and County (Constant 2009 Dollars)



Source: CollateralDNA (Data Express); AECOM; and ArcGIS

Figure 29: Median Sales Price per Square Foot for Matrix, Sycamore, and City (Constant 2009 Dollars)



Source: CollateralDNA (Data Express); AECOM; and ArcGIS

V. Fiscal Analysis

The following section examines some key historic trends related to tax revenues collected by the City. This information is followed by AECOM's estimate of a range of potential price depreciation to homes within the Project's area of mitigated impact for visual and noise nuisances. Finally, using information provided by Matrix Oil regarding potential production, we have created a production schedule and applied oil price projections from the US Energy Information Administration to estimate potential revenues paid to the City.

Historic Taxes

Between 2003 and 2009, not adjusted for inflation, total tax revenues have increased by approximately four percent annually. Since 2003 property tax revenue generally increased, while sales tax revenue decreased. The recent decrease in sales tax is potentially a significant concern for the City. The following figures explore the City's revenue sources in more detail.

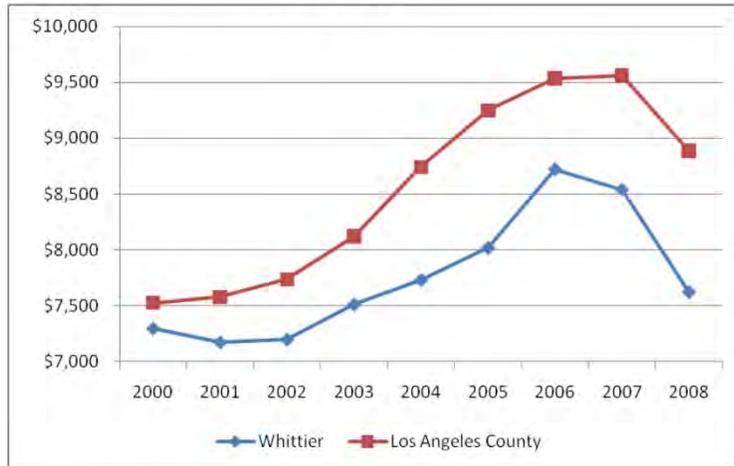
The taxable sales per capita in the City compared to the County are below the County average. Since 2000, the City grew at a slightly faster rate than the County until 2008. The decline in sales tax between 2007 and 2008 came largely as a result of the closure of five of the City's largest auto dealers. With sales taxes currently representing approximately 19 percent of total taxes and due to limited potential for future population growth in the City, the ability to significantly increase sales tax revenues will likely be challenging. Future sales tax revenue will be based on the City's ability to attract retailers that draw residents from outside the City to purchase goods. As a result, the City's ability to maximize and protect existing property tax revenues will be important.

Figure 30: Historic Tax Trends in Whittier



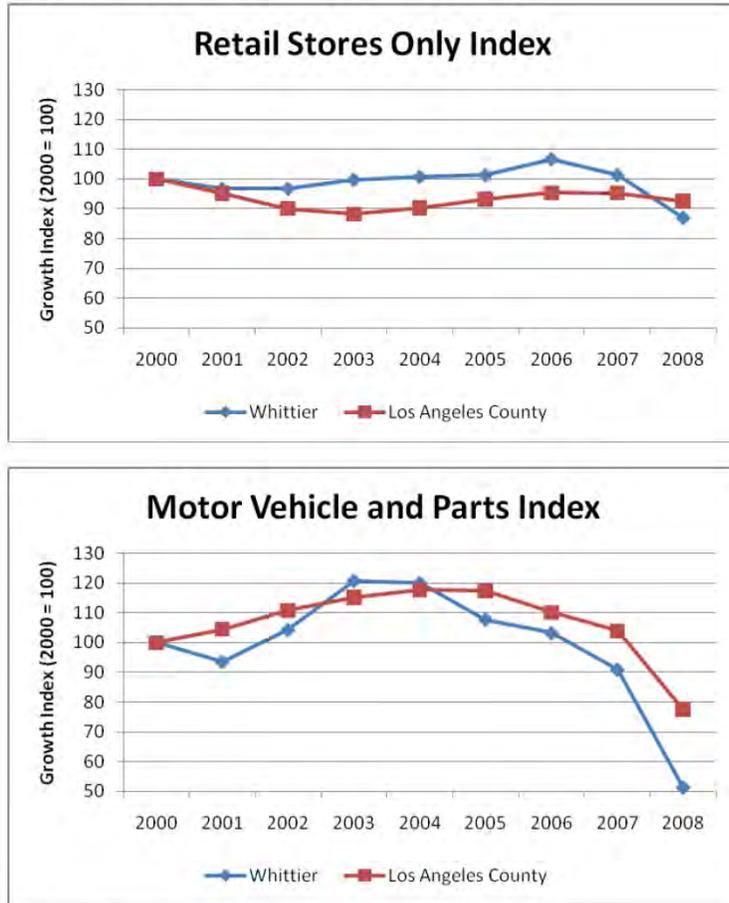
Source: City of Whittier Comprehensive Annual Financial Report (June 30, 2009)

Figure 31: Historic Taxable Sales per Capita



Source: State Board of Equalization and Department of Finance

Figure 32: Sales Tax Index (Retail and Motor Vehicle)



Source: State Board of Equalization

Potential Level of Price Depreciation and Fiscal Consequence

AECOM estimated the range of potential residential home depreciation using the following methodology:

- Based on research conducted by MRS, we have defined the area impacted by the Project based on the effects of the Project once sound and visual impacts have been mitigated as noted in the Draft Project EIR;
- Using 2009 data from the Los Angeles County Assessor, we calculated the total assessed value of those residential properties located within the area impacted by the Project; and
- In order to apply a potential range of depreciation, we have used findings reported in Section IV of this report.

Based on the information provided in the Draft EIR, the Project will create noise and visual nuisances to some residents within the City. The following noise contour and visual view sheds shape files were provided by MRS and imported into our GIS. The noise contour represents both the ongoing operation noise impacts as well as the temporary (but ongoing) drilling impacts. In some instances this may be overestimating the actual noise impact, but we have faulted on the side of being over inclusive. The view shed represents the visual impact of the rig assuming that the area was cleared of all existing vegetation. The actual number of properties affected by the rig will be significantly smaller. In order to provide a general estimate of the potential number of properties affected by the visual impact, AECOM has assumed that 25 percent of the properties within the noise contour and 5 percent of those properties located outside the noise contour will be impacted visually by the rig. The ability to establish a more scientific assessment of the impacts on a property-by-property basis was outside the scope of this study. However, based on field work conducted by MRS we believe this estimate is reasonable.

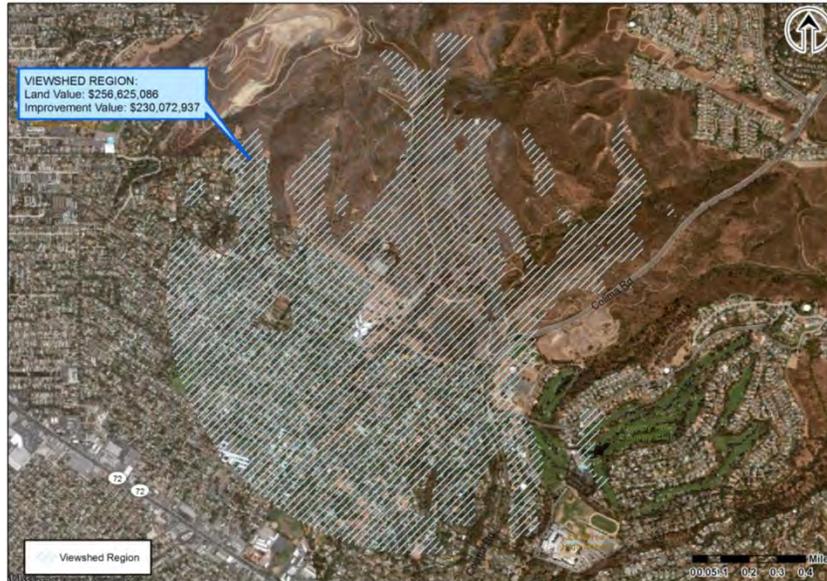
AECOM relied on GIS to gather assessed valuation data based on those properties affected by the noise and visual impacts of the Project. It is important to note that Proposition 13 limits property taxes to a total maximum rate of one percent based upon the assessed value of the property being taxed. Each year, the assessed value of property may be increased by an inflation factor (limited to a maximum increase of two percent). With few exceptions, property is only re-assessed at the time that it is sold to a new owner. At that point, the new assessed value is reassessed at the purchase price of the property sold. The assessed valuation data provided below represents the only data available with respect to the actual market value of taxable property and is subject to the limitations described above. In other words, the actual market value will likely be higher than the values provided herein. However, even a potential decline in market value caused by the Project could yield a net increase in the assessed value of the property after it is sold and reassessed.

Figure 33: Noise Impact Area (Drilling and Operations)



Note: AV = Residential Properties Only.
Source: MRS; Los Angeles County Assessor Parcel Data (2009)

Figure 34: Visual Impact Area (View Shed)



Note: AV = Residential Properties Only; Not all homes will be visually impacted. As such, figure misrepresents total visual impact⁹.

Source: MRS; Los Angeles County Assessor Parcel Data (2009)

⁹ Beyond the area near the site, we have estimated that five percent of homes will be visually impacted by the rig. Please refer to Section 4.6 Aesthetic and Visual Resources for a more detailed discussion of actual impacts by specific location. Chart above assumes that there are no barriers (natural or otherwise) to the view shed.

Figure 35: Impact Areas in Comparison to City



Note: AV = Residential Properties Only
 Source: MRS; Los Angeles County Assessor Parcel Data (2009)

Table 15: 2009 Assessed Values (Residential Properties Only)

	Land Value	Improvement Value	Taxable Assessed Value ¹
Noise Region (Combined)	\$17,113,534	\$19,065,291	\$36,178,825
<i>Noise Drill Mitigation Area</i>	\$13,130,418	\$14,440,886	\$27,571,304
<i>Noise Operations Mitigation Area</i>	\$9,723,896	\$12,750,246	\$22,474,142
Viewshed Oil Rig Region	\$256,625,086	\$230,072,937	\$486,698,023
City of Whittier	\$3,158,924,622	\$2,613,338,268	\$5,772,262,890

¹ Does not include Homeowners Exempt Value

Source: MRS; Los Angeles County Assessor Parcel Data (2009); AECOM

According to hedonic price studies for noise, comparable impacts would likely be 0.6 percent for each one dB increase in noise (most closely analogous to that of the drilling and operations). According to MRS, the average noise increase for the total area impacted would yield an increase of 1.25 dB peak hour combined during drilling. Ongoing work, which would occur more frequently, would yield an increase of only 0.95 dB peak hour combined during operations. AECOM has used this higher noise increase because it represents the high-end of potential impacts. Based on the minimal noise increase, estimated value depreciation would range from 0.87 to 0.58 percent in the high and low scenario, respectively.¹⁰

The visual impact of the rig is assumed to have an impact of a six percent to three percent value decrease for residential home values. As noted, local eucalyptus trees, topography, and other features will limit this impact to a relative small number of homes. Most literature suggests that visual impacts are not severe unless you are taking away an existing vista. Furthermore, this impact is only present when the rig is active. As a result, after the initial five year period this impact would only be present during specific months during the year.

¹⁰ As noted in the EIR "On the decibel scale, an increase of 10 dB in sound level represents a perceived doubling of loudness. Conversely, a decrease of 10 dB in sound level is perceived as being half as loud. It is widely accepted that a change of 3 dBA is barely perceptible to most people, while most people would readily perceive an increase or decrease of 5 to 6 dBA in noise level." As such, the increase of 1.25 dB would generally not be perceptible to anyone. However, it is important to remember this is an average increase over the area and those closer to the Site would experience higher dB increases than those farther away.

Using the aforementioned methodology, we have estimated a range of potential impacts to the City. In both cases, the fiscal consequence (from the City's perspective) would be minimal. The high impact scenario suggests a potential decrease of \$2.2 million in assessed value, which is approximately 0.04 percent of the total assessed value for residential properties in the City. The low scenario suggests a decrease of \$1.2 million in assessed value, which represents 0.01 percent of the total assessed value for residential properties in the City. Converting the assessed value to property tax received by the City, our analysis suggests a range of between approximately \$4,400 and \$2,300 in lost fiscal revenue per year. It is important to note that this is largely theoretical because it assumes that each of the homes was reassessed and that their current assessed value reflects their current market value.

However, this analysis does not take into account specific property value loss and the subsequent financial impact on individual property owners in the City. This analysis presents an average estimate for all residential properties' depreciation throughout the affected areas. Actual impacts will not likely be borne uniformly as illustrated in this study. However, the high and low scenario should provide the City with an order of magnitude impact estimate that it can use to evaluate the Project's potential benefit to the City.

Table 16: Estimate of Potential Price Depreciation (2009 Dollars)

	High Scenario	Low Scenario
Noise Region	\$36,178,825	\$36,178,825
Assumed Noise Noise Impact ¹	100%	100%
Noise Impacted Assessed Value	\$36,178,825	\$36,178,825
Noise Assumed Price Depreciation ²	-2.4%	-1.3%
Noise Value Depreciation	(\$857,438)	(\$481,178)
Property Tax (1%)	(\$8,574)	(\$4,812)
City Share (20%) ³	(\$1,715)	(\$962)
Viewshed Oil Rig Region (Outside Noise Region)	\$450,519,198	\$450,519,198
Assumed Visual Impact ⁴	5%	5%
Visual Impacted Assessed Value	\$22,525,960	\$22,525,960
Visual Assumed Price Depreciation ⁵	-6.0%	-3.0%
Visual Value Depreciation	(\$1,351,558)	(\$675,779)
Property Tax (1%)	(\$13,516)	(\$6,758)
City Share (20%)	(\$2,703)	(\$1,352)
Total Potential AV Decrease (Rounded)	(\$2,209,000)	(\$1,157,000)
Percent of 2009 AV Decrease	-0.04%	-0.01%
Total Potential Loss of Property Tax(Rounded)	(\$4,400)	(\$2,300)
Property Taxes in 2009 (Total)	\$13,252,000	\$13,252,000
Percent of 2009 Property Taxes	-0.03%	-0.02%

¹ AECOM has assumed that 25% of homes will also have a visual impact of the Rig that is included in the assumed value depreciation

² Both scenarios assumes that 25% of homes will have a visual impact and noise impact; impacts based on literature review

³ Estimate based on six year average as reported in the Comprehensive Annual Financial Report (2009)

⁴ Estimate based on discussions with MRS

⁵ Scenarios visual impact based literature review

⁶ Impacts are not cumulative

Source: Cited Case Studies; MRS; Los Angeles County Assessor Parcel Data (2009); AECOM

Appendix: I

References and Resources

The list below is indented to provide the reader with a list of readily accessible reference materials pertinent to this document. This report is based on these references, as well as a variety of other materials reviewed.

2.0 Background

3.0 Relevant Documents

4.0 Potential Project Scenarios

5.0 Oil & Gas Volume Estimates

6.0 Oil & Gas Pricing

California Midway-Sunset First Purchase Price

Retrieved from:

<http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=F005006143&f=M>

California Midway-Sunset Spot Price

Retrieved from: http://crudemarketing.chevron.com/posted_pricing_daily_california.asp

Annual Energy Outlook 2014

Retrieved from: <http://www.eia.gov/forecasts/aeo/er/index.cfm>

Henry Hub Spot Price

Retrieved from: <http://www.eia.gov/dnav/ng/hist/rngwhhdm.htm>

7.0 City Oil & Gas Revenues

California State Lands Commission Public Trust Doctrine

Retrieved from:

http://www.slc.ca.gov/Policy_Statements/Public_Trust/Public_Trust_Doctrine.doc

8.0 Other Direct Revenues

California State Board of Equalization Assessors Handbooks 502, 566

Retrieved from: <http://www.boe.ca.gov/proptaxes/ahcont.htm>

[California State Board of Equalization Rule 468: Oil and Gas Producing Properties](#)

Retrieved from: <http://www.boe.ca.gov/lawguides/property/current/ptlg/rule/468.html>

[Texaco Producing, Inc. v. County of Kern](#) (1998) 66 Cal. App. 4th 1029 [78 Cal. Rptr. 2d 433]

Retrieved from: <http://caselaw.findlaw.com/ca-court-of-appeal/1289135.html>

9.0 Direct City Costs

[Hermosa Beach Comprehensive Annual Financial Report](#)

Retrieved from:
www.hermosabch.org/Modules/ShowDocument.aspx?documentID=2435

[Project Application](#)

Retrieved from: <http://www.hermosabch.org/index.aspx?page=718>

10.0 City Financing Considerations

11.0 Net City Cashflow

12.0 Private Property Values

[Well Location Data](#)

Retrieved from: <http://www.conservation.ca.gov/dog/maps/Pages/GISMapping2.aspx>

[AECOM Draft Project Report Socioeconomic Analysis for Whittier Main Oil Development Project](#):

Retrieved from: <http://www.cityofwhittier.org/civica/filebank/blobdload.asp?BlobID=4195>

13.0 Other Potential Considerations

[Green Power Equivalency Calculator Methodologies](#)

Retrieved from: <http://www.epa.gov/greenpower/pubs/calcmeth.htm#oil>

[California Air Resources Board Auction Information](#)

Retrieved from: <http://www.arb.ca.gov/cc/capandtrade/auction/auction.htm>

Community Dialog Fiscal Team Summary

Retrieved from:

<http://www.hermosabch.org/Modules/ShowDocument.aspx?documentid=3542>

14.0 Economic Activity Benefits

15.0 Potential Hazard Events

Appendix: J

Public Comments & Responses to Comments

In this Appendix questions and comments to the Draft CBA are provided, followed by responses to the same. Responses are listed in alphabetical order based the author's last name (fist name if no last name was provided).

E&B

Natural Resources

Office: (661) 679-1700 • Fax: (661) 679-1797
1600 Norris Road • Bakersfield, CA 93308

April 11, 2014

Mr. Ken Robertson
Community Development Director
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

RE: E&B Oil Drilling & Production Project
Comments Regarding the Draft Cost Benefit Analysis
Section 5.0 – Oil & Gas Volumes

Dear Mr. Robertson:

E&B Natural Resources Management Corp. (E&B) is providing the attached information from PGH Engineers (PGH). PGH has identified two areas where additional data is available that can be provided to CGEOIL to reevaluate the oil and gas volume estimates in the Kosmont report.

Please feel free to contact me with any questions.

Regards,



Michael Finch
Vice President of Health, Safety, Environmental & Governmental Affairs
E&B Natural Resources Management Corp.

Attachment 1 – Letter PGH Engineers

Attachment 2 – External Drive (DOGGR Data, Horizontal vs. Vertical Well Incremental Recovery)



April 9, 2014

Mr. Michael Finch
E&B Natural Resources
1600 Norris Rd.
Bakersfield, CA 93308

Re: ***Comments Regarding City of Hermosa Beach
Draft Oil Drilling and Recovery Cost Benefit Analysis
Section 5.0 – Oil & Gas Volume Estimates***

Dear Mr. Finch:

We have completed our preliminary review of the City of Hermosa Beach's Draft Oil Drilling and Recovery Cost Benefit Analysis. Our review and comments relate to Section 5.0 - Oil & Gas Volume Estimates of the Draft report.

As you are aware, we had the opportunity to meet with the City of Hermosa Beach and specifically Mr. Curtis Henderson, geologist with CGEOIL, LLC, to determine the estimates of oil and gas volumes present and recoverable beneath the City. At this meeting, held on Wednesday, April 2, Mr. Henderson gave an overview of his analysis and described the methodology and data sources used in the analysis. Mr. Henderson also acknowledged that his analysis and resulting estimate of volumes was "very pessimistic" as a result of the limited data he had available for his consideration. I have identified two areas of his analysis where data is available and that can be provided to Mr. Henderson that would in my opinion would significantly increase the oil and gas volumes estimated to be present and recoverable. These areas, and a brief discussion, are as follows:

1. Pre-1977 Production Data

Gore / PGH 1

Mr. Henderson indicated that the production data utilized in his analysis was production data for the California Division of Oil, Gas and Geothermal Resources ("DOGGR"). Historical DOGRR production data only goes back to 1977. That is to say, the DOGGR production database does not contain any production volume prior to 1977. This is significant in this instance due to the fact that wells in Redondo Beach, which form the basis of Mr. Henderson's analysis, commenced production as early as the 1930's. Mr. Henderson's analysis does not take into account almost 40 years of historical production information. Since the Redondo Beach production forms in part the basis of Mr. Henderson's analysis of what wells drilled in Hermosa Beach would produce, this estimate would be in my opinion dramatically understated. It should be noted that that this is not a criticism of Mr.

Gore / PGH 1 Continued

Henderson, just a recognition that he was under a time severe time constraint in performing his analysis and that additional production data would have a direct impact on his analysis. Retrieving pre-1977 historical production from the DOGGR archives in Sacramento is very time consuming. I have compiled this information as a result of my prior work on the Redondo/Hermosa Beach area. The actual DOGGR production forms are being provided with this letter, as well as excel spreadsheets of the data.

In addition to a more realistic and accurate accounting of vertical well recovery, this will also allow for a comparison of ultimate recovery in Redondo Beach to Mr. Henderson's mapped volumes. This comparison is crucial for determining whether or not the geologic maps are reasonable. Reservoir volumes from geologic maps must conform to known historical recovery, otherwise the maps are proven to be unrealistic and must be revised to account for the proper oil and gas volume.

2. Horizontal vs. Vertical Well Incremental Recovery

Gore / PGH 2

E&B Natural Resources intends to use horizontal drilling to access the recoverable reserves underlying the City of Hermosa Beach. Mr. Henderson explained in our meeting that while he recognized this fact, he did not adjust his per well recovery to account for any incremental oil and gas to be realized from horizontal drilling as he did not have the information to make such an estimate.

It is well recognized in the oil and gas industry that horizontal drilling results in a multiple of a typical vertical well recovery in a given field/reservoir. Horizontal drilling is a proven technique in all regions of the U.S. including California. The incremental recovery realized generally ranges from a low of 2.5 – 3 times a vertical well, to as high as 12-times a vertical well. In addition to providing the above referenced historical production information, I am also including twelve technical papers outlining the documented success of horizontal drilling and the incremental recovery versus a vertical well realized from such drilling. This information should provide Mr. Henderson the basis for estimating an incremental horizontal well recovery.

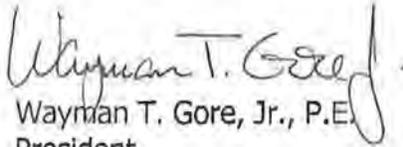
Incorporating the two above referenced pieces of information into Mr. Henderson's study and analysis will result in a more thorough analysis. It will also provide a much more reliable analysis of the amounts of oil and gas to be recovered from wells drilled under the City of Hermosa Beach. I am available to assist Mr. Henderson or the City in understanding or including the information provided hereunder in their analysis, should they so desire.

Mr. Michael Finch

April 9, 2014

Thank you for the opportunity to be of assistance in this matter. If you have any questions or if I can provide any other information please do not hesitate to ask.

Kindest Regards,



Wayman T. Gore, Jr., P.E.

President

PGH Petroleum & Environmental Engineers, L.L.C.

Hollister & Brace

a professional corporation

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Mr. Ken Robertson
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RE: Comments of E&B Natural Resources on Draft Oil Drilling & Recovery Cost Benefit Analysis ("CBA"), Section 7.3, Restrictions on Tideland Revenues, pp. 39-42.

Dear Mr. Robertson:

This office represents E&B Natural Resources ("E&B") regarding certain aspects of its proposed Oil Drilling & Recovery Project located in the City of Hermosa Beach. We are writing on E&B's behalf with comments on the Draft Oil Drilling & Recovery Cost Benefit Analysis ("CBA"). E&B's comments in this letter are focused specifically on Section 7.3, entitled "Restrictions of Use of Revenues" pages 39-42.

Comment No. 1: Scope of Authorized Uses - Tidelands Grant

Candy / Hollister & Brace 1

The CBA states at page 39 that revenues from oil and gas produced from the Tidelands must be held in a Tidelands Trust account to be utilized for purposes consistent with the City's Tidelands Grant and the Public Trust Doctrine. The CBA then incorporates a copy of the Tidelands Grant made to the City in 1919 (Figure 16, pp. 40-41), however, it neglects to provide any substantive discussion regarding the terms of the grant. A plain reading of the City's Tidelands Grant confirms the scope of uses authorized by the grant extend to the full array of uses recognized under the Public Trust Doctrine. E&B believes the CBA would be made more informative to the

Candy / Hollister & Brace 1 Continued

reader if it incorporated a discussion clarifying this point. E&B offers the following text as a suggestion:

The grant from the Legislature to the City in 1919 conveyed to the City "all the right, title and interest" held by the State in and to all the tidelands and submerged lands located within the City's boundaries. The grant was made for the purpose of developing a harbor and related commercial and industrial facilities, including docks, wharves, piers and similar structures. In addition, the grant authorized the City to franchise and lease its tidelands for any purpose "consistent with the trusts upon which said lands are held by the State of California. . ." [Stats. 1919, ch. 479, pp. 941-942.]

In 1971, the California Supreme Court broadened the scope of recognized Public Trust uses beyond the traditional triad of uses (commerce, navigation and fishing) to include recreation, environmental protection, open space, and preservation of scenic areas. (*Marks v. Whitney* (1971) 6 Cal. 3d 251.) As a result, the Public Trust Doctrine now preserves and protects not only water-dependent commerce, navigation, and fishing, but recreation and environmental preservation as well.

The City's grant vests the City with all the same powers of trustee as those formerly held by the State, enabling the City to hold, control, use and improve the granted tidelands within its boundaries for any purpose which promotes and is consistent with the requirements of the Public Trust. This was the holding of *Los Angeles v. Pacific Coast S.S. Co.* (1919) 45 Cal. App. 15, wherein a California appellate court interpreted an identical grant made in 1911 to the City of Los Angeles. As a trustee of its granted Tidelands, with the same trustee powers as those formerly held by the State, the City may hold, control, improve and use its Tidelands and any revenues generated therefrom for any purpose which promotes and is consistent with water-related commerce, navigation, fishing, recreation or environmental preservation.

Comment No 2: Scope of Authorized Uses – General Legislation

Candy / Hollister & Brace 2

In determining the scope of uses authorized by a statutory trust grant, the CSLC looks to the original legislative grant, any amendatory legislation, as well as general legislation applying to all such trust grants. There has been no specific legislation amending the City's original 1919 Tidelands Grant, but there has been general legislation adopted which helps to clarify the City's authority under the grant. E&B believes the CBA would be made more informative if it incorporated a discussion of the different statutes which help to define the scope of the City's statutory trust grant. E&B offers the following text as a suggestion:

As to any particular trustee, the terms of the statutory trust grant must be derived from both the original and all supplementary and amendatory legislation, as well as general

Candy / Hollister & Brace 2 Continued

legislation applying to all such trust grants. There has been no specific legislation amending the City's original 1919 Tidelands Grant, but there has been general legislation adopted which helps to clarify the City's authority under the grant. One example is Government Code § 37387, which applies generally to the leasing authority of all municipal tideland trustees:

"When the legislative body [of a municipal tideland trustee] deems that industrial use of . . . tidelands . . . is inimical to the best interest of the city, it may lease them for park, recreational, residential, or educational purposes, under conditions not inconsistent with the trust imposed upon the tidelands by the Constitution."

The reference in Section 37387 to *"the trust imposed upon the tidelands by the Constitution"* is reference to Gift Clause of the California Constitution (now Article XVI, Section 6), which prohibits local tideland trustees from using trust revenues for purely local municipal purposes which have no statewide public benefits. Otherwise, Government Code § 37387, when read in conjunction with the City's original Tidelands Grant and the California Supreme Court's decision in *Marks v. Whitney*, confers express legislative authorization upon the City to utilize its tidelands and associated revenues for not only water-related commercial and industrial purposes, but also recreational, scenic, educational or environmental purposes as well.

Another example of general legislation applicable to the City's grant is Harbors & Navigation Code § 1698, which provides a laundry list of potential public and private improvements for which public trust revenues may be expended. These include streets, roads, sidewalks, curbs, gutters, parking, wastewater and other public infrastructure and utility-related systems or facilities, as well as parks, recreation, and open space facilities. The limitation imposed by Section 1698 is that the proposed improvements must directly benefit a port or harbor.

Harbors and Navigation Code §§ 5800 and 6000 define the term "harbor" broadly to include "any bay, harbor, inlet, river, channel, slough, or arm of the sea, in which the tides of the Pacific Ocean ebb and flow or in which tides are affected by the Pacific Ocean." Under Division 8, Parts 2 and 3 of the Harbors and Navigation Code, a "Harbor District" or "Harbor Improvement District" could, if desired, be formed as part of the City's government to improve, operate and manage the City's waterfront area using Tidelands Trust revenues generated through the production of oil and gas. Projects such as those identified in Section 1698 which accommodate, promote, foster or enhance the statewide public's enjoyment of the tidelands and waterfront area could qualify as "harbor improvements" within the scope of the City's statutory trust grant.

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Comment No. 3: Permissible Uses of Tideland Revenues – Jurisdiction of the State Lands Commission

Candy / Hollister & Brace 3

In discussing potentially permissible uses of Tideland revenues generated from oil and gas, the CBA references the CSLC's Public Trust Policy (pp. 41-42), and states that the CLCS has some latitude in application of the Public Trust Doctrine as elaborated in the CSLC's Public Trust Policy (p. 41). In addition, the CBA clarifies that the CSLC provides a final determination of what is, or is not a permitted use of Tidelands funds (p. 42). The reality is that the statutory jurisdiction of the CSLC to oversee the management of statutorily granted trust lands extends well beyond the limited discussion in the CBA. E&B believes the CBA would be made more informative to the reader if it were to incorporate the following additional discussion which expands on the CSLC's jurisdictional authority:

While granted public trust lands and assets are managed locally, the Legislature delegated the State's residual and review authority for granted lands to the CSLC. The CSLC is responsible for monitoring administration of each statutory grant by the trustee to ensure compliance with provisions of the granting statute and the Public Trust Doctrine. (PRC §§ 6009(c), 6009.1(a) and (b), and 6301.)

All revenues received from trust lands and assets must be expended only for uses and purposes consistent with the Public Trust Doctrine and the applicable statutory grant. Trustees must annually file with the CSLC a detailed statement of all revenues and expenditures relating to its trust lands and assets covering the fiscal year preceding submission of the statement. The CSLC has express review authority for financial statements relating to the operation and production of Tidelands oil and gas. (PRC §§ 6306 and 7062.)

Comment No. 4: Permissible Uses of Tideland Revenues – 1992 Oil Lease

Candy / Hollister & Brace 4

The CBA does not provide a substantive discussion of permissible uses of Tideland revenues, but only general guidance based upon references to the CSLC's Public Trust Policy and common law interpreting the Public Trust Doctrine. The CBA overlooks an important provision in the 1992 Oil Lease whereby the CSLC specifically approved permissible uses of Tideland revenues for this particular oil project. The 1992 Oil Lease states that Tideland revenues may be used for "the promotion and accommodation of commerce, navigation and fisheries, for the protection of lands within the boundaries of the City, and for the promotion, accommodation, establishment, improvement, operation, and maintenance of public recreational beaches and coastline for the benefit of the public." E&B suggests the CBA incorporate a discussion of this excerpt, as well as a discussion of the circumstances surrounding the CSLC's approval of the 1992 Oil Lease. E&B offers the following text as a suggestion:

Candy / Hollister & Brace 4 Continued

Macpherson Oil Company (“MOC”) entered into an oil and gas lease with the City in 1986, and subsequently entered into an amended and restated lease in 1992 (“1992 Oil Lease”). The 1992 Oil Lease, among other things, added the City-owned Tidelands to the leased lands, in order to allow MOC to engage in a directional oil well drilling project from the City’s maintenance yard. The 1992 Oil Lease also added a provision authorizing the City to expend oil and gas tideland royalties on uses consistent with the Public Trust, including enhancement of the City’s public recreational beaches and coastline for the benefit of the public.

Section 2.b.(2) of the 1992 Oil Lease defines the term “restricted royalties.” It articulates several permissible uses of Tideland revenues generated from this particular oil project:

““Restricted royalty” is that royalty received by the City which must be deposited in a special tide and submerged lands account to be held in trust and to be expended only for the promotion and accommodation of commerce, navigation and fisheries, for the protection of lands within the boundaries of the City, and for the promotion, accommodation, establishment, improvement, operation, and maintenance of public recreational beaches and coastline for the benefit of the public or otherwise authorized by applicable law.”

In March 1994, the CSLC re-approved the 1992 Oil Lease, including Section 2.b.(2), finding the Lease to be consistent with the Public Trust and in the best interests of the People of the State of California. “An administrative agency’s contemporaneous interpretation of a statute under which it operates is ordinarily entitled to great weight...” *Jones v. Lodge at Torrey Pines Partnership* (2008) 42 Cal.4th 1158, 1173.

Comment No. 5: Permissible Uses of Tideland Revenues – Court Approved “Commercial” Uses of Tidelands and Associated Revenues

Candy / Hollister & Brace 5

The City’s 1919 Tidelands Grant authorizes water-related commerce, navigation and fishing, as well as other uses consistent with the Public Trust. The term “commerce” has been interpreted by California courts to include a number of different types of water-related commercial uses. As indicated previously, the CBA does not provide any detailed discussion of permissible uses of Tideland revenues. E&B believes the CBA would be more informative if it incorporated a discussion regarding the types of uses California appellate courts have held to be consistent with the term “commerce” under the Public Trust Doctrine. E&B offers the following text as a suggestion:

The City’s 1919 Tidelands Grant authorizes Tidelands revenues generated from the oil project to be expended on, among other things, water-related commercial activities and

Candy / Hollister & Brace 5 Continued

uses. The following types of uses have all been held consistent with the term "commerce" under the common law Public Trust Doctrine:

1. Uses that directly promote harbor development:

Tidelands and associated revenues may be used for the development and maintenance of structures and improvements that directly promote harbor development. Examples include wharves, docks, piers, warehouses, container cargo and boat storage facilities. *San Pedro etc. R.R. Co. v. Hamilton* (1911) 161 Cal. 610; *Koyner v. Miner* (1916) 172 Cal. 448; *Oakland v. Larue Wharf & Warehouse Co.* (1918) 179 Cal. 207; *City of Oakland v. Williams* (1929) 206 Cal. 315.

2. Uses that are incidental to the promotion of water-related commerce:

Tidelands and associated revenues may also be used for the development and maintenance of structures and improvements that, while not directly promoting harbor development, are incidental to the promotion of water-related commerce. A prominent example is the Port of Oakland's convention center. The court in *Haggerty v. City of Oakland* (1958) 161 Cal.App.2d 407, 413-414 held the convention center was a valid trust use because, although it did not directly promote or support port business, it encouraged trade, shipping, and commercial associations to become familiar with the port and its assets.

3. Uses that accommodate or enhance the public's ability to enjoy tidelands and submerged lands:

Visitor-serving facilities, such as restaurants, hotels, shops, and parking areas, have also been upheld by the courts as appropriate public trust commercial uses. The underlying rationale is that hotels, restaurants, shops, restrooms and parking areas accommodate or enhance the public's ability to enjoy tidelands, submerged lands and navigable waterways. As places of public accommodation, they allow broad public access to the trust lands and enhance the public's enjoyment of trust lands. (*Haggerty, supra*, 161 Cal.App.2d at p. 414; *Martin v. Smith* (1960) 184 Cal.App.2d 571, 577-578.)

4. Uses that must be located on, over or adjacent to water to accommodate or foster commercial enterprises:

Installations that are not directly connected to water-related commerce are appropriate trust uses when they must be located on, over or adjacent to water

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Candy / Hollister & Brace 5 Continued

to accommodate or foster commercial enterprises. (See *Boone v. Kingsbury* (1928) 206 Cal.148, 183; *Colberg, Inc. v. State of California ex rel. Dept. Pub. Work* (1967) 67 Cal. 2d 408, 421-22; and *Carstens v. California Coastal Com.* (1986) 182 Cal.App.3d 277, 289.)

Uses that do not accommodate, promote, foster or enhance the statewide public's need for essential water-related commercial services or the enjoyment of tidelands by the statewide public are not consistent with the Public Trust and are not appropriate public trust uses.

Comment No. 6: Permissible Uses of Tidelands Revenues – *Mallon v. City of Long Beach*

Candy / Hollister & Brace 6

The CBA at p. 42 discusses the overarching principle of the Public Trust Doctrine that tideland resources and any revenues generated therefrom belong to the statewide public and cannot be used for strictly local municipal purposes with no benefit to the people of the State as a whole. The CBA quotes an excerpt from *Mallon v. City of Long Beach* (1955) 44 Cal.2d 199, indicating the excerpt provides guidance on the types of projects considered a benefit to the State as a whole versus projects that are strictly local in scope. The quote is misleading in so far as it suggests that municipal improvements like streets, sewers, storm drains, public parks and parking facilities can never be considered appropriate projects for use of Tidelands revenues. The *Mallon* case is not a prohibition on the use of Tidelands revenues for all local municipal improvement projects, but only those which lack an appropriate nexus to statewide benefits serving the Public Trust. The CBA should clarify this point, and E&B offers the following text as a suggestion:

In *Mallon*, the California Supreme Court considered an attempt by the State Legislature to free 50% of Long Beach's oil and gas revenues from trust control, and transfer them to the city's treasury for purposes of funding general municipal improvements. The improvements proposed by Long Beach were purely local in character, that is to say they were not intended to promote access to or enjoyment of the city's tidelands, and they had no connection to the Public Trust. The Court held that the use of trust funds for purely local municipal purposes unconnected to the Public Trust constituted a violation of both the Public Trust Doctrine and the California Constitution, Article IV, Section 31 (now Article XVI, Section 6 - the "Gift Clause").

The *Mallon* decision should not be read as a wholesale prohibition on the use of Tidelands revenues in all situations where local municipal improvements are proposed. In appropriate cases, local infrastructure improvement projects designed to enhance city streets, sewers, storm drains, parking and recreational facilities may have direct Public Trust benefits - by serving the statewide public's need for essential water-related

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Candy / Hollister & Brace 6 Continued

commercial services, or the general public's access to and enjoyment of tideland resources.

Comment No. 7: Permissible Uses of Tideland Revenues – Upland Improvements

Candy / Hollister & Brace 7

The CBA should clarify that Tideland revenues generated by the oil project are not restricted to use on the City's granted tidelands, but may be used for the acquisition and improvement of upland areas as well, provided the upland projects serve a legitimate Public Trust purpose. This has been demonstrated by numerous CSLC decisions, including those involving the neighboring City of Redondo Beach, where Public Trust revenues were used to purchase and improve upland parcels having direct Public Trust benefits. E&B offers the following text as a suggestion for incorporation into the CBA in order to clarify this important point:

Tideland revenues generated by the proposed oil project are not restricted to use on the City's granted tidelands, but may be used to purchase or improve upland areas as well, provided the upland projects serve a legitimate Public Trust purpose. As an example, in the early 1980s, the CSLC approved numerous proposals by the neighboring City of Redondo Beach, through its redevelopment agency, to rehabilitate with Public Trust revenues a blighted area adjacent to King Harbor, known as the Triangle Neighborhood Shopping Center. The plan involved development of a portion of the triangle area with a 353-suite hotel facility together with typical hotel amenities and a community meeting hall. The CSLC approved the city's use of Trust revenues to purchase privately owned upland parcels adjacent to the hotel site, for the purpose of constructing a parking structure and open landscaped area. In addition, Trust revenues were used to pay relocation benefits and associated legal, consulting and miscellaneous costs. The CSLC approved use of Trust revenues for these purposes on grounds the expenditures would directly benefit the granted lands and enhance the public's ability to use and enjoy the tidelands. The CSLC's approval was conditioned on the requirement that any lands acquired or improvements paid for with Public Trust revenues became assets of the Trust subject to all the provisions of the Trust grant made to the City of Redondo Beach.

Comment No. 8: Permissible Uses of Tideland Revenues – Potential Uses of Tideland Revenues within the City Having a Nexus to Statewide Benefits and the Public Trust

Candy / Hollister & Brace 8

E&B suggests the following discussion be incorporated into the CBA to help the reader understand the different types of projects for which Tideland revenues may be expended:

When determining appropriate uses of Public Trust revenues, the CSLC does not apply a rigid formula, but instead proceeds case-by-case to determine whether a sufficient

Candy / Hollister & Brace 8 Continued

nexus exists between a proposed use of Trust monies and benefits to the statewide public consistent with the Public Trust.

Hermosa Beach is unique in terms of its relatively small size and prime location in the heart of Santa Monica Bay. Visitors migrate to the City's beaches and associated commercial areas not only from the greater Los Angeles region, but from all over the State. Because the City is 1.43 square miles in size, projects which improve street circulation and public parking have direct statewide benefits in terms of providing better access to the City's Tidelands and beaches. By the same token, projects which improve the City's sewer system and storm drains help to keep pollution off the beaches and away from the Tideland areas, enhancing the visitors' overall Tideland experience. These circumstances distinguish Hermosa Beach from some of the larger surrounding communities of Los Angeles, where municipal improvements are often geographically removed from the tideland or beach areas, and do little or nothing to improve public access to or enhancement of the general public's tideland experience.

Expenditure of Tideland revenues on key components of the City's aging infrastructure can thus be justified on the basis of providing significant benefits to the statewide public. Improvements to City facilities such as the Strand and Hermosa Pier, as well to its interior streets, sewers and storm drains, improve public access to the beach, draw visitors into the Tideland areas from outside surrounding areas, and enhance the overall experience and enjoyment of the City's Tideland areas by these visitors. Street improvements alleviate traffic congestion and facilitate outside visitor access to the Tideland areas. Sewer and storm drain improvements keep pollution off the beaches and away from Tideland areas, thus enhancing the public's ability to enjoy the Tideland experience. Parking improvements address the shortage of available parking within the City and enable a larger segment of the public to enjoy the City's beaches and Tidelands. All of these improvements can be seen as having a sufficient nexus to statewide Public Trust benefits to allow expenditures of Tideland Trust revenues for purposes within the scope of the City's statutory trust grant.

Similarly, the City could use its Tidelands revenues to offset its operation and maintenance costs associated with visitor-serving Tideland facilities, such as beach life guard stations, beach comfort stations, beach parking facilities, and beach landscaped areas. Trust revenues could be used to pay the costs of both the equipment and personnel needed to clean Tideland beaches, as well as defray Police Department expenses for special beach patrol services. In addition, the City could use Trust revenues to pay Public Works Department expenses for operation and maintenance of sewer pump stations and ocean water quality testing and reporting. Similar to infrastructure

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Candy / Hollister & Brace 8 Continued

improvements, all these operation and maintenance expenditures have a strong nexus to statewide Public Trust benefits justifying the expenditure of Tideland Trust revenues.

Comment No. 9: Excess Tideland Revenues

Candy / Hollister & Brace 9

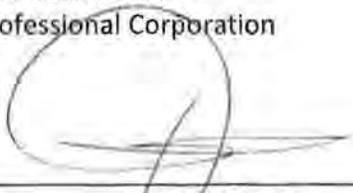
The CBA states that to the extent the City is unable to find appropriate uses for Tidelands oil and gas revenues, a significant portion of such funds may be diverted to the State. This statement is misleading and requires clarification to avoid confusion. Diversion to the State is not something that happens automatically, but instead requires specific Legislative amendment to the City's grant. E&B suggests the following discussion be incorporated into the CBA to help clarify this point.

The CSLC has the authority to investigate the administration of all statutory trust grants. The CSLC also has the authority to investigate specific allegations of misuse of trust lands or associated revenues, and to make recommendations to the Legislature as necessary. (PRC §§ 6009(c), 6009.1(a) and (b), and 6301.) If, in response, the Legislature determines that a municipal tidelands grantee is unable to find appropriate uses for its tidelands oil and gas revenues, or is using its trust revenues for non-authorized purposes, the Legislature has the ability to amend the grant such that the revenues revert to the State for uses that have a statewide benefit. Absent such amendment, tidelands oil and gas revenues must continue to be held in trust. (See *Mallon v. City of Long Beach* (1955) 44 Cal.2d 199, where it was held that Legislature's revocation of the trust as to excess oil and gas revenues resulted in a reversion of these revenues to the State as settlor of the trust.)

This completes E&B's comments on Section 7.3 of the CBA. Feel free to contact the undersigned if you have questions or wish to discuss.

Very truly yours,

HOLLISTER & BRACE
A Professional Corporation

By 
Peter L. Candy
Steven E. Kirby

PLC/crr

Copy: Michael Finch, E&B

Comments on Draft Cost/Benefit Analysis

Clark Strategic Partners

Sustaining the Earth

永續地球

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13 April 2014

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**RE: Comments on Draft Cost Benefit Analysis (CBA) Report for
City of Hermosa Beach (CHB) by:
Kosmont Companies (KC) and sub-consultants, CGEOIL, LLC,
and Green Tech Coast LLC**

Groups and Initials:

City of Hermosa Beach (CHB)
E&B Natural Resources (E&B)
Cost Benefit Analysis (CBA, Report and also as Authors)
Environmental Impact Report (EIR)
Health Impact Assessment (HIA)
California Environmental Quality Act (CEQA)
Stakeholders --- City of Hermosa Beach residents (only first referenced in Section 13.0)
Questions and Issues are (Q:)

Overall Comments and Concerns:

Q: Basic issues

1) The E&B Lease and arbitration result is VERY biased against Hermosa Beach. In fact, the City should appeal it. The City's legal fees to do so will be dramatically lower than those in the settlement. Clark 1

2) The recent insertion of GAS PRODUCTION into the analysis when OIL PRODUCTION was the original issue and the subject of the settlement. This insertion is legally questionable, opens the analysis and any subsequent action based on it to legal challenge, changes the economics, and threatens far graver environmental impacts. Clark 2

3) As proposed by E&B, it raises a long list of land and ocean issues due to accidents, safety issues and security concerns. The Land and Coastal Commissions should issue a note to block this Oil Project in Hermosa Beach and should issue rules and regulations soon. Clark 3

Comments on Draft Cost/Benefit Analysis

1.0 Executive Summary

Project not done then CHB owes E&B \$17.5 million plus interest over 20-30 year pay back period.

Project approved by voters and to be done, then CHB owes settlement to E&B of \$3.5 million. If approved, CBA estimates that the City will received \$118-\$270 million from Project Reservoir over the 35 life of the Project resulting in CHB having from 37% -- 42% revenue accrue to the General Fund.

E&B estimates (and uses in the EIR) revenues of \$541 million, of which 44% would accrue to the General Fund.

School district under CBA estimates would get \$1.2-- \$2.2 million over life of project.

E&B estimates \$3.8 million over life of the project.

Q: Total revenue: Annualized means monthly or per year?

Clark 4

Q: Issues below and in the Report as to the actual amounts.

Clark 5

2.0 Background

2.1 Project History: Macpherson Oil Company (MOC) with E&B in March 2012 Settlement Agreement agreed upon by MOC, E&B and CHB.

Q: Agreement made in order to avoid further litigation. Why?

Clark 6

2. 4 City revenues from Project Reservoir

Clark 7

Q. Define Project Reservoir. Undefined as well as potential oil and gas; variability of Prices, magnitude and hence no predictions

Q: Why was info presentation in manner to simplify interpretations. Technical nuances and considerations required to complete analyses are provided are throughout the Report.

Clark 8

2.5 CBA Terms and Concepts

Defined terms and concepts are utilized throughout the Report.

Geologic Terms

Clark 9

Q: Gas – “Within the context of this document gas refers to natural gas expected to be produced from the Reservoir.” ... “does not refer to gasoline.”

Phase 4: Development & Operations

Defined as “drilling of thirty wells over an approximately 2 ½ year period, and then ongoing recovery operations through the life of the **Oil Lease**, generally 34 years after the

Comments on Draft Cost/Benefit Analysis

commencement of the drilling in Phase 1. Up to 30 redrills may occur over the duration of Phase 4, however no more than five redrills would be permitted in a given year.”

2.7 Project Location: Project site is 1.3 acres at 555 6th Street. Currently maintenance yard to be relocated to New City Yard Site (near City Hall) at 552 11th Place, CHB.

3.0 Relevant Documents

Oil Lease.

Q: No mention here of “gas” **Clark 10**
Settlement Agreement.

Q: Gas is added under Section 4.6 (b) with voters approving project then “payment of \$3.5 million generally payable from City oil and gas revenues.”
California State Lands Commission (CSLC) MOU **Clark 11**

Dated May 11, 1993 that provide “prior acknowledgement of the Oil Lease terms by the CSLC. “

Q: NO gas mentioned which is clearly a legal issue. **Clark 12**

3.2 Other reports & Documents

“School District Oil Lease”

Q: Again. No gas mentioned **Clark 13**

School District Oil Lease Amendment
Now adds “Amendment to Subsurface Oil & Gas Lease...”

BRG Report

Clark 14

Q: The BRG (Berkeley Research Group) states in its March 2013 that there is no conflict of interest and “not allied with E&B” with their findings.

Q: Did the “Authors” verify that their statement “the BRG Report is not prejudiced.”? Such statements must not be accepted at face value. Violations of conflict rules are rife, and once a contract is let it is very difficult to recover the economic and other value lost in the deception. There are strong indicators from the BRG study, their past record and current status of extreme prejudicial data and reporting. BRG’s founders involvement with other projects reveal a record of economic analyses that are narrow and in line with the “client” needs. **Clark 15**

4.0 Potential Project Scenarios

Figure 5: Flowchart of Primary Potential Outcomes

Comments on Draft Cost/Benefit Analysis

Q: Is misleading since any one of the areas listed could stop the entire Project. The agencies and commissions listed will take months if not longer to approve if the Project is voted on to move ahead.

Clark 16

5.0 Oil & Gas Volume Estimates

Q: Again how did gas get added? Clark 17

CGEOIL, LLC associated with Kosmont Team provided data.
Reports used were from Hacker et al from 1984-1988 with others
One by Hacker in 1998 was not reviewed by Kosmont.

Q: Why was Hacker 1998 not reviewed? Clark 18

More recent data shows significant changes along with externality issues like pipe lines, refineries and other potentially dangerous infrastructures.
See recent maps and geological analyses.

5.8 Intera 1997 Report on horizontal oil (added gas) would be at 21%

Q: And what does this mean in terms of the beach and ocean? Clark 19

6.0 Oil & Gas Pricing

All of this data is questionable: from source (supply) to demand.

Q: Where are the externalities reported here? Costs for pipes, refining and land use?
It is impossible to predict the market for fossil fuels. Gas in particular is subject to wild swings.
EIA as source for data is questionable.

Clark 20

7.0 City Oil & Gas Revenues

7.1 City Revenue Formula

Q: Oil Lease is referenced as source for data Clark 21

7.3 Restrictions on use of revenues

Q: Tide Lands and others Clark 22

8.0 Other Direct Revenues

8.1 Oil Lease Property Taxes

City would get additional funds from the taxes on the Reservoir

8.2 Business License taxes

8.3 School District Revenues

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Comments on Draft Cost/Benefit Analysis

9.0 Direct City Costs

9.1 Settlement Agreement

Q: Why settlement agreement is repeated now 4-5 times? **Clark 23**

Environmental Remediation Advance

Q: Report says that funds by City and E&B each for \$50k to total of \$100k for environmental costs come from City “funded in the form of an advance.” (p.56) **Clark 24**

Repayment of Advances

Q: Lots of issues here too **Clark 25**

- 9.6 Emergency Trust Fund
- 9.7 Fire Service
- 9.8 Ongoing Project Monitoring
- 9.9 Property Tax Revenue

Q: All the numbers are guesses. **Clark 26**

10.0 City Financing Considerations

Clark 27

- 10.1 Credit rating
- 10.2 Financial Options
- 10.3 Potential Borrowing Costs
- 10.4 City Financing if Project Approved
- 10.5 City Financing if Project not Approved – four scenarios

Q: All the numbers are guesses.

Will the Authors guarantee all their estimates? Have they signed a contract that verifies and has checks on their numbers.

11.0 Net City Revenues

- 11.1 Estimated Net City Cashflows if Project if Approved
- 11.2 Estimated Net City Cashflows if Project if not Approved

Q: All the numbers are guesses. **Clark 28**

12.0 Private Property Values

12.1 Potential Property Impairment

“Components or factors could include real or perceived potential health impacts, incremental sound levels, odor, visible appearance, concern over impacts from hazard events, concern over reduced value in the marketplace at time of subsequent sale, etc.”

Clark 29

Q: Nothing is given as fact, all the text has is “potential”. Where is the data? The facts are available from other situations and cases (even as noted but no data below) in Section

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Comments on Draft Cost/Benefit Analysis

Clark 29 Continued

12.3 Sample Locations). Real estate and finance institutions have formulas and measurements for such concerns. If not, they should have. There is no data here from the local real estate firms, insurance companies, home and condo owners, etc. Hence the conclusion: “As a result of the wide variety of considerations, and individual decision making processes, prediction and estimation of potential impacts to property values is extremely **nuanced** and bears a significant opportunity for error.”

Q: Interesting, because then the concluding last sentence is:
“Despite these **nuances**, as will be discussed in the next sections, the Authors attempted to **identify a relationship** between proximity to existing oil production facilities and property values.”

Clark 30

Q: In short, they are making up information based on questionable selection of data.

Clark 31

12.2 Los Angeles County Data

Q: The authors came up with inconclusive data and evidence. Yet all of the LA City Council members have voted not to allow “fracking” (horizontal drilling) in the City. The LA Supervisors will be next. There is value but the Authors do want to report it.

Clark 32

12.3 Sample Locations

Case of Beverly Hills (p. 80) – notes only a ban on oil drilling by 2017
Case of Huntington Beach, Long Beach (p. 81) and others

Q: No conclusion but “represent good candidate for additional analysis.”
The issue is that the Authors do not know. The local suspicion is that the values According to local real estate agents will go down considerably.
Most of these Cities have now prohibited fracking (horizontal drilling).

Clark 33

12.4 Project Specific Considerations

Health Impacts

Reference to Phase 4 (see above defined under 2.6)

Reference to the Draft EIR which is cited here as concluding that:

“Under the quantification of impacts in the Draft EIR, the health impacts of the mitigated Project are not considered significant.”

Q: The Draft EIR needs to be reviewed given this conclusion cited above. The evidence throughout the USA and internationally is VERY different.

Clark 34

Other Impact areas listed are: Visual, Noise and Odor.

Q: Why are other critical topics not considered: traffic, piping and shipping of oil (let alone gas if that becomes legal) along with a series of other factors including air and water pollution as well as carbon, particulate and other atmospheric remains from the

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Comments on Draft Cost/Benefit Analysis

Project.

12.5 Sample Case Studies

Q. The use of adjacent and even proximate areas is very questionable. Use of AECOM as a data source also raises questions. Why Whittier for example? What about other beach communities or even Baldwin Heights and Torrance which are closer and have vast emissions from oil and gas drilling and processing operations?

Clark 36

Q: For example the report cited in Appendix F concludes from data in January 2008, roughly 10 months (but more as the data must have been collected in 2007) before the global economic collapse.

“We conclude that they (eg homes near oil wells) do not suffer a value decline from proximity to oil well lots.”

Likewise the AECOM data and report is from 2009. Same problem and issues. The site below listed in “Appendix: G Excerpts from AECOM Report” (p.130) Does not work. Hence, not able to validate both the data and conclusions.

<http://www.cityofwhittier.org/civica/filebank/blobdload.asp?BlobID=4195>

This is seriously wrong and based in another economic era. Today all of this data has changed. Consider the data over the last 2-3 years from Oklahoma and Texas on the property values there as well as the damage from severe and numerous unusual weather damage. Detailed charts and evidence can be provided.

Clark 37

12.6 Conclusions on Value Impacts

“As a result of the information reviewed in this section, subject to a property by property evaluation, the Authors consider a 0-10% reduction in property values possible for properties proximate to the Project Site.”

Q: This is false; not based on current data; and suspect since no local or similar site real estate companies were contacted, asked for data or even current public property values cited in Hermosa Beach or similar communities involved with similar situations of oil drilling.

Clark 38

13.0 Other Potential Considerations

Stakeholders – not defined but assume the residents and property owners in HB.

13.1 Property Insurance

Talked to insurance brokers and underwriters, so that the “Authors’ conclusion that the Project should not impact an individual’s ability to retain insurance, or rates of property insurance.

Comments on Draft Cost/Benefit Analysis

Q: They did NOT contact the State Insurance Commissioner. Why
And more importantly, though getting insurance may be possible, what will it cost? Most likely it will be at a much higher, possibly damaging rate.
“Risks associated with the Project to third party property are **assumed** to be the responsibility of E&B, for which E&B would be required to maintain liability insurance.”
Or will HB be liable? And regardless of who may be liable, it is important to verify that those liable, whether self-insuring parties or third-party insurers, demonstrate their ability to insure against all conceivable damage scenarios.

Clark 39

13.2 Tourism & Special Events

Authors’ conclude “it unlikely that a significant number of tourists, if any, would not visit the City should the Project be implemented.”

Authors’ conclude the same should there be “a major hazard event”

Q: Where and what are the data sources of these questionable conclusions? Did they do rely on opinion and travel behavior surveys that they have not cited? Given the lack of citations it must be concluded that their “finding” is nothing more than unsubstantiated personal opinion.

Clark 40

13.3 Use of Proximate City Facilities and Parklands

Authors’ view of three public parks and even Clark Field nearby the site are:
While some people may not go to the parks due to proximity of the Project site:
“the Authors’ did not consider this a quantifiable financial cost or benefit to the City.”

Q: Again where and what are the data sources of these questionable conclusion? It appears to be mere opinion.

Clark 41

13.4 City Receipt of Green / Sustainability Grants

Authors’ claim from their own experience it would be
“unlikely that it would impact the City’s ability to secure green and sustainability grants from public agencies.”

Q: Where and what are the data sources of these questionable conclusion? It appears to be mere opinion.
The other perspective would be that HB would get more grants to prepare for the dangers, economic downturn due to loss property value and tourism etc.

Clark 42

13.5 Potential Carbon offsets

Authors’ state that the Draft EIR does not address this issue. Their conclusions here are VERY questionable.

Authors’ state the CBA data on GHG (eg. green house gas) emissions from oil (note: not gas) drilling from the Project at 15.3 million MTCO₂ (pg 90). Then they cite the CARB

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Comments on Draft Cost/Benefit Analysis

trading program and its November 19, 2013 (fifth auction) where “16.6 million allowances were sold at a market clearing price of \$11.48 per allowance.” (pg.91)
Then they make reference to the Stakeholders “desire to purchase offset credits for oil produced through the Project”. If the Stakeholders is the City Government of HB or even its own residents, that means that would have to buy the MTCO₂ from their own financial resources to cover the GHG emissions from the oil produced.

The Authors’ conclude:

“For abundance of clarity the purchase of offset credits for GHG emission potential of oil produced through the proposed Project is not required.” (pg.91)

Q: This is incorrect. The State of California has a law (AB32) signed by the Governor and now being enacted that sets GHG reductions by 2020. Given this Project being approved then HB will be liable for the emissions that the oil production is producing.

Clark 43

13.6 Deferred City Capital Improvements

HB has a plan. But the numbers do not make sense; nor do they add up correctly.

14.0 Economic Activity Benefits

“Authors’ utilized the economic input/output model known as IMPLAN (IMpact analysis for PLANning) to quantify the economic impact of the Project and permanent job wages and business expenditures within Los Angeles County (“County”).” (p.93)

The basic numbers here are false. Taking the IMPLAN with the example of job figures in one-year FTE values, then the “expected” 25 jobs created over a four (4) year period would be 100 on-year FTE jobs.

Q: Jobs in the oil drilling business are short term from the initial work crew. SO after the oil project is done with drilling the employees are less than one-fifth of those originally employed. Or in this case, 5 jobs in the 2+ years unless there are accidents, weather and other repairs.

Clark 44

14.1 Direct, Indirect & Induced Impacts

14.2 Construction, Drilling & Production Equipment

14.3 Ongoing Operations

Q: All of the above data is in question.

Clark 45

15.0 Potential Hazard Events

15.1 Insurance Requirements

Q: The requirements for insurance if a hazard event (defined as?) occurs places HB at a high risk. While apparently the coverage is only “\$5million per occurrence for damages to third parties...” (pg 95)

Clark 46

Comments on Draft Cost/Benefit Analysis

Additionally there is an Umbrella policy for \$40 million Control of Well in the LA basin. And another \$6million Emergency Trust Fund. Neither is sufficient to cover a hazard (no matter how it is defined).

Clark 46 Continued

15.2 City Insurance

Q: Will work with its Insurance coverage firm after the Project has begun is risky and should be understood with firm estimates in advance.

As stated above, insurance companies are good resources for values in property, business and especially with potential hazards.

Clark 47

15.3 Potential Hazards

Draft EIR Report has hazards listed and discussed. The charts and figures presented are not dated nor are the sources.

Authors' state that (from table 37) "the likelihood of a given hazard scenario is statistically low." But then note that "the potential consequences of certain hazard scenarios could be high." (pg. 96) Then see Figures 31 and 32 (pg. 97).

"In conclusion, while the probability of significant financial implications of a hazard event are estimated to be statistically remotes, and risk adjusted costs low, there may exist scenarios where the financial cost of a hazard event could be substantial. While extraordinary, such costs could in theory be in excess of insurance levels, and ultimately recovery of financial burdens could have to be pursued outside of recourse through insurance providers. **It may not be possible to completely mitigate potential financial implications of hazard events.**" (pg. 99)

16.0 Conclusion

All the issues noted here were covered above. In summary, the key issues stand unaccounted for and explained by the Authors.

Clark 48

1) The economic and financial areas in the Draft Cost Benefit Report are seriously in error. Aside from numbers being incomplete, dated and wrong, they lack any life cycle or externality economics.

Consider among other example is the use of a formula for job creation based on the first year and then calculated for four years and projected for the life of the Project. When a base number is wrong; then used for long term calculation, the entire chart and figure is suspect.

Other examples include materials and reports cited on real estate values In 2007-09. The global economic collapse occurred in the middle (October 2008) of those numbers making them suspect as well.

Comments on Draft Cost/Benefit Analysis

Clark 48 Continued

Finally, the reference and use of the BRG data and report whose contractor was E&B makes their numbers and conclusions also suspect. There is more.

2) The insertion of GAS within the last few years (and legally on what basis?) when Oil was the original issue and basis for the settlement. Specifically the oil-to-gas sleight of hand is a critical issue. Most oil wells produce gas, but that is usually minor, and is often flared off. So-called dry wells are all gas; the more profitable ones produce oil and gas in various mixtures; the higher profits come from the higher and more resilient/stable value of the oil, which is in shorter supply and is not being competed down in price the way gas is.

The issue for using a sleight of hand argument is in whether the shift is one of degree or of kind. Contract law I expect generally would allow for reasonable shifting to be contemplated in situations where industry standards contemplate it. But even industry standards would define a boundary condition for a change in kind. If the change in expected output can be described convincingly as a change in kind that exceeds industry standards for well descriptions, then perhaps the contract can be challenged as not conforming to the subject matter of the prior legal action. The detailed analysis from Daniel Wolf, Esq are attached.

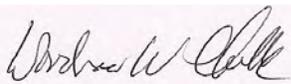
Clark 49

3) Land and Coastal Commissions need to issue a note to stop this Hermosa Beach project as proposed by E&B due to a long list of land and ocean issues due to accidents, safety and security. They need to issue rules and regulations in coastal and ocean areas immediately. The attached analysis by Howard Goldstein, Esq provides the background and data.

Recommendation: The E&B Lease and arbitration result is a VERY biased settlement toward Hermosa Beach. In fact, this should be appealed by the City. The legal fees to take such actions are dramatically lower than those in the settlement.

Clark 50

Thanks for your attention.



Woodrow W. Clark II, MA³, PhD
Qualitative Economist
and
Daniel Wolf, Esq

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April 12, 2014

Mr. Ken Robertson
Community Development Director
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, CA 90254
oilproject@hermosabch.org

RE: Draft Report on Cost – Benefit Analysis for Hermosa Beach

Goldstein 1

As fossil fuel energy sources have peaked, the answer to our nations energy problem appears simple, squeeze every last ounce out of the ground by fracking (which is what oil and gas companies mean when they say “horizontal drilling”). But no solution to a complex problem is truly easy or without great cost both financially and ecologically.

When fracking first came into prominence, the quest for clean energy took a back seat and new hopes are being pinned on natural gas. And although fracking appears as viable alternative with trillions of cubic feet of natural gas just waiting to be used, offering the prospect of almost unlimited energy security for the next couple of hundred years, the truth is far different.

Today, the City of Hermosa Beach is faced with is an almost Faustian choice between energy ‘now’ traded against life itself, as it will exist in the future. It is literally a question of deciding whether to give up a pound of water for an equivalent pound of natural gas.

A paramount concern is the project misnomer “Oil Drilling and Recovery Cost Analysis.” The report speaks more to the immediate economic dollar cost of retaining the land for its own public use versus the economic dollar cost of issuing drilling permits than it does of the tremendous health and safety aspects of the underlying fracking project. Interestingly the term “fracking” is not used in the report. The City of Hermosa Beach is faced with a lose-lose situation on the front end, having to finance through the mechanism of bonds versus the long-term obliteration of its coastline. No cost benefit analysis can measure the latter.

Of particular note is that the report uses mathematical calculations to determine future failure rates that appear to be based on oil industry failure standard rates for off shore drilling on deepwater rigs. The report’s calculations assume failure rates” termed “YEARS BETWEEN FAILURES.”



Deepwater Horizon oil slick as seen from space by NASA’s Terra satellite on May 24, 2010

Of major concern is that the report focuses on oil extraction, but Table 37 in the report regarding “Failure Rates” focuses primarily on leaks and ruptures of “Gas” into the environment. This report does not discuss the “bait and switch” objectives of this project.

Table 37: Scenario Failure Rates

Scenario	Failure Rate, per Year	Years Between Failures
Scenario 1 Wellhead Area Rupture during drilling: blowout	0.0062000	162
Scenario 1b Wellhead area leak during drilling	0.0420000	24
Scenario 2 Wellhead Area Rupture during production	0.0000017	604,127
Scenario 2b Wellhead area leak during production -pressurized and non-pressurized	0.0017000	576
Scenario 3 Rupture at Gas Plant separators, scrubbers to compressors - low pressure	0.0001200	8,385
Scenario 3b Leak at Gas Plant through inlet scrubbers to compressors - low pressure	0.0010000	978
Scenario 4 Rupture at Gas Plant LTS, scrubbers and compressors - mid pressure	0.0000920	10,902
Scenario 4b Leak at Gas Plant LTS, scrubbers and compressors - mid pressure	0.0011000	903
Scenario 5 Rupture at Gas Plant compressors 2nd stage - high pressure	0.0000460	21,513
Scenario 5b Leak at Gas Plant compressors 2nd stage - high pressure	0.0007800	1,282
Scenario 6 Rupture at natural gas pipeline along Valley Dr and at meter	0.0001100	9,065
Scenario 6b Leak at natural gas pipeline along Loop Road and at meter	0.0001200	8,418
Scenario 7 Loss of Containment from odorant storage/transfer	0.0690000	14
Scenario 8 Release of Crude Oil and Subsequent Fire	0.0002700	3,660
Scenario 9 Release of Crude Oil Storage/Pumping with subsequent spill outside containment	0.0000002	6,421,148
Scenario 10a Rupture at refrigeration system	0.0000350	28,448
Scenario 10b Leak at refrigeration system	0.0004000	2,478
Combined Facility Gas Rupture during drilling	0.0066000	152
Combined Facility Gas Leak during drilling	0.0470000	21
Combined Facility Gas Rupture: no Drilling	0.0004000	2,472
Combined Facility Gas Leak: no Drilling	0.0062000	162

Note to Table 37: From Table 4.8-12 of the Draft EIR

The fact that seems to be clouding the discussion about fracking is that it is not about lower carbon emissions or a cleaner environment, fracking is all about water. If the facts are known and understood, there should not even be an argument. On average it takes 3 - 5 million gallons of fresh water to frack a well and a well can be fracked multiple times. The concept that people find difficult if not impossible to grasp is that the water used in fracking is gone forever, it can never again perform its function of providing life giving nourishment to flora and fauna. It metamorphoses from a life giving source to one that is

hazardous to all forms of life. Water has always been associated in our minds as a way to clean things and possibly it is this mental association that makes it almost impossible to comprehend that water used in fracking can never be cleaned. Water used in fracking remains toxic for thousands of years and cannot be treated to render it potable, at least not when considered from any vaguely commercially viable sense, it is gone, taken off the table so to speak. It might be possible to clean 'fracking water' in a laboratory using expensive equipment and methods but impossible to implement on a large scale. Further a little bit of calculation shows that water used in fracking is used on a weight for weight basis. That is a kilo of fresh water is needed to extract a kilo of natural gas. This is not just a figure of speech, it is frighteningly close to the truth. In actual fact the ratio viz-a-viz water to natural gas is more in the region of 1:5 (one part water by weight for every five parts by weight of natural gas) it is still pretty horrifying, when one realizes that not only will that water not be available for future use for thousands of years if ever but that it also retains the capacity to contaminate other as yet uncontaminated clean water supplies and in this case the ocean of the coast of the City of Hermosa Beach.

The above statement is made on the basis that a gallon of water weighs the same as approx 91 cubic feet of natural gas and that the average yield of a fracked well is 2.5 billion cubic feet, while approx 5 million gallons of water are used to extract that amount of natural gas. (In fact this might be on the conservative side because on average a well may be fracked 10 times during its lifetime.)

The same logistics govern fracking as in the normal drilling process. Shale wells start strong and fade fast and a well that might be prolific in the beginning will fade out to next to nothing in just a couple of years. The good sites get targeted first and the less likely ones later. Fracking is also more expensive than ordinary drilling for oil or natural gas. Horizontal shale drilling might cost anything from 3.5 million dollars in limestone formations to 9 million dollars in harder rock formations. The cost of normal vertical drilling would be between four hundred thousand dollars to six hundred thousand dollars. The life span of normal oil wells is also spectacularly longer. Much of the additional cost is due to the additives that are used in shale drilling:-

- 1) To begin with approximately 3 million gallons - 5 million gallons (10.5 million litres to 17.5 million litres) of fresh waters (salt water won't do) is needed for each well that is drilled.
- 2) Mixed into this freshwater are around 50,000 gallons of hydrochloric acid (to dissolve the lime stone).
- 3) Then 1000 gallons of antibacterial solution are needed to kill the organisms that might eat into the pipes.
- 4) Next, a surfactant is added to reduce the frictional coefficient of the water and a solution to inhibit scaling.

- 5) Depending on the make-up of the soil fungicides maybe added to kill any life forms that might start to grow in the fracked fissures
- 6) Finally 2 million pounds of sand are mixed with the water to prop the fractures open.
- 7) Sometime diesel fuel is used (illegally) as an additional additive.

Each batch of fracking water is unique depending on the conditions found locally. So far so good, it doesn't sound too frightening until you learn that none of that fresh water can ever be used again. It is just not commercially viable to incur the colossal costs incurred in cleaning up 'flow back' or 'produced' water as it is known. Instead the water might be cleaned up to an extent so that it can be re-used for fracking. Some of the chemicals that are mixed into fracking fluids include; lead, uranium, ethylene glycol, mercury, radium, methanol, hydrochloric acid and formaldehyde to name just a few, together they make a lethal brew.

Oil companies seem to be using every trick in the book to cloud the issue of the disappearing act that water undergoes in the fracking process. The amazing thing is that they seem to be succeeding, one of the reasons is that people just can't seem to grasp the fact that fresh water used for fracking is permanently gone. We are still used to technologies like coal fired power generation that use nine to ten times the amount of water used in fracking when calculated on a one on one basis.

Oil Companies often (obnoxiously) emphasize this fact, what they don't do, is point out that the water used in power generation does not disappear, it is cleaned and purified and returned to the environment in the form of water vapor. In the fracking process unimaginable amounts of water are lost forever. The latest ploy that Oil Companies are using to pull the wool over our eyes is to claim that huge improvements have been made in the amount of water being used for fracking. They claim that this re-use of fracked water is a technological marvel that considerably reduces the strain placed on fresh water resources. However, there are only three ways (no option exists for ever making 'fracked' water potable again.) in which fracked water can be 'treated':

- - Diluted with fresh water on site and used for another well. - Treated on site and used for another well. - Hauled off site for treatment and/or disposal in permitted deep injection wells

What the oil companies neglect to disclose is that only about 10% - 30% of the water used for fracking returns to the surface the rest of the water remains underground. It doesn't take a genius to see that if only 10% to 30% of fracked water returns to the surface then the remaining 90% or 70% (the amount will vary from well to well) has to be made up with fresh water harvested from some other source. So where's the huge reduction in water usage that is claimed. What happens to the huge amounts of deadly contaminated water that remains in the ground? It is assumed that it will remain trapped in the shale but this is a presumptuous assumption to make, water has a habit of migrating

whenever the slightest possibility presents itself, and most often it migrates towards other sources of water.

Anyone with the slightest interest in the environment and in the future of our planet has almost certainly seen pictures of wells blighted by methane and once prime land devastated through the fracking process.

Oil Companies seem to have no doubt or remorse as to the course to follow, they have already hired the same law firms hired by the tobacco lobby to put a healthy spin on tobacco use and to drag out the legal process for as long as possible. They literally will stop at nothing, no trick is too obvious, no stratagem too low. Take for instance the not so subtle shift in terminology; returning fracking water was till recently known as 'flowback' now it is known as 'produced' water, just a nuance but still effective, to begin with it is positive sounding, meaning work has been done to 'produce' something. Potentially lethal chemically treated fresh water used in fracking used to be known simply as 'fracking water' now the Industry term for 'fracking water' is 'processed water'. What a wonderful sound that has to it, the water has been processed and is ready for use!

Submitted by:

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Authors Rebecca Hammer of the *Natural Resources Defense Council*, Jeanne VanBriesen, Ph.D., PE of *Carnegie Mellon University*

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To Mr. Ken Botwin, City of Hermosa Beach

Best
Hand

and Questions
Some Comments re: The EIR from

4/14/14
p 176

William Victor, property owner of improved residential lot approximately 100 feet from the sand in Manhattan Beach and licensed attorney representing at one time or another including now other property owners - I have ^{also} been employed as an ordinary seaman on oil tankers and am aware of that alternative

I have been reading a hard copy of the Draft EIR and am unable to locate answers to many questions which may be in the Draft but I do not see -

RECEIVED
APR 14 2014

COMMUNITY DEV. DEPT.

What I can see is that there is a considerable gamble on the safety and place held in perpetuity as a public place for recreation and enjoyment is decreased 50% -

But this affects not only Hermosa Beach but neighboring communities along the entire California Coast and perhaps more -

I personally have been involved in the hazardous results of petroleum spill for over eight years - it is life-changing for the hundreds and properties involved.

Petroleum hazardous waste spills can't be imagined adequately by those

Who don't have the experience.

p. 2 of 6

I am concerned with many items -

How are the EMT responsibilities which "deadly
misses jobs" going to be mitigated - as noted at 4.6-3

What are the names of the persons who
will be making day to day decisions on
the drilling?

Have these persons been involved
in oil spills before?

If so - what was the result?

~~Answers~~ Was it mitigated in
each case? How? Fully mitigated?

Are any of the people who are
involved in the proposed drilling plans,
persons who were involved in other
spills including in Louisiana?

Who - what will they do differently?

Was insurance sufficient to
make the victims whole?

How many lives were lost (injured
and ③ irreparably affected)?

Are any of the people on any of these
persons involved in still being remediated?

~~What are~~ What spills are still
out remediated?

What happened to the fish life?

Is it true that fish were ~~found~~^{caught} dead in the water as a result of these spills?

What is the plan in the proposed drilling that will avoid these hazards?

Who is the proposed insurance carrier?

Has the company committed to insure the project and what are the details of coverage?

Has anyone in the proposed applicant (E & B Natural Resource Management Corp) been or any associate who is or be involved with the oil drilling project been with any other corporation in the Louisiana oil spills of recent years?

~~What?~~ Please name that associate and what their involvement was / is in the Louisiana oil spills?

Did their employees in such oil spills - receive "significant inputs" - as detailed in the City of Houma NDA " and how were they mitigated?

Does the applicant have references to a list of persons who have witnessed the work on industrial and/or oil drilling which was disturbing to the environment and residents, including persons, Air quality,

drainage, Fire Hazard, Safety, flooding, water quality, water supply, soil erosion, compaction, grading, noise, Public Safety facilities - utilities, traffic/circulation, vegetation, reduction of elements of Toxic and hazardous water?

What are the financial statements of ~~the applicant~~ the applicant? ~~that are~~ Will the Financial Resources of the applicant be adequate to handle an oil spill on the ^{site} significant projects that are included in the project of undertaking this project over the 30 year undertaking?

If they are adequate please let the communities including Hermosa Beach have the details of their financial capability or capabilities in plain language without generalities? -

Has attention been directed in the EIR to the fact that if that is a significant impact in Hermosa Beach it will also affect Redondo Beach, Manhatten Beach, El Segundo and perhaps the entire coast of California and Mexico?

Where is the attention directed on this Draft EIR?

for a project which more likely than not
will result in impacting the environment
and lives of people throughout the
something for the good of of the
applicant primarily who appears to have
shown a lack of integrity in its
history, in alleged false advertising
and generated disrespect throughout
the South Bay ~~for~~ area well if the
application is permitted for decades.

I apologize deeply for my poor
handwriting and you may email
me at vic-luis3@gmail.com

if you have a question about anything
I have written. I did not have time to do the ~~the~~
I have retained a copy and can translate it if necessary.

Thank you for considering public
comment and answering the questions.

I also suggest that the primary author
of the EIR be invited to speak at a
public meeting or public meetings
to answer questions that may not have
been answered, or are not clear.

Respectfully submitted -
V. V. ~~its~~ ~~property~~ ~~owner~~
in Manhattan Beach.

Pamela Townsend

From: MICHAEL V LEAHY <snmleahy@msn.com>
Sent: Tuesday, April 08, 2014 12:32 PM
To: Oil Project
Subject: Public Review EIR

My assumption is that E&B Oil is a corporation, meaning that its liability for damages will be limited to the value of the company. Based on that my prior concern regarding the entire duration of the project is the likelihood that a problem, incident, disaster will occur and E&B Oil will not have the financial resources to meet its legal obligations.

By way of example:

Leahy 1

1. who will pay for dismantling of the facility in the event E&B Oil abandons the effort at any time during the project?

2. who will pay for clean up of any above ground, below ground or in water contamination if E&B Oil fails to meet its financial obligations?

3. who will pay for damages arising from the operations (building or drilling rigs collapse, contaminated run off) during the project for accidents, property damage and personal injury other than E&B Oil?

There are any number of adverse events (earthquakes, winter storms such as occurred in 1983) that may and are likely to occur during the project, which if not covered by E&B Oil or other financial protections, such as insurance policies, bonds, that would leave the residents and the city at risk. With the limited liability arising from E&B Oil's incorporation, the residents and city are the ultimate insurers of this project. For the project to be acceptable, considering all of the risks and issues contained in the EIR, there must be financial protections put in place by E&B Oil that protects the residents and city beyond E&B Oil's own resources. The financial benefits to the city do not appear to be sufficient to offset the potential liabilities in the event of E&B Oil's fails to cover the liabilities.

Sincerely,

*Michael V. Leahy
260 29th Street
Hermosa Beach, CA, 90254*

Pamela Townsend

From: Ken Robertson
Sent: Tuesday, April 15, 2014 7:37 AM
To: Oil Project
Subject: FW: HB Oil Draft EIR submission
Attachments: emailing4182030900to903alternativeletter2_pdf4182.zip

Ken Robertson

Director, Community Development Department
City of Hermosa Beach
(310) 318-0242

From: buyer [REDACTED]
Sent: Monday, April 14, 2014 9:57 PM
To: Ken Robertson
Subject: HB Oil Draft EIR submission

Hi Ken,

Please do not publish my email or phone number on the City website or any other method.

Thank you for the opportunity to participate in the Hermosa Beach EIR and CBA process.
Please enter all of my submissions into the administrative record and consider any reference to a Notice of Preparation (NOP) to be equally applied to the Draft EIR.

Please find attached 18 PDF documents (zip) expressing my concerns, opinions and alternative submissions.
The items beginning with LA County Parcel numbers are specific site recommendations.
The two 'Scoping' items are my process concerns.

Please consider all of my past concerns as new concerns for the purpose of the DEIR consideration.

I look forward to further involvement in the process.

Respectfully, Tom Morley

Morely 1

x Modification of calculations based on updated or additional information

Comment: The CBA should be modified to use the 1977 State Lands Commission report, commissioned by the City of Hermosa Beach as the independent baseline of actual production in the most adjacent similar oilfield.

x Additional explanation of assumptions and/or conclusions

Comment: The CBA should be modified to provide responses to public written submissions in NOP and Draft periods. The Public should have access to all of the source data relied upon or referenced in the Draft CBA.

Morely 2

For an abundance of clarity, the Authors neither support nor oppose the proposed Project. In the Authors' opinion, this report presents a neutral and unbiased perspective of the potential costs and benefits of the proposed Project to the City.

Comment: The most 'neutral and unbiased perspective' would be from the State Lands Commission and include actual 35 year 31 adjacent well data. The CBA should be modified to use the 1977 State Lands Commission report, commissioned by the City of Hermosa Beach as an independent baseline of actual production in the most adjacent similar oilfield. All Charts and Tables should include the Redondo Beach baseline as well as the referenced Oil Industry or CBA Authors conclusions. All Oil Industry reports (from E&B in the BRG report) should be considered as potentially biased and/or speculative as they were created for persuading State and Regional approvals, Ballot measure campaigns, Oil Lease sale or Investors evaluation or Lawsuit preparation against the City.

Morely 3

Page 2

A number of alternative production revenue estimates, and additional potential City revenue and cost considerations are discussed herein.

Morely 4

Comment: The CBA should be modified to include alternative production revenue estimates from sources other than the applicant, including all of the City's own independent consultants over 3 decades. My previous NOP submission for the CBA included a request to include six additional potential sources of Oil volume estimates, none of which were incorporated into the Draft CBA or explained in the Draft CBA why they were not included.

Comment: The CBA should use a new baseline Oil Volume throughout the report and provide this data in each Chart and Table contained in the final report. The CBA should be modified to use the 1977 State Lands Commission report, commissioned by the City of Hermosa Beach as an independent baseline of actual production in the most adjacent similar oilfield. This 35 year, 31 well, Redondo Beach North Lease data is the only factual information available which defines the oilfield

Morely 5

Comment: The CBA should be modified to include a 'worst case' revenue estimate and a 'worst case' projection of Oil production volumes and production recovery percentages per year of similar local oilfields.

Morely 6

Comment: The CBA should be modified to include a 'worst case' cost estimate and present a breakeven analysis chart identifying the volume of Oil required for the City to pay all of the costs from the City General Fund.

Morely 7

Page 4

2.1 Purpose of Report

This Cost Benefit Analysis ("CBA") is intended to provide the reader with an estimate of the potential financial costs and benefits of the Project to the City of Hermosa Beach, primarily based on whether voters of the City approve, or do not approve the Project. Within these two potential outcomes a series of alternative scenarios are evaluated and discussed. While this report does not quantify every potential financial impact, it does attempt to quantify the factors that could have a significant impact on City revenues and expenditures. In some cases quantification of potential costs or benefits are beyond the scope of this document, however, some qualitative discussion is provided for consideration. An overview of context of this CBA, and general Project information follows.

Morely 8

Comment: The CBA should be modified to include alternative projections of City revenues including a 'worst case' scenario of Oil volume identified by review and consideration of several independent City paid reports created over the past 3 decades as well as the actual production of the adjacent Redondo Beach oilfield (North Lease) over 35 years which utilized 31 oil wells and redrills.

Page 6

2.4 Limitations of Analysis

The City revenues estimated herein are primarily tied to the potential production of oil and gas from the Reservoir. Given

(i) the general uncertainty of recovery rates for oil and gas projects,

Comment: The 'uncertainty' can be removed for at least one baseline case by the CBA utilizing the actual production data available for the adjacent Redondo Beach oilfield (North Lease) which utilized 31 oil wells and redrills over 35 years. This report should recalculate all to the Charts and Tables using the factual baseline first and comparing all of the 'uncertain' data to the baseline.

Morely 9

(ii) lack of precise test information available on the potential oil and gas Reservoir volume, and

Comment: The 'uncertainty' can be removed for at least one baseline case by the CBA utilizing the actual production data available for the adjacent Redondo Beach oilfield (North Lease) which utilized 31 oil wells and redrills over 35 years. This report should recalculate all to the Charts and Tables using the factual baseline first and comparing all of the 'uncertain' data to the baseline

Morely 10

(iii) general variability in oil and gas prices, projections contained herein should be considered as order of magnitude estimates, rather than predictions of specific results.

Comment: Much of this 'variability' could be alleviated and would be further clarified by including actual data from Redondo Beach production as a known factual volume baseline. Please define 'order of magnitude' as used throughout this CBA report?

Morely 11

Additionally, other areas of analysis are based on a variety of variables, projections, and estimates, which include assumptions that represent the Authors' best estimates. In some cases assumptions are based on limited information.

Comment: Many of these 'assumptions' could be further clarified by the CBA including actual data from Redondo Beach production as a known factual volume baseline.

Morely 12

In all cases the estimates contained herein should be considered as order of magnitude estimates. In areas where qualitative discussion is provided the reader may have to make its own conclusions, informed by this document, as to the potential impacts of the Project.

Morely 13

Comment: The CBA should be modified to include footnote indications which provide links to the source documents which were used as the basis for the assumptions, considerations and the many technical nuances for the calculations and analyses applied to complete the CBA report. The source materials must be released for public review.

The reader is encouraged to review this CBA in its entirety to fully understand all assumptions and the complete context of information presented.

The information herein is presented in a manner to simplify interpretation. There are many technical nuances to the calculations and analyses applied. Notes about various assumptions and considerations required to complete the analyses are provided throughout the document.

Morely 14

Comment: The CBA should be modified to include evaluation of City revenues including a 'worst case' scenario of Oil volume as identified in several independent City paid reports created over the past 3 decades as well as the actual production of the adjacent Redondo Beach oilfield over 35 years which utilized as many oil wells and redrills. All of the data in the CBA is currently extrapolated from self-serving E&B BRG materials.

Page 8

2.6 Project Description

As proposed, the Project is comprised of the drilling and operation of up to 30 oil wells at the location of the City's existing maintenance yard.

2.7 Project Location

For general reference, the proposed Project is located in Hermosa Beach, California. Hermosa Beach is a beach community, located southwest of Los Angeles, and is home to approximately 19,500 residents. The City's overall location within the Los Angeles basin is shown in Figure 1 below.

The two primary site locations relevant to the Project are the Project Site and the New City Yard Site. The approximate locations of the two sites are depicted in Figure 2 below.
Figure 2: Project Site and New City Yard Site Location

The Project as proposed would be developed on the existing City maintenance yard at 555 6th Street ("Project Site"). The Project Site is located at the northwest corner of the intersection of 6th Street and Valley Drive, and is approximately 1.3 acres. As part of the Project, the City's existing maintenance yard would be temporarily relocated to the City Hall property at 1315 Valley Drive. If E&B decides to proceed with Phase 4, a permanent facility is proposed to be constructed immediately south of City Hall on City owned property at 552 11th Place ("New City Yard Site"). For reference, the New City Yard Site is currently leased to a self storage operator.

Comment: The CBA should be modified to include all alternate sites for the Drilling and new City Yard reviewed in the Draft EIR and/or submitted as comments to the Notice of Preparation (NOP) for the EIR and the CBA. Since the EIR is not Final, the site selection has not necessarily been made for the Oil Project or the New City Yard location (per CEQA).

Morely 15

Page 13

Oil Lease

The Oil Lease between the City and Windward Associates, L.P., and GLG Energy, L.P. (dated January 14, 1992, "Oil Lease") provides general terms related to the lease of the Project Site for oil production, as well as the City's royalty and drill site lease rights.

Comment: The CBA should be modified to require response to the public's NOP submissions related to Lease costs, revenues and expenditures.

Section (12)(f) -Lessee is restricted to no more than 30 (oil and gas) wells

Comment: The CBA must not assume the Lease specifies 30 'oil and gas wells' and should be modified to require consideration of the Oil Lease in terms of the City Policy (Oil Code) which defines a "well" as Oil, Gas and Water wells and therefore suggests a modification of CBA projections, Charts and tables based on a total of 30 wells of any type. A well is any hole put in the land surface per the Oil Code.

Morely 16

Section (13)(d)(4) Advances are loaned at the lower of 12% or the prime rate, with interest calculated as simple interest, and solely to be repaid from royalties, paid first from Tidelands royalty as permitted by law.

Morely 17

Comment: The CBA should be modified to include consideration of the Tidelands Trust expenditure limitations as defined by the State (the Trustor) in the Public Trust Doctrine. Payments of loans or advances are not 'permitted by law' to be paid from the City Trust.

Page 15

SLC MOU

The Memorandum of Understanding between the City and the California State Lands Commission (dated May 11, 1993, "CSLC MOU") provides prior acknowledgement of the Oil Lease terms by the CSLC.

Morely 18

Comment: The CBA should be modified to include consideration of the elements specified in the State Lands Commission's MOU which specifies a requirement for the City and Oil Operator to execute an amendment agreed to by the City on 4/30/1993. (MOU #11). The CBA should specify that no allocation of expenses or costs shall be deducted from Tidelands Trust funds except as identified in the MOU or Lease as amended.

This MOU specifies the 1957 Mean High Tide Line as the Tidelands border and

Comment: Tidelands/Uplands production should be divided based on well locations 150 feet west of the strand wall, not the existing 450 feet distance to today's waterline. The CBA should consider total production based on the location and the number of protection wells required fulfilling the MOU conditions (plus the MOU#11 amendment and the Oil Lease itself).

Morely 19

Page 16

BRG Report

The Potential Impact of a Proposed Oil & Gas Development Project on the City of Hermosa Beach Phase I Report (dated March 2013, "BRG Report") was prepared by the Berkley Research Group on behalf of E&B.

Page 16

BRG Report

As potential conflict of interest may be relevant to readers of that document, BRG provided the following statement (on page two): "We were retained by E&B to conduct this analysis. The authors of this report, however, are not allied with E&B..."

The Authors assume that the BRG Report is not prejudiced. Certain differences in methodology, assumptions and conclusions exist between this CBA and the BRG Report, however, the Authors conclude that these differences do not represent discrepancies of fact.

Morely 20

Comment: E&B provided the data and BRG provided the compiled conclusions.

Comment: The most 'neutral and unbiased perspective' would be from the State Lands Commission and include actual 35 year 31 adjacent well data and all other CBA Author calculations and Oil Industry reports (from E&B in the BRG report) should be considered biased and/or speculative. The CBA should be modified to use the 1977 State Lands Commission report, commissioned by the City of Hermosa Beach as an independent baseline of actual production in the most adjacent similar oilfield. All Charts and Tables should include the Redondo Beach baseline as well as the referenced Oil Industry or CBA Authors conclusions.

Morely 21

Comment: Every reference to Oil volume reports utilized by the Draft CBA relies solely on the Oil industry reports included in the E&B BRG report and does not reference a single independent report retained by the City over 3 decades. The Author primarily calculates, based on his experience, the data provided by Intera who was contracted by subcontractors of Shell Oil Company subsidiaries (CalResources and AERA).

Morely 22

Comment: The CBA should be modified to include the consideration of the possibility that the E&B BRG report is biased and is the applicants marketing materials (submitted as part of a project application) and that it can not be relied upon in the CBA for the source data for oil volume, oil location or oil production recovery curve. The CBA should include the public disclosure and public review of the complete source materials utilized by the Author to determine volume, location and recovery rates in order for the public to understand the 'worst case' revenue potential of the oil project.

Morely 23

Page 17

4.0 Potential Project Scenarios

Should voters approve the Project, E&B will first have to secure approvals, and agree to any conditions of approval from other regulatory bodies, including the California Coastal Commission, Division of Oil, Gas and Geothermal Resources ("DOGGR"), South Coast Air Quality Management District (SCAQMD), and CSLC.

Morely 24

Comment: The CBA should be modified to include estimations under existing City laws and regulations of the City costs related to all oil project related approvals from State and Regional agencies. The CBA should allocate those City expenses to the General Fund and include them in Table 39 or identify the City codified source of revenue for those expenses or the Lease or Settlement Agreement section committing E&B payment.

5.0 Oil & Gas Volume Estimates

As part of this CBA, the Authors reviewed existing information on the Reservoir, and prepared an estimate of the volume of recoverable oil and gas. Estimates are based on the professional opinion of a licensed geologist at CGEOIL, LLC on the Kosmont Team. A discussion of the information reviewed, estimation methods utilized, and resulting estimates of recoverable oil and gas follows.

5.1 Prior Reports Reviewed

A number of estimates of the potential oil and gas production volumes recoverable from within the Reservoir have been prepared over the years. The Authors were reliant on these prior reports for underlying information utilized to generate the production volume estimates contained herein. The following reports were reviewed in preparing this CBA:

x Hacker (1984)

x Hacker and Hacker (1986)

x Hacker and Hacker (1988)

x Morris (1993)

x Intera (1996)

x Intera (1997)

References to these reports are made throughout this document, typically by reference to the author and year. In addition to the reports listed above, production volumes based on the Hacker (1998, not reviewed by the Authors) report as listed in Appendix H of the BRG Report are sometimes used in comparative reference exhibits herein.

Morely 25

Comment: The CBA should be modified to include potential City revenues including a 'worst case' scenario of Oil volume identified in several independent City paid reports created over the past 3 decades as well as the actual production of the adjacent Redondo Beach oilfield over 35 years which utilized as many oil wells and redrills.

Comment: The CBA should not include any reference or reliance to the 1998 Hacker report because the CBA states "the Hacker (1998, not reviewed by the Authors)"

Morely 26

Comment: Every reference to Oil volume reports utilized by the Draft CBA relies solely on the Oil industry reports included in the E&B BRG report and does not reference a single independent report. The Author primarily calculates, based on his experience, the data provided by subcontractors of Shell Oil Company subsidiaries (CalResources and AERA Energy).

Morely 27

Comment: The CBA should be modified to include consideration of the possibility that the E&B BRG report is the applicants marketing materials and that it can not be relied upon in the CBA for the source data for oil volume, oil location or oil production recovery curve. The CBA should require the public disclosure and public review of the complete source materials utilized by the Author to determine volume, location and recovery rates in order for the public to understand the worst case revenue potential of the oil project.

Morely 28

Comment: CBA should be modified to incorporate responses to NOP and Draft comments the Final CBA product or responded to with a justification for not incorporating.

Comment: The CBA must not assume the Oil Lease specifies 30 'oil and gas wells'. The CBA should be modified to require consideration of the 1992 Lease in terms of the 1986 City policy (Oil Code) which defines a "well" as Oil, Gas and Water wells and to modify CBA projections based on a total of 30 wells of any type. Any hole put in the surface is a well and the project application exceeds the Oil Lease terms.

Comment: The CBA should be modified to include footnote indications which provide the linked source documents utilized for the assumptions, considerations and the many technical nuances required for completion of the CBA analyses. The source materials should be made available for public review.

5.2 Geologic Setting

The three major zones of oil production in the Torrance Oil field are the Upper Main, the Lower Main, and the Del Amo zones. The Upper Main zone conformably overlies the Lower Main zone and underlies the variable thickness of the Repetto and 'poker chip shale' beds of Upper Miocene age. The uppermost part of the upper Main zone consists of interbedded thin sands and shales. The remainder of the Upper Main zone consists of fractured Puente shale. The Lower Main zone overlies the Del Amo zone and consists of similar sediments as the lower part of the Upper Main zone with thin bedded fine grained sand layers and fractured shales. The Del Amo consists of dark brown, fractured shale with thin interbeds of limestone and dolomite and some thin sands. Oil production is from the fractures and some of the thin sand beds."

Comment: The CBA should be modified to include the true (apples to apples) comparison of Redondo Beach actual proven 35 years of data per zone as a baseline to compare each of the BRG E&B provided Production report. The CBA should adjust each of the various E&B BRG estimate reports to recalculate the estimates with and without the Schist Conglomerate zone. (See Table 3 pg 26) The Author has already determined the Lower Del Amo and Schist Conglomerate zones are unproven and speculative strata for production under Hermosa Beach and that there is a "complete lack of information as to reservoir types, type of fracture system, determination of sands if any, aerial extent, existence of water contacts, and lack of other information" for the Lower Del Amo and Schist Conglomerate zones. The Author must be aware that there was zero production from the Conglomerate/Schist zone in Redondo Beach. These adjusted (non-Schist) numbers must be used in throughout the report for all other projections of revenue to the City. If the CBA continues to use estimates which included with the unproven Schist zone then all of the projections are suspect as an unfair comparison to the known and proven actual production zones in Redondo Beach.

Comment: The CBA should be modified to include the information in the 1977 State Lands Commission report which states that the northwestern extent of the Torrance Oilfield in Redondo Beach is unique to the remainder of the Torrance field by its characteristic of the productive strata shallowing and thinning towards the north west.

Limitations of Data

All the reports evaluated (listed in Section 5.0 above), are based on very limited information of the geology underneath the City. In determining the geology and the possible oil reserves accessible within the City, information from adjacent wells in the City of Redondo Beach were utilized. Some additional wells surrounding the City exist, though they have not been instrumental in defining the geology. Additionally, the information obtained on the nearby wells in the City of Redondo Beach has been limited. Well log information, initial production rates, and some ditch samples exist, but no core description, core analysis, or additional logging information (Gamma, Neutron, etc.) could be located. With these limitations, some of the parameters used in the previous reports are assumed to be correct and utilized in this report as additional information was not available. Morely 34

Comment: The CBA should include analysis which supports the City's fiduciary responsibility to educate the Voters of the potential of a low end oil volume/revenue occurrence.

Comment: The CBA must explain or justify the other estimates which are 2 to 7 times the Redondo Beach North Lease actual 35 year data for the same number of wells from the same local oilfield. The CBA should be modified to include the identification of any available technology which can overproduce Redondo Beach to such a degree. Morely 35

Comment: The CBA should be modified to include the data in 1977 State Lands Commission report, commissioned by the City of Hermosa Beach, which specifically identifies the geologic strata which is productive. The 20 years of actual Redondo Beach data includes a map with productive extraction zones identifying Redondo beach cumulative lifetime data "by well" from 1956 to 1976 for each of the 30 North Lease wells and the same data for every redrill. This is the most adjacent field to Hermosa Beach. The City provided the 1977 SLC Map with volume by well to Curtis Henderson on 4/3/14. The CBA should include data from the DOGGR website which also has complete data for the remaining 15 years "by well/by month" for every Redondo Beach well from 1977 to the 1991 abandonment and plugging for a total of 35 years of actual per well data. I can provide this very detailed data, individually and summarized, for each of the 30 Hermosa Adjacent wells to the Kosmont team. Morely 36

Page 20

Well Course

-Directionally drilled wells such as the ones drilled offshore of the City of Redondo Beach utilize a directional report to determine the location of the well. Measurements are taken down the well to determine lengths and angles along the well path to create the report. The use of declination (using magnetic north rather than true north) is a critical factor in the final report. Many of the wells offshore of Redondo Beach utilized a 16 degree declination for calculating well location. Declination has been shown to change with time; in fact the declination factor for the offshore area of Redondo Beach is now close to 14 degrees. Though many of the wells offshore Redondo Beach should be recalculated with a different declination factor, thereby changing their well courses somewhat, this was not accomplished. Not all of the declination factors could be located for each of the wells utilized in this analysis.

Comment: The CBA should be modified to include the Actual Redondo Beach data for 35 years as a baseline. The CBA should include the 1977 SLC and DOGGR data to complete an investigation of the Redondo Beach wells, to date "not accomplished" for this Draft report and the Author should extrapolate any additional potential volume based on the Redondo Beach actual 35 year 31 well production data rather than the Author extrapolating Oil volumes solely from the E&B BRG provided Intera data (which the Author considered 'mislabeled' and 'not correct' and "cannot be agreed with" Intera data.)

Comment: The CBA should include an explanation of the capacity of 30 wells to attain any E&B BRG provided volume projections based on the potential the location of the well pick up zones and required protection wells.

Comment: The CBA should include an explanation of the capability of the 30 wells to extract the oil volume projected in the Draft CBA which indicated 184 acres uplands for 22%, and therefore 666 acres Tidelands for 78%, for a total of 850 acres which must be drained to accomplish the revenue projections.

CBA Volume Estimate Assumptions

This report makes the following assumptions:

- x The structure of the Torrance field carries into the City of Hermosa Beach
- x The sands in the Upper Main, Lower Main, and Upper Del Amo zones that are present under the City of Redondo Beach continue north into the City of Hermosa Beach
- x Some reservoir pressure exists
- x Reservoir pressure will be an issue with the thin sand layers and lack of pressure support. Oil production performance will decline if pressure decreases sufficiently to form gas caps in the reservoir.
- x Faulting is not complex and has not confined the area into small reservoirs
- x Drainage from the Reservoir under the City to the south (i.e. towards Redondo Beach) has not been significant.

Comment: The CBA should be modified to include all estimates presented in the CBA adjusted to additionally show the a value which removes the Schist Conglomerate percentage because the Author does not include the Schist Zone in the assumptions on page 21.

Comment: The CBA should be modified to include the faulting analysis, noted in the previous paragraph, which "were not incorporated" due to "the limited time allowed for the construction of this report".

Comment: The CBA should consider the 1977 SLC report which includes text, North Lease well Map and Upper Main Zone Map which indicate that there are small reservoirs in the upper main zone. The CBA may alter the assumption that "Faulting is not Complex and has not confined the area into small reservoirs" per the 1977 SLC data.

Page 20

Faulting

-Previous reports have shown some geologic faulting, especially the location of the Newport Inglewood Fault zone on the far western edge of the Project. Due to limited time allowed for the construction of this report, the complexities of determining faulting, and the concept that the faulting would ultimately not change the volumetric model significantly, faults were not incorporated. Morely 43

Comment: The CBA should be modified to complete the faulting analysis which "were not incorporated" due to "the limited time allowed for the construction of this report".

5.3 PRMS Classification System

The Society of Petroleum Engineers, American Association of Petroleum Geologists, World Petroleum Council and other organizations have standardized and determined a petroleum resources management system ("PRMS") in an effort to provide a consistent approach to estimating petroleum quantities, evaluating development projects, and presenting results within a comprehensive classification framework. Morely 44

Comment: The CBA should be modified to include the Redondo Beach actual 35 year production from the Hermosa Beach adjacent 31 wells (north Lease) and incorporate it as the baseline.

Comment: The CBA should be modified to include the classification of all the other E&B BRG reports considered in the CBA in terms of the PRMS Classification for each Zone, (Upper Main, Lower Main, Del Amo and Schist Conglomerate) in terms of the PRMS description of chance of commerciality, with the most certain being classified as "Reserves". The decreasing certainties of commerciality are "Contingent Resources", "Prospective Resources", and "Unrecoverable". The each PRMS category is listed below. Morely 45

Comment: The CBA should specify that all data utilized in the analysis and in the CBA must be available publically for citizen review. The CBA should require the CBA to consider any E&B BRG estimates which included production from the Schist Conglomerate as "Prospective Resources", as defined by PRMS, and therefore specify in all Charts and Tables an additional value (estimate) for the E&B BRG data which indicates a reduced volume without the Schist Conglomerate percentage. Morely 46

Page 22

Prospective Resources

-Prospective Resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both an associated chance of discovery and a chance of development. Prospective Resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity.

Page 22 Prospective Resources

Morely 47

Comment: The CBA should be modified to classify any Oil volume projections in the Schist Conglomerate to be considered "Undiscovered accumulations" as shown by the 1977 SLC report and DOGGR 1977 to Present actual Redondo Beach data which shows proven recovery only from three zones (Upper Main, Lower Main and Del Amo)

Page 22 Unrecoverable

-Unrecoverable is that portion of Discovered or Undiscovered Petroleum initially in place which is estimated, as of a given date, not to be recoverable by future development projects. A portion of these quantities may become recoverable in the future as commercial circumstances change or technological developments occur; the remaining portion may never be recovered due to physical/chemical constraints represented by subsurface interaction of fluids and reservoir rocks.

Morely 48

Comment: The CBA should be modified to include the limitation of the Oil Lease, which, "as of a given date" (1992) specifies only 30 wells maximum (defined by the City Oil Code as Oil, Gas or Water wells. The CBA should calculate the production potential of each of the 30 wells, including protection wells, in a determination of the portion of the oilfield which could be deemed "not to be recoverable by future development projects" i.e. the E&B proposed project.

Comment: The CBA should be required to verify how much of the projected 850 acres could be accessed by 30 wells, including protection wells, and adjust projected recovery volume as limited by time and the number of wells. The location of the SLC MOU required protection wells must be considered by the CBA in determination of recoverable Oil. If there are not enough wells to recover the volume then the CBA should present a 'worst case' revenue projection for the attainable oil only.

Morely 49

Comment: The CBA should be modified to consider the Schist Conglomerate zone for inclusion in the "Unrecoverable" category of reserves because there are not a sufficient number of wells allowed by the Lease to assign any of the limited wells to an unproven and undiscovered zone.

Morely 50

5.4 Classification of City Reservoir

It is the Authors conclusion that the oil and gas in the Reservoir should be categorized as Contingent Resources. A number of criteria are missing to consider classifying the oil and gas under the City of Hermosa Beach as Reserves. Most notably, the criteria of Evidence that legal, contractual, environmental and other social and economic concerns will allow for the actual implementation of the recovery project being evaluated has not been met. However, the hydrocarbons under the City are part of the Torrance Oil Field which has proven in the past and continues to be a commercial success. Additionally, the continuation of the geologic structure, the sands, and the same oil/gas type is present north of the City of Redondo Beach. Even with very little information present, the oil and gas under the City of Hermosa Beach would not be considered a Prospective Resource since it is still part of the same oil field as is in the City of Redondo Beach.

5.4 Classification of City Reservoir

Morely 51

Comment: The CBA should be modified to include revenue projections which include only the three zones which were actually productive in Redondo Beach as "Contingent Resources" and exclude the projected revenue from the Schist Conglomerate because it may be classified as "Prospective Resources" or "Unrecoverable" based on available history.

Page 22 and 23

5.5 Reservoir Estimate Probability

Typically, evaluations require an application of a set of forecast conditions (costs, prices, etc.) that are consistent to estimate quantities recovered. The PRMS states in part that: "In many cases, a combination of approaches is used. Use of consistent terminology promotes clarity in communication of evaluation results. For Reserves, the general cumulative terms low/best/high estimates are denoted as 1P/2P/3P, respectively. While the categorization criteria are proposed specifically for Reserves, in most cases, they can be equally applied to Contingent and Prospective Resources conditional upon their satisfying the criteria for discovery and/or development. For Contingent Resources, the general cumulative terms low/best/high estimates are denoted as 1C/2C/3C respectively.

x There should be at least a 90% probability (P90 or 1C) that the quantities actually recovered will equal or exceed the low estimate.

Comment: The CBA should be modified to consider Redondo Beach actual production records for 35 years in the North Lease 31 wells as the baseline and to apply the "90% probability (P90 or 1C) that the quantities actually recovered will equal or exceed the low estimate." and possibly adjust the CBA Low estimate.

Morely 52

x There should be at least a 50% probability (P50 or 2C) that the quantities actually recovered will equal or exceed the best estimate.

Comment: The CBA should be modified to consider Redondo Beach actual production records for 35 years in the North Lease 31 wells as the baseline and to apply the "50% probability (P50 or 2C) that the quantities actually recovered will equal or exceed the CBA High estimate." and possibly adjust the CBA High estimate

Morely 53

x There should be at least a 10% probability (P10 or 3C) that the quantities actually recovered will equal or exceed the high estimate."

Comment: The CBA should be modified to consider Redondo Beach actual production records for 35 years in the North lease 31 wells as the baseline and to apply the "10% probability (P10 or 3C) that the quantities actually recovered will equal or exceed the high estimate." and possibly adjust the CBA High estimate

Morely 54

This report has taken into account the uncertainty in resource estimates and has reported a range of potential results based on the assumptions as stated for 1C, 2C, and 3C.

Comment: The CBA should be modified to consider Redondo Beach actual production records for 35 years in the North lease 31 wells as the baseline projection throughout the financial evaluation in the CBA in order to remove the "uncertainty in resource estimates" and to provide an 'actual data' comparison for each of the 'potential results'.

Morely 55

Page 23

5.6 Volume Estimating Process

In preparing the volume and production estimates utilized herein, the Authors utilized the following process:

- x Input well name, well API number, well surface location, Kelly height
- x Input well directional survey
- x Scan well log information and calibrate
- x Determine well marker information (Top Main, Lower Main, Del Amo, Lower DAMo)
- x Construct structure maps
- x Determine gross thickness maps
- x Determine oil sand pay in each well
- x Construct oil sand pay maps
- x Determine volumetrics of Top Main, Lower Main, and Upper Del Amo zones
- x Determine possible well production by time Morely 56

Comment: The CBA should be modified to consider Redondo Beach actual production records for 35 years in the North lease 31 wells as the baseline volume in the CBA and any additional projections should use this baseline data in the calculations identified in section "5.6 Volume Estimating Process". The newly available data included in the original and complete 1977 State Lands Commission report, which was commissioned and paid for by the City of Hermosa Beach, was only discovered on 3/24/14 (10 months after the Public Records request) and provided to Curtis Henderson and the public (Mr. Morley) on 4/3/14. The new information includes the SLC map of production location and volume from 1956 to 1976 and the SLC map of the Upper Main Zone strata characteristics. This 1956-1976 data plus the 1977 to Present DOGGR data per well were shared with Curtis Henderson on 4/3/2014 and 4/10/14, respectively, and therefore was not available to be incorporated in the Draft CBA.

Page 23

5.7 Reservoir Volumetrics

Intera reduced the net/gross ratios from 0.3 for all the zones to the following:

"Original oil in place (OOIP) layer net/gross ratios were adjusted to obtain the initial oil in place indicated by the material balance studies performed by Intera the net/gross ratios for the three zones were 0.14, 0.17, and 0.06 for the Upper Main, Lower Main, and the DelAmo respectively."

Comment: The CBA should be modified to consider Redondo Beach actual production records for 35 years in the North lease 31 wells as the baseline volume in the CBA. This new data may be a better way to complete a more comprehensive evaluation. We now have the actual 'original' 1977 SLC independent (non-Oil industry) report and maps, including actual production volumes of oil, gas and water plus the Maps of well drainage zones and map of Upper Main zone geological characteristics which should be utilized in an expanded CBA In my conversations with Curtis Henderson, Curtis emphasized his inability to complete reserve estimates due to lack of time, lack of information and lack of possession of the E&B BRG actual hardcopies of the reports as well as other data limitations. Curtis was only allowed to visit the reports in a Law Office and to make hand notes he could take away from the law offices for future consideration. Morely 57

Page 23

5.7 Reservoir Volumetrics

Morely 58

Comment: The CBA should be modified to include actual recovered oil in the Redondo Beach field with emphasis on the actual ratio derived from the Tidelands and the Uplands compared to Intera 93%/7% and CBA Author 78%/22%. The CBA should adjust all of the financial calculations, Charts and Tables in the CBA to reflect the recalculated Redondo Beach probable split to the Tidelands Trust Fund and the General Fund.

A determination of the oil volumes in the Lower Del Amo and the Schist were not accomplished. The complexities for both zones and the complete lack of information as to the reservoir types, type of fracture system, determination of sands if any, aerial extent, existence of oil water contacts, and lack of other information did not allow for a determination of an oil volume. Additional discussion is provided in the note to Table 3 on page 26.

Separately, in the Intera 1996 report, one of the variables used to determine OOIP for each of the major zones appears to be mislabeled, the value of the variable is not correct, or the variable was not used properly. The logic of determining OOIP within the Intera reports was maintained for calculations in Table 1 above, but cannot be agreed with at this time.

Morely 59

Comment: The CBA should be modified to remove the Schist volume estimates and separately identify the non-Schist volume estimates by adjusting the E&B BRG projections and identifying the Non-Schist remainder. The CBA should use the actual Redondo Beach data from 35 years and 31 adjacent border wells in the North Lease as the baseline instead of the 'mislabeled' and 'not correct' and "cannot be agreed with" Intera data.

Page 24 and 25

5.8 Recovery Factor

The recovery factor is total amount of oil that can be recovered from the Reservoir relative to the overall Reservoir volume. The recovery factor is based on many variables, though the key ones are capital investment costs (well, facilities, etc.), cost of operations (taxes, personnel, lifting fluid to surface, processing, etc.) and the return on the investment (price of oil, oil production, etc.). The operator will bear all capital and most operational costs for this Project.

Morely 60

Comment: The CBA should consider the limitation in the Lease of only 30 wells to access all of the CBA indicated 850 acres of the extent of the oilfield (Uplands 184 acres for 22% + (est.) 666 acres Tidelands for the other 78% equals 850 total acres). The CBA should specify how much Oil volume can be recovered in these oilfield characteristics by 30 wells, including consideration of productivity of the required locations for the SLC and Oil Lease required protection wells. The CBA should provide a potential well recovery map of the Tidelands and Uplands in order to identify the subsurface location of the 30 wells, including the protection wells.

Page 24 and 25

5.8 Recovery Factor

The conclusion of the 1997 Intera report stated:

"Based on analogy with the Redondo Beach accumulation, Hermosa Beach can be developed effectively by a limited number of horizontal wells. The oil recovery by a horizontal well drilling program could be as high as 21% of the initial oil in place compared to the 8.6% recovery with [that] was obtained in the Redondo Beach offshore reservoir using vertical and slanted wells."

Morely 61

Comment: The CBA should reference in the text the fact of the Redondo Beach wells were actually developed with similar horizontal/directional technology proposed by E&B, contrary to the Intera conclusion, and that Hermosa Beach would not benefit from an improved production ratio by utilizing different drilling techniques. The CBA should identify an estimated percentage gain in productivity by E&B procedures and provide other local oilfield evidence that process changes actually improve recovery. The CBA should report that the E&B project application and DEIR does not include performing waterflooding or provide any source of the water for waterflooding.

Page 25

5.9 Estimated Reservoir Production

Based on the previous discussions in this section, the Authors estimate the production from the Reservoir as follows:

Table 2:

Morely 62

Comment: The CBA should consider using the 1977 SLC and DOGGR data to determine the Tidelands / Uplands split. The allocation of the Reservoir between the Uplands and Tidelands calculated in Table 2 (78.3% Tidelands and 21.7% Uplands) is currently used as the basis of City royalty and revenue calculations throughout the entire Draft CBA report and indicates an unexplained variance to the 1996 Intera source data split of (97% Tidelands and 7% Uplands).

Table 3

Morely 63

Comment: The CBA should include the Redondo Beach actual production records for 35 years in the North lease 31 wells as the baseline volume in the CBA and calculate all cost benefit charts, tables and analysis based on actual. The Redondo Beach North Lease is the only proven data and all E&B BRG estimates are only projections.

Comment: The CBA should be modified to remove the Schist volume estimates and separately identify the non-Schist volume estimates by adjusting the E&B BRG projections and identifying the Non-Schist remainder. The CBA should use the actual Redondo Beach data from 35 years and 31 adjacent border wells in the North Lease as the baseline instead of the 'mislabeled' and 'not correct' and "cannot be agreed with" Intera data.

Morely 64

Page 25 Table 3

Morely 65

Comment: The CBA should be modified include E&B BRG (Morris, Hacker or any other projection) applicant estimates only if the CBA team can have full possession of each referenced report and that the public has the opportunity to review the same reports.

Comment: The CBA should not include any reference or reliance to the 1998 Hacker report because "the Hacker (1998, not reviewed by the Authors)" and the public has not been allowed review of that specific report.

Morely 66

Page 26

5.9 Estimated Reservoir Production

The Authors assumed the figures from the Applicant also include production assumptions for these zones. Pursuant to information in the BRG Report, Hacker (1988) "noted the possibility of developing substantial reserves from the 'Nodular Shale' and the Schist Conglomerate sections of the City's underground oil and gas reservoir. As discussed in Section 5.7 above, a determination of the oil volumes in the Lower Del Amo and the Schist were not accomplished as part of this CBA. The complexities for both zones and the complete lack of information as to the reservoir types, type of fracture system, determination of sands if any, aerial extent, existence of oil water contacts, and lack of other information did not allow for a determination of an oil volume. For reference and scale, pursuant to Table 1 of the BRG Report, Hacker (1988) estimated that approximately 10.3 million barrels of a total 30.4 million barrels could come from the Schist Conglomerate Zone (33.9% of total).

Morely 67

Comment: The CBA should be modified consider the Schist Conglomerate Zone (33.9% of total) as 'Prospective resources' or 'Unrecoverable' per PRMS criteria based on the above opinion of the Author and the limitation to 30 wells maximum in the Oil lease.

Page 25 and 26

5.10 Well Production Curve

Morely 68

Comment: The CBA should be modified to consider Redondo Beach actual production records for 35 years in the North lease 31 initial wells and redrills as the baseline volume in the CBA and in the consideration of ongoing projected revenues.

Table 4: Type Well Factors by Case

Expectations are that technology improvements (horizontal wells, highly deviated wells, water injection, etc.), and redrills will improve the recovery and change the natural decline of oil production. With respect to redrills, under the EIR, up to 30 redrills may be accomplished over the life of the Project. A redrill is the utilization of an existing well that has previously been drilled, completed, and has been on production or injection. The existing well is abandoned and redrilled to either the same or new location.

Morely 69

Comment: The CBA should be modified to consider only two redrill scenarios as presented in the DEIR, first no redrills 'anticipated by the applicant' and second the 'worst case analysis of "up to 30 redrills could occur over the life of the Proposed Oil Project, with up to five re-drills occurring in any given year" see DEIR (page 2-59) (6 years of 150 days each of additional 24hr/day 7 days a week continuous drilling)

Table 4: Type Well Factors by Case

Morely 70

Comment: The CBA should reference in the text the fact of the Redondo Beach wells were actually developed with similar horizontal/directional technology proposed by E&B, contrary to the Intera conclusion, and that Hermosa Beach would not benefit from an improved production ratio by utilizing different drilling techniques. The CBA should identify an estimated percentage gain in productivity by E&B procedures and provide other local oilfield evidence that process changes actually improve recovery. The CBA should report that the E&B project application and DEIR does not include performing waterflooding or provide any source of the water for waterflooding.

Comment: The CBA should be modified to include the consideration of the Oil Lease terms which allows the Oil operator to "bank" 5400 days of potential additional redrill days which is six times more than the 'Worst Case' 900 days of additional redrills. This consideration of 900 to 5400 days of redrills should be used by the CBA in the property value evaluation section because the 24 hour a day 7 days a week drilling will impact the sales rate and the sales price for those who must sell immediately.

Morely 71

Comment: Table 4 redrills are incorrect as noted in the DEIR and project application.

Morely 72

Page 28

Figure 7

Comment: The CBA should be modified to include a Chart which considers only two redrill scenarios as presented in the DEIR, first no redrills 'anticipated by the applicant' and second the 'worst case analysis of "up to 30 redrills could occur over the life of the Proposed Oil Project, with up to five re-drills occurring in any given year" see DEIR (page 2-59) The CBA should create an accurate representation in Figure 7 of 6 different years of 5 redrills..

Morely 73

Comment: The CBA should be modified to use the most accurate expected production curve in all of the calculation for revenue over time and in a breakeven analysis of all known potential costs, losses and expenses allocated to General Fund revenue. The CBA should be modified to be required to use the Redondo Beach actual data per well available from the 1977 SLC report and DOGGR data instead of exclusively using E&B BRG data

Morely 74

Page 34

7.0 City Oil & Gas Revenues

7.1 City Revenue Formula

The City is entitled to a royalty share of any oil and gas produced from the Reservoir. The calculation of the royalty is based on whether the oil and gas is produced in the Uplands or Tidelands, and then the City's royalty share of produced volumes from each area. The allocation of production between Tidelands and Uplands is based on the recoverable oil volumes in Table 2 on page 25, which estimates that 78.3% of production will be from the Tidelands, and the remaining 21.7% will be from the Uplands.

Page 34

7.0 City Oil & Gas Revenues

7.1 City Revenue Formula

Morely 75

Comment: The CBA should consider the 1977 SLC and DOGGR data to determine the Tidelands / Uplands oil volume split.

Tidelands Revenue

Under the Oil Lease, the City's Tidelands royalty is 18-2/3% of all oil and gas produced from the Tidelands, less a 3-1/3% grant to MOC under the Municipal Corporation Grant Deed in the Settlement Agreement, a net royalty of 15-1/3%. In addition, the Oil Lease stipulates, and the CSLC MOU appears to endorse, that 37.50% of City Tidelands royalty shall go to the City's General Fund as a drill site lease payment.

Morely 76

Comment: The CBA should be modified to identify more clearly the Tidelands Trust expenditure limitations as defined by the State (trustor) in the Public Trust Doctrine. Tidelands Trust funds can only be spent on expenditures which directly service the all beneficiaries, i.e. all of the Citizens of the State and none of the listed costs, losses or expenses noted in the CBA benefit all of the citizens of the State.

Comment: The CBA should be corrected to reflect that the 2012 agreement (assignment) for payment of 3.33% of the City royalty share to Macpherson was not contemplated by the 1993 MOU with the SLC. The assumption that the assignment is not to the benefit of all State Citizens (the beneficiaries of the trust) and therefore must be paid out of City General Funds would be in line with the City's Grantee fiduciary responsibility to comply to the terms of the trust and it must be assumed that the City would not act to risk the reversion of Hermosa's beaches and waters back to the State 1919 Grant by breach of the duties in the 1919 Grant.

Morely 77

Figure 14:

Assumed Land Ownership Distribution

Owner	Acres Owned	% of Total
City	43.83	23.83%
School District	5.35	2.91%
Other	134.77	73.26%
Total Acres	183.95	

Morely 78

Comment: The CBA should be modified to create an accurate representation (Map) of both the Tidelands and Uplands projected Oil Recovery surface and/or subsurface area.

Comment: The CBA should be modified to identify the source of the 184 acre data for 21.7% of the oil production and of the (estimated 666 Tidelands acres) for the remaining 78.3% of the production.

Morely 79

Comment: The CBA should be modified to include an explanation of how the Tidelands oilfield could extend farther northward for the required (est. 666) acres offshore than the distance the CBA designated 184 acres Uplands would extend northward.

Morely 80

Figure 14:

Assumed Land Ownership Distribution

Morely 81

Comment: The CBA should be modified to identify the number and location of the well extraction zones both Tidelands and Uplands so that homeowners can become aware if they are identified as "Other" royalty owners and have the potential for financial gain.

Comment: The CBA should be modified to consider the Oil Lease limitation of 30 wells maximum and the volume potential of each well and an explanation if 30 wells and related the DEIR indicated 30 redrills could potentially produce the full projected oilfield recoverable volume.

Morely 82

Comment: The CBA should be required to consider using the 1977 SLC and DOGGR data to determine the Tidelands / Uplands production split (using Redondo Beach North Lease and the adjacent onshore wells) in Redondo Beach and show a comparison to the CBA 78%/22% assumed split.

Morely 83

Comment: The CBA should be modified to project the well spacing required to attain the volume projection in comparison to Redondo Beach Actual well spacing.

Morely 84

Comment: The CBA should be modified to include a map of possible well locations and probable well locations based on the specific Oil Lease terms which specifies clearly defined well spacing requirements and protection wells for Oil and Gas wells. The CBA report should not speculate on changes to the Lease in the future.

Morely 85

Comment: The CBA should be modified to include an explanation of any variation from Oil industry standard 10 acre spacing preferences and identify the well spacing that 30 wells would require to produce the full volume estimated in each volume projection presented in the CBA.

Morely 86

Page 36

Figure 15

Calculation of City and School District Share of Oil and Gas Production

Comment: The CBA should be modified to include consideration of the Tidelands Trust expenditure limitations as defined by the State (the Trustor) in the Public Trust Doctrine. The 2012 agreement for payment of 3.33% to Macpherson was not contemplated by the 1993 MOU with the SLC. The assumption that the assignment is not to the benefit of all State Citizens (the beneficiaries of the trust) and therefore must be paid out of City General Funds would be in line with the City's Grantee fiduciary responsibility of the trust and would not risk reversion of Hermosa's beaches and waters by inappropriate performance to the terms of the 1919 Grant.

Morely 87

Comment: The CBA should be modified to include modification of line 2 and 3 in the City Tidelands category and shift any reference to a 3.33% Macpherson share to the City Uplands category in the CBA calculation.

Morely 88

Page 37

7.2 Projected City Revenues

Based on the production estimates discussed in Section 5.0, pricing estimates discussed in 6.0, and the City's royalty and revenue rights discussed above, the City's total oil and gas revenue was projected as shown in Table 7 below. For reference the table includes estimates of gross production revenue, the City Tidelands share, the City Uplands share, and the combined total. The figures in Table 7 include revenues from both oil and gas revenues with oil revenues generally comprising 98 -99% of total revenues, and gas revenues the remaining 1 -2%. Additional details of revenue estimates by year are provided in Appendix B. For reference and scale, the City's Fiscal Year 2013-14 budget is approximately \$30 million.

Page 38

Table 7: City Oil & Gas Revenue Projections

Comment: The CBA should be modified to include in Table 7 and Table 8 a projection based on Redondo Beach actual 35 year production from 31 wells in the North Lease as a baseline. (78%/22% split)

Morely 89

Comment: The CBA should be modified to include alternate Tables to recalculate the data based on the actual Tidelands/Uplands split derived from Redondo Beach actual data (Redondo beach North Lease adjacent wells).

Morely 90

Page 39

7.3 Restrictions on Use of Revenues

Uplands restrictions

To the extent that City Code is not modified, the use of Upland revenues to fund permanent relocation of the City maintenance yard contemplated in Section 11.0 would require supplanting other General Fund revenues. The net impact to the Uplands / General Fund would likely remain the same, however, the source of funding from within the General Fund would vary.

Morely 91

Comment: The CBA should define what is meant by the term supplanted. The CBA should be modified to include identification of which General Fund revenues could be 'supplanted'.

The CBA should use as a guide Appendix 1 and 2,

Hermosa Beach Fiscal Revenues, 01/15/2014,

Hermosa Beach Downtown Core revitalization Strategy, Market and Economic Analysis.

The major categories include

Property Tax 57%,

Utility Tax 12%,

Sales Tax 12%,

Other Tax 5%,

Occupancy tax 9% ,

Franchise Fee 3.5% ,

Property Transfer 1%.

Excess Tidelands Revenues

In addition to limitations on use provided through common law, some State Tidelands Grants provide that every three years, 85% of Tidelands fund balances in excess of \$250,000 shall be diverted to the California State General Fund, and the remaining 15% shall be retained by a city as a reserve. Funds being reserved for future capital improvement projects or bond payments are not typically considered excess revenues. To the extent that a city is unable to find appropriate uses for Tidelands oil and gas revenues, a significant portion of such funds may be diverted to the State.

The Authors did not find excess revenue provisions that would apply to the City's Tidelands Grant, or the City's Tidelands Trust Fund.

Morely 92

Comment: The CBA should at a minimum be required to provide the specific State Code number which applies to 'Excess Tidelands Funds'.

Comment: The CBA should be modified to include identification of the specific application to Hermosa Beach of this 'Excess Tidelands Funds' provision instead of leaving the issue unresolved. The CBA should create a Table, similar to Table 39, which reflects to potentiality of 85% of the Tidelands Trust reverting to the State and the Remaining 15% maintained in the Tidelands Trust.

Morely 93

Comment: The reverting to the State of the largest half of all the Oil revenue must be clearly stated in the CBA as it would be an important consideration for the Voters. The Author statement that they 'did not find' evidence in the grant is not a definitive answer to the question of whether the 85% Tidelands Trust reversion rule applies to Hermosa Beach.

Morely 94

Page 43

7.4 Minimum Lease Payments

Project Site Value

Morely 95

Comment: The CBA should be modified to include the City Yard property value in Section 9 of the CBA, Direct City Costs, and incorporate the loss of liquidity of the site as a potential cost to the City.

Comment: The CBA should be modified to include the City Yard property value as an expense in Table 39.

Morely 96

Comment: The CBA should be modified to include the New City Yard property value in Section 9 of the CBA, Direct City Costs, and incorporate the loss of liquidity of the site as a potential cost to the City.

Morely 97

Comment: The CBA should be modified to include the New City Yard property value as an expense in Table 39.

Morely 98

Page 49

8.0 Other Direct Revenues

8.1 Oil Lease Property Taxes

As shown in Table 12 and Table 13 above, the Authors estimated the initial (2016) assessed value of E&B oil rights to be approximately \$144 million based on the CBA Expected case, and up to approximately \$534 million based on the Applicants' production estimates in the EIR. For reference, these values are noticeably different as while the estimated production revenues are less under the CBA Expected scenario, the initial Project costs are not different. The Authors are continuing to work with the LACOA on assessed value estimates, and anticipate an update to these figures as part of the final CBA.

Morely 99

Comment: The CBA should be modified to include an estimate of the initial (2016) assessed value of E&B oil rights be calculated on Redondo Beach actual 35 year, 31 North Lease oil volumes as a baseline and incorporate this data into Table 14.

Page 50

8.3 School District Revenues

Comment: The CBA should be modified to include in Table 15 and Table 16 a projection based on Redondo Beach actual 35 year production from 31 wells in the North Lease as a baseline and Redondo Beach Tidelands/Uplands (Redondo Beach North Lease adjacent wells) split.

Morely 100

Page 54

9.0 Direct City Costs

9.3 Permanent Relocation of Maintenance Yard

One of these options includes a below grade structure accommodating 97 parking spaces (net), the other does not. The Authors understand the estimated cost of the supplemental parking option is approximately \$18.8 million, and pursuant to the Permanent City Yard Relocation Cost Estimate, the option without supplemental parking is estimated to cost approximately \$10.0 million (\$2014, including New City Yard Site remediation).

Morely 101

Comment: The CBA should be modified to include the allocation of the \$8.8 million estimate for the 97 parking spaces expense to either the Tidelands Fund or City General Fund because the parking replacement is a direct responsibility to the City as mandated by the Coastal Commission in City agreements. There is no agreement with E&B to pay this expense and no Oil Project Fee in existing City Code to pay for parking spaces.

Comment: The CBA should be modified to include the \$8.8 million estimate for the 97 parking spaces as an expense in Table 39.

Morely 102

Page 55

9.4 Displacement of Storage Site

“...the value of the improvements would be approximately \$1.4 -2.1 million; a total of approximately \$3.5 -5.6 million including the underlying land. Should the City maintenance yard not be relocated to the New City Yard Site, the City could conceivably sell this property to raise capital, if desired.”

Morely 103

Comment: The CBA should be modified to include the City Yard property value in Section 9 of the CBA, Direct City Costs, and incorporate the loss of liquidity of the site as a potential cost to the City and a loss of marketability at current value and the loss of potential of appreciation as reduced future value after 35 years of Oil production on the site. The CBA could alternatively produce a market value estimate of abandoned 30 well, 35 year Oil sites as compared to adjacent properties which were not oilsites and include the difference as a cost in Table 39. See CBA page 44, section 7.4

Comment: The CBA should be modified to include the City Yard property value as an expense in Table 39.

Morely 104

Comment: The CBA should be modified to include the New City Yard property value in Section 9 of the CBA, Direct City Costs, and incorporate the permanent loss of liquidity of the site as a potential cost to the City and a permanent loss of marketability.

Morely 105

Comment: The CBA should be modified to include the New City Yard property value as an expense in Table 39.

Morely 106

For reference, in the cashflow analysis in Section 11.1 the present value of rent forgone over the life of the Project through the relocation of the City maintenance yard was estimated to have a present value of approximately \$6.4 million.

Comment: The CBA should be modified to include additional years of lost rent because the New City Yard would not reasonably be moved again in the future and the loss of rent would be permanent at \$250,000 per year or more after 35 years.

Morely 107

Rent forgone after the Project was not included as the Project Site will ultimately be returned to the City, and could essentially replace or exceed the lost income stream after the completion of the Project.

Comment: The CBA should include a modification of the statement that “the Project Site will ultimately be returned to the City, and could essentially replace or exceed the lost income stream after the completion of the Project” because the New City Yard would not reasonably be moved again in the future in order to accommodate such a potentiality of replacing or exceeding additional years of lost rent. The CBA could alternatively produce a relocation estimate of the removal of the New City Yard and apply that cost to Table 39.

Morely 108

Page 59

9.7 Fire Service

It is the Authors' understanding that E&B would be responsible for compensating the City for the cost of additional service capacity of the City's Fire Department and/or mutual aid agreements necessary as a result of the Project.

Comment: The CBA should be modified to include the allocation of the \$16.5 million estimate for the Fire Service expense to either the Tidelands Fund or City General Fund because the Fire Service is a direct responsibility of the City.

Morely 109

Comment: The CBA should be modified to include the specific source of the \$16.5 Million dollars with consideration of existing City Laws and regulations or an alternative payment requirement under E&B's existing responsibilities indicated in the Oil Lease, Oil Code, Conditional Use Permit or Settlement Agreement.

Morely 110

Comment: If the CBA cannot find such a payment method under existing laws or agreements then the \$16.5 million should be included in Table 39 as a City Cost rather than being left as an unassigned expense. The Voters are the decision makers and deserve a resolution to this issue in the CBA.

Morely 111

Page 64

9.9 Property Tax Revenue

Table 21 Impact to City Property Tax Receipts of Hypothetical Impairment Thresholds
PV (of Loss) over 35 years \$ (430,000) \$ (1,900,000) \$ (5,300,000) \$ (10,170,000)

Comment: The CBA should be modified to include as a City Cost in Table 39 the allocation of the \$0.43 to \$10.17 million estimate for the reduction of City Property Tax Receipts to either the Tidelands Fund or City General Fund.

Morely 112

Comment: The CBA should be modified to include a Table similar to Table 39 which specifies the 'Worst Case' analysis of \$10.9 million Property Tax Losses under each of the various scenarios above.

Morely 113

Page 67

10.4 City Financing if Project Approved

Comment: The CBA should be modified to include an assumption that the City does not chose to utilize it's \$6 million reserve or chooses to retain the reserve for an Oil Emergency Fund until after the dangerous development phase is complete.

Morely 114

Comment: The CBA should be modified to include an assumption that the City does not chose to utilize it's \$6 million reserve except to supplement Oil revenue contributions to the \$6 million Emergency Fund in years 4 thru 14 when the Oil revenue is required to fund a \$6 Million Oil Emergency Fund.

Morely 115

Page 68

10.5 City Financing if Project Not Approved

Morely 116

Comment: The CBA should be modified to include an assumption that E&B is not due any payment and has not lost the opportunity for a Project Approval until their last opportunity for a voter's approval has been rejected.

Comment: The CBA should be modified to include an assumption that the \$17.5 million is not a required payment to E&B if E&B retains their rights to the Lease and retains their right to a future re-vote on approval of a project.

Morely 117

Page 79

11.0 Net City Revenues

In this section calculations of net projected City revenues are provided under various scenarios assuming the Project is approved, or the Project is not approved. These calculations are based on analyses throughout this document, and prior sections can be referred to for additional information and context.

11.1 Estimated City Cashflow If Project Approved

In Table 23 through Table 27 summary calculations of net City revenues should the Project be approved are provided. Additionally, in Table 28 a sample calculation of the annual cashflow for the CBA Expected Case is provided (assuming advances are utilized). In each case, the full use of the City's approximated \$6.0 million set aside was assumed.

Morely 118

Comment: The CBA should be modified to include a present value breakeven analysis starting with the list of all of the expenses the City would potentially incur based on the terms of the existing laws, existing fees and existing terms of the Lease and Settlement Agreement and a calculation of all sources of revenue required to pay for the total expenses.

Comment: The CBA should be modified to include a present value breakeven analysis from the perspective of the number of barrels of Oil that would be required to be produced to pay for all of the expenses the City would potentially incur based on the terms of the existing laws, existing fees and existing terms of the Lease and Settlement Agreement.

Morely 119

Comment: The CBA should be modified to include new Tables similar to Table 23 through Table 28 which include a comparison to Redondo Beach Actual 35 year production volume for the 31 well in the North Lease with Tidelands/Uplands split (using North Lease adjacent Uplands wells).

Morely 120

Comment: The CBA should be modified to include all costs, losses and expenses identified in Section 9 and the other revised CBA elements be included in Table 23 through Table 28 and that all allocations be reduced from the General Fund if not authorized for Tidelands trust expenditure in the City's 1919 Tidelands grant or pre-approved under existing law.

Morely 121

Comment: The CBA should be modified to include Table 23 through Table 28 be modified to indicate the 85% reversion of Tidelands Funds to the State unless otherwise proven not to apply to the Hermosa Beach Tidelands Trust Fund under current law.

Morely 122

Please submit these suggestions in the administrative record for the HB Oil Project.

Tom Morley

To: Ken Robertson, From: Tom Morley 04/13/2014

Please consider this a submission to the Oil Cost/Benefit Analysis .

Please submit this submission into the administrative record of the E&B Oil Project.

While reviewing the Hermosa Beach Oil Lease No.2, incorporated into the E&B Settlement Agreement, and available on Herмосabch.org, I noticed that there are activities allowed by an Oil Operator which must be addressed in the Cost/Benefit Analysis document. Please consider all of these approved and potential activities as if they will be performed in order to provide a complete investigation of the potential significant financial impacts of any Oil Project as contemplated and agreed per the terms of the Lease.

Morely 123

A. Any and all financial projections must be limited to the terms of the Lease. As identified in the EIR as an entitlement, the assigned Lease specifically defines a “30 well maximum” limitation and the City’s Oil Code defines a “well” as Oil, Gas or Water wells and therefore any Cost/Benefit Analysis must be based on this Lease Limitation as approved by the State Lands Commission. If the proponents 34 or 35 well project configuration is used then the tidelands wellbottoms can not be counted in your revenue projections without the prior reconsideration by the State Lands Commission. The City, as trustee, cannot allow Oil and Gas production access to the Tidelands in breach of the SLC terms of approval without risking the loss of all the City’s tidelands trust rights. Any financial projection based on 35 wells must also take into consideration the cost impact of the City losing its trust of the tidelands. The Oil Lease No.2 also specifies a maximum of 21 wells may be bottomed in the Tidelands (Lease 12.f) and restricts and requires vertical and horizontal spacing and specific locations for each wellbottom (12.f.1,2,3,4), (12.g.1) as well as mandatory protection wells (12.g.2).

Please acquire and incorporate into the report an actual final wellbottom map for the project specified in the Lease and Oil EIR document and utilize those specific locations for volume estimates based on the geologist reports identified below (B) and their oilfield analysis of potential recovery geographical limits. Please provide Exhibit E of the Lease in your report and incorporate those measures in your analysis of variables.

Also see the Macpherson Oil oilfield location map in the 1990 EIR, which specified only the southeastern quadrant of the entire Hermosa Beach 1 sq. mile Tidelands zone as the ‘productive zone’ (found in the response argument against alternative site locations for the drillsite in an attempt to justify the non-viable access to the Oil from Redondo Beach. Read 1990 EIR comment 39 and related response.)

B. The City is in possession of Oil Volume estimates which are significantly lower than those submitted by the proponent of the current project application. Please request these documents from the City and identify the source detail (with authors/dates) and incorporate the volume estimates for the uplands/tidelands oilfield production split for separate Cost/Benefit Analysis. These estimates range from 3 mil to 9.5 mil barrels in the oilfield in stark comparison to the 30, 43 and 50 mil estimates portrayed by the Applicant in press reports. Please request the City to provide original copies of the several City paid and City received reports from the 1970’s and 1980’s, and 1990’s including but not limited to;

Morely 124

1. The report of a City paid independent consultant.
2. The report of the City/State Lands Commission paid collaboration.
3. The State Lands Commission independent analysis.
4. The report from the Hermosa Beach Stop Oil Coalition consultant submitted for the EIR and for the SLC tidelands Lease approval hearing.
5. The estimates used by the City for the Mock Jury Trial in 2009.
6. The several estimates prepared for the Macpherson vs. H.B. lawsuit.

C. The well records from the adjacent portion of the same oilfield have a historical record of lower production in comparison to Project Applicant claims. The Geologist reports noted above (B) also indicate that based on the Redondo Beach actual experience over 50 years, the Hermosa Beach strata is the tail end of the productive zone, thinning and shallowing into a less viable strata to the North and West. Additionally, as portrayed in 1993 the City and Macpherson Oil at the State Lands Commission and in the Courts, successfully claimed Redondo Beach was to have drained the Hermosa Oil for 30 years, thus the geologist estimates must be further reduced by 20 additional years of pressure differential drainage. A financial projection should be presented based on the assumption that HB will produce the same as RB, less the claimed drainage from past RB production.

Please evaluate the Redondo Beach (RB) 50 years of actual production figures, available in the Redondo Beach Planning Department, for the 58 wells formerly in production across the Hermosa Beach (HB) southern borderline. Each of the RB wellbottom records includes a yearly production rate for Oil and for Gas while providing a 'water-cut' percentage with the end of life wells producing 98% water. The Project Applicant has proposed a specific number of tidelands wells and the data from the same number of wells most adjacent to HB on the RB side of the border should be consolidated (in tables) to represent production curves over time for the most similar historical oilfield data available. All other data is only projections and/or estimates and those speculations' should be stood up against actual facts.

The production curve and volume should be applied to the financial assumptions of product price and related price inflation growth/loss. The ratio of Oil vs. Natural Gas in the actual RB production should be used to extrapolate the estimated HB revenue. The cost of disposing of the huge volume of waste water (water-cut brine) must be determined and used as a reduction to the pre-royalty revenue stream.

The RB proven production data specifies the wellbottom locations with specific well depths indicating the 1800 foot to 2400 foot productive zone. This productive zone is the only productive zone that should be considered because 50 years of drilling in RB did not find any other geologic oil bearing strata and constitutes data of the earth formation that new technology cannot change. RB did not leave several additional geologic strata of oil untouched when they closed down their wells due to lack of revenue, if Oil was there Redondo would have wanted the revenue. Please provide the percentage of oil projected by the Project Applicant in all zones compared to the amount of that projection coming from the proven production zone in RB.

The Hermosa Beach Lease also specifies only two potential geologic strata are expected to be drilled. See Lease definitions (3) below last sentence;

An "oil zone" or a "gas zone" is any sequence of strata containing oil, gas or other hydrocarbon substances, where the reservoir characteristics, such as pressure, temperature, specific gravity, viscosity, permeability and porosity, are similar, and whenever such sequence of strata is separated from dissimilar producing strata by an impervious layer of shale or other such rock. An oil zone is a zone which produces primarily oil or oil and associated gas. A gas zone is a zone which produces primarily gas and/or gas condensate. By way of example of what is intended to constitute a zone, the parties currently expect that there are two zones potentially productive of oil and/or gas under the leased lands, the so-called "Main Zone" and the "Del Amo Zone."

Morely 125 Continued

D. The Cost/Benefit Analysis must explain how many years and months remain for productive activities and to identify if there are any extensions of time available or anticipated in the Lease or by the parties in the Settlement Agreement. Please provide and identify the source document identifying the determination of remaining time of the assigned Lease and the date of abandonment. By my calculation from the initiation of the Lease on 10/14/1986, on 10/14/2013 there was 8 years remaining on the Lease which should be the maximum considered in at least one scenario of any Cost/Benefit Analysis. By my calculation from the amended Lease date of 1/14/1992, on 1/14/2014 there will be 13 years remaining on the Lease which should be the maximum considered in at least one scenario of any Cost/Benefit Analysis.

The 10/14/1986 Lease, as amended 1/14/1992 (replacing all terms except section 20) is for a term of 35 years maximum as specified in 1(c) and 35 years is the maximum term allowed by the State Lands Commission action on 3/8/1994 per the Public Resources Code. The City has a fiduciary responsibility to not allow Oil and Gas production access to the Tidelands in breach of the SLC terms, which approved a 35 year time limit. The City's trustee status must not risk the loss of all the City's tidelands trust rights including the land rights. All financial estimates must comply to strict time restraints indicated by the State Lands Commission. If the estimates are beyond the 35 year term as measured from Lease date, please indicate if the parties intend to return to the State Lands Commission for reconsideration of the Lease approval.

Also, please see the Unitization clause of the Lease and identify the maximum number of additional Units allowed and the Unit lease terms, for each Unit which would be allowed. Specifically identify if the time allowed for Units of recovery run concurrently with the remainder of the 35 year term or if each Unit would have a term which runs subsequent to each of the Unitization determinations. Please report if there is a limit to the number and size of subsequent Unitization actions. The Cost/Benefit Analysis should consider all of the costs of the possible timeframes before site abandonment as allowed by the Lease in the Section 1.(b) language "...but in no event shall the Term exceed thirty-five (35) years."

Morely 126

E. The Cost/Benefit Analysis should consider all the ramifications of 14 years of drilling as specifically allowed in the Lease. At least one scenario of the financial revenue stream forecast must use the agreed upon terms of the Lease with respect to maximum allowable time frames for well completion in Section 12. That scenario should take into account multiple variations of volume estimates (see B above) and the RB actual volume from adjacent border wells in combination with the forecasted production rate curve as modified by the negotiated Lease well completion schedule below. With 120 day possible well completion dates specified in the Lease, the first three wells may not occur until four years from today and the fourth well at year five. Following the first five wells, the Lease also requires only three more wells per year for the next ten years. The operator could be only at half production at year ten and full well completion at year fourteen. This slow implementation is available to the Lessee and must be presented as a possible scenario in the Cost/Benefit Analysis. Please consider the cost of the disruption to the neighborhood for 14 years of heavy industrial development activity followed by many more years of production and workover activity.

The following is a summarized explanation of the Lease terms.

The 'Exploration Phase', 'Testing Phase', and 'Development and Production Phase', as described in the Lease may extend to a total of 14 years from this submission or 12 years end of Primary Term (1.c). These activities cannot begin until the completion of the 'Permit Phase', which according to the Settlement Agreement is on indefinite hold per the Force Majeure clause which stopped the clock. For this analysis perhaps the Cost/Benefit Analysis can assume that the Permit Phase will be the 1 year (362 days) specified as remaining (per the Settlement Agreement) in the Primary Term (Lease 1.c) of 2 years and that the clock may not begin until after the November 2014 Ballot measure vote.

Thus, the allowable schedule according to Section 12 (b,)

1 year until Election Day November, 2014

1 year 'Permit Phase and Primary Term' (1.c and 12.a)

360 days for 'Exploration Phase', 120 days each of the 3 wells (12.c.1, 2, 3)

270 days for, 'Testing Phase' (12.a and 12.d.2)

3240 days, 120 days each well for remaining 27 wells resulting in the allowable Lease total of 30 Oil, Gas and Water wells. (12.e)

600 days additional, 120 days each well for 5 more wells based on Project application. (17% beyond Lease terms as approved by the SLC)

5200 days total (14.25 years or 171 months) to total well completion.

If well completion occurs sooner, the unused days are accumulated in a 'Credit Period' (Lease 12.e.). These total allowable days are over 3000 more days than those presented in the Project Application and can be used for any drilling purpose over the 35 year lease. (12.e.1) The additional days of Heavy industrial drilling activity is in addition to the over 3000 days of the less intense workover rig utilization allowed on the site.

The Lease contemplates the use of these days as excerpted below.

Here are some of Lease conditions which envision the use of these 8.63 years of drilling 'Credit Days' in the out years as initial well production wanes, as all well bottoms are known to experience, and must be considered as part of the Cost/Benefit Analysis.

(12.e.1) Lessee shall receive a credit for the period between the actual date of commencement of drilling for such well and the date the 120-day period would have expired, and that number of days shall constitute a credit period (the "Credit Period"). Lessee may add days to the Credit Period in similar fashion by commencing with actual drilling of subsequent wells sooner than the last day of the 120-day period allowed between wells under this Section. The days comprising the Credit Period may be used and applied by Lessee at any time, and from time to time, with respect to the drilling of any subsequent well or wells under this Lease to extend for any number of days, up to the total amount of days then comprising the Credit Period, the 120-day period for commencement of actual drilling of any such well(s), by using each day of the Credit Period to extend the date for commencement of the drilling of any well for one day.

These excess days must be considered a realistic possibility because the Lease (1.b) requires the operator to diligently maximize production and allows multiple methods to accomplish this goal. Please provide Lease Exhibit E in your report and incorporate those measures in your analysis of variables.

(1.b) diligently conducting, producing, drilling, deepening, repairing, redrilling or other necessary lease or well maintenance operations

(1.d) the Lessee commences and prosecutes with reasonable diligence, drilling, deepening, repairing, redrilling, injecting and disposing of water or other operations for restoring production of oil or gas

(12.c.1) Lessee shall continue with the drilling of such well until all the potential producing objectives as shown in Exhibit "E" have been encountered

(12.e.1) During the Development and Production Phase which shall continue throughout the remaining term of the Lease, Lessee shall, subject to the other terms and provisions of this Lease, operate and produce those wells which it has drilled from the Drill Site which are capable of production in paying quantities

F. Please evaluate the City's cost associated with Lease term 15.(a) including the California Coastal Commission, Department of Fish And Game and the SCAQMD. Please determine the cost to the City of non-compliance by the City or Oil operator of any of the required agency approval requirements, especially in the event of lease termination, abandonment, suspension or Operator financial failure to perform as applied to each Project Phase.

15. The Lessee shall comply with all laws, rules and regulations of the United States, of the State of California and its political subdivisions, and of the City of Hermosa Beach applicable to the Lessee's operations, including, but not limited to, the applicable provisions of Divisions 3 and 6 of the Public Resources Code and the regulations of the Division of Oil and Gas and State Lands Commission. The Lessee shall also comply with any special operating requirements set forth in a conditional use permit issued by the City.

Morely 129

G. Please produce a Financial Hazard Footprint Analysis considering the Lease Section 18 "Liability, Insurance and Indemnification" Please inspect carefully the insurance and indemnification in the lease and evaluate the sufficiency of coverage to protect citizens.

Please provide, using readily available online Real Estate Market Value tools (Zillow?), a current property value footprint Map for structures in the adjacent scope of the project at 100 ft, 250 ft, 500 ft and 1000 ft from the boundaries of the proposed Oil Project Site at the City Yard. If possible, also produce a similar report for each of the alternate sites, proposed or submitted by the public for the EIR since the CEQA process has not yet determined the least environmentally damaging alternative site and will not until sometime in 2014.

Using the evaluated Hazard area from the September 17, 1998 Aspen (Final) report, available from the City Files, please overlay the hazard zones determined by the City's paid consultant and calculate the value of the structures for each hazard and intensity level. If possible, please combine the demographic Census data to determine the number of people 'i.e. sensitive receptors' in residence and the average transient population who could encounter the negative occurrence of each of the specified hazard disruptions and damage type. Please chart an estimate of the a financial impact to the people within each of the distance zones noted above.

Finally, please compare the insurance requirement in the Lease and consider the Indemnification of the City to calculate for each zone the percent of covered damage which could be covered by the Oil Operator insurance and bond requirements. Please provide a financial profile of the Proposed Operator and evaluate the strength of the Operators portfolio to absorb compensation for damages attributed each of the potential mishaps (per Aspen report 1998). Determine if the Proposed Operator could avoid financial responsibility if the accident was caused by any level of subcontractor or independent contractor and if so, evaluate the financial stability and insurance requirements in a similar fashion for the other parties possibly at fault. Please evaluate the past performance of the proposed Oil Operator and identify any historical examples of the current Project Applicant performance related to negative incidents from similar Oil activities which have or have not been covered by insurance or direct payment to damaged parties. Is there any history of avoidance of damage restitution by lack of sufficient insurance or financial resources or even bankruptcy?

Morely 130

H. Please consider incorporating the Hermosa Beach Oil Health Impact Study data, Please estimate cost of potential medical expenses, uncovered by the Lease required insurance limits, for the entire lifetime of the generations of people living or born during the activity of the Oil project.

Please verify and evaluate for accuracy City Attorney Michael Jenkins comment in a public City Council meeting that the City would have 'zero liability' or requirement to assist injured people from any cause related to the Oil Project. Please explain and evaluate the indemnification clauses as applied to the City in the Lease. If an Oil Project incident occurs, who would be held responsible to pay for damages to the tourists, citizens and property owners which may be uncompensated by inadequate insurance or an indemnified City? Please provide an outline of the financial recovery process and legal procedures required to get individual restitution for those not covered by the insurance limitations in the Lease. Please evaluate which parties would have priority in insurance claims, i.e. contractors, suppliers, personal health damage or personal property damage or other.

I. Please evaluate the Opportunity Cost of abandonment of City Yard and Self Storage Facility.

Provide the current market value at maximum potential re-zoned use of each of the two properties specified in the Oil Project proposal as well as the other suggested alternative sites proposed by the public in the EIR period since the least environmentally damaging site will not be determined until the final EIR in 2014. Compare the market value of these alternatives over 35 years as compared to the low volume Oil production scenario,

Please evaluate the Cost / Benefit to the City of having the Oil Project located on one of the sixteen alternate sites submitted to the EIR . This cost / benefit should not consider the cost of a modified project location to the Oil Proponent but only to the City.

For example,

Evaluate Cost Benefit of the Oil Project being located on the south-west most one acre corner of the Community Center and eliminating the tennis courts.

Evaluate the Oil project located at the Self Storage location and avoid the relocation of the City Yard altogether.

Evaluate the Oil project at the Self Storage and distribute the City Yard services to outsourcing the dry storage, fuel servicing and overnight vehicle storage to Redondo Beach and the remainder of the services distributed to the seven other small City owned lots on prospect, next to the Alamo club/tennis courts and between 4th and 5th street at the greenbelt, and the parking services parking area as suggested by the Public Works Director in Staff Memo to City Council.

Evaluate cost / benefit to the City of the distributed City Services with Redondo Beach cooperation, selling the City Yard at highest use re-zoning and locating the Oil project in the south-west most one acre corner of the Community Center and eliminating the tennis courts. This will continue the revenue from the Self Storage and retain it for Fire/Police department relocation as previously planned, while benefiting from the sale of the City yard for 20 to 30 Residential sites, and retain all of the parking the Coastal Commission wants in the City. There are many parks in the city which could accommodate tennis courts which serve all parts of the city north and south.

Please evaluate the value of the City yard as sold in highest best re-zoning while and paying the \$17.5 mil Oil Settlement payment with the City Yard proceeds, while

Morely 131 Continued

implementing distributed/outsourced City Services and retaining the Self Storage.

Please evaluate the option of keeping the Self Storage and parking as is and alternatively calculate the cost of locating the City Services in a consolidated location on any of the EIR suggested alternatives and compare these sites to a distributed multi-site City Services approach as previously detailed in a previous City Public Services Staff Report (please request from City or ask me for it). Also, rather than consuming the entire Self Storage site and parking, consider outsourcing some of the City services as suggested in the financial table of City Costs and available cost reductions which was a previously confidential document released to the public on 10/24/2013 per the 10/23/2013 City Council vote. (See City Clerk or City website for report).

J. Please specify the specific definition of use of tidelands derived funds as specified in the 1919 Tidelands grant of trust from the State of California to the City of Hermosa Beach and as required to apply to the trustee in the 1994 SLC Memorandum of Understanding accompanying the Tidelands Lease approval for an Oil Project in Hermosa Beach.

Morely 132

Best Regards, Tom Morley

The unrestricted Uplands revenue split will need to be recalculated based on the 1957 MHTL for the City and Schools.

Morely 134 Continued

Also, see attached NRDC report on tidelands spending which compares different Cities and lawsuits.

Last, please help me understand page 42, Excess Tidelands Revenue. This is one of the most important aspects of the report and it is left undetermined and un-quantified. If we do not spend the money on the tidelands we did all this work for the benefit of the State. The report should chart the annual value and percentage of the projected Tidelands revenue that will be sent to the State.

Last sentence reads, "The Authors did not find excess revenue provisions that would apply to the City Tideland Grant, or the City Tideland Trust Fund." .

The full paragraph is irrelevant to Hermosa Beach because there is no evidence it applies to Hermosa Beach. It is misleading to infer that Hermosa Beach can reserve funds for capital improvement projects without stating that, even if Hermosa Beach had such a grant provision (which we do not), such reserves must be for Tidelands Grant appropriate projects or bonds if they are to avoid being designated as 'excess revenue'.

If this is true then the statement should read "The State of California will receive all of the tidelands oil revenue, not spent locally according to the Tidelands Grant, into the State General Fund. The State can not by law send any of it back to Hermosa Beach."

Morely 135

Best Regards,
Tom Morley

On Fri, Feb 21, 2014 at 10:06 AM, Edward Almanza <superpark@igc.org> wrote:

Tom,

Pamela Townsend

From: Lael <lael.stabler@verizon.net>
Sent: Monday, April 14, 2014 10:14 PM
To: Oil Project
Cc: Ken Robertson
Subject: Re: Cost Benefit Analysis Comments
Attachments: Calendar Item C29 4_28_93.pdf

Stabler 1

Under the terms of the settlement agreement, the City has granted to Macpherson a 3.3% interest in all royalties in perpetuity. The Cost Benefit Analysis ("CBA") prepared by Kosmont deducted this amount from the 18 2/3% tidelands lease royalties payable to the City, leaving a net tideland royalty of 15 1/3%. Apparently this was done in the belief that the settlement agreement superseded the 1919 Grant of public trust lands and the Memorandum of Understanding executed May 11, 1993 ("MOU"). However, since all revenue derived from tidelands resources is subject to the public trust, the City can only utilize those funds to promote the purposes for which the trust was granted. (See Appendix: C "California State Lands Commission Public Trust Doctrine.") In terms of determining oil and gas revenue to the City, clearly 11 2/3% of the tidelands royalty goes directly to the Special Tidelands Trust Fund; any payment to Macpherson would have to come out of general fund royalties (subject to voter approval since they currently may only be spent for open space and recreational purposes).

The lease between the City and Macpherson included a breakdown of tidelands lease royalties which the "Lessee shall pay to City." It stated that the City would receive an amount equal to 18 2/3% of all hydrocarbons (except gasoline) extracted and sold from the tidelands. Pursuant to the 1919 Grant, all royalties generated by production from the tidelands were and are "restricted" and can only be spent on projects which directly benefit the tidelands and the public trust. After extensive negotiations, the City and the State Lands Commission ("SLC") entered into the MOU whereby the SLC agreed that, as consideration for the use of the drill site, the City could allocate 7% (37.5% of 18.67%) of restricted tidelands royalty revenue to its general fund (to be used exclusively for the acquisition of parks and open space). The SLC required that the remaining 11 2/3% (62.5% of 18.23%) of restricted tidelands royalty revenue be deposited into a Special Tidelands Trust Fund established by the City. The SLC approved the City's oil and gas lease based upon and subject to the MOU and corresponding amendments to the lease. Calendar Item C29 (and Minute Item 29) detailing the findings made by the State Lands Commission on April 28, 1993 with respect to its approval of the oil and gas lease is attached.

Stabler 2

Secondly, it's not clear when the City will start to receive royalty payments. The lease states that minimum royalty payments will be paid to the City beginning four (4) years after the first well is brought into production. However, at the informational meeting on February 24, 2014, the Kosmont representatives indicated that the City would receive royalty revenues before that time to the extent they were generated. What factors determine when these payments start? Is E & B entitled to first recover project development costs and/or reimbursement of funds advanced to the City for relocation of the maintenance yard and emergency fund contributions prior to making any payments? Based upon correspondence I've reviewed with respect to the initial lease negotiations, this appears to be the parties' contemplation.

Stabler 3

Third, in calculating oil and gas volume estimates, all the reports analyzed by CBA (except for the 1984 Hacker report) were prepared for and on behalf of the oil industry. Kosmont did not review the Hallinger report dated 10/24/95 which provides a comparative analysis of the 1984 and 1988 Hacker Reports and wherein he stated that the latter was a grossly inflated "selling report" which added "possible" zones of production requiring at least 166 wells to recover the projected 30 million barrels of oil. Nor did Kosmont differentiate between the 1996 and 1997 INTERA Reports which estimated Hermosa's resources (16 million barrels) and Redondo's resources (43 million barrels) respectively. I note that Kosmont only utilized reports referenced in E & B's economic report (with a disclaimer regarding its reliance thereon, pg. 16) and did not consider any other

Stabler 4

independently conducted analyses. The City retained various experts to determine estimated volume and value of available tideland resources in preparation of the 2012 trial; public requests have been submitted for copies of the reports which should also be made available for further review by Kosmont.

Finally, in reviewing Table 39 (at page 101 of the CBA), I note a deduction for "Settlement Agreement Payment;" does this include both the \$3,500,000 payable to E & B as well as the 3.3% royalty share granted to Macpherson? It would be helpful to have this clarified.

Thank you for considering these comments.

Lael Stabler
66 – 18th Street
310 379-3300
Lael.stabler@verizon.net

Pamela Townsend

From: Stephen McCall <stephen.mccall@outlook.com>
Sent: Monday, April 14, 2014 10:58 PM
To: Oil Project; Ken Robertson
Subject: Proposed E&B Oil and Drilling production Project - Comments & Questions, McCall 20th Pl

To whom it may concern:

Please find below my comments and questions that I would like your review and consideration on.

I would appreciate it if you could email me back to confirm receipt.

Thanks!
-Stephen McCall

About me...

I am a homeowner in Hermosa Beach at 1219 20th Place, with my wife and two children aged 2 and 4.

I've reviewed the DEIR, as well as CBA, HIA.

I attended the full public comment meeting on 4/10 to review the DEIR.

Thanks to the City...

I appreciate that the City has gone above and beyond to involve the community in the review of this project and sincerely hope this openness will continue in the time leading up to public vote, where it is critical there can be sufficient information presented in a relateable way for people to make an informed decision.

Factual based comments + questions...

1. Presentation of findings - can the findings be related to similar projects in other cities (Beverly Hills, Huntington Beach... USA or outside of the USA) - what are the proportion of 'successful' projects where there have been no issues and the community has been fully supportive, versus 'unsuccessful' projects where disasters have arisen, health issues, etc. Can the finding be more relateable both in using visuals of the proposed site and buildings; as well as on matters such as noise, smell, etc. Can the findings be related to the previous time this measure was evaluated and voted on. Can the findings be presented at a public town hall event, with public Q&A.
2. Oil production / manufacturing - how does the proposed volume for E&B / Hermosa project relate to current oil #'s for Manhattan Beach, El Segundo, Redondo Beach, Santa Barbara, Malibu, Huntington Beach, etc.?
3. Increase in mortality rate - needs to be 0.0. I'm not sure how people could ethically vote on a project where there is even the slimmest percentage possibility of people's health being affected. McCall 1
4. Impact on tourism, impact on property values, etc. - these findings need to be better thought through given the wider implication to the community.
5. Trucks in Hermosa Beach - what is the current volume of trucks (garbage, etc.) and how does the proposed increase for oil transportation relate to this?
6. Scenario planning, if the project does not get supported - will the City go bankrupt. If so, what will the implications be to residents on taxes, schools, etc. Give examples from other cities. McCall 2

7. Investments to the community - what would be the proposed investment in schools and other key areas if the project is supported? How quickly would we see those benefits directly impacting those areas?
8. Ban on fracking for the entire period of any permit.
9. Independent report on E&B - history, experience at other sites.
10. What happens after 34 years - if the project is given the go-ahead, can the project only be given a finite life?
11. Will council members and those on the review board be stating their intended position to vote 'yes' or 'no' on this?

###

Pamela Townsend

From: jskinla@verizon.net
Sent: Monday, April 14, 2014 2:31 PM
To: Oil Project
Subject: Cost Benefit analysis

Attn. KenRobertson

Please accept the following comments on the cost benefit analysis:

Krag 1

The projected earnings do not include any valuation for the potential production from the Schist zone even though the report states that it could add 34 percent to the production. Leaving every reader and voter to extrapolate what that might mean to the potential project is inadequate and detracts from the entire purpose of the city contracting to a third party to present a single consistent view of the project. Adding 34 percent more effective production to the P-90 case and maybe 30% to the P-50 case would yield a better comprehensive view of the project possibilities.

The proposed insurance of only \$40MM seems grossly inadequate to cover project needs. It seems at least an increase to at least \$200MM would be a good start. Maybe better yet would be a Bond posted that the City has access to initiate for \$200MM would be best.

Krag 2

There was no increase in assessed value for the improved property once the plant is constructed. The exclusion may be because the royalty payment is in lieu of improved property equivalent. Is that right?

Krag 3

The proposal could explore and include an increase in sales tax if contracts and procurement is committed by the builder to be executed within Hermosa Beach city boundaries.

Krag 4

Jeff Krag
516 8th Street

Pamela Townsend

From: kathy berlin <kathymberlin@yahoo.com>
Sent: Monday, April 14, 2014 3:22 PM
To: Oil Project
Subject: comments on the Cost Benefit Analysis

To: Ken Robertson,
Community Development Director, City of Hermosa Beach

Re: Comments on the Cost Benefit Analysis

Mr. Robertson,

I have reviewed the Oil Drilling & Recovery Cost Benefit Analysis as best a lay person can. Our city is facing quite a task and has a huge responsibility to understand the expected effects of the drilling, environmental and financial. I commend the city for its efforts with the cost benefit analysis and the health impact assessment. The cost benefit analysis is very helpful, but I hope that you can make it easier to read for the community.

Berlin 1

I suggest that you include a summary which states clearly the annual revenues expected and the revenues the town must expend under the "yes" and "no" vote. It would be most helpful if the summary were itemized by year. I understand that the analysis has to be thorough, taking into account, all predictions, but a simple consolidated summary would be most helpful.

As it is now, people seem to be misinterpreting the data. One person stated at the public hearing on the DEIR that the town would receive \$40 Million a year from the drilling.

And people seem to think the schools will benefit greatly from the drilling. But as I read the chart on p.116 of the draft, the schools are expected to receive far less than \$100,000 for most of the 34 years.

Berlin 2

Also, a chart showing the annual funds expected for the city, and the amount of that which will be restricted would be helpful.

The financial information is critical, as those who do not think the environmental effects substantial seem to believe the financial rewards to the city will more than be worth the risk of environmental harm. Can you include a cost to the city if there is a spill? If the air has an odor? If the noise is intolerable? If Hermosa Beach no longer is the ideal little beach city it is now? Those predictions would be helpful.

Berlin 3

I appreciate the volume of the information in the analysis, but it would be helpful to have a summary to refer to. Obviously much misinformation abounds. We need to know the facts in order to make an informed decision about the drilling. Please make the final cost benefit analysis clear. It is crucial to this vote.

Thank you for your efforts,

Kathy Berlin

3202 Highland Ave.

Hermosa Beach

Terri Dinubilo

From: Valentina Marmol <valen3031@gmail.com>
Sent: Monday, March 17, 2014 7:53 PM
To: City Clerk
Subject: Input on Drilling in Hermosa

1657 Ruhland Ave
Manhattan Beach, CA 90266
March 17, 2014

Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

I, Valentina Marmol, am writing this letter in regard of my opinion on the Hermosa oil drilling. First, let me introduce myself because that would be the nice thing to do. As you can see, my name is Valentina Marmol. I am a full time sophomore at Mira Costa High School. I have a passion for singing, painting, playing the piano, and swimming. My question for all you council members is what is your opinion on the drilling? Are you all concerned for what the possible consequences the oil drilling will bring upon? As a Spanish speaker, "Hermosa" means pretty and lovely in Spanish, so why not keep Hermosa hermosa?

Do we want to ruin the city life, ocean life and risk the dangers of some drill that most likely won't be needed in the next two years? Think about all the new, eco-friendly inventions that have been coming out lately. They all do not require the oil we need. Noise, air pollution, explosions or dangerous gases are all possible risks that can affect the lovely city of Hermosa Beach.

The drilling can also effect the residents of the city but also the wildlife in the ocean. The spot where the company wants to insert the diagonal drill in is where whales go to get their food supply, krill. This can reduce the amount of krill leading to the extinction of the whales, the largest animals on our beautiful earth! Not to mention that the drilling won't be too far, about 100-150 yards from where the children's play sites are. The drilling can cause bad air which can lead to the young kid's lungs. Kids are already breathing a bad amount of air pollution which is caused by all the junk we have in our environment.

Mayor DiVirgilio, I recall that you told the Daily Breeze, "Obviously, the things that will catch the most attention are all the impacts, particularly the ones that aren't able to be mitigated down to a standard threshold. Our goal is to provide a lot of data so the public can have as full a view as possible." If I'm wrong, my opinion is that you have stayed neutral about the whole drilling issues. Can this give me a chance to change your mind? I know your co-partner, Barragan has her opinions on the drilling too. Imagine if the drilling were to happen. Imagine all the protestors waiting outside of your office with posters saying, "This drill will destroy this city!" More and more residents will have to pay more taxes just for the drill. The company can go somewhere secluded to find their oil. Why Hermosa? Not only will the oil drill anger more residents but it will make the city financially unstable. We won't be able to attend the annual Hermosa Fair or Saint Patrick's Parade.

Marmol 1

Some fellow classmates of mine are up for the drilling. I want to prove them wrong as well. They don't know that the ocean they'll be swimming in will secretly be somewhat toxic. The company makes sure that there won't be any oil spills but it's still going to ruin our ocean. Say if the oil drilling were to happen, I can guarantee they will not be happy with the results.

In the summer, my favorite thing to do is go swimming in the ocean and have deep talks with my friends while we are tanning. Will you make sure that will stay the same even though there will be a drill below us? My question is why doesn't the drilling company go somewhere else off our coast? Mayor DiVirgilio, I just want to "Keep Hermosa Hermosa." I don't want other disputes about oil and such and how we should trade. In my opinion, you all should follow how to keep Hermosa Hermosa. The last thing you all need is to be drowning of stress when residents of this lovely city come to complain. Also, you all will have a lot on your hands, not saying you do not, with the environmental and residential life. This can effect the animals in the ocean but also the residents of Hermosa Beach. You tell me how it goes and I'll be waiting back for your letter in the mail. How's that? I hope I can keep in touch and we can Keep Hermosa Hermosa.

Yours truly,
Valentina Marmol

Terri Dinubilo

From: Cindy Zhou <cizhou98@gmail.com>
Sent: Monday, March 17, 2014 11:27 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input on Drilling in Hermosa

1947 Manhattan Avenue
Hermosa Beach, CA 90254
March 17, 2014

Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

According to the following compiled information, Hermosa Beach should not be drilled for oil because of financial, environmental, and health reasons, and deeply concerning issues as well. As a resident of Hermosa Beach, I also believe that it is detrimental to the spirit and history of Hermosa Beach to allow oil drilling to happen on its premises.

Zhou 1

It is true that Hermosa Beach can benefit from the profit made with the oil drilling, but it can also ruin the real estate values and its tourist industry. The city of Hermosa could with the funds to improve the city and have a larger task force of lifeguards, police, and firefighters. Yet Hermosa already have all that and will honestly be better even without the money. Hermosa Beach is also famous for its fabulous beach scene and wonderful tourist spots. What would happen when all of it is debilitated by the oil drilling happening right under Pier Avenue?

The oil drilling will destroy the already fragile marine ecosystem that we have in our ocean. Although E&B has assured us of the slim chance of an oil spill, can you really risk the lives of the precious organisms under the water? Because E&B will be allowed to drill under any part of Hermosa Beach, it means that their injection wells and other drilling activities could alter the pressures underground and cause old faults to rub against each other again, creating new and dangerous earthquakes.

By allowing oil drilling in Hermosa, we are endangering our own health and body. E&B is exempt from regulations that supervise the amount of pollutants produced in the water and air. This means that the air we breathe everyday and the water we drink will be affected by the oil drilling. Traffic will also be increased when production of the oil drilling begins, influencing the flow of traffic on the streets, which will lead to more stress upon day workers and students driving to school. Another important factor is our children. The elementary school and middle school in Hermosa Beach both encourage walking to school and back, and the heavy traffic could jeopardize the children's safety and freedom.

Overall, Hermosa Beach is a very close and tight-knit community. We know our neighbors across the street, the family a few streets down, our friends on the strand that we go surfing with every weekend. Do we want to risk their and our lives by voting for an unnecessary drilling that could very likely impact our homes in such harmful ways? Therefore, under such incriminating evidence, the residents of Hermosa Beach should vote against oil drilling in Hermosa Beach.

Yours sincerely,

Cindy Zhou

Terri Dinubilo

From: Dominic Di Rado <dirado100@gmail.com>
Sent: Monday, March 17, 2014 11:43 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input on drilling in Hermosa

568 31st Street
Manhattan Beach, CA 90266
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

Hello Mayor and Councilmembers, I am Dominic Di Rado, a student from Mira Costa High School, writing you this letter in regards to the oil drilling in Hermosa Beach. I, personally, am against the oil drilling.

One reason for this is because the harm it could do to the environment if an accident occurs. I know there are numerous safety measures in place to prevent accidents, but if an accident happens it will not only ruin the aesthetics of Hermosa Beach, but also the whole South Bay. It will also ruin the ecosystems around our beaches. Also, the gases produced from the oil making process could be harmful for the people and environment of Hermosa Beach.

Another reason I am against the oil drilling is because the hassle and the inconveniences it will cause the residents of Hermosa Beach. If the oil drilling is permitted, the proposed drilling site will be within 0.5 miles of 50 percent of Hermosa Beach residents. Nobody wants to live right next to an oil drilling sight. Also, the constant noise and light emissions will be annoyances for Hermosa Beach that no one wants to have. Also, traffic flow will dramatically increase because of the heavy truck traffic for the construction alone, not considering the fact this will surely increase once the drilling site is completed.

Di Rado 1

A counter-argument for this is the profit Hermosa Beach will make off of this. But in reality, a small portion will go to Hermosa Beach, while the rest goes to the oil company. It's said that Hermosa Beach will be in debt if they don't O.K. the oil drilling, but Hermosa Beach has over 4 million dollars in reserves. This will limit, if not abolish the likelihood of this so called "debt"

Thank you for reading my letter and hope you take into consideration the points a made during it.

Yours sincerely,

Dominic Di Rado

Terri Dinubilo

From: Jamie Danis <jamie.m.danis@gmail.com>
Sent: Monday, March 17, 2014 9:56 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input on Drilling in Hermosa

1531 5th Street
Manhattan Beach, CA 90266
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

Hello, I'm Jamie Danis and I'm a local resident and student at Mira Costa High School, and after researching the issue through my chemistry course, I believe that drilling for oil of the shore of Hermosa is an extremely ill-advised idea.

One reason that I believe drilling in Hermosa is a terrible idea is that the oil drilling is exempt from many environmental laws. As a result, it would cause major pollution for Hermosa residents and surrounding areas. It would affect both the air and the water quality, and as a result could cause many health issues for residents. Also, the pollution would continue to build as long as the project continued, and as such would only be worse and worse for Hermosa and surrounding areas the longer it would continue.

Another reason to reconsider oil drilling in Hermosa is that the drilling could easily create earthquakes. Earthquakes are already relatively common in California and are often destructive. Scientists have proven that injection wells and other human activities can help to create earthquakes by changing pressures underground. That often "unclamps" old faults that were previously under pressure. The tectonic plates then slide past each other and cause the ground to shake. By increasing our chances of having an earthquake centered so close to us, we could suffer major damage and losses.

Finally, the oil drilling would also increase traffic in Hermosa. For many people with already busy schedules, the 10,500 estimated miles of additional heavy truck traffic in the first ten months would pose an issue. It would almost definitely affect children's routes to school, and for many students, sleep deprivation is already an issue. These children do not need to sacrifice more of their sleep to account for additional traffic. Danis 1

While proponents of oil drilling argue that Hermosa is in need of the revenue the oil drilling would provide, this is in reality entirely false. Hermosa has \$80 million in assets, and as such is financially secure. Also, the revenue would be largely controlled by the State Tideland Trust, and as such the funding would be extremely restricted on what it could be used for. Seeing as Hermosa is, in fact, financially secure, oil drilling is unnecessary.

The benefits of oil drilling far outweigh the benefits. It would create additional pollution, an increased amount of earthquakes, and increased traffic. While it would generate additional revenue, the funds would be limited and Hermosa is not desperately in need anyways. Thank you for your time and consideration.

Terri Dinubilo

From: Ella Swanberg <ellabella10@gmail.com>
Sent: Monday, March 17, 2014 9:45 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input on Drilling in Hermosa

424 29th St
Hermosa Beach, CA 90254
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

Hello, my name is Ella Swanberg. I am sixteen years old, and go to Mira Costa High School as a sophomore. I have lived in the beautiful city of Hermosa beach for my entire life. It is one of the most beautiful cities I have ever been too which leads me to my view of being dead set against the proposed oil drilling.

If Hermosa Beach were to start drilling, it could potentially be dangerous to the health of our citizens and sea life. The chances of an oil spill, are very high and if there were to be one it would kill tons of sea life. Not only could it potentially harm our wildlife and ocean, but oil drilling can increase air pollution. This could lead to both smog and a higher sickness rate. Gas and oil companies have no liability and are in fact exempt from a number of federal environmental laws; The Safe Water Drinking Act, Clean Water Act, Clean Air Act and many more affecting the cities environment.

In addition to the effects oil drilling could have on the environment, it will increase the traffic tremendously. Not only for the months while they are constructing, but afterwards. There will be huge trucks driving through our little town, causing noise and traffic. The route these trucks would be taking would be passing by the elementary school which is unsafe for the young children.

As you would expect, noise pollution and traffic, will make Hermosa Beach a less desirable city to live in. All of the components of the drilling system are estimated to be .5 miles away from 50% of all Hermosa Beach homeowners. This of course will lower property value, therefore lowering property taxes which decreases revenue to Hermosa Beach. Not only will it lower property value, but it will become less of a tourist destination, lessening the business of the community shops.

Although there are many who agree with these reasons against the oil drilling, there are also people who believe it would be a great financial boost for our town, as a percentage of all revenue is promised to the city of Hermosa Beach, and its schools. Where in theory that is true, the fact is that there are no guarantees as to how much the city will make. The estimates that have been made have come from studies paid for by Macpherson, which makes the credibility questionable.

Swanberg 1

Oil drilling would be far from beneficial to Hermosa Beach. There are too many risks, including negative effects to our environment, citizens, and property. The only gain, which is not guaranteed, is financial. I believe that the risks outweigh the reward, thus Hermosa Beach should not move forward with the proposed oil drilling. Thank you for your consideration.

Yours sincerely,

P.O. Box 45220
Los Angeles, CA 90045
March 14, 2014

Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, council Members Tucker, Barragan, Petty, Fangary, and City Manager Bakaly:

My name is Malik McDaniel, and I am a student attending Mira Costa High School. Today I am discussing the topic of the drilling that will be commencing in Hermosa. I believe that drilling in Hermosa would benefit the city greatly. As we all know, drilling in the Middle East is becoming more expensive due to fact that oil is becoming scarce. Drilling in Hermosa would not only bring prosperity and wealth to the city, but this would also lessen the dependence of oil from foreign countries, like Iraq. Another reason why drilling is a good idea because there have been no current sources of energy to replace it.

Wealth is an important part of this city in order to keep programs open to further McDaniel 1 new generation that will be residing in Hermosa Beach. Reported in the analysis of the project for the city, it is stated by C.Wil Soholt, Vice President of Kosmont Cos., that this project will generate \$147 million to \$299 million of the course of the next three decades. Estimates from E&B Natural Resources calculate that profits can top out at \$500 million. With the revenue from this project, this would be able to support the city financially to help mold the future for the next generation.

Another benefit of this drilling project, would be the fact that this would bring us closer to self reliance or in other make us less dependent for foreign oil, rather than importing it from Middle Eastern countries, such as Iraq. This self reliance would therefore balance the world economy and in our country as well, because the countries providing the oil, would have a lesser voice in the prices of petroleum. Another benefit going tandem with the self dependence would be the creation of jobs for many people, thus reducing the unemployment rate of 5.0% (as of 2010). This would also boost the income per capita of Hermosa which is already 119.9% greater than the California average, and 158.8% greater than the nation average.

In addition to increased wealth and self reliance, petroleum is one of, if not the cheapest source of energy. Take hydrogen for example. Hydrogen during combustion with oxygen has no by products other than water. It is very expensive to pull hydrogen from water, and ironically the carbon dioxide releasing from producing hydrogen from fossil fuels actually outweighs the benefits. According to PBS, "Hydrogen that escapes during the production process could erode the ozone layer even further and exacerbate global warming". However this is not the only challenge faced while trying to use hydrogen as a fuel cell. Because of its high density, hydrogen must be stored at high pressure. These containers will have to be able to withstand impact from crash because, like gas it is very flammable and has no smell. Platinum is the current solution, but because of its scarcity, it is not very probable. Sensors would also have to be included to alert the driver of a leak before it combusts.

Now one of the major concerns with continuing with this project is safety. Through previous examples, like the Gulf oil spill, it has been proved disastrous for the wildlife of the ecosystem, which therefore affects the community. But gas and oil companies have learned from their mistakes. Gas detectors in homes are now used to recognize irregularities in air levels which would be caused by high levels of carbon dioxide, nitric oxide, and combustible gases like methane and propane. The same thing applies to oil rigs off the coast. Detectors and sensors will be used to monitor the rigs and point out any spikes in gas leakage so it may be repaired immediately. On top of that, the new sturdier materials used to build the rigs are constantly being improved to ensure the safety of the community.

Oil Drilling can be proved to be a worthy investment for the city of Hermosa economically as well as sovereign from other countries oil trade. This project would help increase the value of this city and improve schools to help future generations thrive in this ever changing world. Oil has also been proved to be a stable energy source compared to hydrogen power and electricity, which still causes the same amount of emissions if not more. Overall the pros of drilling outweigh the cons, therefore making it clear that this project is beneficial to not only Hermosa, but also to the rest of the nation.

Respectfully,

Malik McDaniel

Terri Dinubilo

From: kakillman18@verizon.net
Sent: Monday, March 17, 2014 3:58 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Hermosa Beach Drilling

303 South Redondo Ave.
Manhattan Beach, CA 90266
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

My name is Kelli Killman and I am a sophomore student at Mira Costa High School. I am in favor of the Hermosa Drilling Project contrary to the many not in favor to the drilling for oil. I am sharing my views as a student advocate for the Hermosa Drilling. My reasons include that it will create more jobs, more money for city, money for the schools, greater supply of oil, and no relying on foreign oil.

Killman 1

One of many reasons for supporting the drillings is that it will create more jobs. These jobs may include the engineers, architects, drillers and many more. By creating more jobs it will bring in more money to families. Having this money will create more spending. More spending will boost the economy. Hermosa drilling is needed because it will raise the number of jobs which will greatly impact our city for the greater.

The second main reason for why the drilling is a good idea is that it will bring in more revenue not only for the city but for the school districts in the city. The drilling has promised the city \$118 million to \$270 million over the next 34 years. Around \$1.2 million to \$2.2 million will be given to the school districts. This is a solution to the city's financial problems and help fund the schools that are in desperate need for money. Hermosa Beach could go bankrupt without this drilling. This huge amount of money offered to the small city can be used to help enormously by using it to rebuild the city. The schools in the district are struggling to keep alive especially with extracurricular activities such as music, sports, and art. These classes can barely stay afloat and drilling can save them. Schools will also have no more budget cuts that cause loss of jobs, resources, libraries, and activities that students cherish.

My final reason to supporting the drilling is that it will give the state and other states a greater supply of oil and it will help the nation stop relying on foreign oil. By relying on foreign oil it causes the US to spend great amounts of money on oil from unstable countries rather than spending it on funds at home. There are many dangerous factors to relying on foreign oil like weakening our economy, imbalance between imports and exports, and the money used to buy gas funds Middle East governments. By drilling in hermosa the US government could slowly stop relying on foreign oil which could save us from the dangers of foreign oil. By having access to this great supply of oil in the US we will raise our rate of export and strengthen the economy.

Hundreds of people are against the drilling for reasons like that it will decrease tourism, cause a threat to marine ecosystem, oil spills, and that it will release dangerous hydrogen sulfide gas. Drilling could be a potential disaster to the marine ecosystem if there was an oil spill. However oil drillers are looking for new ways to build

ships to limit the potential case of an oil spill like making their ships out of steel. This project could decrease tourism which brings in a lot of necessary income for the city but with the drilling there wouldn't be a need for tourism since the project is bringing in a lot of money. However the release of hydrogen sulfide gas caused by drilling can be fatal, smelly, and flammable. To limit these workers should have proper safety equipment, mandatory gas test, and to chemically treat drilling fluid to not have corrosion failures. Also it should be in a confined space and have adequate ventilation.

Hermosa drilling can be a great things for many reasons for example it will create more jobs, more money for city, money for the schools, greater supply of oil, and no relying on foreign oil. These reasons greatly outnumber the negative effects of the drilling. I feel Hermosa Drilling is the answer to make Hermosa Beach a better place. Thank you for taking the time to read and consider this letter.

Yours sincerely,

Kelli Killman

Terri Dinubilo

From: Megan Chelliah <megan@chelliah.us>
Sent: Monday, March 17, 2014 5:59 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input on Drilling in Hermosa

1501 Pacific Ave.

Manhattan Beach, CA 90266

March 17, 2014

Mayor Michael DiVirgilio

Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,

City Manager Tim Bakaly

City of Hermosa Beach

1315 Valley Drive

Hermosa Beach, CA 90254

Dear Mayor DiVirgilio, Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary, and City Manager Bakaly:

My position on the oil drilling in Hermosa is that I am against it. Although the reasoning behind the oil drilling might better the community as well as the rest of the country in the future, right now all it will do is cause havoc in the peaceful town of Hermosa. Overall, right now the oil drilling will cause more traffic in the community, take 5 years to complete, and may cause earthquakes.

First of all, the traffic will increase in the town of Hermosa. If Hermosa lets the drilling happen, they will have huge trucks coming in and out of the city continuously. On top of that, while the drilling sites are being built even more trucks will be driven throughout the city with all the supplies used to build it. The trucks are estimated to add 10,500 miles of heavy-truck-traffic in the first few months and will be driven by schools and along the routes to schools. This will end up making everyone's mornings even harder.

Another point is that this project will take up to five years to complete. The five years will be composed of tons of construction and the installment miles of underground pipelines. More than half of Hermosa will be .5 miles away from the proposed drilling sites. Even after the five years of long construction are up the oil rigs can run 24 hours a day, seven days a week, for 35 years. This will leave Hermosa with constant noise from the construction as well as emissions of odors, and a decrease of tourist attraction.

Lastly and most dangerous, the drilling could cause earthquakes. By drilling underground to put in the oilrigs, the pressure could change causing an earthquake. Scientists have known for years now that drilling like this can cause a shift in pressure and lead to “unclamping” of stressful faults causing earthquakes. Many scientists believe that drilling like this where you have to inject fluid into disposal wells is exactly what can cause faults to slip. The drilling in Hermosa would be dangerous to the community.

Chelliah 1

On the other hand though, the drilling in Hermosa could bring in a lot of profit and lessen the oil prices because the oil would be coming from in state rather than overseas. The oil-drilling project apparently has invested in underground piping to expel the possibility of an oil spill right off our beautiful coast. The industry plans to be as unobtrusive as the can around the city. Also without this project, many people will loose their jobs because the have nothing to work on and have already invested so much money into their Hermosa Beach project.

With all these points in mind, I still believe that drilling in Hermosa will cause more harm than good. The drilling is already upsetting the community. It has cause many people to speak out against this proposal and even promise to move if it is to get accepted. I feel that the drilling is unnecessary at the moment and should be put off until more necessary circumstances arise.

Yours Sincerely,

Megan Chelliah

1345 17th Street
Manhattan Beach, CA 90266
March 17, 2014

Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

Hello, my name is Tyler Knudson and I am a sophomore at Mira Costa High School. It has come to my attention that drilling for oil in Hermosa Beach is a major conflict right now. Even though I live in Manhattan Beach, I have strong opinions for the search for oil in Hermosa. This is due to the fact that the two towns are so close to each other that they're practically just the same. I would like to argue my opinion on this matter.

There are many reasons against drilling but the most important is the amount risks that follow. First, there is always a risk of an oil spill. Living near the beach, the ocean is a part of all the residents lives in Manhattan and Hermosa Beach. If an oil spill were to happen, it would ruin our beaches, kill our ecosystems, destroy our sand, and prohibit residents from going in the ocean. The small possibility of this happening is too dangerous to risk in our beautiful town. Secondly, toxins are another important risk that could damage our community. Polluted water and air would affect the health of the people. Knowing that everyone in Hermosa would live as close as half a mile away from an oil well, storage tank, or a drilling rig, toxins and poisons would be a major health problem.

Another reason is the amount of problems the town would face during the process. First, traffic would go up tremendously due to all the heavy duty trucks entering and exiting the city. Traffic can already be bad enough with the buses traveling from place to place and the rush hour traffic. The last thing we need is construction trucks polluting our air even more and causing more traffic. Also, the construction would take 30-35 years! This is a long time of loud banging and construction chaos that goes with the building process of the drills and pipes. In addition, the buildings would take up a lot of space and would not add to the beauty of our town.

Lastly, we don't need to drill for oil. The big picture at the end of this 35 year process would be

Knudson 1

the 519 million dollars that it would bring to Hermosa. Our towns are wealthy enough as they are. We are blessed with incredible expensive technology at our schools already and the 519 million is unnecessary. Yes, that much money would be nice to have but it is definitely not worth the risks and effects that would come with it. Plus, the future contains hydrogen powered cars. If these cars are successfully created, the need for oil will be removed. Hermosa is perfect the way it is; the clear blue waves, the boardwalk, and all the happy people. Why should we mess with the peace of the community?

Now you are probably thinking about how the drilling will all pay off in the long run, there will be no sound pollution, everything will be done underwater meaning there's no risk for an oil spill, and we need the money. After 30-35 years, most of us young residents will be moved out and living elsewhere. When we return to our hometown, we would like to see the gorgeous beaches that we were so lucky to grow up on. We would not like to return to smoggy air and a town that is struggling to remove oil from the oceans. Even though the oil pipes will be beneath the ocean's surface, there is always a risk of them being damaged. Once one is broken, how do we fix something quickly that is so far down in the ground? The so called "sound proof walls" would cancel out most noise but it would not eliminate the noise from trucks or other related construction projects.

In conclusion, the drilling for oil should not partake. The outcome will not be worth the process and pollution. Also there are too many risks that could ruin our community. We live in the best place on earth and if one tiny error is made during the process, our ocean and ecosystem could be destroyed. Keep Hermosa hermosa.

Thank you for your time and considering my letter.

Yours sincerely,

Tyler Knudson

Terri Dinubilo

From: Kian Arnold <hockeydogz@gmail.com>
Sent: Monday, March 17, 2014 5:16 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Hermosa Beach Drilling

717 29th St.
Manhattan Beach, CA 90266
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

I am writing this letter to simply state my opinion on a local environmental issue, The Hermosa Oil Drilling. Being a nearby resident I feel the need to inform you all how I feel. I am currently a student at Mira Costa High school. On my freetime I enjoy going to the beach and hanging out with my friends. I believe that the drilling in Hermosa should not occur because we live in a beautiful place and should keep it that way.

The first reason, and one of the main reasons I believe it should not occur is because our community and coast is stunning and adding oil rigs and plants would destroy a majority of its aesthetics. My whole life I have had the opportunity to see Hermosa beach the way it currently is. I hope it will be the same for my kids someday, not overloaded with tankers, smog, and oil rigs. Hermosa is a very peaceful and laid back community. When you add noisy twenty-four hour drilling running constantly, it is not a promising combination.

Another reason why Hermosa should oppose the drilling is because E&P's company hasn't been 100% successful with other projects in California. From 2007-2012, only five years, there has been 15,937 gallons spilled on the coast. That is an average of a reported spill every four months. Personally I don't think it is fair to put our local sea life and the environment at such a great risk.

My final concern is that the drilling will cause Hermosa to be overloaded with construction and noise. It will become one giant construction site, clogged with traffic, noise, and pollution. Hermosa is already a little tight when it is a matter of traffic. Having huge work trucks with loads of materials for construction with bring absolute havoc and disorder to the entire community. That sounds unpleasant without even mentioning the amount of noise created from the construction.

The members of the community who support drilling do have their reasons, for example the profit that Hermosa will receive is substantial. \$500 million dollars guaranteed over the course of the entire project. Though it is a logical reason to be all for that kind of money, it is more of a matter of compromise. You can choose to accept it, and over time benefit in wealth, all while managing to destroy a community and possibly even an environment. It is a matter of moral compromise and to me, not a very smart compromise. But another critical reason is that that amount of money is unnecessary, Hermosa already recently stated in a financial condition report that they are doing just fine without the profit of the oil company.

Arnold 1

in the long run and big picture it just doesn't weigh out. Hermosa needs to remain Hermosa, why should we become an industrial mess, we are a beach town. The pro's just do not compare to all of the cons that come with it. I would like to thank you for taking the time to read my opinion on this subject.

Yours sincerely,

Kian Arnold

Terri Dinubilo

From: Matt Padilla <mp4d@hotmail.com>
Sent: Monday, March 17, 2014 11:22 PM
To: City Clerk
Cc: tnielsen@mbusd.com
Subject: Input on Drilling in Hermosa

3005, Walnut Avenue
Manhattan Beach, CA 90266
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

Hello. My name is Matt Padilla. I am a Sophomore at Mira Costa High School and a resident of Manhattan Beach. I am one of the many who oppose the oil drilling in Hermosa. In this letter, I'd like to assess the problems with oil drilling in Hermosa Beach.

One reason why I am opposed to this because of how it will affect the community. 50% of Hermosa's population lives within a 0.5 mile radius of the proposed drilling site. They will be critically affected by the noises and toxic odor of the drilling site. This also makes Hermosa Beach and the surrounding cities less desirable for tourists, as well as lower property values. Padilla 1

Another reason is that the drilling of oil will not be environmentally friendly. Without a doubt, drilling for oil will cause pollution. Toxic odors and smog will definitely make the south less desirable to visitors. If there is a single oil spill in our beautiful ocean, there will be a huge crisis. All our beautiful wildlife here will be at risk.

My final reason is that it is a bad deal for Hermosa Beach, The presence of an oil and gas drilling operation and pipeline will lower property values. Which, in turn, will decrease taxes and revenues to the city. The last thing that most people want is more taxes

Other people who don't oppose the drilling might say that there are some advantages to the drilling like, it might give people more jobs. However, the increase in jobs might lead to more traffic on main streets like PCH or Sepulveda.

This is why I oppose the drilling of oil in Hermosa Beach. Thank you so much for listening to my discussion.

Yours sincerely,

Matt Padilla

Terri Dinubilo

From: Diego Marcucci <marcuccidiago584@gmail.com>
Sent: Monday, March 17, 2014 11:20 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input On Drilling in Hermosa

415 Herondo Street, Apt #305
Hermosa Beach, CA 90254
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

My name is Diego Marcucci and I am a Hermosa Beach resident attending Mira Costa High School for my second year and am enrolled in CP Chemistry with Teresa Nielsen as my teacher. I was part of the Hermosa Beach City School District for 5 years in my studies at Hermosa Valley School and have had the pleasure of knowing what the aura of the city is like and the people and education that it has to offer. Regarding the ongoing discussions between our city and MacPherson Oil Co. I feel as if our city should not allow the company to dig through our soil for oil.

Our city is known for it's peaceful and beautiful environment day after day. We already have the AES power plant on Herondo Street, and the addition of the drilling hole only six streets away would cause an enormous disturbance for our residents living between those streets. The amount of pollutants coming from a single area will cause the air brought in by the sea to spread these harmful emissions throughout our city and even farther. Although Hermosa Valley School is six streets away, many of the students walk or ride their bike through that area and would have to inhale the pollutants.

Another issue with this drilling would be the danger it would impose on the surrounding citizens in the case of an accident. These drillings are set to be done right next to South Park, a popular park for children and even sports practices. This park also has an after school program in which kids from HVS walk to everyday, and having a possible disaster waiting just a block away puts too much risk on the kids. There are houses just down the hill from the expected drilling spot, and as proven from past drilling, accidents can go on for a long time without being controlled.

One of the biggest issues would be the loss in tourism the city would obtain. We have banned public smoking and our community works hard to keep this environment clean and that is what attracts the tourist. With this drilling making extreme noise and damaging our environment, the city would lose a great amount of money with people that are highly against our drilling in urban towns. Even though we would not plunge our income from tourism, this project would extend for years and slowly year by year the city would start becoming an enclosed town with far less tourism than is normally expected each summer.

Marcucci 1

One thing that MacPherson Oil Co. could bring to us would be a large profit. According to them, this oil could be worth millions of dollars, which is the main reason for the drilling. Our city gets along with a tight budget, but still manages to be the small city it is with an extremely good budget considering the two schools that it has. The revenue from this drilling would help out the city in a good way, maybe even create jobs in our town to help run the drilling. Even this money could help boost tourism, education, and modernization in parts of the city.

Marcucci 2

I still strongly stand to not let the MacPherson Oil Co. drill in our city. You may have heard thousands of arguments for or against this topic, but hear them from the next generation, the generation that will have to deal with the results of this voting. Us teenagers are the one with the biggest voice, but a voice that can't be expressed. This is why my classmates and I write to all of you, to show you what we think after growing up in this town all our lives and not wanting to see it change, or in some opinions wanting this city to be different from what it now is.

Yours sincerely,

Diego Marcucci

921 Boundary Place
Manhattan Beach, CA 90266
March 17, 2014

Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

Hello, my name is Elliot Walters and I am a sophomore at Mira Costa High School. I would like to address the issue of oil drilling by E&B in Hermosa Beach. After some research, I have discovered that the process of the oil drilling will not impact the community in a significant way if it is eventually implemented in Hermosa Beach. For this reason I believe oil drilling in Hermosa Beach should be permitted, and I will provide more support for this argument in a few paragraphs.

Walters 1

If no action is taken, the oil will still be in the same place, under the sand at Hermosa Beach. If the oil drilling is permitted, it will give the city of Hermosa Beach a very significant amount of revenue in royalties from the drilling. While the costs for funding the project may be high, the cost will be even higher if the drilling is not approved by voters. The city would be forced to pay E&B a settlement of seventeen and a half million dollars, opposed to a settlement of three and half million dollars, in addition to the costs for the project which would add up to about seven and a half million dollars, if the project is approved. The revenue estimation over a course of 35 years if the project is approved adds up to a total between one hundred and eighteen million dollars and two hundred and seventy million dollars. This would pay the city back in full for the funding of the project and create a large amount of profit.

The profits made from the oil drilling could be used to beautify Hermosa Beach, add new facilities, and improve the existing structures in the city. A personal suggestion of mine is to use the profits to fund research on alternative power sources to oil, such as the use of hydrogen gas as a fuel source. The money made from the oil drilling could potentially eliminate the need for oil drilling and prevent the cause for controversies similar to the one I am currently writing about. The use of hydrogen as a fuel source opposed to the use of oil could be helpful to the environment in terms of emissions. Hydrogen fuel releases water vapor as an emission, while

gasoline, obtained from petroleum, releases large quantities of Carbon Dioxide into the air, which brings on global warming when trapped in the earth's atmosphere. If the city of Hermosa Beach supported research for this new source of fuel, and informed its residents about hydrogen fuel, the use of oil may be unnecessary one day.

One reason the residents of Hermosa Beach do not want the oil drilling is because of the aesthetically unpleasing features of the project. The facility where the oil is recovered is blocked by a 16 foot high wall, and all power lines and poles are underground, so the site is not identifiable as an oil recovery location unless one has prior knowledge of the facility's site. The pipe that transports the oil is concealed underground and leads to the facility's collection center, so the oil collection will be virtually unnoticed by the residents of Hermosa Beach.

A point that can be used against my input is the occurrence of an oil spill during the process of oil drilling. It has happened before, and has caused devastation to a location's environment. The oil pipe route proposed by E&B avoids areas with frequent human activity, and the pipes transporting the oil itself are reinforced with many layer and will be constantly monitored in case of an oil spill.

In this situation, the most sensible course of action is to approve drilling in the city of Hermosa Beach. There are arguments against the action, which are completely viable, but I personally believe that the benefits from the drilling outweigh the harms of it. The city will gain a large amount of revenue from the project, which can be used for many different pursuits, such as improving the city's overall condition as a whole, and supporting new sources of energy. Thank you for reading my opinion on the situation, and I hope you take it into consideration.

Sincerely,
Elliot Walters

1315 Corona Street
 Hermosa Beach, CA 90254
 March 17, 2014

Mayor Michael DiVirgilio
 Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
 City Manager Tim Bakaly
 City of Hermosa Beach
 1315 Valley Drive
 Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

I am contacting you concerning the oil drilling that is being debated in Hermosa. I understand that you must get a lot of these, and that this whole thing has caused quite a headache. I am a student of Mira Costa, and I am writing this letter for a school assignment. I hope that this fact will not detract from my opinion of the matter, although I am only a Junior in High school. I live and have grown up in Hermosa Beach, and I believe that this decision will impact my peers and I; we are the future of this city. I do not share the same views as the rest of this community. I believe that Hermosa Beach should allow the proposed oil drilling and that our city will benefit from it. Consenting to drilling will help our community financially, as well keep our city from being hassled by other drilling companies. It will also contribute to the well-being of our country.

Nobody wants to be in debt, or have to deal with financial trouble. America is already dealing with a recession, and I along with anyone in Hermosa would not want to see the city struggle with that. This project is an amazing opportunity to have a nice cushion to keep us from that. E&B's president says we could be getting 15 percent from oil and gas revenue. This can help us to break away from having to rely so heavily on the bar business, and clear up all the problems that come along with that. 5 percent of royalties goes to Macpherson, which should get them off our backs. 20 cents of each barrel sold will go to our school district, which is another benefit to Hermosa beach locals, especially those who have children in the district. **Personius 1**

Once we allow E&B to start drilling and they are established in our city other drilling companies would be kept away from Hermosa. I'm sure E&B would not want any competitors drilling as well and will do a good job of keeping them away. As I mentioned above this will also help to erase the conflict with Macpherson. Although E&B is going to be here for a while, that will ironically benefit us as well. By the time they leave, and have drilled out everything there will be nothing else for other companies to go for. If we give them permission now, eventually oil drilling in Hermosa will no longer be an issue. If we keep fighting this there will be more and more companies every year, which is only going to cause more tension in the community.

Hermosa Beach has a rare opportunity to help out our country by drilling. Our oil will go to American pumps, or exported to other countries, both would help to boost the U.S. economy. Even if this only raises the economy in a minor way, it shall encourage other communities similar to us to do what we have done. It's all part of a domino effect. For too long Americans have foolishly refused things that are common sense and have paid for it later. Oil drilling is one of those things. Why are we so scared to be patriots? Why do Americans fear being brave? I don't understand it, but we are allowing ourselves to walk farther and farther down a path of destruction. We have let the majority hush our voices and sweep away good and morals. Specifically in our community this majority has taken the form of the party and bar scene. We are known for it too, shipping in people in from the valley area on party buses so they can get wasted and desecrate our beloved town. This is only because we made it this way, because we backed down, we crumbled, and we were weak. Its time to make a change, and hopefully we can stop indulging ourselves in irrational political beliefs.

Of course with oil drilling there must be great caution taken considering that oil drilling has gone wrong before. Those against oil drilling argue that drilling here could result in an oil spill, something that would be damaging in many ways. Fortunately E&B is taking every precaution, and will slant drill, underground instead of setting up oil rigs out in the ocean which would be both a worry and an eye sore. There is no possibility that the oil will leak and pollute the ocean. E&B is well aware of our query concerning that and have taken every precaution to ensure that our land stays unsoiled.

I am willing to take a step forward. I unlike the majority am ready to do something that is unpopular, but can yield great rewards. The people of Hermosa need to stop and realize that there is great gain from this project. The power resides with them, and I am one of them. I think forward, I think towards my future, and my peers future, and maybe even our childrens' future. I am for drilling in Hermosa. I am for doing things that will strengthen our country.

Yours sincerely,

Lincoln Personius

Terri Dinubilo

From: Sophie Dafesh <pangs99@verizon.net>
Sent: Monday, March 17, 2014 10:57 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input on Drilling in Hermosa

5th Street
Manhattan Beach, CA 90266
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

Hello I am a student at Mira Costa High School and I oppose the project to drill for oil in Hermosa beach. There are a plethora of reasons I find the project inadvisable: The first is that it will negatively impact the people in Hermosa beach. It will also risk causing damage to the previously damaged environment. Finally it would negatively impact the town itself

The drill for oil will harm the lives of the people in Hermosa Beach. There are many possible risks that would be caused by the drilling project. First dangerous pollutants would be released in the air such as arsenic, a carcinogen that also may damage the blood vessels. The odors could also cause headaches to residents of Hermosa. These headaches will be caused by Hydrogen Sulfate, which could also cause nausea or mental health risks. Also by re-injecting fluids, there may be an increase of seismic activity. Seismic activity would put Hermosa and its neighboring towns at risk. The project also is a fire hazard. Noise and light would also impact the citizens sleep in a negative fashion, as the noise would be made during testing. These risks would greatly upset townspeople and negatively impact their health.

It will also risk damaging the environment. The methane gas could leak, or contaminate the water. There is also a risk of increasing greenhouse gas emissions, which would not only affect Hermosa, but the entire world. Oil spills also pose a danger to the environment. They are challenging to remove especially from the ocean. They also damage the marine life in the ocean. The oils contents can be poisonous which would be bad for people and animals in the water. Oil can also damage animals feathers and fur, which damages their flight and ability to maintain temperature. Avian life would be especially damaged.\

Finally Hermosa Beach is a beach town. People visit the town to go to the beach and spend time along the beach. If there were an oil spill, it would drive surfers and other beach-goers away from Hermosa Beach. There may also be a loss in property value which would perturb property owners. There may also be subsidence in the

area near to the shore, which would change the land and cause a loss of the beach sand. This would change the layout of the beach and could lead to flooding of beachfront property. All of these changes would impact the way the town presents itself, changing the entire purpose of the town; from a beach town to one designed to harvest oil.

While it is true that the city of Hermosa Beach has taken on this endeavor to settle the promise of a place to drill oil to the E&B company, and by not allowing them to drill oil they will have to pay a settlement of 17.5 million dollars. Hermosa beach can pay the settlement without going bankrupt, and by not allowing oil to drill they are insuring that Hermosa beach will be a clean, safe, and healthy place for all of its residents.

To sum it all up; the drilling in Hermosa should be opposed because it will greatly damage the lives, environment, and the town itself. Thank you for your time.

Yours sincerely,

Sophie D.

From: Zachary Dushenko <zdushenko@gmail.com>
Sent: Monday, March 17, 2014 11:40 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input on Drilling in Hermosa

1014 4th St.
Hermosa Beach, CA 90254
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

I'm assuming you've gotten a large number of these Emails already. If you've taken the time to read each one, you've most likely already noticed a pattern: STOP THE DRILLING. Honestly, I'm against it as well. I feel that oil will soon be useless(or at least should be), the possibility of catastrophic reciprocations from an accident are way too high, and that the community will blindly reject the drilling for as long as it goes on. I truly and sadly must say that I myself have been barraged with protests. What's honestly surprising to me is the lack of effort the drilling companies have expended in order to explain why this is good. Of course, already holding the rights to drill does probably weigh in their favor.

Oil is obviously a non-renewable resource, so there is a finite amount of it on this earth. Thus, since our society has become so reliant on energy, renewable sources of energy have been sought out. Recently, there have been creations such as solar panels, wind turbines, geothermal generators, and even hydrogen power. With all of these resources at our disposal, do you really expect for oil to remain a popular source of energy? There's also the fact that many people have begun to be frightened of greenhouse gases. Since greenhouse gas emissions and their effects are very real, many citizens have begun to turn away from oil. The use of it for energy production is one of the most CO2-emitting processes currently known. More and more people have begun turning to Hydrogen-fuel cells for power. The popularity about them is contained within the fact that using it for energy only leaves a by-product of water. Hydrogen's not the only new, clean, renewable fuel source out there, either. Believe me when I say oil is going to drop off the Capitalist market.

The oil itself isn't the only problem, though. There's also the fact that drilling for oil is incredibly disruptive to the ecosystem. If there were even the slightest leak, the sea life off of Hermosa's coast would turn belly-up. The drilling company would be to blame, even the smallest thing would be blown out of proportion, and it would be the BP Oil spill all over again. But there doesn't have to be an accident for the drilling to be disruptive. Even success can have catastrophic reciprocations. And no, I'm not talking about the butterfly effect, where it's a chain of events. No, the side-effects would be the direct result of the drilling company. Think about this: the drilling is taking place off of the coast of California, in an area already haunted by the fear of earthquakes. Now, when you take out oil from underground, the hole doesn't just fill up. At least, the hole shouldn't just fill up, otherwise you've got a problem. So, think about this: there is a giant gap of nothing in the ground underneath the water's surface, with a very different level of pressure contained within it that that of the surrounding

... what's going to happen? Well, the most obvious answer is it collapses. When this does happen, and this happens every time, the repercussions are pretty severe. Sometimes even earthquake severe.

Aside from the economic and environmental issues with drilling off of the coast of Hermosa, there's also the political standpoint. This drilling company is playing off of a city council vote from 1958. It has been fifty-six years since the right to drill was given. There have also been protests against the oil drilling since 1958.

Basically ever since 1958, the City Council has been trying to undo the mistakes of their predecessor. **Dushenko 1** citizens of Hermosa Beach have been yelling no. This has obviously been very effective. For the most part, all those voting against the drilling have not fully looked at the statistics. E&B promised the city \$118 million-\$270 million over a 34-year time span. The statistics also show that the city will expend \$22 million over 20 years by denying E&B permission to drill. But do the protestors care? No, not at all. Most of them probably don't even know the whole background to this predicament. Since the situation seems to be boiling over now, one may be able to call it a current event 56 years in the making.

Although the citizens of Hermosa Beach have a large case against the drilling, those on the side of E&B have a lot of reasons not to care what the community says. First off, I want to bring up once more, E&B has held the rights to drill off of the coast for 56 years. They could have just started at any time without people even knowing what had just happened. Second, they offered the city a LARGE amount of money. Up to \$270 million spread over 34 years, to be exact. With that much money, Hermosa Beach could... well... get rich. I mean, of course renovations can always be done, of course hiring more cops with higher pay ensures more protection. In all honesty, though, that money would most likely get stopped somewhere at the top, leaving a trickle for those below, just as always. Other than the taxes the city would get, many people have discussed how this would open up job opportunities. From what I've seen in my 15-or-so years living in Hermosa, a business hiring is never more than a few blocks away from your current location.

The general consensus of the Hermosa Beach community is that the oil drilling should not be allowed to take place. Everybody has their own reasons why they're against the drilling, be it for traffic reasons, political reasons, economic reasons, or anything else. As an energy source, oil is not only non-renewable, but also just not popular amongst environmentalists. Whether anything goes wrong with the drilling process or not, the ecosystem surrounding the extracted oil will suffer. Also, expecting the citizens of Hermosa to just sit down and be quiet about this situation is not to be expected. Until there is full certainty that the drilling will never take place, most people will not rest. Even after being offered millions of dollars, the residents will not back down. It should be noted that they haven't backed down for 56 years, and they shouldn't be expected to now.

Sincerely,

Zachary Dushenko

1544 2nd Street
Manhattan Beach, CA 90266
March 17, 2014

Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and
City Manager Bakaly:

My name is Layne Eichenlaub, and I am a sophomore at Mira Costa High School. In regards to the controversy of oil drilling in Hermosa Beach, I strongly believe there are many benefits, which make it worth pursuing. Although there are also understandable concerns, which need to be addressed, there are solutions. Overall, the benefits of this project outweigh the suspicions. I believe oil drilling in Hermosa Beach will not only give the community independence, but also allow room for immense profit for this and future generations.

Eichenlaub 1

One of the many benefits of the oil drilling in Hermosa Beach, the city is expected to receive an approximate total of \$519 million in profit. With this money, it will be a great help for the school system, and residents as a whole. Residents living in the area have rights to the soil. Approximately 1,000 property owners are expected to receive royalty payments, in exchange for their support of the project. These economic benefits will immediately have a positive impact on the city of Hermosa. Based on the numbers provided, it is evident pursuing the drilling project is the best option for the people of the city.

A major concern with the Hermosa Beach Drilling project is the potential danger. This problem is easily avoided. A worry of many is the threat of oil spills. The project plans are to use directional wells, which are a stable way to guarantee the oil is kept safely far underground, with no way of reaching the surface. In California, there are currently 765 active wells thousands of feet below the ocean floor. The success of these active wells has proven the safety of this project. Due to the fact because of these wells we know this project can be done safely, there are no reasons to worry.

Another major benefit with the continuation of this project is the opening and possibility of job opportunities. With the progression of this project, more and more jobs will open up for people to work. With that, those already working on the project will be able to keep the jobs they have. With our economy, it is necessary to take advantage of every job opportunity we get. With the approval of the oil drilling, we will be able to do this. At the end of the day, the Hermosa Beach drilling project is for

the benefit of the people. This is yet another economic benefit, and reason why the Hermosa Drilling project should commence.

As someone against the drilling project, many understandable questions are raised. One of these important questions is the safety of the people. Just as I mentioned earlier, many of the same directional wells are currently active in California. It is guaranteed, the oil rigs are stationed so far under the surface it is impossible for there to be enough oil to reach the surface, and be dangerous for the people. This is due to the smart planning of the system, putting the rigs extremely far underground. Another question I would ask as someone who opposes drilling is the possible negative evolution of Hermosa Beach. What I feel is most important to Hermosa residents is the commonly known idea of "keeping Hermosa, Hermosa". As a small town, Hermosa Beach is one of the few places known as a somewhat historical area because it has stayed unique for so long. With the oil drilling, I would argue the future changes of the town not many would agree with. To counter this, there would be no detrimental changes to Hermosa, only economic benefits. With the rigs and piping so far underground, there is no way of seeing them. For the residents close to the oil, they are given royalty payments if they agree to the project. This takes care of the issue of happiness of the people, because they can decide whether they would like to do it or not, and if they do, earn profit from the project. Overall, from a resident's perspective on the side opposing the oil project, important questions can be answered.

Due to the large profit oil drilling will produce for the city of Hermosa Beach, it is crucial the project commences. The residents of Hermosa Beach will enjoy the success and profit, while keeping a safe and healthy environment. There is no doubt if the project is pursued the city, and people of Hermosa Beach will not regret it. The community will thrive in profit rather than drown in debt, all while keeping Hermosa, Hermosa. Thank you for your time.

Yours sincerely,

Layne Eichenlaub

Terri Dinubilo

From: Morgan McCarroll <morganmccarroll5@gmail.com>
Sent: Monday, March 17, 2014 9:59 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input on Drilling in Hermosa

122 Barney Ct.

Hermosa Beach, CA 90254

March 17, 2014

Mayor Michael DiVirgilio

Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,

City Manager Tim Bakaly

City of Hermosa Beach

1315 Valley Drive

Hermosa Beach, California 90254

Dear, Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

My name is Morgan McCarroll from Hermosa Beach, California and I am writing to you because of my thoughts about oil drilling off the coast of Hermosa. I am against oil drilling in Hermosa because I think it has fewer pros than cons. Health issues, cost of the project, appearance of Hermosa Beach, air pollution and noise can potentially affect residents of surrounding areas. I sure don't want this to happen to beautiful Hermosa Beach and I'm sure I speak for others as well. Residents of Hermosa are so fortunate and lucky to live here. The beauty shouldn't be ruined by something we might regret.

Nearly fifty percent of the city's residents live within 0.5 miles of the site. Air pollution will be released of oil and gas operations for the life of the project. Some chemicals being released include benzene, formaldehyde, propylene, toluene, xylenes, and more. These chemicals can increase asthma attacks, bronchitis, heart attacks, heart failure, headaches, and cardiac arrhythmia, and augmented hospital admissions and emergency room visits. It causes risks to human life incorporating oil spills, fires, equipment failures, leaks, explosions, falling objects, and vehicle accidents. If 10,000 to 20,000 gallons of oil spilled in Hermosa Beach it would spread 17 miles away causing wildlife harm, fishing, fewer tourists, and less money.

Another problem with oil drilling is it would cost millions of dollars. The total cost of the project is measured out to be 28.7 – 30.7 million. This isn't worth the money because of all the cons. It's not worth the

McCarroll 1

ney to have health issues and affect residents of Hermosa Beach. This affects the cost of new and refinanced real estate loans. These loans will be denied because of environmental threats to the area. When it comes to cost ask yourself about all the negative affects.

Hermosa Beach won't look the same if they pass oil drilling. The proposed site will be less than 100 feet away from homes and businesses. Also a 135 - foot tower will be built overlooking the greenbelt. It will block the view of the ocean. Nobody wants a blocked view of the ocean. Hermosa simply won't be the same. It could have the risk of the ocean floor and our beaches sinking.

Lastly, it causes a great amount of air pollution and noise is an issue. Explosions and dangerous gases are a potential threat. The risk of noise is 24/7 and at 70 decibels plus. The oil tank trunks and odor will be unbearable to residents. There is an area of 250 yards of high impact zone. This includes noise, odor, dangerous gases and explosions.

There is no way to contain the odor or deadly gases that are going to be breathed. This isn't fair and could highly affect Hermosa Beach.

I hope you can consider my thoughts on oil drilling in Hermosa Beach. I don't want to see change in Hermosa Beach after almost all my life. It has so many problems and could harm Hermosa greatly. It's not fair for the residents that live here. I hope I influenced no oil drilling in Hermosa Beach. Thank you and I look forward to hearing back from you.

Sincerely,

Morgan McCarroll

Terri Dinubilo

From: Breanna Harris <breanna.harris16@yahoo.com>
Sent: Monday, March 17, 2014 9:46 PM
To: City Clerk
Cc: tnielsen@mbusd.org
Subject: Input on Drilling in Hermosa

p3504 West 185th street
Torrance, CA 90504
March 17, 2014
Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

I am coming to you today regarding the topic of the oil drilling in the city of Hermosa, and informing you of the abundance of reasons why I and the majority of the community are opposed to the procedure. Yes, the drilling project will bring in a plentiful amount of money to the city, but how much money exactly is being invested into it? I will now list a small portion of the many obstructions the drilling will cause: surface mining and processing require extensive land use, there are potential environmental impacts, and the safety and health of the citizens would be at risk.

Harris 1

To my understanding if we deny the oil drilling to occur the city must pay 17.5 million dollars to the MacPherson Oil Company because of the lawsuit they have for a prior breaching of a contract in 1998, and if we agree to the drilling the city must still pay 3 million dollars. So, yes some money would be lost, but according to my research, as of twenty-thirteen, the city of Hermosa is debt free so this would not have much of a financial impact on the community. Also, if the residents had backed out in 1998 why bring the matter up again, if it obviously was not in the well being of the citizens then, what has changed?

Mining, processing and waste disposal require land to be withdrawn from traditional uses, and therefore should avoid high density population areas. Oil shale mining reduces ecosystem diversity with habitats residing a variety of plants and animals. Disposal of mining wastes, spent oil shale and combustion ashes needs additional land use, production of a barrel of shale oil can generate up to 1.5 tons of semi-coke, which may occupy up to 25% greater volume than the original shale. The waste material may consist of several pollutants including sulfates, heavy metals, and polycyclic aromatic hydrocarbons, some of which are toxic and carcinogenic. To avoid contamination of the groundwater, the solid waste from the thermal treatment process is disposed in a landfill. As semi-coke consists of, in addition to minerals, up to 10% organics that may pose hazard to the environment owing to leaching of toxic compounds.

E&B natural resources has spilled almost 16,000 gallons of toxic fluid over the past 6 years in California. E&B averages one reported spill every 4 months.. This goes to show that no matter the precautions taken, their are always the unavoidable risks. The mining can also affect the water management, mining influences the water runoff pattern of the area affected. In some cases it requires the lowering of groundwater levels below the level of the oil shale layer, which may have harmful effects on the surrounding land and forest. One environmental issue is to prevent noxious materials leaching from spent shale into the water supply. The oil shale processing is accompanied by the formation of process waters and waste waters containing tar and several other products, heavily separable and toxic to the environment.

I believe that you want only the best for the citizens you represent, and the best does not include air pollution, or any other safety and health risks, which is what you would be objectifying them to if you proceed with the oil drilling. Main air pollution is caused by oil shale-fired power plants, which provide the gaseous products like nitrogen oxides, sulfur dioxide and hydrogen chloride, and the airborne matter. In addition, the combustion and thermal processes generate waste material, which must be disposed of, and harmful atmospheric emissions, including carbon dioxide, a major greenhouse gas.

If you are still considering being pro-drilling then you clearly do not have the citizens best interests at heart. Hermosa is not interested in making a profit, what they most want is to enjoy the safe and healthy environment that they currently live in, the oil drilling is unnecessary and unwanted.

Yours sincerely,

Breanna Harris

3524 Maple Ave.
Manhattan Beach, CA 90266
March 17, 2014

Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary, City Manager
Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary, and City Manager Tim Bakaly

My name is Josh Hoffman and I am a student of Mira Costa High School and a part of the Model United Nations program. In this class we study politics and global issues, and I read about the issue with the oil drilling and took an interest in it. Much like Model UN, this is a problem in which one must balance the pros and cons to determine what the best solution for the problem is. Taking into account the arguments made by both sides of the issue, and I would have to agree with the side that would allow the drilling to occur in Hermosa.

Some of the members in the party against the oil drilling created a list of some of the atrocious things that the oil drilling could bring to Hermosa, but those things could be easily countered. One of the poor things that the people against the oil drilling stated is that it could bring an oil spill to Hermosa. The drilling company states that if a spill were to occur, it would be disastrous to the area's biology, but the drilling company also stated that the chances a spill or well blowout are very, very unlikely. One of the other big concerns of the oil drilling is that the mono-nitrogen oxides will be harmful to the local people that live in the south bay. Although, the amount of vehicles and the products being released by the vehicles are much more harmful than the mono-nitrogen oxides that could possibly be produced by the oil drilling.

Hoffman 1

The oil drilling could bring many of benefits to the people of Hermosa as well. One of the benefits is the oil drilling could bring in tens of millions of dollars in revenue in the next few decades. They are estimating a revenue of about one hundred forty-seven million dollars to two hundred ninety-nine million dollars to be made by the Hermosa Beach government over the next three decades. This money can fund many sorts of projects, such as improving the school system/ providing a better education for the children of Hermosa, building more community centers or buildings that could help the citizens who are involved in the well-being of the city of Hermosa as a whole, or could be used to improve the Hermosa Beach public safety departments such as the fire department or police department.

The Hermosa Beach drilling project can greatly improve the city of Hermosa through the money it can generate. Through the drilling project, the city of Hermosa can fund many different projects that can substantially improve the lives of many who are living there. The education system could be improved as well as the public safety departments protecting the people. As stated before, the side effects brought on by the oil drilling are either very very unlikely, or they are just not as bad as some of the other factors that are currently existent. For these reasons, I believe that the drilling in Hermosa should occur because of the benefits brought on by it.

1605 wendy way
Manhattan Beach, CA 90266
March 17, 2014

Mayor Michael DiVirgilio
Council Members Peter Tucker, Nanette Barragan, Carolyn Petty, Hany Fangary,
City Manager Tim Bakaly
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

Dear Mayor DiVirgilio, Council Members Tucker, Barragan, Petty, and Fangary, and City Manager Bakaly:

My name is Austin Bowkus and I would like to give you my input on the drilling in Hermosa Beach, I am against the drilling because your whole project is not required to be clean and or safe, and that would ruin our clean water and our air. It will also have aesthetic impacts on our community such as the 110 ft workover rig and the 87 ft electric drill rig that will tower over nearby homes, and with that comes the ruining of our city, because nearly 50% of Hermosa Beach residents live within 0.5miles of the proposed drilling site where there will be, 30 oil rigs, 4 wastewater reinjection wells, storage tanks, and miles of underground pipelines, not including all of the noise and lights coming from the site. This will also make our property values decrease substantially and make our city less attractive as a tourist destination.

One of the reports that i read also said that you recommend 130 mitigation measures to soften the impact of the noisy drilling, chemical odors, and harmful air emissions that would likely occur during demolition, construction, and operations of the project at the corner of 6th st and valley drive at the city's existing maintenance yard. which would be relocated at the city's expense, the city has 6 million set aside and would need 11.5 million to pay 1.1 million for the next 20 year, or the city could cut its annual 30 million\$ budget by approximately 850,000 a year just to pay for it for the next 20 years. Another reason why I am against the drilling is because in my chemistry class we learned about how a lot of car companies are trying to make a car that runs on hydrogen instead of oil because there will be a lot less pollution coming from hydrogen rather than coming from oil, so my question is why should we be drilling for oil and ruining our city if the future of our transportation is running on hydrogen instead of oil, so think about that when you make your vote.

Even though i am against this whole drilling thing i will say why should chose the drilling **Bowkus 1** that is because if you say yes our city will gain 118 to 270 million over the next 34 years, and our schools will receive 1.2 to 2.2 million over the next 34 years, but if we say no then it will cost our city over 22 million in over 20 years, and I don't really think that the 6 million we have saved

up is going to do much help.

So in the end i would like to say that i am against the drilling but i understand that we may need it but one thing is for sure I know that I don't want to have to swim or surf in water full of oil and I'm sure you dont want to either

sincerely,

Austin Bowkus

Pamela Townsend

From: Howard <howard17@mindspring.com>
Sent: Wednesday, March 05, 2014 4:35 PM
To: Oil Project
Subject: written comments on draft EIR, HIA and CBA

March 5, 2014, VIA E-MAIL

Ken Robertson,

Director, Community Development Department, City of Hermosa Beach

RE: Draft Environmental Impact Report, HIA and CBA - E & B Oil Drilling, Pipeline, and Production Project

Dear Ken,

Simon 1

The following is my input for oil drilling public written comments to be considered for inclusion in final reports by the consultants and any further presentation material provided to voters. I am a long-term homeowner living in North HB.

After seeing the "2 – Direct City Costs (If Measure Approved)" slide from the Monday February 24 presentation, it seems that significant costs are omitted.

I haven't finished reading the 3 reports, but I wonder if the streets will upgrade and repair themselves for commercial truck use; the heavy industrial fire department will be strictly volunteer and firefighters will find free oil well firefighting and containment equipment and a place to store and train with it, or the city will have to condemn and purchase adjacent property as a buffer zone due to future safety regulations or for emergency access. Has someone guaranteed that no one will sue the city? We see that there is a projected average additional 0-1.6 deaths per year, up to 6 additional childhood asthma cases per year, anticipated property value reduction due to proximity and in case of a catastrophe, and lots more identified potential liabilities.

I think one additional 8-hour shift in the fire department is wholly inadequate to protect the city from oil drilling and pipeline caused catastrophe. However, one shift plus training was estimated to cost \$250,000 per year or \$16.5 million over 35 years. This minimal staffing cost is far greater than most of the items included in the Direct City Costs summary and should be included in that summary.

When the city's HIA projection is that up to 56 people will die (up to 1.6/year x 35 years) and up to 180 children (up to 6/year x 30 years during phase 4) will suffer asthma as a direct result of oil drilling activities, shouldn't the potential liability be quantified and either the city purchase insurance or allocate money for a new defense and settlement fund? This could mean up to 56 wrongful death lawsuits against the city and up to 180 lawsuits for children's lifetime health damages, assuming only valid claims are filed. And that is without any catastrophic incidents over the next 35 years. Without major insurance coverage, will HB be the biggest, brokest lawsuit target around, likely depressing property values for all HB home and business owners?

The HIA reminds me of the Ford Pinto debacle. Ford identified the dangers of exploding gas tanks, then performed a financial analysis and chose to sell the car in spite of the projected deaths and injuries. The largest individual award was \$126 million by a California jury 36 years ago in 1978, later reduced on appeal to \$3.5 million. One lesson from Ford is when the city plans on people being injured and dying from profit motivated activities, we should not underestimate the fury of California juries and the size of damage awards. This is not the same as a single oil company suing for their illusive lost profits, but possibly hundreds of families suing for loss of their mothers, fathers, grandparents and children, or their health, so the city can have some extra money.

While we can argue all day what a wrongful death lawsuit or a child's asthma is worth, doesn't the spirit or obligation of full disclosure suggest that significant projected damages and liabilities be included in the financial analysis? I would guess that the whole oil drilling fiasco will have direct costs which exceed what the city and schools will receive in oil revenues. I haven't seen a discussion of this issue, but we need to ascertain if the city can charge these defense

liabilities against all the restricted oil revenues? And that assumes that they are not already committed or spent by the time lawsuits are filed.

While insurance does not reduce the projected costs of death and damages, it limits the unplanned costs so long as the coverage is large enough. So if it is reasonable to estimate the settlement cost of a wrongful death at \$2 million and defense costs of \$500K, then up to \$140 million should be planned based on the HIA estimate of up to 56 of these cases. I'm sure there are factors to use to plan for defense and settlement for actual and punitive damages for intentionally causing children's asthma. If that totals \$1 million per case, then there should be provisions in the budget for another \$180 million for these damages, and possibly a contingency if the planning estimates turn out to be low or an incident occurs.

The EIR identifies lots of unmitigated risks that need to be included in the financial projections. Some of these risks only insurance can protect against, such as lawsuits resulting from increased risk of earthquake damage, catastrophic explosions, leaks, fires, discharges, toxic clouds, and more. Any earthquake in the next 35 years will likely raise the question of contributory effects of oil drilling and waste water discharge.

Under the auspices of risk assessment, mitigation of financial concerns, and full disclosure, how about if the city or a private group submit the EIR and other analysis to an insurance company for a quote? An insurance quote would provide an independent assessment of the costs of the risks and exposures of the oil drilling project from someone (the insurance company) who actually has skin in the game – i.e.: they are at risk for payout of claims against all the risks.

The city could look for a full value policy, like insurance companies suggest for homeowners insurance – 6,000 residences (4,000 owner occupied and maybe 2,000 rental buildings) at \$1 million each totals \$6 billion, plus personal injury, liability, city lawsuit defense, and other disaster coverage for 35 years or the life of the oil well and pipeline project. The policy could cover reduction in property values in case of an incident. But what if damages occurred to the Santa Monica bay or property outside HB as a result of the drilling and transportation of oil and gas?

We could even ensure against a dry well, so the city is not out big \$ for moving the maintenance yard, creating an industrial strength fire department, strengthening roads if the pipeline isn't completed, etc. It is also important to establish the future cost of anything buried in the contracts that the city may be indemnifying the oil, pipeline company, or neighboring cities for or for which there is no responsible party other than the city with sufficient resources to pay for the damages. As established above, the property owners in HB own real estate assets valued at \$6 billion or so, at least before a catastrophe.

I can't guess what the insurance cost would be, but I doubt it would be trivial for 35+ years and lots of identified risks. I think the HIA was weak or remiss in exploring and identifying or ruling out the risk of cancer clusters surrounding oil and gas production facilities. Of course, insurance can't keep people from dying or being hospitalized or diagnosed with cancer, but they can assign values and risks to these potential outcomes. Then the insurance cost can be held up as a real cost to compare against profit projections. If we were surprised and the insurance cost is actually trivial, then I'd say buy it!

Thank you for your consideration. Please confirm receipt of this email.

Sincerely,

Howard Simon

Pamela Townsend

From: Jeff Bronchick (Google Drive) <jbhermosa@gmail.com>
Sent: Saturday, February 15, 2014 5:08 PM
To: Oil Project
Subject: Oil project (oilproject@hermosabch.org)
Attachments: oil letter to editor.pdf

Attached: oil letter to editor

Google Drive: create, share, and keep all your stuff in one place.



To the City of Hermosa Beach:

As a resident of the Southbay for 20 years, the past nine of which in Hermosa, I am deeply disturbed by the level of extremist vitriol regarding even the suggestion that Hermosa residents should have the ability to make an informed ballot decision in regard to whether our City should allow oil drilling. In what seems to be a complete vacuum of intelligent debate, I am writing to my fellow citizens to offer some ideas and facts that might help spur some independent thought to counter the obviously visible one side of the issue.

Bronchick 1

While I am an investment analyst by trade who has studied the oil industry for decades, the basis for many of my non-technical comments is simply from spending a few hours on the web. Our City has a surprisingly terrific website where a resident can look at past and projected budgets and the details of history of oil drilling in the Southbay. It also contains links to all the E+B fillings as to what the project will actually look like and just how much money could pour into our schools and our City. I spent time on the Keep Hermosa Hermosa website and Facebook, I also went a little farther and have talked to school district officials, the head of the HBEF and I invited E+B representatives to my office for a Q+A session with some other locals.

Bronchick 2

I conclude the following: it would be the height of insanity, and grossly undemocratic to not allow this proposal to go before the voters. My personal vote would be that we would also be crazy not to approve it.

My first and most important point is that the math of a successful drilling program is so enormously positive for the City - and that means us - that it must be heard. The City's annual budget is \$30mm-ish. Using the 80% of the Berkeley Research Group's study (page 85), one comes up with an average of \$23mm annually for the City split between the General Fund and the Tidelands Fund for the first ten years of project life, trickling down for another 20-ish years. Within any reasonable margin of error, that is an absurdly large elephant to be ignored by a banner campaign. Think of the state in which we live and its finances. Think of the difficulties a small City like Hermosa has in sustaining the kind of service and community we desire. A successful program is a preposterously large piece of good luck for really "Keeping Hermosa Hermosa." A not in any way comprehensive list of things that can be negotiated and funded with this inflow include - complete rebuild of aging City buildings - City Hall, Police, Fire; the expensive and necessary rebuild of our sewers; pier, strand and downtown rebuilds; parking improvements; environmental spending to cleanse run-off pollution, energy efficient City lighting and pension liabilities. Yes, there are two "pools" that the cash flows into - General and The Tidelands Trust, but spending from these pools has been and can be negotiated. In fact, I would argue the biggest argument against drilling is the lack of confidence in City officials to intelligently spend our good fortune, a good problem to have.

Bronchick 3

Secondly and this is also incredibly important and not well understood - the "deal" between the City and E+B is in no way written in stone, as many of the deal points were inherited from the McPherson days, including the inane decision made by former school board officials to take a

Bronchick 4

flat dollar rate as opposed to a more normal royalty rate based upon a percentage of revenues. If this were renegotiated to some percentage of the City format, we are easily talking \$2-4mm to the school every year. And lets be clear, these is royalty dollars which do not affect money from the state..

Bronchick 4 Continued

Which brings us to the schools. It is sadly zero surprise that recent parent nights at Valley and View were just as depressing for parents as when I started attending 9 years ago when my kids were in school. The current "suggestion" of \$1000 per kid is merely to maintain ground in a losing battle and is not a plan to restore school programs like art, music, robust after-school activities and facility improvements. And I would add it acts as a deeply regressive tax as not all can afford the private schools of art, music, theatre, tutoring centers, club sports teams, much less the time flexibility to move kids from one activity to the other. Lets be clear about the choice - several millions a year INTO schools from allowing drilling vs asking parents for \$1mm a year, a number which can only grow. E+B officials also told me they would be willing to consider pre-paying future royalties so that the flow of funds to the schools would not have to wait for oil to flow.

What is deeply upsetting is that school officials feel immense pressure from a vocal "minority"(How would we know without a ballot vote?) not to weigh in on this issue. If the HBEF and the School District are not 100% focused on improving our schools and are being steered by other considerations, then something is seriously amiss. I am not throwing either group under the bus, what I am trying to make loud and clear is they are under pressure from a political movement that has nothing to do with improving our schools and I think it is high time that this pressure was made public and parents get a chance to understand the issues and weigh in. School officials and the HBEF have the obligation to enter into discussions with the City and E+B about how to secure appropriate and direct funding for the schools and they deserve our vocal support to do so.

Bronchick 5

Let's also be honest about oil drilling. The EIR will say nothing we don't already know. This is going to be an annoying, messy and epic piece of site construction for what I guess to be three-ish years that is not going to be fun for those who live south of Pier. What I don't think people understand is that the proposed site is already a hazardous waste site for which the City is on the hook for remediating with a multi-million price tag. Again, things are negotiable - compensation for an x radius around the site? Re-route truck routes down Herondo instead of Pier? What I also think people don't understand is there is a drilling phase and then a pumping phase. The former will drive us crazy - the latter is the long-term project and it is going to be difficult to notice it is there most of the time. This process has been accomplished legally and successfully in cities and areas across the country(including Beverly Hills High School and Hillcrest Country Club - arguably two of the most unlikely sites in my opinion) without producing legions of zombies or generations of bed-ridden communities. The suggestion that the City of Hermosa is embarking upon a massive and unproven project is simply false.

Bronchick 6

I would also like to add that, lest we forget, this is California. This project would be the most

Bronchick 7

Bronchick 7 Continued

scrutinized project humanly possible...as it should be...and it will be subject to all the latest in environmental monitoring possible..as it should be. I would also note that the technology of oil drilling and pumping is arguably one of the most intense and fastest areas of development in the world and there are real roles for our community in negotiating standards and rules to ensure we have the best and safest project possible. Why don't we get involved instead of just saying no?

In closing, I think the "Keep Hermosa Hermosa" slogan to be quite ironic and unsettling. We want to keep an effectively insolvent City(yes, you need to count pension obligations, legal obligations and deferred capital spending on sewers and street repair as real obligations) tied to a dysfunctional state? We want to maintain schools that continue to struggle under financial pressure and continue a terribly regressive tax of \$1000 per child? We want to be held hostage for cash by a downtown scene where residents can rarely be found on a weekend? Don't we want better for our community?

"Think Global, Act Local" is utterly at work here and I personally think it is outrageous to have global political movements, however well intentioned, to utterly impede our ability to materially improve our own lives in our own town for generations. I would propose an alternate slogan for the City - Hermosa First!

Bronchick 8

This is a complicated issue and arguably historic decision for our City and everyone does a vote on it.

Jeffrey Bronchick,
Hermosa Beach Resident

Cost/Benefit Report Scoping September 23, 2013

To: Ken Robertson, City of Hermosa Beach
From: Stacey Armato, Stop Hermosa Beach Oil

Armato 1

- 1 Cost on the city for spills, explosions, leaks: project for small to catastrophic.
(Note: two biggest revenue sources for the city are transient occupancy tax, and property tax)
- Consideration should be given to the following:
- a. Decreased tourism: effect on hotels, restaurants, retail and subsequent effect on city revenue
 - b. Effect on property values
 - c. Effect on city services
 - d. Cost of emergency services
 - e. City liability when E&B exceeds insurance limits
 - f. City liability when E&B goes bankrupt
 - g. County, state and federal fines

2 Cost of negative press on city tourism and property values with each mistake or accident E&B makes. Armato 2

- 3 Oil reservoir calculation
- Consideration should be given to the following:
- a. risk of migration
 - b. lease restriction of 21 wells into the Bay
 - c. all values should be estimated assuming they will not be fracking or using high pressure steam injection- which will severely limit their oil recovery.
- Armato 3

- 4 Property value decline
- Consideration should be given to the following:
- a. To accurately estimate this, we must compare Hermosa to other affluent, dense, beach communities with high property values.
 - b. Under the agreement, they can drill 360 degrees under the entire city and into the ocean- what is the cost of this on property values?
 - c. Costs of the city to defend all lawsuits brought by property owners for decline in value of property.
 - d. What is the current effect of the looming election on property values- specifically south of Pier Ave.?
- Armato 4

- 5 Cost to hand over the city yard for 35 years Armato 5
- Consideration should be given to the following:
- a. Cost of cleaning up the site in 35 years if the oil company does not clean up.
 - b. Value of property after 35 years of existing as an oil drilling site.

6 Opportunity/benefits lost by drilling at the city yard Armato 6
Look at the proposal from 2010 from the Green Task Force for alternative ideas for the city yard

7 Cost to relocate the city yard Armato 7
Consider subsequent property value decline at the new location.

8 Increased cost to city to oversee oil and drilling operations. Armato 8
Look to other cities with similar sized projects to determine if HB needs its own oil and gas division.

9 Increased cost to city to increase fire and police, and upgrade equipment to handle a oil and gas spill, leak or explosion. Armato 9

10 Cost on the city for road damage for excessive truck mileage during 5 year construction period. Armato 10

11 Cost of displacing 15 parking spots. Armato 11

12 Property insurance

Armato 12

Consideration should be given to the following:

- a. Increased cost of insurance for homes near drill site, and possibly the whole city.
- b. Who pays if homes are deemed uninsurable?

13 Tourism impacts- even without a spill leak or explosion

Armato 13

Consideration should be given to the following:

- a. Effect on hotels, retail and restaurants.
- b. Costs of the city to defend all lawsuits brought by business owners suffering decline in business.
- c. Costs of decreased tax revenue from Transient Occupancy Tax.
- d. Attention should be paid to special events that come to town and how those would be affected with truck traffic, drill rigs, air pollution, etc.

14 Cost of E&B expanding the drill site to adjacent areas- i.e. green belt, south park, and other adjacent public properties.

Armato 14

15 Tidelands royalty

Armato 15

Consideration should be given to the following:

- a. Fully examine the settlement and lease agreement.
- b. How many years do we really have left on the lease?
- c. General fund only ends up with 3 2/3%
- d. Macpherson ends up with 3 1/3%
- e. Tidelands trust ends up with 11 2/3%

16 Estimation of all costs to be paid before royalties are paid to the city:

Armato 16

Consideration should be given to the following:

- | | |
|------------------------------------|--|
| a. \$30M to buy the mineral rights | i. delay costs |
| b. EIR and other studies costs | m. promotional costs |
| c. advertising and marketing costs | n. office rental costs |
| d. clean up cost of city yard | o. security costs |
| e. all personnel costs | p. water costs |
| f. trucking costs | q. penalty costs |
| g. well construction costs | r. benefits- cars, housing, gas allowances |
| h. well maintenance costs | s. training costs |
| i. pipeline costs | t. wastewater disposal cost |
| j. insurance costs | u. other waste disposal cost |
| k. any other construction costs | v. \$3.5M that must be paid back to E&B even if they drill for oil |

17

Armato 17

The oil company states that nearly 40% of the oil will be recovered in the first 5 years. 80% will be recovered in the first 10 years. The minimum royalty restriction in the lease says the city will be paid a minimum royalty 4 years after the first well is drilled. Even at that point there is only a nominal yearly royalty payment. So that would mean that the city would completely miss much of peak oil production and royalty payments. Furthermore, what happens if it takes 10 years for the oil company to be reimbursed all its upfront expenses? Will Hermosa be left being paid a nominal minimum royalty throughout the duration of the 35 year contract?

18 Audit costs by the city on the oil company oil production and revenues.

Armato 18

19 Cost of losing future and current sustainability grants.

Armato 19

20 Costs of loss of opportunity to attract green jobs and development and branding our city as carbon neutral.

Armato 20

21 Cost of declined school enrollment

Armato 21

22 Benefit of being a town that doesn't drill for oil.

Armato 22

Consideration should be given to the following:

- a. benefits of NO risk of air pollution from drilling and trucking
- b. benefits of NO oil spill leaks or explosions
- c. benefits of NO pipeline bursts
- d. benefits of NOT being the first town to expose the Santa Monica Bay to oil drilling in over 50 years- risking its pristine state

23 Cost of 11,000+ metric tons (or more) of carbon emissions yearly

Armato 23

24 Cost of groundwater contamination- possibly throughout the entire city.

Armato 24

25 Costs of defending the city in lawsuits brought by neighboring communities.

Armato 25

26 Compare Hermosa Beach to LIKE communities:

Small, dense, touristy, clean beach towns with high property values and great schools that are financially solvent, with no debt and \$80 M in assets.

Armato 26

27 For homeowners that own mineral rights:

Because of deep directional drilling, ownership rights extended only so many feet, and the fact that the majority of oil expected to be retrieved from the tidelands, what is the likelihood these homeowners would receive any royalty?

Armato 27

28 Creative ways to pay for the \$17.5M fully acknowledging the city has over \$6M earmarked only to pay this settlement

Armato 28

29 Cost of air pollution and monetary value on short and long term health effects and mortality

Armato 29

30 Impartial analysis expected:

There will be people in the city or city council that have an expectation of what they want to hear, we want to be sure Kosmont is doing this for the people, not to impress city council.

Armato 30

Pamela Townsend

To: Wil Soholt (wsoholt@kosmont.com)
Subject: FW: cost-benefit analysis

Pamela Townsend, Senior Planner
City of Hermosa Beach
Community Development Department
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-----Original Message-----

From: r²m [<mailto:rsquaredm@gmail.com>]
Sent: Sunday, April 13, 2014 6:06 PM
To: Oil Project
Subject: cost-benefit analysis

To Ken Robertson April 13, 2014

From Roberta Moore
930 9th st.

RE: draft cost-benefit analysis.

Moore 1

1. I am very disturbed that Tidelands money is assumed to be usable as if it were Uplands income.

The city yard is Uplands and is where proposed wells will be located, but income will be from well under the sea and not legal to use for municipal or school purposes.

The draft report suggests that some common law may be applicable and could affect understanding of existing law. But common law is usually based on cases where existing written law is not clear, or not specific, or is lacking in some way. Since the Tidelands Trust is quite clear and quite specific, I doubt that any decisions can rest on undermining it.

2. I believe that E&B should be required to pay for leasing the city land from the day that the city is forced to vacate that land.

I know no justification for paying no rent until 4 years after creating a producing well. Most probably the definition of a producing well should be addressed in every detail. It could take an unknown number of years of disturbing the peace, digging 30 wells, and keeping our land unavailable to us before achieving one productive well.

Moore 2

3. If an average barrel of oil sells for \$100, why should the schools receive such a small share of that money? E&B expresses a concern that the state may reduce its support of our schools if the schools have too much income. This is

Moore 3

nonsense. If our schools have too much income, we can surely give up the state share. (My personal opinion is that we should not be giving our property taxes to the state at all—but that is another issue)

Moore 3 Continued

4. Pages 118 thru 124 are simply unbelievable. Except for a vague faded drilling tower, appearing to be 2 miles away, the before and after pictures are identical to each other. E&B apparently chooses to be deceptive and that makes them unacceptable as a business partner.

Moore 4

5. We know that the oil is there; it is not unknown. It seeps up and covers our boats and ships at sea, it gathers on our beaches in the form of tar. Sometimes there is so much floating on the ocean that it can be seen from my house. No agreements should be made which are conditional upon 'discovering' oil and natural gas.

Moore 5

5. It is invalid to make any comparisons to Wilmington. Wilmington was developed as an oil field well before being developed as a lowest price community. Hermosa was developed almost one house at a time because it was and is a nice place to live.

Moore 6



April 11, 2014

Mr. Ken Robertson
Community Development Director
City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, California 90254

RE: E&B Oil Drilling & Production Project
Oil Drilling and Recovery CBA [Draft]

Dear Mr. Robertson:

At the request of E&B Natural Resources (“E&B”), I have reviewed the draft CBA (“CBA”) prepared by the Kosmont Companies (“Kosmont”) and published in February 2014. With this letter, I respectfully offer some comments and observations about the draft.

A. My Qualifications

I am a professional economist with 45 years’ experience analyzing public policy issues. I have served as a non-partisan Division Chief at the U.S. Office of Management and Budget, which is part of the Executive Office of the President. I have also served as California’s non-partisan Legislative Analyst, where I was responsible for analyzing (1) all funding requests contained in the Governor’s annual budget, (2) all bills introduced in the California Legislature that potentially affected state and local revenues or expenditures, (3) all proposed voter initiatives submitted to the State Attorney General for a title and summary, and (4) all ballot propositions put before the voters on the statewide ballot. In addition, as Legislative Analyst I supervised the preparation of dozens of cost-benefit analyses that the Legislature assigned to my office.

For the last 18 years, I have been an economics consultant specializing in issues involving financial institutions, housing and mortgage lending, and public finance. In this capacity, I have performed numerous economic and fiscal impact analyses of proposed projects, legislation, and regulations.

I have enclosed with this letter a copy of my *curriculum vitae* (Attachment A).

I am familiar with the proposed oil development project that is the subject of the draft CBA. In March 2013, Jenny Young, Fei Tang, and I prepared an independent analysis of the royalty and property tax revenues that the City of Hermosa Beach can expect to receive if the proposed project goes forward (“The Potential Impact of a Proposed Oil & Gas Development Project on the City of Hermosa Beach,” henceforth referred to as the “BRG Report.”)

B. Standard of Review

My assignment from E&B was to review the draft CBA and identify any changes to the draft that I believe would make the final version more reliable and more useful to the City of Hermosa Beach and its residents. I was not asked to defend the findings and conclusions contained in the BRG Report where they differ from Kosmont's.

C. Summary of Conclusions

In my opinion, the Kosmont Companies have done a commendable job of analyzing the proposed oil development project. I believe the assumptions that guided their analysis (page 21) are generally reasonable, and their primary conclusion – that the proposed project will generate hundreds of millions of dollars in revenue for the City – is fully supported by the available evidence.

Nevertheless, I believe the draft CBA can be improved so as to make it more useful to the City and its residents as they consider whether the proposed project is in the community's best interest and should go forward.

The four most-important ways in which I believe the draft CBA can be improved are as follows:

1. In estimating the original oil in place (Section 5.7), the authors should give greater weight to the findings of geologists who have spent significantly more time analyzing the physical capacity and likely contents of the hydrocarbon reservoir that lies beneath the City. Hamm / BRG 1
2. In estimating the likely oil and gas recovery factor (Section 5.8), the authors should abandon the implicit assumption that recent improvements in technology and production methods will have no effect on the recovery ratio in the base case. Hamm / BRG 2
3. In estimating the economic activity benefits (Chapter 14) that the proposed project will yield, the authors should make allowances for the additional jobs and increased personal income that will be generated for the benefit of Hermosa Beach residents when those residents who own mineral rights and are entitled to royalties from the sale of oil and gas spend their royalty payments within the community. The authors should also take into account the increase in jobs and personal income that will result when the City spends its royalty payments on projects and services for the benefit of City residents. Hamm / BRG 3
4. In estimating the proposed project's likely effect on private property values, the authors should consider the impact that hundreds of millions of dollars in increased fiscal capacity will have on the quality of life in Hermosa Beach. Most, if not all, of these funds will be spent to maintain and enhance public services and public works for the benefit of Hermosa Beach residents. Other things being equal, improvements in public Hamm / BRG 4

services when not accompanied by a corresponding increase in property taxes tend to raise property values in a community.

Hamm / BRG 4 Continued

With these and other changes that I recommend, I believe the CBA will provide the City and the residents of Hermosa Beach with a much better basis for deciding if the proposed project is in the community's best interests.

D. Reservoir Volumetrics (Section 5.7)

The single most-important determinant of the royalty and property tax revenue that the City can expect to receive from the proposed project is the volume of oil and gas that can be safely and efficiently pumped from the section of the Torrance oil field beneath Hermosa Beach. In fact, the difference between Kosmont's assumption regarding oil volumes and BRG's assumption accounts for up to 59% of the difference between our estimates of the royalties that the City can expect to receive if the project goes forward (Kosmont: \$230 million; BRG: \$490 million).

The authors of the draft CBA correctly note that there is "uncertainty of resource estimates," and they consider probabilities in creating their "Low Case," "Expected Case," and "High Case" estimates of production.

In view of the uncertainties involved in estimating oil reserves, I believe it makes sense to consider a range of possible outcomes, as Kosmont has done. In my opinion, however, Kosmont has not made sufficient allowance for the probability that oil can be safely and economically recovered from the Lower Del Amo and Schist Conglomerate zones of the reservoir.

As the authors of the draft CBA point-out, the two geologists who have studied the commercial potential of the Hermosa Beach reservoir for the longest period of time – Robert Hacker and his son Paul – "estimated that approximately 10.3 million barrels of a total 30.4 million barrels could come from the Schist Conglomerate Zone" (page 26). In estimating the original oil in place, however, the authors assign a probability of zero to the Hackers' 10.3 million barrel estimate. The draft CBA makes no allowance for any oil or gas in either this zone or the Lower Del Amo layer above it.

In my opinion, this omission causes the authors' estimates of the original oil in place to be much too low. Because the authors' estimates of the City's royalties ultimately are based on the volume of oil in the reservoir, this omission also causes their estimates of royalties to be much too low.

Clearly, there is an element of uncertainty regarding the volume of oil and gas in the Lower Del Amo and Schist Conglomerate zones of the reservoir, and applying a probability factor to the Hacker and Intera estimates of these volumes is appropriate, *provided* the Hacker and Intera estimates, themselves, have not already been adjusted to reflect this uncertainty. In no case, however, should the probability factor be zero.

Recommendation. I respectfully recommend that Kosmont reconsider the estimates made by the Hackers, Intera, and Robert Hilty, and adjust its own estimate upward to make allowance for recoveries from the two lower sections of the reservoir. If they make this adjustment, their estimate of the royalties that the City can expect to receive if the project goes forward will necessarily be significantly higher.

E. Recovery Factor (Section 5.8)

A second important determinant of the City's oil and gas royalties is the percentage of the original oil in place that can safely and economically be pumped to the surface for sale.

The authors of the draft CBA assume that the recovery factor will fall within a range of 8.6% to 17.2%, with an expected recovery of 12.9%. It appears that (1) the lower boundary of the range (8.6%) is equal to actual recovery percentage achieved by pumping operations in neighboring Redondo Beach, (2) the upper boundary (17.2%) is simply the lower boundary multiplied by two, and (3) the expected recovery (12.9%) is the mid-point between the upper and lower boundary. Therefore, the recovery factors for the Low Case, Expected Case, and High Case are all based on Redondo Beach's experience.

In my opinion, using the recovery rate achieved by the operators of the Redondo Beach oil wells as the base case recovery rate for the proposed project is indefensible, for three important reasons.

1. **The Redondo Beach field was shut-down prematurely, meaning that total oil and gas production from this field is not indicative of how much oil and gas *could have been recovered* – even with the outmoded technology and production methods then in use.** All operating wells in Redondo Beach were shut-down in August 1988, while some of them were still producing substantial quantities of oil and gas. The 8.6% recovery ratio that Kosmont assumes in its base case represents the percentage of the original oil in place recovered prior to the shutdown. Had the wells at Redondo Beach remained in operation until production was no longer commercially practical, the actual recovery ratio would have been significantly higher.
2. **Redondo Beach's experience reflects the use of outmoded technology and production methods.** The Redondo Beach wells were drilled between 1956 and 1978. Since these wells were drilled, there have been dramatic improvements in drilling and production technology, as well as in production methods. These improvements include the use of seismic imaging, horizontal drilling, GPS-guided drills and pumping equipment, and more-sophisticated uses of water to both prevent subsidence and force more oil to the surface.

As the authors of the draft CBA acknowledge, Intera estimated in 1997 that the technology and methods then available could allow recovery rates as high as 21%. In the 17 years since Intera made its estimate, there have been further significant improvements

in the efficiency and effectiveness of oil production technology and methods. Were Intera to update its estimate, I would expect the predicted recovery ratio to be higher still.

The lower boundary of Kosmont's assumed recovery ratio range – the ratio on which all other assumptions are based – implicitly assumes that the technological and methodological improvements in oil production since the 1970s has had *no effect* on the recovery rate that can be achieved at Hermosa Beach. In my opinion, this is not a tenable assumption.

- 3. In addition to being restrained by premature closure and outmoded technology, oil production in the Redondo Beach fields was constrained by oil prices that were 85% below today's prices.** Other things being equal, the potential recovery ratio for a given oil field will rise as oil prices rise. This is because oil deposits that are not cost-effective to tap when prices are low become commercially viable when prices are high enough to cover the excess costs of producing the oil. In August 1988, when the Redondo Beach wells were capped, the price of West Texas Intermediate Crude was \$15.52/barrel. Today, the price is \$103.19/barrel, and the U.S. Energy Information Administration expects the price to continue rising in real terms. At today's price, some oil deposits in the Redondo Beach field that were not profitable to tap in the 1980s could have been profitably tapped, thereby increasing the recovery ratio for these wells above 8.6%.

Further evidence that Kosmont's assumed recovery ratio is much too low is provided by the United States Geological Survey ("USGS"). In a 2012 report that was revised in February 2013 (<http://pubs.usgs.gov/fs/2012/3120/>), the USGS provides estimates of the recovery efficiency for 10 giant oil fields in the Los Angeles Basin, including the Torrance Field (of which the Hermosa Beach reservoir is a part). The recovery ratios estimated for the Torrance Field range from 35% to 55% -- considerably higher than Kosmont's (and BRG's) assumed recovery ratio.

Kosmont's recovery ratio assumption accounts for 23% of the difference between its estimate of the City's prospective oil and gas royalties and the estimate contained in the BRG report.

Recommendation. I respectfully recommend that Kosmont re-consider its recovery rate assumption, taking into account both the dramatic improvements in technology and methods, and the sharp rise in oil prices, that have occurred during the past four decades. If, for example, Kosmont was to conclude that these developments can increase the base recovery rate by 50%, the methodology used in the draft CBA would yield a range of recovery rates with a lower boundary of 12.9%, an upper boundary of 25.8%, and an expected rate of approximately 19.4%. This change would add approximately \$115 million to the estimated present value of the City's oil and gas revenues – even if no allowance is made for oil in the Lower Del Amo and Schist Conglomerate zones.

Hamm / BRG 6

F. Economic Activity Benefits (Section 14)

In Section 14 of the draft CBA, the authors estimate the impact of the proposed project on the level of economic activity within the City and region. Here again, I believe their estimate is much too low.

In my opinion, the methodology that the authors use to estimate the project's likely economic impact is sound. They employ a widely used input-output model, known as IMPLAN, for this purpose. (I have often used this model for similar purposes.) I believe, however, that the authors have not incorporated in the model all of the cash flows that are properly attributable to the proposed project. Specifically, they do not appear to have made allowance for the economic impact of the royalties that E&B would pay to the City and to private parties who own mineral rights in Hermosa Beach.

As my colleagues and I note in the BRG Report, private parties are entitled to royalties on 73.26% of the oil and gas revenue attributable to production from the Uplands. We estimate that these royalties will total approximately \$116 million. (Using the production estimates in the draft CBA, the mineral rights owners' royalties would total between \$54 million and \$90 million.) While not all of the royalty recipients will be residents of Hermosa Beach, and not all of the royalties will be spent within the City, clearly a significant portion will be. The result will be an increase in the number of jobs held by Hermosa Beach residents, and an increase in income received by local families and businesses.

Similarly, the City will spend most of its oil and gas royalties on projects and services intended to improve the living environment enjoyed by Hermosa Beach residents. Much of what the City spends will be received by residents and businesses, further increasing personal income and the demand for labor within Hermosa Beach.

In both cases, the initial impact of increased spending will have a multiplier effect, further increasing the number of jobs and personal income within the City, in the same way that project expenditures on construction, drilling and production will induce further spending.

Recommendation. I respectfully recommend that the final CBA take into account the substantial increases in economic activity that will result when hundreds of millions of dollars of oil and gas royalties from the proposed project are spent by public and private owners of mineral rights.

Hamm / BRG 7

G. Private Property Values (Section 12)

In Section 12 of the draft CBA, the authors consider the proposed project's potential to negatively impact the market value of residential and commercial properties within the City – particularly those located close to the proposed project site.

The authors correctly note:

Given the multitude of factors that influence buyer decisions, and wide variation in individual calculus, the value or impairment of value of a particular [property] attribute[, such as proximity to the proposed project site,] is extremely difficult to predict. (page 77)

Notwithstanding this difficulty, the authors – to their credit – attempt to use Los Angeles County data to quantify the project’s potential impact on private property values. They report, however, that:

The resulting data was inconclusive and in many cases consistently yielded values *higher* than County averages for properties in close proximity to [oil] well sets. The Author’s conclusion is not that proximity to well sets are accretive to value, but rather that other factors must influence the results, such as well sets, on average, being located in communities with higher than average property values. (page 78, emphasis added)

In my opinion, Section 12, in its current form, is incomplete and misleading. In addition to considering whether the proposed project could impair the value of private property, the draft CBA should consider whether the project’s impact on private property values could be positive.

Both the BRG Report and the draft CBA find that if the proposed project goes forward, it will yield hundreds of millions of dollars in additional revenue to the City of Hermosa Beach. For a City with an annual General Fund budget of approximately \$30 million, the additional revenues would significantly increase the City’s ability to maintain or enhance the quantity and quality of services provided to Hermosa Beach property owners. There can be no doubt that, other things being equal, an increase in the quantity and quality of public services, if not accompanied by a corresponding property tax increase, will tend to make residential property in Hermosa Beach more desirable to buyers, and thereby cause such property to increase in value.

While the draft Cost Benefit analysis provides no support for the hypothesis that the proposed project will reduce property values,¹ it is at least suggestive of the opposite hypothesis: that oil projects tend to *raise* property values. As noted above, the authors suggest that oil wells tend to be “located in communities with higher than average property values.” This correlation may reflect, in part, the greater ability of communities with oil and gas revenues to provide the services sought by current and potential residents, without increasing property taxes.

Recommendation. I respectfully recommend that the final CBA explore further the apparent correlation between above-average property values and the presence of oil wells in the community. Specifically, I believe the authors should consider the extent to which the positive impact of oil and gas revenues on a municipality’s ability to provide above-average public services to property owners causes property values to be higher than they otherwise would be.

Hamm / BRG 8

¹ I will discuss the two studies cited in Section 12 later in this letter.

H. Other Recommendations for Improving the Final CBA

In addition to the recommendations set forth above, I offer the following suggestions for improving the CBA so that it is more useful to City officials and Hermosa Beach residents in deciding whether the proposed oil development project should go forward.

1. Make the Analysis more transparent.

Clearly, the authors have sought to make their report comprehensive, readable and understandable. To make it more so, I recommend that the report be expanded as follows:

- a. **Specify the actual prices used to value the oil and gas produced by the project.** Hamm / BRG 9

Sections 6.2 and 6.3 of the draft CBA describe in general terms the methodologies that the authors used to estimate the prices at which the oil and gas produced by the project will sell. To help interested parties evaluate the report's findings and conclusions, the report should identify the specific prices used to value the oil and gas. Hamm / BRG 10

- b. **Show the derivation of the estimated original oil in place.**

Table 1 (page 24) of the draft CBA shows the components of the author's 146.83 million stock-tank-barrel estimate of oil in the reservoir below the City. I could not tell from the report, however, how the authors came up with their estimate of oil in each of the upper three zones. To make it easier for interested parties to evaluate the report's findings and conclusions, the report should show the source data and calculations that underlie these estimates.

- c. **Clarify the meaning of "FV," as used in Table 23.** Hamm / BRG 11

In Table 23 (page 70), the authors show their estimates of the "Net City Revenues" that they expect the proposed oil and gas project to yield. The estimates are shown in two columns – one labeled "FV" and the other labeled "PV (\$2014)." Page 6 of the report states that "FV" stands for Future Value, and "PV" stands for Present Value.

I interpret the "PV" column of Table 23 as showing the authors' estimate of the City's cash flows from the proposed project, discounted to 2014.

It is not clear, however, how the amounts in the "FV" column were derived, or how they should be interpreted.

The concept of future value is used extensively in economics to show how a given sum will grow over time if invested at an assumed interest rate. If the authors are seeking to show how much the expected net revenues generated by the proposed project would be worth at some future date, it would be helpful to the reader to know what that date is and why it is relevant to an understanding of the proposed project's merits. If, instead, the "FV" column shows the undiscounted or inflation-adjusted cash flows expected from the project, the final CBA should make this clear.

To help interested parties evaluate the report's findings, I recommend that the authors clarify how the amounts in the "FV" column of Table 23 were derived and what significance they attach to these amounts.

Hamm / BRG 12

- 2. The final CBA should point out that the Neustein-Matthews study is relevant only to small *income-producing* properties in Hermosa Beach – not to residential properties.**

In the draft CBA, the authors cite the following conclusion reached by Richard A. Neustein and DeLane Matthews in a study entitled "Oil Well Lot Proximity Study":

A single family home next to an oil well lot in this area may suffer a value decline, but it is relatively small, currently (January, 2008) on the order of \$20/SqFt of gross living area. Small income properties, on the other hand, exhibit no consistent discrimination against being next to an oil well lot. We conclude that they do not suffer a value decline from proximity to oil well lots." (page 87)

The authors of the draft CBA claim that this study "may provide some reference for immediately adjacent properties." (page 87)

The Neustein-Matthews study may, indeed, be reassuring to the owners of income-producing properties immediately adjacent to the proposed project site, since the study concludes that these properties will not suffer a decline in value as a result of the project.

Since the study attempts to analyze the impact of oil well sites on the value of "immediately adjacent properties," and since there are no residential properties immediately adjacent to the proposed project site, the authors should make clear in the final report that the Neustein-Matthews study has no relevance to residential properties located in Hermosa Beach.

- 3. The methodology used by AECOM in its analysis will not yield reliable results when applied to properties located in California, and this analysis should be omitted from the final CBA.**

Hamm / BRG 13

In Section 12.5 of the draft CBA, the authors reference certain conclusions reached by AECOM and included in a Draft EIR prepared for the Whittier Main Oil Development Project. In reaching these conclusions, AECOM used data from County Assessors' offices as proxies for the market values of residential property located proximate to oil wells. Such a methodology, however, cannot yield reliable results for properties in California. As a result of Article XIII-A of the State Constitution (commonly referred to as Proposition 13), assessed value is not a reliable indicator of a property's market value except on those relatively infrequent occasions when the property changes hands. Article XIII-A limits the change in AV to a maximum of 2% per year. No such limitation applies to the annual change in market values, as the trend in California housing prices during the 2000-2006 period makes clear.

In addition, AECOM relies on the results of multiple regression analyses for its conclusions about the likelihood of impairment for specific properties that are “proximate” to an oil project. Such analyses, however, cannot be used for this purpose. Multiple regression analysis is effective and useful when used to estimate the value or sale price of numerous properties, such as those in an entire neighborhood or county. Such analyses, however, cannot reasonably be used to estimate the market value of one particular home with a high level of confidence, due to standard errors in the regression that can result in a wide range of value or sale price indications. Such a range would make it virtually impossible to identify with reasonable certainty whether values of nearby properties were impacted by 0% to 10%.²

Finally, I note that the database and inputs AECOM used to estimate the impact of oil wells on market values were not included in the report so as to permit independent analysis of the study’s findings and conclusions.

Hamm / BRG 14

4. No basis is provided for the authors’ conclusion in Section 12.6.

In the final part of Section 12, the authors of the CBA state:

As a result of the information reviewed in this section, subject to a property by property evaluation, the Authors consider a 0 – 10% reduction in property values possible for properties proximate to the Project Site. (page 88)

The authors do not explain how they came up with the upper bound of the range (a 10% reduction in value). Their own attempt to explore the connection between proximity to oil wells and residential property values was, in their words, “inconclusive,” and revealed a correlation between oil well proximity and *above-average* home values. Further, as explained above, the two studies cited in this section of the draft CBA can shed no light on any possible connection between proximity and value because (1) the focus of the Neustein-Matthews study was on a type of residential property that does not exist in Hermosa Beach (*i.e.*, properties immediately adjacent to an oil well site), and (2) the AECOM study suffers from several fatal methodological flaws that render its results unreliable when applied to California properties.

In the final version of the CBA, the authors should provide a sound analytical basis for their speculation that the proposed project could reduce property values by as much as 10%, or delete such speculation from the report.

Hamm / BRG 15

5. Reconsider the interpretation of the 1997 Intera report.

In preparing their estimates of the original oil in place, the authors appear to have relied, at least in part, on two reports produced by Intera, a geosciences and engineering consulting firm hired

² See, for example, Thomas E. Kabat & Frank A. Voorvaart, “Quantifying Damages In Real Estate Litigation,” in *Litigation Services Handbook: The Role of the Financial Expert*, 4th Edition, Section 27.3(d).

by CalResources in 1996 to review available data on Hermosa Beach and Redondo Beach. The Draft CBA's authors state:

The 1997 [Intera] report was a material balance model of the offshore Redondo Beach wells, but to match production amounts and calculated OOIP, the models [stet.] net/gross ratios had to be reduced from the parameters used in the 1996 report. As such, the Intera 1996 volumes were decreased accordingly (recalculated) using the 1997 net/gross ratios. (page 24)

Kosmont's recalculation reduces Intera's 1996 estimate of oil in the reservoir by 60%. It is not apparent to me why any adjustment to the 1996 Intera estimates is justified. My interpretation of the 1997 Intera report is that it primarily focused on the likely recovery rate if newer technology is used to extract oil from the reservoir. I see nothing in the 1997 report to indicate that Intera was backing away from its 1996 estimates of the original oil in place.

Of course, Intera is in the best position to say whether Kosmont's recalculation is justified.

- 6. Foregone rent resulting from the Second Amendment to the ground lease should not be counted as a cost of the proposed project.** Hamm / BRG 16

In estimating the City's costs associated with the oil development project, Kosmont includes the foregone rent resulting from the Second Amendment to the ground lease covering the proposed site for the new maintenance yard. In my opinion, this is improper, and has the effect of understating the City's net benefit if the project goes forward by \$6.4 million (\$2014). Whatever the City's motivation in agreeing to the lower lease-rate,³ this opportunity cost has already been incurred and cannot be considered an incremental cost attributable to the proposed project.

Furthermore, the authors ignore the option value to the City of the right to terminate the lease with one year's notice. Hamm / BRG 17

- 7. The discussion of Potential Carbon offsets (Section 13.5) is highly misleading and should be extensively revised or eliminated from the final CBA.**

The draft CBA presents estimates of how much "stakeholders" would have to spend if they voluntarily chose to purchase carbon offset credits to compensate for the *use* of oil produced by the proposed project. It is not clear why the authors chose to include these estimates in the draft CBA since, as they acknowledge, no "stakeholder" would be required to purchase such credits.

More importantly, the discussion is based on a deeply flawed but unstated premise: that the *production* of oil in Hermosa Beach will cause (1) motorists to drive more miles in their gasoline-powered cars, (2) factories to use more fossil-fuel energy to produce their products, (3) families to use more fossil-fuels to heat their homes, and (4) airlines to schedule more flights.

³ Kosmont "considered this a concession for adding a provision allowing the City to terminate the lease upon one year's notice," in anticipation of the proposed project. (page 55) No evidence is presented to support this hypothesis.

The authors imply, moreover, that the increased consumption of oil and gas by motorists, businesses, families, airlines, and other consumers will be equal to the production from Hermosa Beach wells. They provide no support for the premise that an increase in the supply of oil and gas creates its own demand.

In my opinion, a much more reasonable assumption is that the production of oil at Hermosa Beach will have *no* (or minimal) impact on the amount of oil and gas used by the “stakeholders.” The authors of the Draft EIR apparently share this opinion. They write:

The demand for crude oil in the region is not a function of the supply; if this crude oil is not produced, it will be supplied by another source, as crude oil prices are set largely on the global market. (E & B Oil Drilling & Production Project Draft Environmental Impact Report, page 4.2.57)

If, instead of increasing their consumption, motorists, factories, families, airlines, and other consumers respond to the increase in supply from Hermosa Beach by reducing their use of oil and gas imported from Saudi Arabia, Indonesia, Mexico, and Venezuela, as is highly likely, there would be *no* increase in the amount of greenhouse gases released in the United States as a result of the proposed project’s output. Furthermore, if the proposed project’s output causes members of the Organization of Petroleum Exporting Countries to reduce their output of oil and gas in order to prevent the increased supply from lowering the prices they receive for their exports, there might be no increase in greenhouse gases worldwide.

As an economist, I do not rule-out the possibility that oil produced by the proposed project could have some impact on the world price, and a lower price could increase the quantity of oil demanded. I would not, however, expect the increase to be significant, given the minuscule size of the anticipated production at Hermosa Beach relative to worldwide production.

At a minimum, the final CBA should explicitly state the premise on which its calculation of carbon offset costs is based, provide evidence that supports the premise, and identify the circumstances in which this calculation would be relevant to “stakeholders,” who are neither required nor expected nor likely to purchase such offsets.

Better still, Section 13.5 should be removed from the CBA. Since the residents of Hermosa Beach are the predominant stakeholders for the project, and since there is no reason to believe that they will increase their consumption of oil by 17.1-35 million barrels (or even by 170-350 barrels), there is no justification for calculating the cost to “stakeholders” of purchasing carbon offsets for this amount of oil.

Hamm / BRG 18

- 8. The final CBA should put the Mallon decision in the proper context, so that the residents of Hermosa Beach are not misled as to how Tidelands funds can be used.**

The draft CBA includes a quotation from the California Supreme Court’s opinion in *Mallon v. City of Long Beach*, which I have reproduced below:

we cannot hold that the construction and establishment by the city of Long Beach of storm drains, a city incinerator, a public library, public hospitals, public parks, a fire alarm system, off-street parking facilities, city streets and highways, and other expenditures that have been authorized to be made from the ‘Public Improvement Fund’, are of such general state-wide interest that state funds could properly be expended thereon. Such expenditures are for purely ‘municipal affairs’. (page 42)

In my opinion, a reader might interpret this quote from the Court’s opinion to mean that the *types* of facilities mentioned by the Court can never be funded with Tidelands money. Such an interpretation clearly would be unwarranted, and is contrary to fact.

As noted in the BRG Report, the California State Lands Commission has, within the just the past three years, approved the use of Tidelands money to fund upgrades to the Long Beach Convention Center, treatment and disposal of contaminated soil, a walking path, security lighting, resurfacing of parking lots, replacement of parking meters, renovation of restrooms, diversion of polluted water runoff into the sewer system, improvements to sidewalks and streets, an upgrade of a municipal sports center, improvements to a municipal theater, the purchase of commercial leaseholds, construction of a parking structure, and upgrades to a municipal pier.

It is unlikely that any of these projects would have been approved if the Commission had concluded that they did not have the potential to provide statewide benefits consistent with the Public Trust. Similarly, it is likely that the storm drains, public parks, off-street parking facilities, street improvements, and other projects that the City of Long Beach sought to fund would have won the Supreme Court’s approval if they had offered the potential of providing statewide benefits. In short, whether or not a specific project can be funded with Tidelands money depends on the project’s unique attributes – not on what *type* of project it is.

In the BRG Report, my co-authors and I included an illustrative list of 18 ways in which the City of Hermosa Beach could use its Tidelands revenues to serve the Public Trust, while enhancing the quality of life for the City’s residents. I found nothing in either Section 7.3 of the Draft CBA or Appendix C to suggest that any of these illustrative projects, if properly scoped, could not win approval from the California State Lands Commission.

In sum, I believe the CBA would be more useful to the people of Hermosa Beach if it devoted as much space to how Tidelands funds *can* be used as it now devotes to how these funds cannot be used.

I. Corrections

In reviewing the draft CBA, we identified several minor errors that do not affect the conclusions set forth in the report but should be corrected in the final version.

1. **Source for the Energy Information Authority's oil and gas price projections used in valuing the oil.**

In describing its oil price projections, the Draft CBA states:

EIA data utilized herein from the early release of the 2013 Annual Energy Outlook ("2013 AEO") which data is provided in 2012 dollars. For the purposes of this report, these values were escalated to assumed 2014 dollars by applying a 1.5% inflation rate over two years. (page 31)

In preparing the BRG report on the proposed project, we relied on the early release of the 2013 Annual Energy Outlook, in which the data was reported in 2011 dollars. The early release of the 2014 Annual Energy Outlook, however, reports future prices in 2012 dollars.

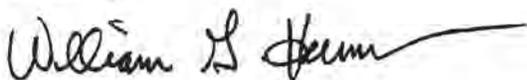
2. **Sections of the reservoir considered in the Intera reports.** Hamm / BRG 20

Tables 1 and 2 of the draft CBA (pages 24 and 25) appear to misrepresent the components of Intera's original-oil-in-place estimate. Both tables show Intera estimates for "Upper Del Amo." In its reports, however, Intera did not distinguish Upper Del Amo from Lower Del Amo.

3. **Possible typographical error in Figure 15.** Hamm / BRG 21

Figure 15 of the Draft CBA (page 36) is generally consistent with the text regarding the Tidelands/Uplands split of the City's oil and gas revenues (78.28%/21.72%). At one point in the figure, however, a different split appears: 83.08%/16.92%. We assume that this split is from an earlier draft of the report, and was overlooked when Kosmont revised the current draft.

Sincerely,



William G. Hamm
Director

Pamela Townsend

From: Dan Inskeep <daninskeep@hotmail.com>
Sent: Tuesday, April 01, 2014 8:51 AM
To: Oil Project
Subject: CBA comment

Dear HB City Staff,

Inskeep 1

The initial draft of the CBA does not make clear, and include in the cost analysis, the fact that the City will have an obligation to temporarily relocate the maintenance yard and complete haz-mat abatement of known conditions at the site, including those that are affecting ground water, if the project is not approved. Because recent testing confirmed the existence of contamination, abatement must be performed, regardless of the outcome of the vote, in order for the City to avoid potential liability.

Also, it is my opinion that using a \$3.7 million dollar remediation figure is a gross underestimate. With nearly 10 years of experience in grading activity and management of numerous soil abatement projects, I have yet to see a single one be completed for less than the high end of its cost estimate range (\$5.5 million in this case).

Omitting this as an unavoidable obligation is significantly misleading and should be addressed using a realistic cost figure in the final draft of the CBA.

Thank you!

Dan Inskeep
79 16th Street
(310) 376-9347

Comment	Response to Comment
Armato 1	<p>A discussion of potential impacts to tourism is provided in Section 13.2 of this CBA.</p> <p>A discussion of potential impacts to property values is provided in Section 12.0 of this CBA.</p> <p>A discussion of potential impacts on City services and emergency services is provided in Section 9.7, Section 9.8, and Section 11.2 of this CBA.</p> <p>A discussion of potential impacts from hazard events is provided in Section 15.0 of this CBA.</p> <p>Fines related to non-compliance by the Applicant would be borne by the Applicant.</p>
Armato 2	<p>A discussion of potential impacts to tourism is provided in Section 13.2 of this CBA.</p> <p>A discussion of potential impacts to property values is provided in Section 12.0 of this CBA.</p> <p>A discussion of potential impacts from hazard events is provided in Section 15.0 of this CBA.</p>
Armato 3	<p>This CBA estimates of recoverable oil and gas are based on the recovery of oil and gas utilizing the technology described in and limited by the EIR for the proposed Project. With respect to the comment of "lease restriction of 21 wells into the bay", under Section 12(f) of the Oil Lease the "leased lands shall be fully drilled at such time as Lessee has drilled a total of twenty-one (21) wells which are bottomed on the leased lands in the tidelands." It is the Authors conclusion (not a legal opinion) that this does not necessarily represent a maximum number of wells permitted in the Tidelands, but rather when the certain minimum obligations of the Applicant will be considered to have been met.</p> <p>As discussed in Section 2.6 of this CBA, based on discussions with the City it is the Authors' understanding that the Project does not include "Fracking".</p>
Armato 4	<p>A discussion of potential impacts to property values is provided in Section 12.0 of this CBA.</p> <p>A discussion of potential impacts from hazard events and related insurance coverage is provided in Section 15 of this CBA.</p>
Armato 5	<p>The Applicant is responsible for dismantling the facility.</p> <p>The Applicant would responsible for any remediation required as a result of the proposed Project. Note however that this excludes the remediation of the existing conditions on the Project Site discussed in this CBA (Specifically, Section 9.5 of this CBA).</p> <p>A discussion of the insurance and hazard events is provided in Section 15.0, and a discussion of the Emergency Trust Fund is provided in Section 9.6 of this CBA.</p>

	<p>A discussion of the potential value of the Project Site and New City Yard site are provided in Section 7.5 and Section 9.4 of this CBA.</p> <p>If the Project is approved, upon completion of the Project the City could return the Project Site to its current use as a maintenance yard, or keep the maintenance yard at the New City Yard Site and lease or sell the Project Site. The Project Site's then history of use as for oil production may or may not impair its value; such analysis is highly speculative.</p>
Armato 6	<p>The CBA evaluates the Project as propose in the EIR.</p> <p>A discussion of the potential value of the Project Site and New City Yard site are provided in Section 7.5 and Section 9.4 of this CBA.</p> <p>If the Project is approved, upon completion of the Project the City could return the Project Site to its current use as a maintenance yard, or keep the maintenance yard at the New City Yard Site and lease or sell the Project Site. The Project Site's then history of use as for oil production may or may not impair its value; such analysis is highly speculative.</p>
Armato 7	The costs associated with relocating the maintenance yard is provided in Section 9.2 and Section 9.3 of this CBA.
Armato 8	A discussion of City costs related to ongoing Project monitoring is provided in Section 9.8 of this CBA.
Armato 9	<p>As discussed in Section 9.7 of this CBA, under the mitigation measures in Section 4.6 of the EIR (FP-1c, and FP1-f), should the Project be approved, the Applicant would be responsible for reimbursing the City for these incremental costs, and as such these figures are provided for reference only and not included in the calculation of net City revenues.</p> <p>The proposed Project is not expected to have a material impact on City police services.</p>
Armato 10	An evaluation of existing roadway conditions, the potential impact on the quality of roads of vehicle traffic under the proposed Project and the cost of roadway maintenance is beyond the scope of the CBA.
Armato 11	The relocation of the City maintenance yard under the proposed Project includes replacement of all existing parking.
Armato 12	A discussion of private property insurance is provided in Section 13.1 of this CBA.
Armato 13	A discussion of potential impacts to tourism is provided in Section 13.2 of this CBA.
Armato 14	The CBA evaluates the Project as proposed in the EIR.
Armato 15	<p>A discussion of royalty calculations and the distribution between Tidelands and Uplands revenues is provided in Section 7.0 of this CBA.</p> <p>As discussed in Section 3.1 of this CBA, under the Settlement Agreement 345 days remain in the Primary Term of the Oil Lease and the Primary Term is, generally, suspended until all approvals required for drilling are obtained. For reference, under Section 1(c) of the Oil Lease the Primary Term shall not exceed two years. In application to production estimates, the Authors generally interpret this to mean that the Oil Lease will remain in effect for 34 years from the commencement of drilling.</p>
Armato 16	City royalty revenues are independent of the Applicants construction and operational costs.

	Estimates of gross royalty revenues the City would receive by year are provided in Appendix C of this CBA, and a sample of net City cashflows in consideration of City costs are provided in Table 30 of this CBA.
Armato 17	<p>Estimates of gross royalty revenues the City would receive by year are provided in Appendix C of this CBA, and a sample of net City cashflows in consideration of City costs are provided in Table 30 of this CBA.</p> <p>City royalty revenues are independent of the Applicants construction and operational costs.</p> <p>The minimum royalty payments referenced in the question are in essence minimum payments that would be due to the City should royalty revenues be less than the minimum lease payments prescribed under Section (2)(b)(1) of the Oil Lease. Further discussion of the minimum royalty payments is provided in Section 7.5 of this CBA.</p>
Armato 18	A discussion of City costs related to ongoing Project monitoring is provided in Section 9.8 of this CBA.
Armato 19	A discussion of green and sustainability grants is provided in Section 13.4 of this CBA.
Armato 20	The commenter's question requires speculation and is beyond the nature of the CBA.
Armato 21	A decline in School District enrollment as a result of the proposed Project is speculative.
Armato 22	The commenter's question requires speculation and is beyond the nature of the CBA.
Armato 23	A discussion of potential carbon offsets is provided in Section 13.5 of this CBA.
Armato 24	The Applicant would responsible for any remediation required as a result of the proposed Project. Note however that this excludes the remediation of the existing conditions on the Project Site discussed in this CBA (specifically Section 9.5 of this CBA). A discussion of the insurance and hazard events is provided in Section 15.0 of this CBA.
Armato 25	The commenter's question requires speculation and is beyond the nature of the CBA.
Armato 26	The Authors are unsure of what the commenter's question is. An evaluation of the financial profile of other communities is beyond the scope of the CBA.
Armato 27	Identification of potential royalty revenues for entities other than the City and School District is beyond the intent and scope of this CBA.
Armato 28	A discussion of City costs and net cashflow under a scenario where the Project is not approved is provided Section 10.5 and 11.2.
Armato 29	A discussion of potential health impacts under the proposed Project are provided in the HIA. An evaluation of potential costs of these potential impacts is beyond the scope of this CBA.
Armato 30	In the Authors' opinion, this CBA presents a neutral and unbiased perspective of the potential costs and benefits of the proposed Project to the City.
Arnold 1	Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.
Berlin 1	A summary of the estimated net revenues should the proposed Project be approved or not by the voters of Hermosa Beach is provided in Section 11.0 of this CBA.

	<p>A sample estimate of annual net City cashflows under base assumptions is provided in Table 30. Unfortunately such an evaluation for all of the possible variables and outcomes is too voluminous to include in the CBA, however the information to make adjustments as desired is provided within this CBA. A summary of gross estimated City revenues should the proposed Project be approved is provided in Appendix C, and a summary of estimated City expenses is provided in Table 23 of this CBA. Further Table 43 provides an estimate of net City revenues under the three scenarios evaluated in this CBA should the proposed Project be approved.</p>
Berlin 2	<p>Estimates of gross royalty revenues the City would receive by year are provided in Appendix C of this CBA, and a sample of net City cashflows in consideration of City costs are provided in Table 30 of this CBA.</p> <p>Estimates of net royalty revenues the School District would receive by year are provided in Appendix D of this CBA.</p>
Berlin 3	<p>A chart depicting the distribution of projected City Tidelands and Uplands revenues can be found in Section 1.0 and Section 17.0 of this CBA.</p> <p>The distribution of City Tidelands and Uplands revenues under alternative royalty calculation methods is discussed in Section 7.2 of this CBA.</p> <p>Estimates of gross royalty revenues the City would receive by year are provided in Appendix C of this CBA, and a sample of net City cashflows in consideration of City costs are provided in Table 30 of this CBA.</p> <p>A brief discussion of potential noise and odor impacts is provided in Section 12.0 of this CBA. A discussion of various considerations and potential hazard events are provided in Section 13.0 and Section 15.0 respectively of this CBA.</p>
Bowkus 1	<p>Please see Section 9.0 of this CBA for a discussion of City costs, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p>
Bronchick 1	<p>The commenter's statement is noted.</p>
Bronchick 2	<p>The commenter's statement is noted.</p>
Bronchick 3	<p>The commenter's statement is noted.</p> <p>Estimates of gross royalty revenues the City would receive by year are provided in Appendix C of this CBA, and a sample of net City cashflows in consideration of City costs are provided in Table 30 of this CBA.</p>
Bronchick 4	<p>The commenter's statement is noted.</p> <p>Please see Section 8.3 for a discussion of School District revenues.</p>
Bronchick 5	<p>The commenter's statement is noted.</p>
Bronchick 6	<p>The commenter's statement is noted.</p> <p>Please see the Final EIR for a discussion of potential impacts from the Proposed Project.</p>
Bronchick 7	<p>The commenter's statement is noted.</p>
Bronchick 8	<p>The commenter's statement is noted.</p>
Candy / Hillister & Brace 1	<p>A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some</p>

	guidance on permissible uses.
Candy / Hillister & Brace 2	A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.
Candy / Hillister & Brace 3	A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.
Candy / Hillister & Brace 4	A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.
Candy / Hillister & Brace 5	A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.
Candy / Hillister & Brace 6	<p>A small change to the text provided in Section 7.4 was made to help clarify that the Mallon decision may not be directly applicable to the City's use of Tidelands funds.</p> <p>A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.</p>
Candy / Hillister & Brace 7	A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.
Candy / Hillister & Brace 8	<p>A small change to the text provided in Section 7.4 was made to help clarify that the Mallon decision may not be directly applicable to the City's use of Tidelands funds.</p> <p>A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.</p>
Candy / Hillister & Brace 9	<p>A small change to the text provided in Section 7.4 was made to help clarify that the diversion provisions are not a part of the City's Tideland Grant and that changes would require State legislative action.</p> <p>A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some</p>

	guidance on permissible uses.
Chelliah 1	Please see Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved. It is the Authors opinion that given the global scale of the oil and gas market, the proposed Project would likely have no or a de minimis impact on gasoline prices.
Clark 1	The commenter's statement is noted.
Clark 2	As introduced in Section 2.5 Gas refers to natural gas expected to be produced from the Reservoir (in addition to oil). The recovery of gas from the Reservoir is an expected occurrence, is in essence a byproduct of recovering oil, and was specifically contemplated in the Oil Lease.
Clark 3	The commenter's statement is noted.
Clark 4	Total revenue over the life of the Project refers to the sum of annual revenues over the life of the proposed Project.
Clark 5	The commenter's statement is noted.
Clark 6	The question is beyond the scope of the CBA. Some information can be found on the City's website. Additional questions on the matter should be addressed to the City.
Clark 7	Reservoir in the CBA is defined as "The oil field underlying the City of Hermosa Beach and extending out to sea one nautical mile from the mean high tide line." (Section 2.5, Appendix A, et al.)
Clark 8	Information was presented in a manner to simplify interpretation in an attempt to make a highly complex analysis more readily comprehensible by the reader. The technical nuances and considerations provided throughout the report allow the reader to understand at a greater level of detail if desired.
Clark 9	The Authors are unsure of what the commenter's question is.
Clark 10	As introduced in Section 2.5 Gas refers to natural gas expected to be produced from the Reservoir (in addition to oil). The recovery of gas from the Reservoir is an expected occurrence, is in essence a byproduct of recovering oil, and was specifically contemplated in the Oil Lease.
Clark 11	As introduced in Section 2.5 Gas refers to natural gas expected to be produced from the Reservoir (in addition to oil). The recovery of gas from the Reservoir is an expected occurrence, is in essence a byproduct of recovering oil, and was specifically contemplated in the Oil Lease.
Clark 12	As introduced in Section 2.5 Gas refers to natural gas expected to be produced from the Reservoir (in addition to oil). The recovery of gas from the Reservoir is an expected occurrence, is in essence a byproduct of recovering oil, and was specifically contemplated in the Oil Lease.
Clark 13	As introduced in Section 2.5 Gas refers to natural gas expected to be produced from the Reservoir (in addition to oil). The recovery of gas from the Reservoir is an expected occurrence, is in essence a byproduct of recovering oil, and was specifically contemplated in the Oil Lease.
Clark 14	The Authors are unsure of what the commenter's question is.
Clark 15	The Authors did not investigate BRG, such an inquiry is beyond the scope of the CBA, and as stated in the CBA assumes that the BRG Report is not prejudiced. Regardless, the Authors did not rely on information in the BRG Report in the preparation of its analysis.
Clark 16	The timing of potential outcomes is not the purpose of the exhibit. Agencies could indeed take time to review approvals.
Clark 17	As introduced in Section 2.5 Gas refers to natural gas expected to be produced

	from the Reservoir (in addition to oil). The recovery of gas from the Reservoir is an expected occurrence, is in essence a byproduct of recovering oil, and was specifically contemplated in the Oil Lease.
Clark 18	<p>The Hacker 1998 report and some of the many other reports estimating reservoir volume and potential recovery volume were not reviewed and/or specifically referenced in this CBA as they were not available, or provided no value to the Author's analysis.</p> <p>Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.</p>
Clark 19	The Authors are unsure of what the commenter's question is. A discussion of potential hazard events is provided in Section 15
Clark 20	Speculation on induced externalities is beyond the scope of the CBA. The Authors agree that it is difficult to project the price of oil and gas. The U.S. Energy Information Administration is considered a reliable and ubiquitous source of information on oil and gas pricing.
Clark 21	The Authors are unsure of what the commenter's question is.
Clark 22	The Authors are unsure of what the commenter's question is.
Clark 23	The term Settlement Agreement is defined in Section 3.1 and is referenced repeatedly as it provides a significant piece of the framework of the agreement between the City, Applicant, and MOC evaluated in the CBA.
Clark 24	The Authors are unsure of what the commenter's question is.
Clark 25	The Authors are unsure of what the commenter's question is.
Clark 26	The figures in the CBA represent the Authors estimates and projections based on a thorough evaluation of pertinent information and factual data available.
Clark 27	The figures in the CBA represent the Authors estimates and projections based on an evaluation of available information. The Authors cannot "guarantee" estimates. There is no signed contract to "verifies and has checks on their numbers". Some of the CBA Authors are registered municipal advisors with experience in the municipal financing entity. This experience was relied upon in preparing estimates.
Clark 28	The figures in the CBA represent the Authors estimates and projections based on a thorough evaluation of pertinent information and factual data available.
Clark 29	Where appropriate data is available on potential impacts it is referenced within the CBA.
Clark 30	The Authors are unsure of what the commenter's question is.
Clark 31	The figures in the CBA represent the Authors estimates and projections based on a thorough evaluation of pertinent information and factual data available.
Clark 32	The commenter's statement is noted.
Clark 33	The commenter's statement is noted. While the extraction process commonly referred to as "Fracking" is often utilized in conjunction with horizontal drilling, horizontal drilling is distinct from "Fracking".
Clark 34	The commenter's statement is noted.
Clark 35	Speculation on induced externalities is beyond the scope of the CBA.

Clark 36	The sample case study locations were identified based on the proximity of oil production to residential neighborhoods. The AECOM analysis was cited as it included a review of potential impacts to property values of residential properties in proximity to oil production facilities.
Clark 37	The AECOM report cited in Appendix F looks at the value differential between properties in close proximity to oil production facilities to those that are not. As discussed Section 12.1 of this CBA, market environments change, and the potential spread between property values with and without certain attributes may fluctuate. However, a spread is typically observable if attributes are impacting price. The property data evaluated by the Authors in Section 12.2 of this CBA covered a 10 year period between 2002 and 2012, and a variety of market conditions.
Clark 38	As discussed in Section 12.0, The Authors conclusions are based on the information and data reviewed in the preparation of the CBA which included market data, the value of properties in proximity to oil production facilities similar in nature to the proposed Project versus properties located further from the same facilities, as well as a review of relevant analyses of value impacts from potentially negative property attributes. The property data evaluated by the Authors in Section 12.2 of this CBA covered a 10 year period between 2002 and 2012, and a variety of market conditions.
Clark 39	The Authors contacted the California Department of Insurance which offered no contradictory guidance on the matter. Please review Section 13.1 for a discussion on the Authors conclusions and reasoning.
Clark 40	An exhaustive evaluation of potential impacts to tourism and special events from the Project or a major hazard event is beyond the scope of the CBA. Regardless, such an evaluation is speculative given the many unique attributes of the proposed Project, and the City. The Authors conclusions are discussed in Section 13.2
Clark 41	An exhaustive evaluation of potential impacts on use of City facilities and parklands from the Project is beyond the scope of the CBA. Regardless, such an evaluation is speculative given the many unique attributes of the proposed Project, and the City facilities and parklands. The Authors conclusions are discussed in Section 13.3
Clark 42	An exhaustive evaluation of potential impacts on the City's ability to secure grants due to implementation of the proposed Project is beyond the scope of the CBA. As noted in Section 13.4 of the CBA, the Authors conclusions are based on its historic review and preparing grant applications. The commenter's statement is noted.
Clark 43	GHG estimated to be directly generated by the proposed Project are considered in the EIR. It is the Authors understanding that the evaluation of the GHG potential created through the combustion of petroleum products that could be produced from the Reservoir are is not required under AB32. The Applicant will be responsible for compliance with AB32
Clark 44	As discussed in Section 14.0 of this CBA, should the proposed Project be approved, the initial drilling operations would be expected to support a far greater number of jobs than ongoing operations. All figures are for total job creation, not just Project Site specific employment.
Clark 45	The commenter's statement is noted.
Clark 46	The commenter's statement is noted.
Clark 47	The commenter's statement is noted.

Clark 48	<p>The commenter's statement is noted.</p> <p>Employment estimates in the CBA cover two distinct periods – first during construction, drilling, and initial production, and second during ongoing operation.</p> <p>As discussed in Section 12.2 data covering the ten year period between 2002 and 2012 was reviewed.</p> <p>The Authors did not rely on information in the BRG Report in the preparation of its analysis.</p>
Clark 49	<p>As introduced in Section 2.5 Gas refers to natural gas expected to be produced from the Reservoir (in addition to oil). The recovery of gas from the Reservoir is an expected occurrence, is in essence a byproduct of recovering oil, and was specifically contemplated in the Oil Lease.</p>
Clark 50	<p>The commenter's statement is noted.</p>
Danis 1	<p>Please see Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p>
Di Rado 1	<p>Please see Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p>
Dushenko 1	<p>Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p>
Eichenlaub 1	<p>Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p>
Goldstein 1	<p>The commenter's statement is noted.</p> <p>While the extraction process commonly referred to as "Fracking" is often utilized in conjunction with horizontal drilling, horizontal drilling is distinct from "Fracking".</p> <p>As discussed in Section 2.6 of this CBA, based on discussions with the City it is the Authors' understanding that the Project does not include "Fracking".</p> <p>As discussed in Section 15.3 scenario failure rates are based on the analysis within the EIR.</p>
Gore / PGH 1	<p>While the Authors did not directly review DOGGR production data in the preparation of the Draft CBA, the information and documents reviewed in the preparation of this CBA did include and consider historic Redondo Beach production data.</p>
Gore / PGH 2	<p>Consideration of modern horizontal well technology was given in estimating recovery rates in this CBA.</p> <p>The recovery rate experienced in Redondo Beach was lower than the lowest estimate in this CBA.</p> <p>There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach, and there is no reliable data set or conclusive evidence to support a change in the recovery rates estimated in this CBA.</p>

Hamm / BRG 1	<p>Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.</p> <p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA.</p>
Hamm / BRG 2	<p>Consideration of modern horizontal well technology was given in estimating recovery rates in this CBA. There is no reliable data set or conclusive evidence to support a change in the recovery rates estimated in this CBA for the Reservoir.</p>
Hamm / BRG 3	<p>Identification of potential royalty revenues for entities other than the City and School District is beyond the intent and scope of this CBA.</p> <p>Further, estimating potential spending by mineral rights owners requires a significant amount of speculation as to what percentage of mineral rights owners live within the City, what percentage of potential income might be spent, if spent, what percentage would be within the City, etc.</p>
Hamm / BRG 4	<p>Given the nature of municipal and public entity budget processes, predicting when or how estimated royalty revenues would be utilized is speculative.</p>
Hamm / BRG 5	<p>As discussed in Section 5.7 of the Final CBA, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir as "The complexities for both zones and the complete lack of information as to the reservoir types, type of fracture system, determination of sands if any, aerial extent, existence of oil water contacts, and lack of other information did not allow for a determination of an oil volume." The potential scale of production from these strata as estimated by others is described in the note to Table 3 in Section 5.9 of this CBA.</p>
Hamm / BRG 6	<p>Consideration of modern horizontal well technology was given in estimating recovery rates in this CBA. There is no reliable data set or conclusive evidence to support a change in the recovery rates estimated in this CBA for the Reservoir.</p>
Hamm / BRG 7	<p>Should the proposed Project proceed, individuals that own mineral rights may receive royalty revenues. However, assumptions on the use of such revenues, timing and/or location of use and the extent used for purposes that would drive economic activity within the City are speculative.</p>
Hamm / BRG 8	<p>The Authors support the notion that above-average public services could positively impact home values. However, given the nature of municipal and public entity budget processes, and the constitutional/statutory limitations on a city council's capacity to authorize expenditures beyond the current operating year, predicting when or how estimated royalty revenues would be utilized and the impact of such uses on property values in the future is speculative.</p>
Hamm / BRG 9	<p>Assumed oil and gas pricing is discussed in Section 6.2 and Section 6.3 of this CBA. Unless otherwise noted, estimates in this CBA utilize a fixed price of \$95 per barrel of oil, and \$4.60 per MCF of gas (both effectively escalated at assumed inflation in future value and present value calculations).</p>

Hamm / BRG 10	The derivation of estimated Oil in Place is discussed in Section 5.7 of this CBA, and was based on a volumetric analysis of each of the three zones as described in Section 5.6.
Hamm / BRG 11	In this CBA future value is abbreviated as “FV”. A discussion of the meaning of future value is provided in Section 2.5.
Hamm / BRG 12	The Richard A. Neustein MAI, CRE, FRICS Well Lot Proximity Study provided in Appendix F provides data and discussion relevant to both single family homes, and small multi-unit properties.
Hamm / BRG 13	The component of the AECOM analysis cited in the commenter’s question relied on median sales values per square foot and utilized neither assessed valuation data nor regression models. However, some of the studies reviewed and cited in the AECOM report did include regression models, and should be reviewed by the commenter if there are questions about the same.
Hamm / BRG 14	The conclusion provided in Section 12.6 represent the Author’s opinion based on a review of a number other analyses and data sources.
Hamm / BRG 15	The Intera reports were not relied on in the analysis, rather only as a comparison to the CBA estimates. Other reports were considered in the same manner, but since the underlying information could not be determined, they were not cited. The calculations used in the 1996 Intera report could not be resolved, hence the modifications used in the CBA
Hamm / BRG 16	It is the Author’s conclusion that but for the proposed Project, the New City Yard Site could continue to be leased indefinitely into the future. Further, it is the Author’s conclusion that but for the proposed Project an amendment to the storage site lease would be executed including the same or higher rent and other relevant provisions in effect prior to the second amendment. The \$6.4 million cited reflects the total rent lost if the City can no longer rent out the New City Yard Site, of which approximately 90% would still be incurred even if a reduced lease rate was carried forward. Please see Section 9.4 for additional discussion.
Hamm / BRG 17	The discussion of the cost of purchasing carbon offset credits is included in this CBA as such an evaluation was requested by stakeholders. The Authors agree that the proposed Project would likely have no or a de minimis impact on global oil supply and demand, and also agree that an argument could be made that local oil production consumed locally could have a lower carbon footprint than globally sourced oil consumed locally. However, the foundation of the question is how the City could achieve carbon neutrality by offsetting carbon produced from oil sourced from within the City.
Hamm / BRG 18	A small change to the text provided in Section 7.4 was made to help clarify that the Mallon decision may not be directly applicable to the City’s use of Tidelands funds. A legal interpretation and opinion on the use of Tidelands funds under the City’s Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.
Hamm / BRG 19	The commenter is correct – the 2013 AEO citation was incorrect. Early release 2014 EIA data was utilized in both the Draft CBA and this CBA. The error has been corrected in this CBA.

Hamm / BRG 20	The commenter is correct – Intera did not distinguish “Upper Del Amo” from Lower Del Amo. The error has been corrected in this CBA.
Hamm / BRG 21	The commenter is correct – the 83.08% / 16.92% was an error and has been corrected in this CBA. No calculations were made based on the erroneous figures in either the Draft CBA, or this CBA.
Harris 1	Please see Section 9.0 of this CBA for a discussion of City costs if the proposed Project is or is not approved.
Hoffman 1	Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, Section 8.3 of this CBA for a discussion of estimated School District revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.
Inskeep 1	A discussion of the temporary relocation of the City Maintenance Yard is provided in Section 9.2 of this CBA, and a discussion of the cost of environmental remediation of the Project Site is provided in Section 9.5. It is unknown when or if the City would remediate the Project Site but for the proposed Project. The commenter’s statement is noted.
Killman 1	Please see Section 14.0 for a discussion of estimated economic benefits associated with the proposed Project. Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.
Knudson 1	Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.
Krag 1	As discussed in Section 5.7 if the Final CBA, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir as "The complexities for both zones and the complete lack of information as to the reservoir types, type of fracture system, determination of sands if any, aerial extent, existence of oil water contacts, and lack of other information did not allow for a determination of an oil volume." The potential scale of production from these strata as estimated by others is described in the note to Table 3 in Section 5.9 of this CBA.
Krag 2	The commenter’s statement is noted.
Krag 3	As discussed in Section 8.1 of this CBA, if the proposed Project is approved the City would be expected to receive additional revenue from property taxes levied essentially on the value of the Reservoir. Given the uncertainty in the amount of property taxes to be generated from Reservoir value, and as discussed in Section 9.9 of this CBA, the uncertainty of potential impacts to private property values, for the purposes of the CBA, the Authors assumed that the incremental property taxes and potential for decreases in property tax revenues would effectively cancel each other out.
Krag 4	The commenter’s statement is noted.
Leahy 1	The Applicant is responsible for dismantling the facility. The Applicant would responsible for any remediation required as a result of the proposed Project. Note however that this excludes the remediation of the existing conditions on the Project Site as discussed in Section 9.5 of this CBA. A discussion of the insurance and hazard events is provided in Section 15 of

	<p>this CBA.</p> <p>The commenter's statement is noted.</p>
Marcucci 1	<p>A discussion of potential impacts to property values is provided in Section 12.0, and a discussion of potential impacts to tourism is provided in Section 13.0 of this CBA.</p>
Marcucci 2	<p>The commenter's statements are noted.</p> <p>Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p> <p>Please see Section 14.0 for a discussion of estimated economic benefits associated with the proposed Project.</p>
Marmol 1	<p>Please see Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p>
McCall 1	<p>An exhaustive evaluation of potential impacts to tourism and special events from the Project or a major hazard event is beyond the scope of the CBA. Regardless, such an evaluation is speculative given the many unique attributes of the proposed Project, and the City. The Authors conclusions are discussed in Section 13.2</p>
McCall 2	<p>A discussion of the potential costs to the City of the proposed Project is not approved is provided in Section 11.2 of this CBA.</p>
McCall 3	<p>Estimates of gross royalty revenues the City would receive by year are provided in Appendix C of this CBA, and a sample of net City cashflows in consideration of City costs are provided in Table 30 of this CBA.</p> <p>Estimates of net royalty revenues the School District would receive by year are provided in Appendix D of this CBA.</p> <p>Given the nature of municipal and public entity budget processes, predicting when or how estimated royalty revenues would be utilized is speculative.</p>
McCarroll 1	<p>Please see Section 9.0 of this CBA for a discussion of City costs, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p>
McDaniel 1	<p>Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p>
Moore 1	<p>The CSLC has provided guidance supporting an interpretation different than the one provided in the Draft CBA. For a discussion of the current interpretation please see Section 7.0 of this CBA.</p> <p>A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.</p>
Moore 2	<p>The commenter's statement is noted.</p> <p>The minimum royalty payments referenced in the question are in essence minimum payments that would be due to the City should royalty revenues be less than the minimum lease payments prescribed under Section (2)(b)(1) of the</p>

	Oil Lease. Further discussion of the minimum royalty payments is provided in Section 7.5 of this CBA.
Moore 3	The School District's share of royalty revenues are based on the terms agreed upon in the School District Oil Lease, and School District Oil Lease Agreement. The commenter's statement is noted.
Moore 4	The commenter's statement is noted.
Moore 5	The test phase of the proposed Project is expected to determine if there are sufficient amounts of oil and gas to warrant the large capital expenditures required to produce it. Terms of the various agreements will not be modified based on whether or not it is economical to produce oil and gas from the Reservoir.
Moore 6	As discussed in Section 12.5 of this CBA, the Oil Well Lot Proximity Study included in Appendix F is provided as a reference point, though different communities may value proximities differently.
Morely 1	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.
Morely 2	To the Author's knowledge, reports and documents that are within the public's purview have been made available, however the release of proprietary documentation is not within the purview of the Authors.
Morely 3	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach. Other than the Applicant's estimates, estimates from other reports originally included in the Draft CBA (only as a reference) were removed in the drafting of this Final CBA.
Morely 4	The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA. The Applicant's estimates are provided for reference only, and were not relied upon by the Authors in its estimates of potential oil production. Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.
Morely 5	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different and does not represent an appropriate "baseline" case for estimates of Hermosa Beach production as of 2014.

Morely 6	<p>This CBA includes an analysis of the Authors projected production curves for a Low scenario as discussed in Section 5.9.</p> <p>As discussed in Section 5.8, the production of a given field or well is a function of many variables including available well technology, capital investment, operating costs, and the price of oil.</p> <p>The Authors conclude that a comparison of historical production of other fields to the projections specific to the Reservoir in the CBA would likely be misleading and therefore not appropriate for inclusion.</p>
Morely 7	<p>This CBA includes an estimate of City expenses in Section 9, and a summary of the same is provided in Section 9.10.</p> <p>The Authors estimate that total production of approximately 5.6 million barrels of oil would be required for the Uplands fund to “breakeven” over the duration of the proposed Project. Under such a scenario the Tidelands fund would realize net revenues of approximately \$47 million.</p>
Morely 8	<p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA.</p> <p>Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.</p>
Morely 9	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different and does not represent an appropriate “baseline” case for estimates of Hermosa Beach production as of 2014.</p>
Morely 10	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different and does not represent an appropriate “baseline” case for estimates of Hermosa Beach production as of 2014.</p>
Morely 11	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.</p> <p>The term order of magnitude is used in this CBA as a note and reminder to the reader that figures are estimates and projections intended to provide relative scale and/or amount. Various estimates and projections within the CBA are subject to a number of variables that could change in the future. In this CBA the use of order of magnitude is not in the strict scientific sense relating to the power of ten.</p>
Morely 12	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is</p>

	expected to be different and does not represent an appropriate “baseline” case for estimates of Hermosa Beach production as of 2014.
Morely 13	To the Author’s knowledge, reports and documents that are within the public’s purview have been made available, however the release of proprietary documentation is not within the purview of the Authors.
Morely 14	<p>This CBA includes an analysis of the Authors projected production curves for three scenarios; a Low, Expected and High case. A discussion of these three scenarios is provided in Section 5.9 of this CBA.</p> <p>Production information and City Revenue information assuming the Applicant’s projections are provided for reference only, and were not relied upon in preparing this CBA Low, Expected, and High Scenarios evaluated in this CBA.</p> <p>Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.</p> <p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA. The Applicant’s estimates are provided for reference only, and were not relied upon by the Authors in its estimates of potential oil production.</p>
Morely 15	The scope of this CBA was to evaluate the proposed Project as described and evaluated in the EIR, and not alternative locations that are not currently being proposed.
Morely 16	This CBA evaluates the proposed Project which pursuant Section 2.1 of the Final EIR contemplates the drilling of "34 wells (30 oil wells, four wells for water disposal/injection)".
Morely 17	The CSLC MOU allows for the allocation of Tidelands funds to repayment of the Advances discussed in Section 9.5 of this CBA. Please see Section 11 of this CBA for a discussion of the use of Tidelands funds for repayment of monies due under the Settlement Agreement.
Morely 18	Should the proposed Project be approved, the City and Applicant will need to be in compliance with the terms of the existing CSLC MOU or as subsequently amended. The existing CSLC MOU acknowledges the City’s intent to allocate Tidelands funds to repayment of portions of the Advances as discussed in Section 9.5 of this CBA.
Morely 19	<p>The estimated split of Tidelands and Uplands production was based on volumetric estimates of the location of oil in place in Hermosa Beach. The figures are estimates only, and actual production by area may be different. The Authors conclude that changes to the delineation between Tidelands and Uplands, if appropriate, would not result in a more accurate estimate of the allocation of potential revenues.</p> <p>Table 8 in this CBA provides an estimate of the potential variance in Tidelands and Uplands revenues from the base distribution of oil in place (78.3% Tidelands / 21.7% Uplands) given different Tideland and Upland ratios of oil in</p>

	place.
Morely 20	The commenter's statement is noted.
Morely 21	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.
Morely 22	<p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA.</p> <p>Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.</p>
Morely 23	<p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA.</p> <p>The Applicant's estimates are provided for reference only, and were not relied upon by the Authors in its estimates of potential oil production.</p> <p>To the Author's knowledge, reports and documents that are within the public's purview have been made available, however the release of proprietary documentation is not within the purview of the Authors.</p> <p>This CBA includes an analysis of the Authors projected production curves for three scenarios (please see Section 5.9), as well as an estimate of gross City revenues, City expenses, and net City revenues in Section 7.0, Section 9.0, and Section 11.0 in this CBA respectively.</p>
Morely 24	The Applicant will be responsible for securing Project related approvals beyond the control of the City. Should the Project be approved some City staff time may be utilized in the course of these applications; however these staff are already employed by the City and are not considered an incremental cost. Further, the use of staff time as a resource is considered compensated through the payment of permit related fees.
Morely 25	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.
Morely 26	<p>Other than the Applicant's estimates, estimates from other reports originally included in the Draft CBA (only as a reference) were removed in the drafting of this Final CBA.</p> <p>Some references to description of geology remain as they provide a good summary of available information, are provided for the benefit of the reader,</p>

	however were not relied upon in the preparation of the CBA.
Morely 27	<p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA.</p> <p>Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.</p> <p>The Applicant's estimates are provided for reference only, and were not relied upon by the Authors in its estimates of potential oil production.</p> <p>Other than the Applicant's estimates, estimates from other reports originally included for reference only in the Draft CBA were removed in the drafting of the Final CBA.</p>
Morely 28	<p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA.</p> <p>The Applicant's estimates are provided for reference only, and were not relied upon by the Authors in its estimates of potential oil production.</p> <p>To the Author's knowledge, reports and documents that are within the public's purview have been made available, however the release of proprietary documentation is not within the purview of the Authors.</p> <p>This CBA includes an analysis of the Authors projected production curves for three scenarios (please see Section 5.9), as well as an estimate of gross City revenues, City expenses, and net City revenues in Section 7.0, Section 9.0, and Section 11.0 of this CBA respectively.</p>
Morely 29	This Final CBA incorporates responses to comments to the Draft CBA. Comments provided in advance of the preparation of the Draft CBA were considered in both the Draft and Final CBA.
Morely 30	This CBA evaluates the proposed Project which pursuant Section 2.1 of the Final EIR contemplates the drilling of "34 wells (30 oil wells, four wells for water disposal/injection)".
Morely 31	<p>Citations to reference materials are provided throughout the CBA.</p> <p>To the Author's knowledge, reports and documents that are within the public's purview have been made available, however the release of proprietary documentation is not within the purview of the Authors.</p>
Morely 32	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different.</p> <p>As discussed in Section 5.7 and 5.9, the estimates of recoverable oil in this</p>

	CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir. The Authors believe that figures in the BRG Report and the Applicant's production estimates include production from these strata. The potential scale of production from these strata is described in the note to Table 3 in Section 5.9 of this CBA.
Morely 33	Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.
Morely 34	This CBA includes an analysis of the Authors projected production curves for a Low scenario as discussed in Section 5.9.
Morely 35	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different.</p> <p>As discussed in Section 5.8, the production of a given field or well is a function of many variables including available well technology, capital investment, operating costs, and the price of oil.</p> <p>Consideration of modern horizontal well technology was given in estimating recovery rates in this CBA. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach. The use of modern technology in Redondo Beach would be expected to yield additional production.</p>
Morely 36	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different.</p> <p>While the Authors did not directly review DOGGR production data in the preparation of the Draft CBA, the information and documents reviewed in the preparation of the Draft CBA did include and consider historic Redondo Beach production data.</p>
Morely 37	While the Authors did not directly review DOGGR production data in the preparation of the Draft CBA, the information and documents reviewed in the preparation of this CBA did include and consider historic Redondo Beach production data.
Morely 38	This CBA estimates the potential recovery under the proposed Project based on the Authors review of relevant information, and is not intended to provide verification or commentary on all reports prepared by other entities.
Morely 39	The area producible by a single well varies greatly depending on the type of well technology employed. As an example, a horizontal well can drain a much larger area than a vertical well, and a single well head can support multiple horizontal laterals.
Morely 40	As discussed in Section 5.7 and 5.9, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir. The Authors believe that figures in the BRG Report and the Applicant's production estimates include production from these strata. The

	potential scale of production from these strata is described in the note to Table 3 in Section 5.9 of this CBA.
Morely 41	There is insufficient information available on the Reservoir to complete a faulting analysis. Further, in the Authors opinion, faulting would not significantly change the results of the volumetric model utilized in this CBA to estimate reservoir volumes and production.
Morely 42	There is insufficient information available on the Reservoir to complete a faulting analysis. Further, in the Authors opinion, faulting would not significantly change the results of the volumetric model utilized in this CBA to estimate reservoir volumes and production.
Morely 43	There is insufficient information available on the Reservoir to complete a faulting analysis. Further, in the Authors opinion, faulting would not significantly change the results of the volumetric model utilized in this CBA to estimate reservoir volumes and production.
Morely 44	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different and does not represent an appropriate “baseline” case for estimates of Hermosa Beach production as of 2014. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.
Morely 45	A discussion of the classification of the Reservoir can be found in Section 5.4. As discussed in Section 5.7 and 5.9, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir. The Authors believe that figures in the BRG Report and the Applicant's production estimates include production from these strata. The potential scale of production from these strata is described in the note to Table 3 in Section 5.9 of this CBA.
Morely 46	To the Author's knowledge, reports and documents that are within the public's purview have been made available, however the release of proprietary documentation is not within the purview of the Authors. As discussed in Section 5.7 and 5.9, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir. The Authors believe that figures in the BRG Report and the Applicant's production estimates include production from these strata. The potential scale of production from these strata is described in the note to Table 3 in Section 5.9 of this CBA.
Morely 47	A discussion of the classification of the Reservoir can be found in Section 5.4. As discussed in Section 5.7 and 5.9, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir. The Authors believe that figures in the BRG Report and the Applicant's production estimates include production from these strata. The potential scale of production from these strata is described in the note to Table 3 in Section 5.9 of this CBA.
Morely 48	The area producible by a single well varies greatly depending on the type of well technology employed. As an example, a horizontal well can drain a much larger area than a vertical well, and a single well head can support multiple horizontal laterals. The production volumes in this CBA consider a maximum of 30 oil and gas wells.

Morely 49	<p>The estimates of recoverable oil in this CBA consider potential constraints on production based on the number of wells in the proposed Project.</p> <p>With respect to protection wells, four water injection wells along the Tidelands / Uplands border may be sufficient, and there is currently no production in Redondo Beach to protect.</p>
Morely 50	<p>There is a possibility that production from the Schist Conglomerate zones could occur. While it is the Authors conclusion that here is currently not enough information to include such potential production in the projections herein, it does not preclude the possibility of future production from these zones.</p> <p>The number of wells required to drain a given field varies greatly depending on the type of well technology employed. As an example, a horizontal well can drain a much larger area than a vertical well, and a single well head can support multiple horizontal laterals.</p>
Morely 51	<p>A discussion of the classification of the Reservoir can be found in Section 5.4.</p> <p>As discussed in Section 5.7 and 5.9, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir. The Authors believe that figures in the BRG Report and the Applicant's production estimates include production from these strata. The potential scale of production from these strata is described in the note to Table 3 in Section 5.9 of this CBA.</p>
Morely 52	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.</p>
Morely 53	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.</p>
Morely 54	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.</p>
Morely 55	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.</p>
Morely 56	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.</p> <p>While the Authors did not directly review DOGGR production data in the preparation of the Draft CBA, the information and documents reviewed in the preparation of this CBA did include and consider historic Redondo Beach</p>

	production data.
Morely 57	Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.
Morely 58	The estimated split of Tidelands and Uplands production was based on volumetric estimates of the location of oil in place in Hermosa Beach. The location of historical oil production in Redondo Beach is expected to be different. Table 8 in this CBA provides an estimate of the potential variance in Tidelands and Uplands revenues from the base distribution of oil in place (78.3% Tidelands / 21.7% Uplands) given different Tideland and Upland ratios of oil in place.
Morely 59	As discussed in Section 5.7 and 5.9, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir. The Authors believe that figures in the BRG Report and the Applicant's production estimates include production from these strata. The potential scale of production from these strata is described in the note to Table 3 in Section 5.9 of this CBA. The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.
Morely 60	The number of wells required to drain a given field varies greatly depending on the type of well technology employed. As an example, a horizontal well can drain a much larger area than a vertical well, and a single well head can support multiple horizontal laterals. The estimates of recoverable oil in this CBA consider potential constraints on production based on the number of wells in the proposed Project. With respect to protection wells, four water injection wells along the Tidelands / Uplands border may be sufficient, and there is currently no production in Redondo Beach to protect. The determination of the optimum path and bottom location of wells could only be determined subsequent to test drilling.
Morely 61	The wells in Redondo Beach are considered vertical wells, or derivatives thereof. Consideration of modern horizontal well technology was given in estimating recovery rates in this CBA. The Project Applicant would have to get a waterflooding permit for reinjection, just to dispose of excess water. The use of waterflooding, and sources of water for waterflooding are considered in the EIR.
Morely 62	The estimated split of Tidelands and Uplands production was based on volumetric estimates of the location of oil in place in Hermosa Beach. The location of historical oil production in Redondo Beach is expected to be

	<p>different. Table 8 in this CBA provides an estimate of the potential variance in Tidelands and Uplands revenues from the base distribution of oil in place (78.3% Tidelands / 21.7% Uplands) given different Tideland and Upland ratios of oil in place.</p>
Morely 63	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.</p> <p>The Applicant's estimates are provided for reference only, and were not relied upon by the Authors in its estimates of potential oil production.</p>
Morely 64	<p>As discussed in Section 5.7 and 5.9 of the Final CBA, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir. The Authors believe that figures in the BRG Report and the Applicant's production estimates include production from these strata. The potential scale of production from these strata is described in the note to Table 3 in Section 5.9 of this CBA.</p> <p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.</p>
Morely 65	<p>Other than the Applicant's estimates, estimates from other reports originally included in the Draft CBA (only as a reference) were removed in the drafting of this CBA.</p> <p>To the Author's knowledge, reports and documents that are within the public's purview have been made available, however the release of proprietary documentation is not within the purview of the Authors.</p>
Morely 66	<p>Other than the Applicant's estimates, estimates from other reports originally included in the Draft CBA (only as a reference) were removed in the drafting of this Final CBA.</p> <p>To the Author's knowledge, reports and documents that are within the public's purview have been made available, however the release of proprietary documentation is not within the purview of the Authors.</p>
Morely 67	<p>A discussion of the classification of the Reservoir can be found in Section 5.4.</p> <p>As discussed in Section 5.7 and 5.9, the estimates of recoverable oil in this CBA assume no production from the Lower Del Amo and Schist Conglomerate of the Reservoir. The Authors believe that figures in the BRG Report and the Applicant's production estimates include production from these strata. The potential scale of production from these strata is described in the note to Table 3 in Section 5.9 of this CBA.</p> <p>There is a possibility that production from the Schist Conglomerate zones could occur. While it is the Authors conclusion that here is currently not enough information to include such potential production in the projections herein, it does</p>

	<p>not preclude the possibility of future production from these zones.</p> <p>The number of wells required to drain a given field varies greatly depending on the type of well technology employed. As an example, a horizontal well can drain a much larger area than a vertical well, and a single well head can support multiple horizontal laterals.</p>
Morely 68	<p>The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different and does not represent an appropriate “baseline” case for estimates of Hermosa Beach production as of 2014</p> <p>The timing and quantity of redrills evaluated in this CBA are estimated based on potential production scenarios wherein redrills are assumed to occur when they would be beneficial, limited by the various controlling documents / restrictions. As stated in this CBA up to 30 redrills may be permitted under the EIR. However, actual production and the benefit of potential redrills will drive the actual utilization of redrills.</p>
Morely 69	<p>The timing and quantity of redrills evaluated in this CBA are estimated based on potential production scenarios wherein redrills are assumed to occur when they would be beneficial, limited by the various controlling documents / restrictions. As stated in this CBA up to 30 redrills may be permitted under the EIR. However, actual production and the benefit of potential redrills will drive the actual utilization of redrills.</p>
Morely 70	<p>The wells in Redondo Beach are considered vertical wells, or derivatives thereof. Consideration of modern horizontal well technology was given in estimating recovery rates in this CBA. The Project Applicant would have to get a waterflooding permit for reinjection, just to dispose of excess water. The use of waterflooding, and sources of water for waterflooding are considered in the EIR.</p>
Morely 71	<p>Under the 1993 Conditional Use Permit, a work over rig or any other rig may be used on-site for a maximum of 90 days per year, and only on weekdays between the hours of 8 am and 6 pm. The Authors considered this activity and the potential nuisance thereof in its evaluation of proximate property values.</p>
Morely 72	<p>The redrills listed in Table 4 of the Draft CBA (and this CBA) are estimated based on potential production scenarios wherein redrills are assumed to occur when they would be beneficial, limited by the various controlling documents / restrictions. The EIR evaluates the maximum potential impact from the maximum number of redrills considered.</p>
Morely 73	<p>The timing and quantity of redrills evaluated in this CBA are estimated based on potential production scenarios wherein redrills are assumed to occur when they would be beneficial, limited by the various controlling documents / restrictions. As stated in this CBA up to 30 redrills may be permitted under the EIR. However, actual production and the benefit of potential redrills will drive the actual utilization of redrills.</p>
Morely 74	<p>This CBA includes an analysis of the Authors projected production curves for three scenarios (please see Section 5.9), as well as an estimate of gross City revenues, City expenses, and net City revenues in Section 7.0, Section 9.0, and Section 11.0 of this CBA respectively.</p> <p>The Authors estimate that total production of approximately 5.6 million barrels of oil would be required for the Uplands fund to “breakeven” over the duration of</p>

	<p>the proposed Project. Under such a scenario the Tidelands fund would realize net revenues of approximately \$47 million.</p> <p>There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach. Production information and City Revenue information assuming the Applicant's projections are provided for reference only, and were not relied upon in preparing this CBA Low, Expected, and High Scenarios evaluated in this CBA.</p> <p>While the Authors did not directly review DOGGR production data in the preparation of the Draft CBA, the information and documents reviewed in the preparation of this CBA did include and consider historic Redondo Beach production data.</p>
Morely 75	The estimated split of Tidelands and Uplands production was based on volumetric estimates of the location of oil in place in Hermosa Beach. The location of historical oil production in Redondo Beach is expected to be different. Table 8 in this CBA provides an estimate of the potential variance in Tidelands and Uplands revenues from the base distribution of oil in place (78.3% Tidelands / 21.7% Uplands) given different Tideland and Upland ratios of oil in place.
Morely 76	A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.
Morely 77	The CSLC has provided guidance supporting an interpretation different than the one provided in the Draft CBA. For a discussion of the current interpretation please see Section 7.0 of this CBA.
Morely 78	<p>The drafting of such a map is outside of the scope of the CBA, and in the Author's opinion has little value.</p> <p>The estimated split of Tidelands and Uplands production was based on volumetric estimates of the location of oil in place in Hermosa Beach. The figures are estimates only, and actual production by area may be different. The Authors conclude that changes to the delineation between Tidelands and Uplands, if appropriate, would not result in a more accurate estimate of the allocation of potential revenues.</p>
Morely 79	The estimated split of Tidelands and Uplands production (78.3% Tidelands / 21.7% Uplands) was based on volumetric estimates of the location of oil in place in Hermosa Beach as discussed in Section 5.9. The 184 acres discussed in Section 7.1 relates to land ownership, and not the estimated location of oil in place.
Morely 80	The estimated split of Tidelands and Uplands production (78.3% Tidelands / 21.7% Uplands) was based on volumetric estimates of the location of oil in place in Hermosa Beach as discussed in Section 5.9. The 184 acres discussed in Section 7.1 relates to land ownership, and not the estimated location of oil in place.
Morely 81	Identification of potential royalty revenues for entities other than the City and School District is beyond the intent and scope of this CBA. Additionally, absent the drilling of test wells there is insufficient information to accomplish this task.
Morely 82	This CBA assumes a maximum of 30 oil and gas wells. The area producible by a single well varies greatly depending on the type of well technology employed.

	As an example, a horizontal well can drain a much larger area than a vertical well, and a single well head can support multiple horizontal laterals.
Morely 83	The estimated split of Tidelands and Uplands production was based on volumetric estimates of the location of oil in place in Hermosa Beach. The location of historical oil production in Redondo Beach is expected to be different. Table 8 in this CBA provides an estimate of the potential variance in Tidelands and Uplands revenues from the base distribution of oil in place (78.3% Tidelands / 21.7% Uplands) given different Tideland and Upland ratios of oil in place.
Morely 84	The area producible by a single well varies greatly depending on the type of well technology employed. As an example, a horizontal well can drain a much larger area than a vertical well, and a single well head can support multiple horizontal laterals. The production volumes in this CBA consider a maximum of 30 oil and gas wells.
Morely 85	Absent the drilling of test wells there is insufficient information to accomplish this task without complete speculation. Well spacing may also be addressed in pooling of the Uplands. Well protection well may only be needed along the Tidelands / Uplands border if at all.
Morely 86	There is currently no 10 acre standard spacing preference, especially with the use of horizontal wells and newer well technology. The 10 acre spacing referenced was likely linked to the historical use of vertical wells in the area that could not drain as large of an area as a modern horizontal well could.
Morely 87	The CSLC has provided guidance supporting an interpretation different than the one provided in the Draft CBA. For a discussion of the current interpretation please see Section 7.0 of this CBA.
Morely 88	The CSLC has provided guidance supporting an interpretation different than the one provided in the Draft CBA. For a discussion of the current interpretation please see Section 7.0 of this CBA.
Morely 89	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different.
Morely 90	The estimated split of Tidelands and Uplands production was based on volumetric estimates of the location of oil in place in Hermosa Beach. The figures are estimates only, and actual production by area may be different. The Authors conclude that changes to the delineation between Tidelands and Uplands, if appropriate, would not result in a more accurate estimate of the allocation of potential revenues. Table 8 in this CBA provides an estimate of the potential variance in Tidelands and Uplands revenues from the base distribution of oil in place (78.3% Tidelands / 21.7% Uplands) given different Tideland and Upland ratios of oil in place.
Morely 91	Additional comments regarding the potential to supplant revenues, if necessary and appropriate, are provided in Section 7.4 of this CBA. Identification of potential sources of alternative funding is within the purview of City and beyond the scope of the CBA.
Morely 92	Tideland grants to a given entity provide the provisions and restrictions thereto and may be modified only through State legislative action. As stated in Section 7.4 of this CBA, the City's Tideland Grant does not include an excess revenue provision.
Morely 93	As stated in Section 7.4 of this CBA, the City's Tideland Grant does not include an excess revenue provision.

Morely 94	As stated in Section 7.4 of this CBA, the City's Tideland Grant does not include an excess revenue provision.
Morely 95	Should the proposed Project be approved the City would lease the Project Site to the Applicant. But for the proposed Project it is a reasonable assumption that the City Yard would remain on the Project Site. The City's estimated cost associated with the loss of use of the Project Site is the cost of providing a replacement facility as contemplated in Section 9.2, 9.3, and 9.4 of this CBA.
Morely 96	Should the proposed Project be approved the City would lease the Project Site to the Applicant. But for the proposed Project it is a reasonable assumption that the City Yard would remain on the Project Site. The City's estimated cost associated with the loss of use of the Project Site is the cost of providing a replacement facility as contemplated in Section 9.2, 9.3, and 9.4 of this CBA.
Morely 97	City costs associated with lost rent as a result of relocating the City Yard to the New City Yard Site and displacing the existing self storage operation are discussed in Section 9.4 of this CBA.
Morely 98	City costs associated with lost rent as a result of relocating the City Yard to the New City Yard Site and displacing the existing self storage operation are discussed in Section 9.4 of this CBA. The estimated City cost from lost rent of the New City Yard Site is included in summaries of estimated City costs within the CBA.
Morely 99	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.
Morely 100	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different. There are no wells in Redondo Beach that represent a good analog for the well technology that is now available and could be used in Hermosa Beach.
Morely 101	As discussed in Section 9.3 of this CBA, the 97 parking spaces referred to would be supplemental / in addition to the replacement of parking currently available. The City is not required to deliver the supplemental parking, and as such it is not considered a cost.
Morely 102	As discussed in Section 9.3 of this CBA, the 97 parking spaces referred to would be supplemental / in addition to the replacement of parking currently available. The City is not required to deliver the supplemental parking, and as such it is not considered a cost.
Morely 103	Should the proposed Project be approved the City would lease the Project Site to the Applicant. But for the proposed Project it is a reasonable assumption that the City Yard would remain on the Project Site. The City's estimated cost associated with the loss of use of the Project Site is the cost of providing a replacement facility as contemplated in Section 9.2, 9.3, and 9.4 of this CBA. If the Project is approved, upon completion of the Project the City could return the Project Site to its current use as a maintenance yard, or keep the maintenance yard at the New City Yard Site and lease or sell the Project Site. The Project Site's then history of use as for oil production may or may not impair its value; such analysis is highly speculative. The Authors conclusion is that the maintenance yard would likely remain at the

	New City Yard Site, and that the income stream or sale value of the approximately 56,628 – 69,200 square foot Project Site (please see Section 7.5 of this CBA) would be approximately equal to or exceed the 34,897 square foot New City Yard Site.
Morely 104	Should the proposed Project be approved the City would lease the Project Site to the Applicant. But for the proposed Project it is a reasonable assumption that the City Yard would remain on the Project Site. The City's estimated cost associated with the loss of use of the Project Site is the cost of providing a replacement facility as contemplated in Section 9.2, 9.3, and 9.4 of this CBA.
Morely 105	The City estimated costs associated with lost rent as a result of relocating the City Yard to the New City Yard Site and displacing the existing self storage operation are discussed in Section 9.4 of this CBA. The estimated City cost from lost rent of the New City Yard Site is included in summaries of estimated City costs within this CBA.
Morely 106	The City estimated costs associated with lost rent as a result of relocating the City Yard to the New City Yard Site and displacing the existing self storage operation are discussed in Section 9.4 of this CBA. The estimated City cost from lost rent of the New City Yard Site is included in summaries of estimated City costs within this CBA.
Morely 107	As discussed in Section 9.4 of this CBA, Rent forgone after the Project was not included as the Project Site will ultimately be returned to the City, and could essentially replace or exceed the lost income stream after the completion of the Project.
Morely 108	As discussed in Section 9.4 of this CBA, Rent forgone after the Project was not included as the Project Site will ultimately be returned to the City, and could essentially replace or exceed the lost income stream after the completion of the Project. If the Project is approved, upon completion of the Project the City could return the Project Site to its current use as a maintenance yard, or keep the maintenance yard at the New City Yard Site and lease or sell the Project Site. The Authors conclusion is that the maintenance yard would likely remain at the New City Yard Site, and that the income stream or sale value of the approximately 56,628 – 69,200 square foot Project Site (please see Section 7.5 of this CBA) would be approximately equal to or exceed the 34,897 square foot New City Yard Site. The estimated City cost from lost rent of the New City Yard Site is included in summaries of estimated City costs within this CBA.
Morely 109	As discussed in Section 9.7 of this CBA, under the mitigation measures in Section 4.6 of the EIR (FP-1c, and FP1-f), should the Project be approved, the Applicant would be responsible for reimbursing the City for these incremental costs, and as such these figures are provided for reference only and not included in the calculation of net City revenues
Morely 110	As discussed in Section 9.7 of this CBA, under the mitigation measures in Section 4.6 of the EIR (FP-1c, and FP1-f), should the Project be approved, the Applicant would be responsible for reimbursing the City for these incremental costs, and as such these figures are provided for reference only and not included in the calculation of net City revenues

Morely 111	As discussed in Section 9.7 of this CBA, under the mitigation measures in Section 4.6 of the EIR (FP-1c, and FP1-f), should the Project be approved, the Applicant would be responsible for reimbursing the City for these incremental costs, and as such these figures are provided for reference only and not included in the calculation of net City revenues
Morely 112	The hypothetical evaluation included in Section 9.9 is provided to illustrate the magnitude of decreases in property value required to have an impact on City Revenues. The Authors assumption is that the potential gains in Project Site specific property tax revenues and potential losses in property tax revenues from properties proximate to the Project Site would cancel each other out.
Morely 113	The hypothetical evaluation included in Section 9.9 is provided to illustrate the magnitude of decreases in property value required to have an impact on City Revenues. The Authors assumption is that the potential gains in Project Site specific property tax revenues and potential losses in property tax revenues from properties proximate to the Project Site would cancel each other out.
Morely 114	Analysis of scenarios with and without the use of the City's approximately \$6.0 million set aside are provided throughout the document, and specifically discussed in Section 9.2 and 11.0 of this CBA.
Morely 115	<p>Analysis of scenarios with and without the use of the City's approximately \$6.0 million set aside are provided throughout the document, and specifically discussed in Section 9.2 and 11.0 of this CBA.</p> <p>Under the Oil Lease City contributions to the Emergency Trust Fund are only required to be made through an allocation of City royalty revenues. While the Oil Lease stipulates that the Emergency Trust Fund shall be fully funded within 10 years of the commencement of the requirement of the Applicant and City to begin funding the same, it appears silent on where funding would come from if royalty revenues are insufficient. Under the three scenarios evaluated in this CBA City royalty revenues were sufficient to fully fund the Emergency Trust Fund within the prescribed period.</p> <p>Please see Section 9.6 of this CBA for additional discussion.</p>
Morely 116	As of the drafting of this CBA a Citywide vote to approve or not approve the proposed Project will occur in March of 2015. If the City electorate votes not to approve the Project, under the Settlement Agreement the City will owe the Applicant \$17.5 million. A discussion of City costs and net cashflow under a scenario where the Project is not approved is provided Section 10.5 and 11.2.
Morely 117	As of the drafting of this CBA a Citywide vote to approve or not approve the proposed Project will occur in March of 2015. If the City electorate votes not to approve the Project, under the Settlement Agreement the City will owe the Applicant \$17.5 million. An discussion of City costs and net cashflow under a scenario where the Project is not approved is provided Section 10.5 and 11.2.
Morely 118	<p>This CBA includes an analysis of the Authors projected production curves for three scenarios; a Low, Expected and High case. A discussion of these three scenarios is provided in Section 5.9.</p> <p>The CBA provides an estimate of the net revenues to the City under these three scenarios if the proposed Project is approved by the City, and similarly costs to the City if the Project is not approved.</p> <p>The Authors estimate that total production of approximately 5.6 million barrels of oil would be required for the Uplands fund to "breakeven" over the duration of</p>

	the proposed Project. Under such a scenario the Tidelands fund would realize net revenues of approximately \$47 million.
Morely 119	The Authors estimate that total production of approximately 5.6 million barrels of oil would be required for the Uplands fund to “breakeven” over the duration of the proposed Project. Under such a scenario the Tidelands fund would realize net revenues of approximately \$47 million.
Morely 120	The oil in place and potential recovery estimated in this CBA is specific to Hermosa Beach as of 2014. Historical oil production in Redondo Beach is expected to be different.
Morely 121	The CSLC MOU allows for the allocation of Tidelands funds to repayment of the Advances discussed in this CBA (Please see Section 9.5 of this CBA). Please see Section 11.0 of this CBA for a discussion of the use of Tidelands funds for repayment of monies due under the Settlement Agreement.
Morely 122	As stated in Section 7.4 of this CBA, the City’s Tideland Grant does not include an excess revenue provision.
Morely 123	<p>This CBA evaluates the proposed Project which pursuant Section 2.1 of the Final EIR contemplates the drilling of "34 wells (30 oil wells, four wells for water disposal/injection)".</p> <p>With respect to the comment of "lease restriction of 21 wells into the bay", under Section 12(f) of the Oil Lease the "leased lands shall be fully drilled at such time as Lessee has drilled a total of twenty-one (21) wells which are bottomed on the leased lands in the tidelands." It is the Authors non-legal opinion that this does not necessarily represent a maximum number of wells permitted in the Tidelands, but rather when the certain minimum obligations of the Applicant will be considered to have been met.</p>
Morely 124	<p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA.</p> <p>Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.</p> <p>The Applicant’s estimates are provided for reference only, and were not relied upon by the Authors in its estimates of potential oil production.</p>
Morely 125	<p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA.</p> <p>Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by</p>

	<p>professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.</p>
Morely 126	<p>As discussed in Section 3.1 of this CBA, under the Settlement Agreement 345 days remain in the Primary Term of the Oil Lease and the Primary Term is, generally, suspended until all approvals required for drilling are obtained. For reference, under Section 1(c) of the Oil Lease the Primary Term shall not exceed two years. In application to production estimates, the Authors generally interpret this to mean that the Oil Lease will remain in effect for 34 years from the commencement of drilling.</p> <p>Unitization would link multiple if not all Uplands (non-Tidelands) rights; but only one Unit would be contemplated. Unitization would have to be in accordance with the Oil Lease.</p>
Morely 127	<p>As discussed in Section 3.1 of this CBA, under the Settlement Agreement 345 days remain in the Primary Term of the Oil Lease and the Primary Term is, generally, suspended until all approvals required for drilling are obtained. For reference, under Section 1(c) of the Oil Lease the Primary Term shall not exceed two years. In application to production estimates, the Authors generally interpret this to mean that the Oil Lease will remain in effect for 34 years from the commencement of drilling.</p> <p>Should the proposed Project be approved, absent the discovery of no oil in the Reservoir during the test drilling phase given the capital expenditures required of the Applicant, the need for return of investment, and the time value of money, the Authors do not consider a slow start up a plausible scenario for evaluation.</p>
Morely 128	<p>The proposed evaluation is speculative and beyond the scope of the CBA.</p>
Morely 129	<p>A discussion of potential hazard events and potential financial implications of a hazard event is discussed in Section 15 of this CBA.</p> <p>The CBA evaluates the proposed Project as described in the EIR.</p> <p>An evaluation of the Applicant's historical operational performance is beyond the scope of the CBA.</p>
Morely 130	<p>A discussion of potential hazard events and potential financial implications of a hazard event is discussed in Section 15 of this CBA.</p> <p>The proposed evaluation is speculative and beyond the scope of the CBA.</p>
Morely 131	<p>A discussion of the value of the Project Site is provided in Section 7.5 of this CBA. A discussion of the value of the New City Yard Site is provided in Section 9.4 of this CBA.</p> <p>An evaluation of either the Project Site or New City Yard Sites under alternative zoning from what exists today is highly speculative.</p> <p>The CBA evaluates the proposed Project as described in the EIR.</p>
Morely 132	<p>A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.</p>
Morely 133	<p>The estimated split of Tidelands and Uplands production was based on</p>

	<p>volumetric estimates of the location of oil in place in Hermosa Beach. The figures are estimates only, and actual production by area may be different. The Authors conclude that changes to the delineation between Tidelands and Uplands, if appropriate, would not result in a more accurate estimate of the allocation of potential revenues.</p> <p>Table 8 in this CBA provides an estimate of the potential variance in Tidelands and Uplands revenues from the base distribution of oil in place (78.3% Tidelands / 21.7% Uplands) given different Tideland and Upland ratios of oil in place.</p> <p>With respect to protection wells, four water injection wells along the Tidelands / Uplands border may be sufficient, and there is currently no production in Redondo Beach to protect.</p> <p>The determination of the optimum path and bottom location of wells could only be determined subsequent to test drilling.</p>
Morely 134	<p>The estimated split of Tidelands and Uplands production was based on volumetric estimates of the location of oil in place in Hermosa Beach. The figures are estimates only, and actual production by area may be different. The Authors conclude that changes to the delineation between Tidelands and Uplands, if appropriate, would not result in a more accurate estimate of the allocation of potential revenues.</p> <p>Table 8 in this CBA provides an estimate of the potential variance in Tidelands and Uplands revenues from the base distribution of oil in place (78.3% Tidelands / 21.7% Uplands) given different Tideland and Upland ratios of oil in place.</p>
Morely 135	As stated in Section 7.4 of this CBA, the City's Tideland Grant does not include an excess revenue provision.
Padilla 1	Please see Section 12.0 of this CBA for a discussion of potential impacts to real estate values, and Section 13.2 of this CBA for a discussion of potential impacts to tourism.
Personius 1	Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, Section 8.3 of this CBA for a discussion of estimated School District revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.
Simon 1	<p>An evaluation of existing roadway conditions, the potential impact on the quality of roads of vehicle traffic under the proposed Project and the cost of roadway maintenance is beyond the scope of the CBA.</p> <p>As discussed in Section 9.7 of this CBA, under the mitigation measures in Section 4.6 of the EIR (FP-1c, and FP1-f), should the Project be approve, the Applicant would be responsible for reimbursing the City for these incremental costs, and as such these figures are provided for reference only and not included in the calculation of net City revenues.</p> <p>Please see the final HIA for an updated analysis of potential health impacts should the proposed Project proceed.</p> <p>A discussion of insurance coverage is provided in Section 15.0.</p>
Sophie D 1	A discussion of potential impacts to property values is provided in Section 12.0,

	and a discussion of potential impacts to tourism is provided in Section 13.0 of this CBA.
Stabler 1	The CSLC has provided guidance supporting an interpretation different than the one provided in the Draft CBA. For a discussion of the current interpretation please see Section 7.0 of this CBA.
Stabler 2	<p>The CSLC has provided guidance supporting an interpretation different than the one provided in the Draft CBA. For a discussion of the current interpretation please see Section 7.0 of this CBA.</p> <p>A legal interpretation and opinion on the use of Tidelands funds under the City's Tideland Grant is beyond the scope of the CBA. The CBA provides some of the relevant source documents to help guide the reader as to how potential limitations may be applied. Additionally, the City Attorney has provided some guidance on permissible uses.</p> <p>Please see Section 11.0 of this CBA for a discussion of the use of Tidelands funds for repayment of monies due under the Settlement Agreement.</p>
Stabler 3	<p>Estimates of gross royalty revenues the City would receive by year are provided in Appendix C of this CBA, and a sample of net City cashflows in consideration of City costs are provided in Table 30 of this CBA.</p> <p>The minimum royalty payments referenced in the question are in essence minimum payments that would be due to the City should royalty revenues be less than the minimum lease payments prescribed under Section (2)(b)(1) of the Oil Lease. Further discussion of the minimum royalty payments is provided in Section 7.5 of this CBA.</p>
Stabler 4	<p>Many estimates specific to the Hermosa Beach field have been historically produced and were reviewed by the Authors, however, they are all ultimately reliant on similar data and information, and general lack thereof. Differences between reports are generally the result of differences in assumptions about drilling techniques as technology has improved over the years, differing estimation methods, probability assumptions, and/or different interpretations by professions of the same and/or similar data. Absent test drills in the Reservoir utilizing modern drilling practices, or some currently unforeseen technology, no truly new information is or will be available.</p> <p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA. The Applicant's estimates are provided for reference only, and were not relied upon by the Authors in its estimates of potential oil production.</p> <p>Other than the Applicant's estimates, estimates from other reports originally included in the Draft CBA (only as a reference) were removed in the drafting of this Final CBA.</p> <p>The number of wells required to drain a given field varies greatly depending on the type of well technology employed. As an example, a horizontal well can drain a much larger area than a vertical well, and a single well head can support multiple horizontal laterals.</p>

	<p>To the Author's knowledge, reports and documents that are within the public's purview have been made available, however the release of proprietary documentation is not within the purview of the Authors.</p> <p>The Authors have reviewed the pretrial testimony provided to it, and a summary of the Authors review is provided in Section 16.0.</p>
Stabler 5	<p>The Settlement Agreement Payment line in Table 39 of the Draft CBA, and Table 43 of this CBA (and similar tables in Section 11.0 of both) refers to the payment of \$3.5 million from the City to the Applicant as prescribed by the Settlement Agreement. The City royalty revenues depicted in these tables are net of the 3.33% grant provided to MOC under the Settlement Agreement.</p>
Swanberg 1	<p>Please see Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved, Section 12.0 of this CBA for a discussion of potential impacts to real estate values, and Section 13.2 of this CBA for a discussion of potential impacts to tourism.</p> <p>The Authors estimates are based on its professional analysis of the available data and what it considers to be appropriate estimation techniques as described in this CBA.</p> <p>Please see Section 5.0 of this CBA for a discussion of Reservoir volume estimates, and Section 7.0 for a discussion of estimated City royalty revenues should the proposed Project be approved.</p>
VICW 1	<p>The Authors are unsure of what the commenter's question is.</p> <p>A discussion of property insurance is provided in Section 13.1 of this CBA, and a discussion of potential hazard events is provided in Section 15.0 of this CBA.</p>
Walters 1	<p>Please see Section 7.0 of this CBA for updated estimates of City royalty revenues, and Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved.</p>
Zhou 1	<p>Please see Section 11.0 of this CBA for a discussion of estimated net City cashflow if the proposed Project is or is not approved, Section 12.0 for a discussion of potential impacts to real estate values, and Section 13.2 for a discussion of potential impacts to tourism.</p>