

## Comments to 5<sup>th</sup> Draft of the DSC EIR

The 5<sup>th</sup> Draft of the Delta Stewardship Council's Environmental Impact Report identifies construction aggregate and Portland cement as a mineral resource zone (MRZ-2) that could be potentially impacted by the Proposed Project. While active Oil and Gas wells are identified as resources within the Legal Delta and Suisun Marsh, hydrocarbons have not been categorized with an MRZ designation. As pointed out in Chapter 13 on page 13-2, significant natural gas accumulations have been produced from within the area of interest, most notably Rio Vista, Union Island, and Suisun Bay. Furthermore, the USGS places remaining total undiscovered resources in the Sacramento Basin in the Winters-Domengine petroleum system at P95 139 BCF, P50 488 BCF, and P5 1,067 BCF. (Figure 1) The Winters-Domengine geologic formations are generally the producing reservoirs within the Delta and Suisun Marsh area of interest. If we assume the P50 case of 488 BCF remaining potential, that resource could be worth anywhere from \$1.5 to \$2.4 billion. To say that there are no significant mineral resources of regional or statewide importance within the Suisun Marsh should be directed at construction aggregate and cement only and should not be extended to cover all minerals. The statement on page 13-2 lines 24 and 25 and page 13-7 lines 43 and 44 should be rewritten to account for the probability that significant non-associated dry natural gas may be found within the area of interest and that the Proposed Project may in fact have a significant impact on the ability of lessees to access needed mineral resource recovery sites.

The state's initiatives to reduce its carbon emissions through conservation efforts and expansion of renewable energy sources extend the value of natural gas to the state well beyond that indicated above based on commodity price. Replacing coal fired power plants with more efficient gas fired plants and using these plants to provide base load electricity generation can only help California meet its long term electricity demands. In 2010, natural gas accounted for over 50% of the fuel stock used for in-state power generation while total renewables accounted for 14.6% with wind making up only 3% of that.<sup>i</sup> Increases in large hydroelectric and nuclear projects are at risk due to permitting lead times and public sentiment. The California Energy Commission's report on energy demand forecast through 2022 predicts electricity consumption to grow on the order of 1% to 2% per year with a large portion of that growth being fueled by natural gas (30% to 90%).<sup>ii</sup>

To further illustrate the importance of natural gas to the state, the most likely regional alternative to natural gas for electricity generation comes from the Shiloh wind farm at Montezuma Hills. The comparison that follows breaks down the power density of the two resources expressed as horsepower per acre. A single natural gas well making 100 MCFD at the end of its life will generate 1023 HP per acre assuming a .5 acre production pad. According to Ecology and Environment, Inc.<sup>iii</sup>, and the Solano County Reporter<sup>iv</sup>, the Shiloh Wind Farm phase II expansion is capable of generating 176 megawatts over the 5000-6000 acres that comprise the facility. Assuming the most optimistic power density case of 5000 acres, the Shiloh II facility is generating 47 HP per acre. The hypothetical natural gas

well even at the end of its life is 95% more effective at using 1 acre of land to generate power than the nearby wind farm.

Without recognition of natural gas as a mineral resource zone, lead agencies will not be required to give consideration to impacts from the Proposed Project and this could have a significant impact on accessing thousands of acres of Oil and Gas mineral leases within the area of interest. This EIR should reflect the importance of probable future natural gas accumulations to the region and state and the potential impacts the Proposed Project could have on accessing this most significant resource.

Respectfully Submitted,

A handwritten signature in black ink that reads "R. Rondeau". The signature is written in a cursive, slightly slanted style.

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**Sacramento Basin Province assessment results.**

[MMBO, million barrels of oil; BCFG, billion cubic feet of gas; MBNGL, thousand barrels of natural gas liquids. Results shown are fully risked estimates. For gas fields, all liquids are included under the NGL (natural gas liquids) category. F95 denotes a 95-percent chance of at least the amount tabulated. Other fractiles are defined similarly. Fractiles are additive, assuming perfect positive correlation. TPS, Total Petroleum System; AU, Assessment Unit. Gray shading indicates not applicable]

Total Petroleum Systems (TPS) and Assessment Units (AU)	Field type	Total undiscovered resources												
		Oil (MMBO)				Gas (BCFG)				NGL (MBNGL)				
		F95	F50	F5	Mean	F95	F50	F5	Mean	F95	F50	F5	Mean	
<b>Dobbins-Forbes TPS</b>														
Forbes-Kione and Older AU	Oil	0	0	0	0	0	0	0	0	0	0	0	0	
	Gas					46	161	353	176	0	0	0	0	
Lower Princeton Canyon Fill and Northern Nonmarine Rocks AU	Oil	0	0	0	0	0	0	0	0	0	0	0	0	
	Gas					11	32	67	35	0	0	0	0	
<b>Winters-Domengine TPS</b>														
Late Cretaceous Deltaic and Submarine Fan AU	Oil	0	0	0	0	0	0	0	0	0	0	0	0	
	Gas					68	242	509	261	43	221	611	261	
Shallow Marine Sands and Canyon Fill AU	Oil	0	0	0	0	0	0	0	0	0	0	0	0	
	Gas					14	53	138	62	9	48	159	62	
<b>Total Undiscovered Oil and Gas Resources</b>			0	0	0	0	139	488	1,067	534	52	269	770	323

Figure 1: USGS assessment of total undiscovered resources for the Winters-Domengine petroleum system. <sup>v</sup>

Sources:

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<sup>i</sup> [http://www.energyalmanac.ca.gov/electricity/total\\_system\\_power.html](http://www.energyalmanac.ca.gov/electricity/total_system_power.html)

<sup>ii</sup> <http://www.energy.ca.gov/2011publications/CEC-200-2011-011/CEC-200-2011-011-SD.pdf>

<sup>iii</sup> <http://www.ene.com/Projects/shiloh-ii-wind-farm-solano-county-california>

<sup>iv</sup> <http://fromthereporter.com/specials/made/pages/made53.html>

<sup>v</sup> <http://pubs.usgs.gov/fs/2007/3014/>