April 19, 2013

To:
Ms. Genevieve Walker
U.S. Department of State
NEPA Coordinator 2201 C Street NW
Room 2726 Washington,
D.C. 20520

Dear Ms. Walker,

Please see our comments for the Draft Supplemental Environmental Impact Statement (Draft SEIS) for the Keystone XL Project that was released on March 1, 2013.

Our comments are supported by the attached report, *Oil Sands Greenhouse Gasses, and US Oil Supply: Getting the Numbers Right – 2012 Update*[i].

Our report draws on the analysis and insight from the IHS CERA Oil Sands Dialogue. Since 2009, our Oil Sands Dialogue has brought together policymakers, industry representatives, academia, non-governmental organizations, environmental organizations, and other related stakeholders to advance the conversation surrounding Canadian oil sands development. The objective is to enhance understanding of critical factors and questions surrounding industry issues and foster a fact-based discussion.

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The Draft SEIS is a thorough investigation of the potential environmental impacts from the Keystone XL project. However, our analysis differs from the Draft SEIS in two key areas:

Incremental greenhouse gas emissions (GHG) emissions associated with consuming oil sands are lower than that reported in the Draft SEIS. The Draft SEIS states that oil sands life-cycle GHG emissions are 17 percent higher than the average[ii]. Our latest research shows that life-cycle GHG emissions from oil sands imported into the United States are 12 percent higher than the average crude oil consumed in the US[iii]. The Draft SEIS oil sands production and upgrading emissions are dated and outside the range of IHS CERA and other studies that represent current oil sands operations and products[iv].

If Keystone XL is not approved, GHG emissions from substitute crudes would be in the same GHG emissions range as oil sands, not lower. The reason for this is the alternative to Canadian oil sands will be Venezuelan heavy oil. The Draft SEIS states that if crudes from the Keystone XL were to replace crudes from other sources, that the lifecycle emissions would likely increase[v]. The US Gulf Coast refining region consumes large volumes of heavy crude oils—crudes that are similar in quality to much of the expected growth in oil sands supply. With or without oil sands supply to the Gulf Coast from Keystone XL, refiners there will continue to process heavy crude oils given the large scale of the coking capacity. Today, the largest supplier of USGC heavy crude is Venezuela. While lifecycle GHG emissions from oil sands imported and consumed in the United States range between 4 and 23 percent higher than the average crude oil consumed in the US (average value is 12 percent); Venezuelan crudes are in the same GHG intensity range —between 4 and 20 percent higher[vi]. If Keystone XL is not built, the United States will import more heavy oil from Venezuela; these crudes have similar carbon intensities to Canadian oil sands products (resulting in little to no change in the overall GHG intensity of the US crude slate).

Our attached report provides more analysis to support our conclusions. It cites our publicly available research that we have conducted in recent years with consultation of many stakeholders.

We appreciate your consideration of our comments.

Sincerely,

James Burkhard, Vice-President and Head of Research, Oil Markets, Energy Scenarios and Integrated Services
Jackie Forrest, Senior Director, Oil Sands Research, IHS CERA

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[i] The paper's detailed appendix has also been included for reference.

[ii] Specifically, the Draft SEIS states, ES 5.5.2 (page ES-15) "WCSB crudes are more GHG-intensive than the other heavy crudes they would replace or displace in U.S. refineries, and emit an estimated 17 percent more GHGs on a life-cycle basis than the average barrel of crude oil refined in the United States in 2005."

[iii] See Table 2, page 23 IHS CERA Special Report "*Oil Sands Greenhouse Gasses, and US Oil Supply: Getting the Numbers Right – 2012 Update*", November 2012. Reported value assumes a wide boundary for measuring GHG emissions and is consistent with the 2005 average crude baseline used in the Draft SEIS. Wide boundary includes all emissions beyond the facility site including those from producing natural gas used at the oil production facilities and from electricity generated off site.

[iv] The Draft SEIS uses data from 2009 US Department of Energy National Energy Technology Laboratory DOE NETL report which estimates GHG emissions in 2005(DOE NETL, *An Evaluation of the Extraction, Transport and Refining of Imported Crude Oils and the Impact on Life Cycle Greenhouse Gas Emissions, March 27, 2009*). IHS CERA did not use the DOE NETL study in our analysis, since the source is dated and does not represent current operations – which have lower emissions compared with 2005 (The DOE NETL GHG emissions for oil sands extraction and upgrading are about 1.5 times higher than the IHS CERA and others study results of current operations). Also, DOE NETL estimate does not account for how bitumen products are actually shipped to the US market for refining – as a blend of bitumen and lighter diluents:
Mining and Upgrading SCO. About half of today's oil sands production is from mining and upgrading. DOE NETL 2009 assumes a 2005 mining and upgrading emission value of 134 kilograms of CO2 (kgCO2) per barrel of SCO or about 120 (kgCO2 per barrel of refined products. The source for this value is not clear. The DOE NETL values are higher than those of any studies used in the IHS CERA analysis (which looked at the range of results across eight sources for mining and upgrading published since 2010). The range of results for the sources studied by IHS CERA was 87.5 to 103 kgCO2 per barrel of refined products, and the average value was 92 kgCO2 per barrel of refined products (see IHS CERA detailed Appendix A1-9 for data).
Thermal extraction emissions. Thermal methods inject steam into the wellbore to heat up the bitumen and allow it to flow to the surface. Two thermal processes are in wide use in the oil sands today: steam-assisted gravity drainage (SAGD) and cyclic steam stimulation (CSS). On average SAGD has lower GHG emissions per barrel produced than CSS. In 2012 about 65 percent of oil sands produced from thermal extraction were from the SAGD method, and SAGD volumes are growing. To estimate GHG emissions for producing dilbit with thermal extraction, the DOE NETL study draws on a 2005 value for producing bitumen using the relatively high-emission CSS method (a process that represents 35 percent of current production) and assumes 134 kgCO2 per barrel. In the case of thermal production, there is no source for the estimate used in the DOE NETL 2009 paper; however, in a previous paper published in 2008 DOE NETL does provide a source for this value (a 2006 estimate for CCS Imperial to produce a barrel of bitumen). In addition, the estimate assumes the production of a barrel of bitumen only, a product that cannot be transported via pipeline. IHS CERA assumes that dilbit, not bitumen, will be shipped down the pipeline and ultimately converted into refined products on the US Gulf Coast. The IHS CERA analysis (which looked at the range of results across 8 sources published since 2010), found that thermal extraction of dilbit produced between 43 and 109 kgCO2 per barrel of refined products, and the average value (assuming 65% dilbit from SAGD and the reminder from CCS) was 80 kgCO2 per barrel of refined products (see detailed Appendix A1-9 for data).

[v] [v] Specifically, the Draft SEIS states, ES 5.5.2 (page ES-15) "As WCSB and Bakken crudes replace crudes from other sources—independent of whether the proposed Project exists—the life-

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cycle GHG emissions associated with transportation fuels produced in U.S. refineries would likely increase”

[vi] See Table 2, page 23 IHS CERA Special Report “*Oil Sands Greenhouse Gasses, and US Oil Supply: Getting the Numbers Right – 2012 Update*”, November 2012. Reported values all assume a wide boundary for measuring GHG emissions and are consistent with the 2005 average crude baseline used in the Draft SEIS. Wide boundary includes all emissions beyond the facility site including those from producing natural gas used at the oil production facilities and from electricity generated off site.

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