Essar Steel Minnesota L.L.C.
Supplement to Environmental Impact Statement (SEIS)
Final Preparation Notice – July 2010

I. Title of EIS being supplemented and dates of completion:

Final Environmental Impact Statement, Minnesota Steel Project, Nashwauk, Minnesota, completed August 10, 2007.

II. Description of Situation Necessitating Preparation of the Supplement

The Minnesota Department of Natural Resources (DNR) in co-operation with the United States Army Corps of Engineers (USACE) prepared a joint state and federal Environmental Impact Statement (EIS) for the Minnesota Steel Industries, L.L.C. (Minnesota Steel) Taconite Mine, Crusher, Concentrator, Pellet Plant, Direct Reduced Iron (DRI) Plant, and Steel Mill Project to produce sheet steel from taconite ore, near the town of Nashwauk, Itasca County, MN. The joint EIS was completed in August, 2007 in accordance with the provisions of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 - 4347) and the Minnesota Environmental Policy Act (MEPA; Minn. Stat. Ch. 116D).

The original Minnesota Steel project involved reactivation of the former Butler Taconite mine and tailings basin near Nashwauk, Minnesota. The project includes the dewatering of existing mine pits in the area and open pit mining operations to remove ore and waste rock. Waste rock will be stockpiled near the mine pit and ore will be hauled to the crusher with further processing in the concentrator and pellet plant. Tailings from the concentrator will be discharged to the existing Butler Taconite Stage I Tailings Basin. Taconite pellets will be sent to the DRI plant and the DRI-produced pellets will in turn be used in the steel mill. The steel mill will consist of two electric arc furnaces, two ladle furnaces, two slab casters, and a hot rolling mill to produce sheet steel.

In October, 2007 Minnesota Steel was purchased by Essar Steel Holdings Ltd. (ESHL) and Essar Steel Minnesota L.L.C. (ESML) was subsequently formed. ESHL also purchased Algoma Steel in Sault Saint Marie, Ontario, Canada in July, 2007. ESML is now proposing to increase the production capacity of the Nashwauk facility's crusher, concentrator, and taconite pellet plant from 4.1 million tons per year (mtpy) to 6.5 mtpy. The purpose of this increase in taconite pellet production capacity is to: 1) standardize the taconite pellet furnace's design and size to match other such operations owned and operated by ESHL; and 2) produce additional pellets to supply operations at Algoma Steel. ESML also proposes to reduce the 20-year life of the mine plan to 15 years, the former being the length of mine operation considered in the original EIS. No changes to the DRI or steel mill are proposed.

The proposed increase in pellet production will require the addition of a crusher/concentrator line and the installation of a larger pellet furnace, both of which will lead to an increase in air emissions. The project will include installation of mercury control technology on the pelletizing furnace. No changes to water usage or surface discharges are expected. In the Permit to Mine the planned active mine life will be reduced to 15 years rather than 20 years that was evaluated in the original EIS. The accelerated mine plan is not expected to change the footprint of the mine pits, stockpiles, or the total quantity of ore and waste rock mined

during the life of the Permit to Mine. In addition, no additional wetlands will be affected. Although the proposed facility modifications will result in an increase in the rate of tailings generation, the total amount of tailings generated over the life of the project will not change. Therefore, no change in the footprint of the tailings basin is projected.

Because Minnesota Steel's mining and processing operations have already been reviewed through the EIS process, State Environmental Review requirements for ESML's modified project will be met by preparing a Supplemental EIS (SEIS). In addition, because there are no additional wetland impacts, the USACE has made a preliminary determination that a supplement to the Federal EIS under NEPA is not required. Therefore the SEIS for the modifications to the originally-reviewed project proposed by ESML will be a State-only environmental review.

III. Scope of Supplement: Alternatives, Issues, and Studies

Minnesota Rules Part 4410.3000, subpart 5, requires the scope of a supplement to an EIS to be limited to alternatives, impacts, and mitigation measures not addressed, or inadequately addressed, in the Final EIS.

A. Alternatives. The SEIS will address four alternatives for the increased production in taconite pellets: 1) the Proposed Alternative (Increase taconite pellet production from 4.1 mtpy to 6.5 mtpy), which was not addressed in the original EIS; 2) the No-Action Alternative, which is the original "Build or Proposed Project" Alternative evaluated in the Minnesota Steel EIS; 3) a re-evaluation of best available control technology (BACT) for criteria pollutants whose emission are estimated to increase in amounts greater than the significant increase thresholds under 40 CFR Part 52, for any proposed changes to the BACT identified in the original EIS; and 4) air emissions control technology alternatives for mercury. Because the No-Action alternative has previously been reviewed in an EIS, the analysis for the SEIS will be limited as described in Section B below.

B. Issues. The SEIS will address the following issues:

1. *Impacts to Surface Water Quantity*. No increases in water appropriations or discharges are anticipated. No change in direct effects to wetlands is anticipated. The DNR will evaluate the current proposed water balance versus the water balance that was reviewed in the first EIS taking into account the difference in projected mine life from 20 years to 15 years. If the new water balance supports a need for additional water that changes conditions than what was reviewed in the first EIS, those potential impacts, including wetlands will be evaluated in the SEIS. The SEIS will address the quantity of water: 1) needed to satisfy mining, beneficiation, pellet production, and steelmaking; and 2) to be discharged or transferred between waters of the state. If water in addition to that required for the project reviewed in the first EIS is determined to be needed, then the impacts of any changes on surface waters (including wetlands) or groundwater resources and mitigation will be assessed in the Supplement.

2. *Impacts to Surface Water Quality*. The SEIS will address the composition of water transferred between waters of the state and from seepage from the tailings basin, and in turn estimate the change in surface water quality, including any increases in the rate of chemical additive use. No direct surface discharges from the facility were included in the original proposed project, and none are proposed for the

modifications project. The original EIS did not consider the effects of changes in water quality on wild rice growing in receiving water bodies, and therefore the SEIS will address these impacts as well.

3. *Impacts on Solid Waste Generation*. An increase in the amount of solid waste generated from the larger taconite pellet furnace and associated air pollution controls will be assessed. The increased rate of generation of tailings and waste rock will also be assessed.

4. *Impacts on Air Quality*. The increased rate of mining and taconite pellet production may lead to an increase in potential air emissions. The SEIS will include an assessment of these increases, an evaluation of the best available control technologies, and the effects associated with any increases in air emissions from those that were evaluated in the original EIS, and new pollutants or standards that were not evaluated in the original EIS. This will include an assessment of the impacts on Class II or local air quality, air quality and visibility impairment in Class I Areas (Voyageurs National Park, Boundary Waters Canoe Area Wilderness Area, Isle Royale National Park, and Rainbow Lakes Wilderness Area), and a Human Health Screening Level Risk Assessment (HHSLRA). The original EIS included a Screening Level Ecological Risk Assessment (SLERA); the need for further evaluation will be assessed, and if additional study is warranted, the SLERA will be updated in the SEIS.

5. *Contribution to Global Greenhouse Gas (GHG) Emissions*. The SEIS will provide information on the project's potential contribution to GHG emissions. This will include assessment of: 1) changes in GHG emissions; and 2) the project's energy and GHG efficiency, both of which are subject to MPCA-approved guidance.

6. *Impacts Associated with Mercury*. The SEIS will review estimates of potential uncontrolled mercury emissions in a mercury mass balance. The SEIS will also include an evaluation of possible mercury emission reduction alternatives and a mercury mass balance for any proposed mitigation measures to be incorporated into the project. The SEIS will also include a plan for adhering to the MPCA's October-2009 policy for New or Modified Emission Sources of Mercury.

7. *Cumulative Air Quality Effects – Class I PSD Pollutants*. The SEIS will evaluate the potential impacts of Prevention of Significant Deterioration (PSD) pollutants, including PM_{10}, NO_x, and SO_2, on Class I Areas. The analysis will use the CALPUFF modeling system reflecting Federal Land Manager (FLM) guidance to estimate the ambient air quality concentrations in Class I areas around the project site. Specific details of the modeling for Class I areas will be resolved with the FLMs and MPCA staff.

8. *Cumulative Air Quality Effects – Class I Acid Deposition and Ecosystem Acidification*. The SEIS will include an assessment of the estimated project emissions for potential sulfur and nitrogen deposition onto Class I areas around the project. In addition to the Class I areas, a semi-quantitative approach will be used to assess the potential cumulative effects of ecosystem acidification.

9. *Cumulative Air Quality Effects – Class I Visibility Impairment*. The SEIS will include a cumulative effects analysis assessing the potential visibility effects on Federal Class

I areas. The SEIS will use a semi-quantitative approach in the analysis. The SEIS will also describe how the proposed modification project affects the NE Minnesota Regional Haze Plan.

10. *Cumulative Mercury*. The SEIS will report cumulative mercury effects appropriate to potential changes in air dispersion over local lakes and their watersheds that may result from the modifications project. The potential for the project to significantly increase mercury contamination of fish, either alone or as a result of cumulative local deposition with other nearby, new, or proposed emission sources will be identified.

11. *Cumulative Effects – Climate Change*. The SEIS will report information available from governmental and scientific sources on climate change. The discussion will include: 1) background information on the issue of climate change; and 2) projected environmental effects due to climate change extrapolated to the state level. Potential impacts to natural resources will be identified, although no assessment of potential significance will be required.

12. *Socioeconomic Effects*. The SEIS will analyze the general social and economic effects of the proposed modifications project. This will include the direct and indirect effects on local economic development, tax base, and demand for public services. The SEIS will also update the status of the homeowner buyouts required to meet MPCA air permit requirements.

C. Special Studies or Research. The SEIS will rely on the following special studies or research:

1. *Updated Mine Plan*. A mine plan that reflects changes from the proposed modifications has been completed by ESML and will be available for use in the SEIS. It describes pit geometry, shows plans for phasing of pit development, and includes materials flow rates for ore, lean ore, waste rock, and overburden broken out by area. It also describes necessary mine facilities such as haul roads and ramps.

2. *Updated Water Quantity and Water Chemistry Balance*. The SEIS will require an updated detailed water quantity and water chemistry balance for the project that includes: processing plant needs; mine pit dewatering; lake/stream augmentation; and tailings basin seepage/discharge. Additional sources of water to supply the processing plant will be identified if the updated water balance indicates a water deficiency for the processing plant. The water quantity and chemistry balance will also consider the water reuse and recycle system (WRRS) previously permitted and whether the proposed modification changes the feasibility of the WRRS with respect to the potential build-up of dissolved solids or other water quality concerns. This information will be used to model how affected watershed yield and lake water levels would change both during and after mining.

3. *Wild Rice*. Information on the current presence of wild rice in receiving water bodies from the ESML project will be identified and assessed. Changes to sulfate concentrations for affected water bodies will be modeled. This information will be used to identify potential impacts to wild rice in receiving waters due to changes in sulfate concentrations and/or water levels. Potential adverse environmental effects

to water bodies will be identified and monitoring and/or mitigation will be developed to detect changes and to avoid and/or minimize impacts.

4. *Solid Waste Generation Estimates and Disposal Options*. The SEIS will evaluate the increased rate of tailings deposition and the effect on the tailings basin footprint, height, operation, and stability as well as fugitive dust emissions. The SEIS will also assess the quantity of solid wastes to be generated such as emission control dust and slag. The original EIS indicated that solid and hazardous wastes would be disposed of in off-site facilities according to Minnesota Rules Parts 7035 and 7045. No changes to stockpiles or solid waste disposal options are proposed.

5. *Air Emission Inventory*. The SEIS will include an updated air emission inventory that reflects changes of the proposed increase in taconite pellet production, increased rate of mining, changes to the mine plan, updated air emission control equipment, and any new pollutants that were not evaluated in the original EIS.

6. *Best Available Control Technologies (BACT) Evaluation for Air Emissions*. The SEIS will include an updated BACT evaluation for criteria pollutants whose increase in potential emissions are greater than the air emission major modification thresholds for PSD air permit requirements in 40 CFR Part 52 and for any proposed changes to control technologies previously permitted.

7. *Class I Air Quality Analysis*. The SEIS will include modeling of PM_{10}, NO_x, and SO_2 to assess air quality related values such as visibility and acid deposition in Voyageurs National Park, Boundary Waters Canoe Area Wilderness Area, Isle Royale National Park, and Rainbow Lakes Wilderness Area. Modeling under a protocol approved by MPCA will be conducted using the CALPUFF modeling system based on FLM-approved guidance and modeling protocol. The SEIS will include an assessment of acid deposition from NO_x and SO_2 emissions from the project in the Class I areas.

8. *Class II Air Quality Analysis*. The SEIS will include modeling under a protocol approved by MPCA of criteria pollutants for which there are state and/or federal air quality standards to estimate the change in air quality impacts at the project boundary as a result of the proposed modification, including any new pollutants or standards that were not evaluated in the original EIS. Modeled concentrations in the original EIS will be considered in the analysis. A comparison to state and federal air quality standards will also be made.

9. *Mercury Mass Balance and Control Technology Assessment*. The SEIS will include estimates of potential uncontrolled mercury emissions in a mercury mass balance. Possible mercury emission reduction alternatives will be evaluated, including a mercury mass balance for any proposed mitigation measures to be incorporated into the project. The SEIS will also include a plan for adhering to the MPCA's October-2009 policy for New or Modified Emission Sources of Mercury.

10. *Human Health Screening Level Risk Assessment (HHSLRA)*. The HHSLRA will be updated for increases in air emissions and discharges of potential risk driver chemicals, changes to toxicity values, and changes to risk assessment protocols according to a work plan approved by the MPCA. The MPCA Mercury Risk Estimation Method (MMREM) will be completed for the modified ESML Project and

the resulting risk value discussed in the HHSLRA. The SEIS will include a discussion of the HHSLRA results and will identify mitigation measures, as appropriate, to address any mercury-related effects.

11. *Screening Level Ecological Risk Assessment (SLERA)*. The original EIS included a SLERA that assessed the ecological risk associated with the SEIS No Action Alternative. DNR's consultant will review: 1) the original EIS documentation; and 2) the underlying changes in emissions and discharges of risk driver chemicals associated with the modifications project. If it is determined that there is a potential increase in the ecological risk associated with the project, then the proposer will update the SLERA based on a protocol approved by the DNR. The DNR consultant will review the updated SLERA and incorporate the assessment of impacts and potential mitigation into the SEIS.

12. *Greenhouse Gas Emissions Inventory*. Greenhouse gas emissions of the project will be quantified and reported in the SEIS as described in MPCA air permitting guidance. The guidance recommends quantification of direct greenhouse gas emissions as well as those generated through the use of energy at the facility. Changes in GHG emissions due to habitat conversion and/or disturbance will also be calculated.

13. *Cumulative Effects on Class I Air Quality – PSD Pollutants*. The SEIS will evaluate the potential impact of PDS pollutants, including PM_{10}, NOx, and SO_2, on the Class I areas. This analysis will use NO_x, SO_2 and speciated PM_{10} (e.g., coarse particulate; fine particulate) data, as well as primary sulfate emissions for the project, and use the CALPUFF modeling system per FLM guidance to estimate ambient air concentrations in Class I areas around the project site. Specific details of the modeling for Class I areas will be resolved with the FLMs.

14. *Cumulative Effects on Class I Air Quality – Acid Deposition and Ecosystem Acidification*. The SEIS will include an assessment of the project's estimated emissions for potential sulfur and nitrogen deposition onto Class I areas. In addition to Class I areas, a semi-quantitative approach will be used to assess the potential cumulative impacts of ecosystem acidification.

15. *Cumulative Effects on Class I Air Quality – Visibility Impairment*. The SEIS will include a cumulative impacts analysis assessing the potentially visibility impacts on Federal Class I areas. The SEIS will use a semi-quantitative approach in the analysis. The SEIS will also describe how the proposed modification impacts the NE Minnesota Regional Haze Plan.

16. *Cumulative Mercury Effects*. The SEIS will include assessment of whether the proposed modifications project would cause a change in fish tissue concentrations from that previously modeled. If air dispersion modeling predicts that mercury concentrations over the lakes and their watersheds are not substantially changed under the modifications project, then the existing Keetac Expansion Project cumulative impacts assessment will be used to represent the impacts of the revised ESML project. If the mercury concentrations are demonstrated to change substantially, then the cumulative mercury impacts analysis will include new modeling that includes updated emissions parameters for the proposed facility modifications. The goal of this analysis is to determine if the potential local

deposition of mercury from the project will significantly increase mercury contamination of fish, either alone or as a result of the cumulative local deposition with other nearby, new, or proposed emission sources.

17. *Cumulative Human Health Screening Level Risk Assessment*. The SEIS will include a cumulative inhalation risk analysis that will follow MPCA general guidance. Background risk will be derived from ambient air monitoring data and the incremental risk from the proposed project will be added to the background risk to estimate potential cumulative risk for the Nashwauk area.

18. *Cumulative Effects on Climate Change*. The SEIS will report information available from governmental and scientific sources on climate change. The discussion will include: 1) background information on climate change; and 2) projected environmental effects due to climate change extrapolated to the state level. Potential impacts to natural resources will be identified.

19. *Socioeconomic Effects*. ESML will acquire information and analyze possible general social and economic impacts of the proposed project modifications in the SEIS. This will include the direct and indirect effects on local economic development, tax base, and demand for public services.

IV. Proposed Time Schedule

Preparation Notice Publication	March 22, 2010
Preparation Notice Comment Period Ends	April 12, 2010
Distribution of Draft Supplemental EIS	October 2010 to December 2010
Distribution of Final Supplemental EIS	January 2011 to March 2011
Determination of SEIS Adequacy	February 2011 to April 2011