

**Joshi Technologies International, Inc.
Information Summary for the Public**

Host Country:	Colombia
Name of Borrower:	Joshi Technologies International, Inc.
U.S. Sponsors:	Dr. Sadanand Joshi and Ms. Claudette Joshi
Foreign Sponsors:	Ismocol de Colombia S.A. and Parko Services S.A.
Project Description:	Oil Field Expansion
Total Project Costs:	\$70 million
Proposed OPIC Loan:	\$18 million
Developmental Effects:	The project is the third OPIC supported investment in the Palagua oil field. The project will have a positive developmental impact on Colombia and Colombia's energy infrastructure. Although Colombia is self-sufficient in energy, a lack of investment prior to 2005 led to a decline in proven oil reserves. JTI uses innovative extraction technologies in the Palagua field for production and processing of crude oil. The project will have a positive human capacity impact, and will provide training for a portion of the employees. Additionally, JTI provides benefits to its employees as well as maintains a park for the local community.
U.S. Effects:	Because the project involves the local extraction and sale of oil-and-gas products, there is no potential for an adverse impact on the U.S. economy. The project is expected to have a positive impact on U.S. employment, and is expected to have a positive impact on the U.S. balance of payments over the first five years.
Environment:	<p>The project has been screened as Category A because it involves a major expansion of enhanced oil recovery operations and involves 80 wells with the potential to affect a large area (approximately 1000 acres). The major environmental and social issues of concern include the potential for air emissions and waste water discharges; management of oil production wastes, including sludges and drilling muds; the potential for oil spills; hazards to worker safety; and prevention of fires and explosions.</p> <p><u>Applicable Standards.</u> The project and its contractors will be required to meet (i) the International Finance Corporation's (IFC) Environmental Health and Safety Guidelines for Onshore Oil and Gas Development (April 30, 2007) and applicable provisions of IFC's General Environmental Health and Safety Guidelines (April 30, 2007); (ii) the World Health Organization's Guidelines for Drinking Water Quality for water re-injected into groundwater; (iii) applicable provisions of the American Petroleum Institute's Standard 2610 for Design, Construction, Operation,</p>

Maintenance, and Inspection of Terminal and Tank Facilities; (iv) VROM, Dutch Ministry of Housing, Spatial Planning and Environment Circular 21, 137 (February 4, 2000) for the treatment of contaminated soils, sediments and waters; and (v) all applicable environmental, health and safety requirements of Colombia with respect to the project.

The project is located in an existing oil field and does not require additional land use conversion or clearance or the construction of additional ancillary infrastructure. The site is not located in or near internationally designated protected areas, critical habitats or areas of cultural significance. The project will not result in physical or economic displacement or impacts on indigenous people. Therefore IFC Performance Standards 5, 7 and 8 and not applicable to the project.

Impacts and Mitigation Measures. Electricity required by the project will be produced by small generators fueled with associated gas from project wells. The project's greenhouse gas emissions are estimated to be 80,000 tons CO_{2eq}/year; therefore, the project is not considered a major source of greenhouse gas emissions. Water used in the enhanced recovery operations and domestic use is sourced from groundwater, which is abundant in the area.

Principle project waste streams include sewage, wastewater treatment sludges, oily sludges, drilling muds and contaminated sediments from legacy oil field operations. The wastewaters generated from oil processing are treated using oil/water separators and filtration prior to reuse or reinjection. Solid wastes, including treatment sludges, are treated to reduce the toxicity of contaminants present and then biodegraded using land farming techniques. Drilling muds are treated to reduce oil contamination and then land farmed.

Blowout risks are considered low because hydrocarbons in the depleted reservoirs are at low pressure. In addition, the directional drilling to be deployed in the project minimizes the risk of blowouts when compared to conventional drilling methods. Safety, fire prevention and spill controls are considered acceptable. Fire prevention systems are tested on a weekly basis and are designed to comply with NFPA Code 30. The project has an oil spill prevention and countermeasures plan in place that meets or exceeds the requirements of the US Environmental Protection Agency.

The project will be required to (i) submit Annual Reports on environmental and social performance; (ii) implement its Environmental and Social Impacts Management and Monitoring Plan, Spill Prevention and Control Countermeasures Plan, Occupational Health and Safety Plan and Fire Prevention and Control Plan; (iii) develop and implement a grievance mechanism and hold public consultation with area residences at least on an annual basis; and (iv) conduct an independent environmental and social audit within three years of the execution date of the loan agreement.

The project's Environmental and Social Impact Assessment was released on OPIC's

	web site for public comment on July 12, 2010. The comment period closed on September 10, 2010, and OPIC did not receive any comments on the project.
Workers Rights:	OPIC's statutorily required standard worker rights language will be supplemented with provisions concerning the right of association, organization and collective bargaining, minimum age, hours of work, and hazardous work situations. Standard and supplemental contract language will be applied to all workers of the project.
Human Rights:	In consultation with the Department of State, the project received a Human Rights Clearance on April 8, 2010.