Abstract

Petroleum companies operating in the Ecuadorian Amazon historically have been faced with strong community opposition to large infrastructure projects, particularly pipelines. Pipelines have been delayed in government permitting, communities have attempted to stop construction, legal actions have been initiated for environmental and community damages during and after construction, and operating pipelines have been sabotaged causing lost production and significant environmental damage from oil spills and significant social impact from contamination or explosions.

AEC Ecuador Ltd., a subsidiary of EnCana Corporation (EnCana), and Walsh began evaluating strategies in 2002 for mitigating these costly impediments to permitting, building and operating a crude oil pipeline around the rapidly growing Amazonian city of Lago Agrio. A total of 13 different right-of-way (ROW) alternatives were investigated in the Environmental and Social Impact Assessment process to determine the three best and potentially least controversial routes. The Company encouraged four other petroleum producers to share a single ROW -- a proposal without precedent in Ecuador -- and a decision was made: all committed to use the same ROW to reduce social and environmental impacts from multiple ROWs crossing Lago Agrio.

A comprehensive and transparent stakeholder engagement strategy was developed to facilitate community participation and evaluation of the three alternatives. The stakeholders included local, regional and national government; community councils and associations; non-governmental and religious organizations; and individual landowners. Field visits were conducted, technical presentations were provided, formal and informal comments were solicited and workshops were conducted to arrive at a hybrid alternative with micro routing around areas of stakeholder concern. A key strategic decision was made by the Company to maintain transparency throughout consultation process and flexibility in the final design, despite an atmosphere of continuous conflict stemming from another recently constructed pipeline in the city. The affected communities also participated directly in construction monitoring and environmental and social compliance assessment. Due to the high level of community acceptance and proactive environmental approach, the government regulators allowed for a special exemption from the hydrocarbon law to allow multiple pipelines in a single ROW and as consequence, the existing regulation was identified as outdated compared with current international industry practice for ROW.

The pipelines in the ROW were constructed in 2003 with no public controversy and have been operating to date without incidents and without any complaint about the stakeholder strategy and methodology. There have been no legal challenges.
Introduction

The project objective was to build the Lago Agrio Tank Farm (with a designed storage capacity of 200,000 barrels; 100,000 are currently installed) and a 10 kilometer oil pipeline connecting to the Amazonas Station of the Heavy Crude Oil Pipeline – OCP (Oleoducto de Crudos Pesados in Spanish) in the city of Lago Agrio, Sucumbios Province of Ecuador (Figures 1 and 2).

Managing the ROW of this pipeline required an innovative approach to minimize the social impacts, considering that three other petroleum producers were also planning to install pipelines through Lago Agrio. The hydrocarbon regulation at the time demanded a 30-meter-wide ROW per pipeline. Despite this hurdle, EnCana initiated discussion with the other producers to share a single ROW among four companies in order to reduce spatial impacts. This sharing of a single ROW is the first in Ecuador (Figure 3 Cross Section).

The 16” diameter pipeline is buried along a loop to the south of the city in a low-growth-rate rural area. It is 9.20 kilometers long and has a remote oil spill detection system. The construction time was four months. Non-skilled labor opportunities, as
well as some skilled positions, were provided to local community members in order to help address the high unemployment in the region, which is currently 9.50%\textsuperscript{2}.

The objective of this project was to build the crude oil storage facility and associated pipeline within budget and schedule, while openly engaging all stakeholders. The operator had a strong corporate commitment to creating a transparent negotiating environment for the public consultation process, and to maintain flexibility in the final design. This approach is a distinct change in philosophy from historical projects in Lago Agrio, which have often been developed in an atmosphere of conflict due to a lack of transparent consultation with stakeholders.

**Stakeholder Engagement**

Lago Agrio grew out the oil boom of the 1970s, expanding from what was initially a remote producing field located in primary tropical rainforest. Urban development and population growth of this boomtown has been chaotic and disorganized. For example, new neighborhoods have been developed on top of existing ROWs, key city properties are located next to tank farms, etc. Lago Agrio is also the center of a legal dispute over impacts from the petroleum industry and its development in the 1970s. Local communities (including immigrant farmers and indigenous tribes) are still calling for more international attention to these residual social and environmental impacts. The relationships between some stakeholders and the OCP project were tense several years prior to this project, which made consensus building difficult. This backdrop of controversy required that the operator be creative and manage an aggressive stakeholder engagement plan in order to succeed. A specific Engagement Strategy was drafted for all internal stakeholders before project implementation.

**Engagement Strategy**

Once key stakeholders were identified (including local authorities, provincial and central government entities, civic organizations, local church organizations and other interested informal groups), an engagement strategy was established defining the parameters and boundaries to engage all stakeholders, including the regulatory authorities, with fair compensation and sustainability, as well as adequate environmental and social management of the project.

**Specific Objectives**

Four specific objectives were established:

1. Identify and apply the highest environmental standards for the pipeline construction and operation phase, searching for the best, least intrusive pipeline route, with community consensus and support
2. Establish the synergies and connections with the civil society and other stakeholders including community leaders, environmental groups, local authorities and the church
3. Negotiate a large compensation project, which is socially oriented and with real community backing including consent of the civil society and local government/authority (e.g., local mayor, city council, etc.)
4. Execute the project on schedule and on budget with no social, environmental or safety incidents.

**Methodology**

In order to achieve the specific objectives as part of the engagement strategy, the following steps were taken:

1. A multidisciplinary team was established to initiate dialog with the community, build consensus and negotiate compensation
2. Review and systematization of information provided by secondary sources
3. Engagement with key stakeholders and representatives of regulatory bodies
4. Discuss and analyze primary and secondary environmental and social impacts of the pipeline project development and reach consensus with stakeholders for its execution

**Multidisciplinary Team**

The multidisciplinary team included personnel with adequate skills and experience in civil engineering; environmental engineering; social management; conflict resolution and negotiation; media management and communications. The team members were:

(a) A manager for environmental, health, safety and community affairs (EHS-CA)
(b) Two environmental/social advisors; a community relations advisor for negotiation with civic and community organizations.
(c) Two pipeline engineers for stakeholder awareness and technical project description and execution.

\textsuperscript{2} National Statistics and Census Institute – INEC, Statistics March 2006.
(d) A 4-person team of community relations coordinators, for on site negotiations.
(e) A social communication expert to manage local media at national level.
(f) A social communications expert to manage the Lago Agrio and Amazon region media.
(g) Walsh Environmental Scientists and Engineers (Walsh) to provide the environmental and social impact assessment.

Four tiers of interaction were pre-established in order to expedite interaction and timing:
1. Regulatory bodies of the central government
2. Local and provincial authorities
3. Civic and local organizations
4. Individual landowners and land acquisition

Teamwork Methodology

Transparency in project evaluation, stakeholder dialogue and compensation negotiation were the key for success. The first approach was made with the regulatory authorities of the central government, who provided feedback on concerns of local stakeholders in Lago Agrio regarding general and historic petroleum industry activities. A local and influential social communications expert was included on the team to manage the Lago Agrio and Amazon region media, and act as a liaison between the team and the civil society with the objective of reaching consensus on the project. It was also decided to use an inductive negotiation method: first reach consensus with the general public (those most directly impacted) and then with the local Mayor, as the elected representative of Lago Agrio. This is a well-known principle: “many negotiation processes must be defined by the needs of the general public and not by government institutions or individual political leaders”.

The environmental and social impact assessment addressed the primary design goal of determining the least intrusive pipeline route considering current Lago Agrio demographics and infrastructure, environmental sensitivities and urban growth plans. Walsh identified thirteen possible routing alternatives, which were scrutinized using high resolution satellite imagery and aerial photography, prior to selecting the top seven based on additional considerations involving city expansion trends, river bank stability, existing oil infrastructure and pipeline ROWs, hydrological conditions, and soil stability, among others (Fig. 4).

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4 IKONOS, 1 meter resolution.
The best three alternatives were determined using historical information based on 30 years of satellite imagery\(^5\) and other analyses performed by citizen representatives, Lago Agrio Municipal technical staff, representatives of the regulatory agencies of the central government, some informal groups, and local churches (Fig. 5).

\(^5\) LANDSAT
The preferred route alternative was selected from these three alternatives with the full participation of these stakeholders after on-the-ground inspection and aerial inspection by helicopter. Some localized concerns were addressed by the team through micro-routing alternatives (Fig. 6).
The alternative selection process also involved four pipelines within a single ROW with different owners and “tie-in points” along the ROW. The operator obtained a power-of-attorney from the other producers to manage environmental and social issues on their behalf. This was a unique initiative that demanded that the operator take the lead in the overall process. The route selection was also linked to the existence of a recently negotiated pipeline ROW which connected to the OCP Amazonas Station. This section needed to be designed for five pipelines of five separate producers (Fig. 7).
Communication and Education

Managing and screening adequate information internally and externally was a real challenge in order to communicate harmoniously with the stakeholders, the other three oil producers and other internal stakeholders. All field data, design and technical information, government approval status and stakeholder interaction reports were prepared with the target audience in mind, in order to achieve effective communication. The expertise of the community relations staff was critical in providing feedback from the field. This enabled effective communication and proper education of the different steps taken towards full Lago Agrio community acceptance and understanding.

Negotiation: Consensus and Agreement

Once the project’s communication and education program were in place, a negotiation strategy with those community members directly affected by project execution was initiated directly by the community relations staff. The EHS-CA Manager (with authority delegated by the other producers) also initiated compensation negotiations with the city Mayor. Several presentations were made to the Mayor and his staff that provided summaries of input from community members and stakeholder feedback. Two critical stakeholders participated in all meetings with the Municipal staff: a church representative and the local influential social communications expert. These individuals functioned as witnesses to the transparency in the negotiation process and facilitated communication with the community as a whole.

The community relations advisor also interacted with the civil society stakeholders, including (among others) community organizations, trade organizations, unions, women’s’ associations, etc. and helped maintain open communication channels between the Mayor and his staff and EnCana’s representative, which were critical for reaching agreement.

Dialog among all community stakeholders continued for several weeks until a social compensation agreement was reached; this involved construction of a public market building following Municipality of Lago Agrio design requirements. This contribution was “in-kind” and to be built by EnCana fully in compliance with environmental and safety construction requirements. The selection of a public market project came out of a pool of several alternatives proposed and discussed by local stakeholders, in order to fulfill a Lago Agrio city need which had been pending for several years. Additionally, EnCana committed to perform the pipeline construction activities under permanent community monitoring; to implement a health campaign during the construction phase; to provide all non-skilled and some skilled job opportunities to local community members; and to optimize utilization of local services such as transportation, catering and monitoring; to implement an open community audit process during project execution and post-execution.

Project Execution and Completion

Construction was initiated immediately after signing the compensation agreement and individual landowners’ permits were granted for ROW access and construction. A total of 400,000 accident-free man-hours were worked, and no social or environmental incidents occurred during the execution of the project. Community monitors acted, as previously agreed, with full empowerment to verify the operator’s commitment to the Environmental and Social Management Plan. Four community audits were successfully executed and corrective actions were implemented to mitigate any residual environmental or social impacts. The pipeline has operated since completion of construction in 2003 without any serious incident (as of late 2007). The project has never been legally challenged. As of November 2007, the construction of the public market is underway.