



REPORT OF THE:

EXTERNAL COMPLIANCE MONITORING GROUP

BHAGYAM AND AISHWARIYA FIELD DEVELOPMENT

2nd Site visit: October 2010

India



Prepared for

International Finance Corporation

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ANNEX A: TRIP SUMMARY 2nd MISSION, OCTOBER 2010

FREQUENTLY USED ACRONYMS

AP: Action Plan
BFF; Bhagyam Field Facility
CEIL: Cairn Energy India Pty Limited
CSR: Corporate Social Responsibility
CWA: Central Waste Accumulation
DG: Diesel Generator
EC: Enterprise Center
ECMG: External Compliance Monitoring Group
EHS: Environmental Health and Safety
EHSS-MS: Environmental, Health, Safety and Social Management System
EMP: Environmental Management Plan
EIA: Environmental Impact Assessment
GRC: Grievance Redressal Committee
HR: Human Resources
HS: Health and Safety
ICECD: International Centre for Entrepreneurship and Career Development
IFC: International Finance Corporation
IOTL: Indian Oil Tanking Limited
LACP: Land Acquisition and Compensation Plan
LAO: Land Acquisition Officer
LL: Land Losers
M&E: Monitoring and Evaluation
MoEF: Ministry of Environment and Forests
MPT: Mangala Process Terminal
MSDS: Material Safety Data Sheet
NGO: Non Governmental Organization
PCDP: Public Consultation and Disclosure Plan
PM: Particulate Matter
PPE: Personal Protection Equipment
PS: Performance Standard
RoU: Right of Use
REIA: Rapid Environmental Impact Assessment
SOP: Standard Operating Procedures
SR: Stakeholder Relationship
TiE: Theatre in Education
WMP: Waste Management Plan
WP: Well Pad

INTRODUCTION

This report summarizes observations made during the second site visit (October 3rd and 4th, 2010) by D'Appolonia S.p.A., Italy (D'Appolonia), serving as the External/Independent Environmental, Health and Safety (EHS) Compliance Monitoring Consultant (referred to as the External Compliance Monitoring Group – ECMG) for the Bhagyam and Aishwariya Field Development Project, India (“the Project”).

This External Compliance Report is broken down into three key subject areas, as follows:

- compliance with International Finance Corporation (IFC) Policies and Guidelines;
- compliance with the Environmental Impact Assessment (EIA) documentation and projects Environmental Management Plans (EMP); and
- recommendations for improvement based on the findings of the visit and D'Appolonia's experience.

ECMG observations that require action and that will be reviewed in subsequent assessments have been collected in Table 1.1: Follow-up Issues that is updated by the ECMG following each project visit assessment. The Follow-up table is structured as follows: new issues are given a distinctive, progressive number with the first digit indicating the mission (e.g. 1 for the first mission, 2 for the second, etc.); when applicable, issues closed during the current visit have been designated as such and highlighted in gray; and issues closed during a previous visit have been deleted. The ECMG has also provided recommendations for Project improvement based on the collective experience and expertise of the team members. These recommendations are not always to be considered compliance requirements and there is no onus on the operation for implementation. ECMG, however, encourages the Project to consider the usefulness of the recommendations and incorporate them, as appropriate, into management activities.

Cairn Energy India Pty Limited (CEIL), a subsidiary of Cairn India, is party of the RJ-ON-90/1 Block (Rajasthan Block or Block) Production Sharing Contract, dated May 15 1995, and Operator of it on behalf of a Joint Venture with the Oil and Natural Gas Corporation Ltd, a Public Sector Organization. CEIL has then undertaken a comprehensive exploration program in the Rajasthan Block, an area of about 5,820 km², during the past five years resulting in a number of oil and gas field discoveries (see Figure 1.1).

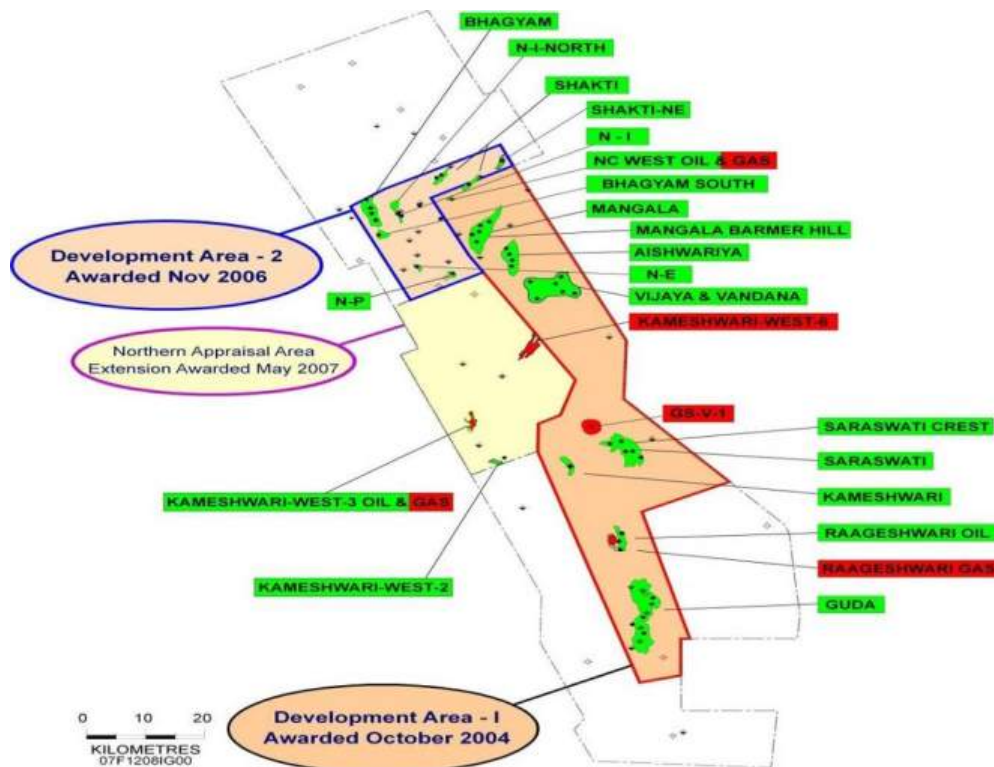


Figure 1.1: Discoveries Fields in the RJ-ON-90/1 Block

The exploration program included the drilling of over 100 exploratory and appraisal wells resulting in over twenty five hydrocarbon discoveries in the block. In early 2006 CEIL obtained Environmental Clearance from the Ministry of Environment and Forests (MoEF) for the development and production of five fields located in the northern and central parts of the Rajasthan Block: Mangala, Aishwariya, Saraswati oil fields and the Raageshwari oil and gas fields. In March 2008, CEIL has obtained the Environmental Clearance from MoEF for the development and production of the Bhagyam field, located approximately 17 km from the Mangala Process Terminal (MPT). The field lays within the Barmer District, southwest Rajasthan, on the northern part of the Block, covering an area of approximately 5.17 km². The Bhagyam field is being developed as a satellite of the Mangala field and extracted crude integrated into the MPT for processing, storage, and export.

The Bhagyam field development plan include the construction of approximately 15 Well Pads (WPs), a field facility where individual well pads flowlines converge, a network of underground in-field pipelines connecting the WPs to a field facility; a series of transfer pipelines connecting the field facility to the MPT, and expansion of the MPT to accommodate the new crude production. The 15 WPs include total of a maximum of 81 wells of which 51 are production and 31 injection wells (see Figure 1.2).

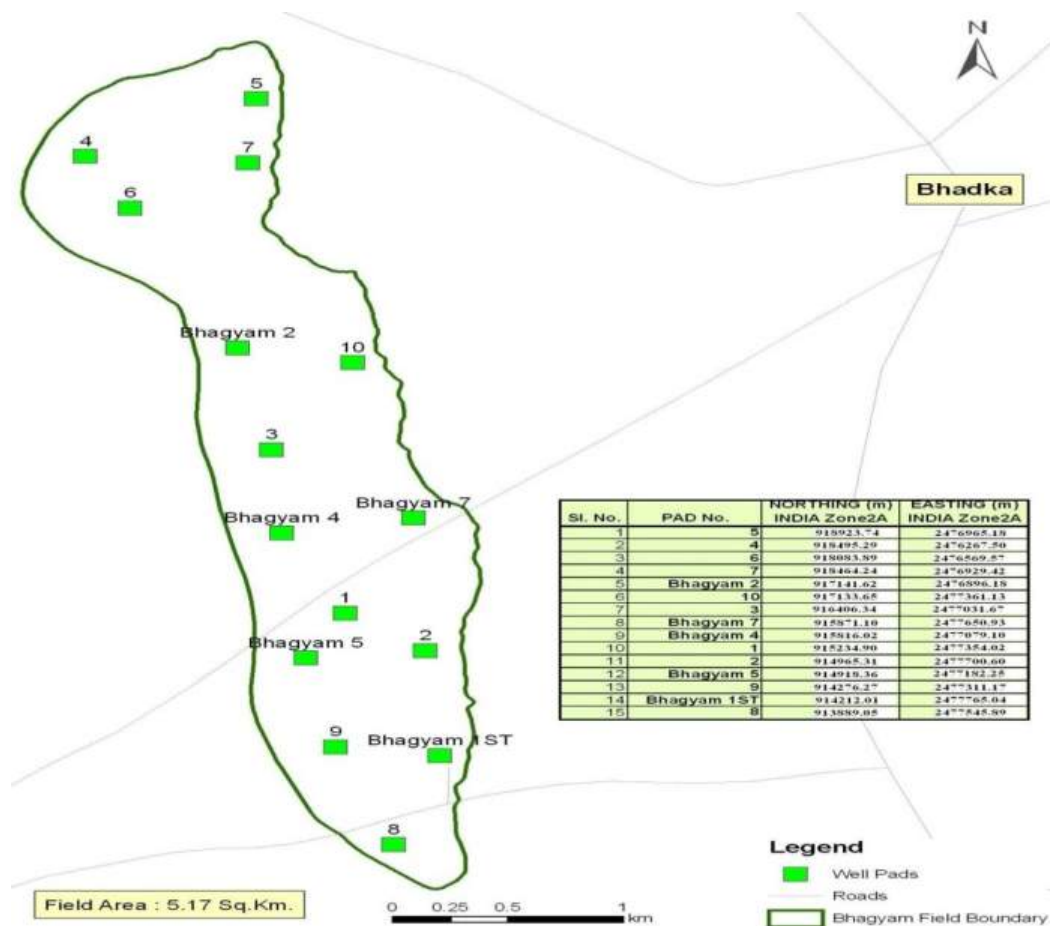


Figure 1.2: Bhagyam Field Development

Drilling of production/injection wells consist of multi-well drilling that enables several wells to be drilled from a single drilling pad location. The maximum depth of the wells is estimated to be around 1,500 to 2,000 m depending on the targeted hydrocarbon zones. Each WP requires approximately 4.4 ha for a total required area of about 66 ha. It should be noted that the total area will not be contiguous but spread over several land parcels within the Bhagyam field. The network of underground in-field pipelines will first be clustered to a receiving WPs (WPs 1, 9, and 12) and then connect to the Bhagyam Field Facility (BFF). This network consists of various size pipelines (e.g. 4 to 16 inches in diameter) to carry the crude oil to the

BFF and to distribute injection water, power fluids and utility from the MPT to the well heads. The BFF, which according to preliminary plans will be located within WP 15, consists of a manifold station that receives the well head fluid from the individual WPs and transfers it, through a common pipeline, to the MPT. In addition, the BFF receives and distributes the service pipelines from the MPT to the individual WPs. Connecting the MPT to the BFF will be a series of pipelines that will be laid within a corridor 30 m wide and approximately 40 km long. With the integration of the Bhagyam field, the total processing capacity of the MPT is expected to increase from 100,000 bopd to 140,000 bopd of crude oil. The utilities, water injection, electrical power, power fluid requirements for the Bhagyam field abstraction and processing will be shared and augmented from the facilities installed at the MPT.

The Aishwariya Field (Figure 1.3) is located approximately 15 km southeast of the MPT area. The overall development of this field will be similar to the Bhagyam field with areas set up for WP development (a total of 9 WPs), associated in-field pipeline, and a series of transfer pipelines connecting the field facility to the MPT along a common Right of Use (RoU). According to Project management, this field development schedule will greatly depend on the Mangala and Bhagyam field production and overall Project operational activities. Therefore, the Project has not clearly defined yet some of the details for this field if not for WPs locations.



Figure 1.3: Aishwariya Field Development

Cairn has sought financial assistance from IFC and committed to apply its Performance Standards (PSs) on Social and Environmental Sustainability to the design, construction, operation, and closure of the Project. In general, IFC's involvement and financing require both pre-finance project due diligence and post-finance project assurance with respect to various social, environmental, health, and safety to ensure compliance with IFC Policies and Performance Standards relevant to the Project. CEIL has committed to external/independent social, environmental, health, and safety compliance monitoring to provide an additional level of transparency to the implementation of its management programs.

D'Appolonia scope of work is to conduct quarterly visits during the construction of the Project in order to:

- identify areas and degrees of compliance with the Equator Principles and the following IFC Policies and Guidelines:
 - o IFC General Environmental, Health and Safety Guidelines (April 2007); and
 - o IFC Environmental, Health and Safety Guidelines for Oil and Gas Development, Onshore (April 2007).

- identify areas and degree of compliance with each of the following IFC Performance Standards:
 - o Performance Standard 1: Social and Environmental Assessment and Management Systems,
 - o Performance Standard 2: Labor and Working Conditions,
 - o Performance Standard 3: Pollution Prevention and Abatement,
 - o Performance Standard 4 Community Health, Safety and Security,
 - o Performance Standard 5: Land Acquisition and Involuntary Resettlement; and
 - o Performance Standard 8: Cultural Heritage;
- compliance with any previously developed Action Plans (AP) and/or agreements between Cairn and IFC and other Banks;
- identify areas and degree of compliance with the following CEIL developed plans:
 - o Environmental, Health, Safety and Social Management System (EHSS-MS) as described in the Cairn India Corporate Responsibility Management System,
 - o Projects specific EIA and EMP,
 - o provide practical guidance and advice to Project's field teams; and
 - o identify specific EHS issues and conduct follow-up and closure of open issues.

The Focus areas of the EHS reviews are the following:

- EHS Management performance;
- EHS compliance (versus Indian and International standards as presented in project specific EIA and EMPs);
- compliance with IFC PS on Social and Environmental Sustainability and EHS Guidelines;
- facilities review; and
- Implementation of the EHS Action Plans (as presented in the EIA and EMP).

During the field activities, D'Appolonia assessed all Project's associated facilities (i.e. the WPs, the in-field pipeline corridor, etc.) based on direct observations, interviews with project personnel, and pertinent documentation provided by CEIL.

Specific activities conducted during this site visit included the following:

- Evaluation of implementation of the commitments contained within the project specific EIA and EMPs. Items addressed in these documents include: air quality, surface and ground water resources, soil resources, natural resources (flora and fauna), noise and vibrations at off-site receptors, waste management, and cultural resources;
- evaluation of the Project compliance with Corporate Responsibility Guiding Principles and Management System, with the Public Consultation and Disclosure Framework Plan (Corporate, and for Rajasthan) and with the Land Acquisition Framework Plan (Corporate, and those developed specifically for Rajasthan);
- evaluation of the implementation of Project commitments contained within specific EHS Action Plans developed in the EIA and EMPs;
- evaluation of compliance with IFC PS Policies and Guidelines listed above;
- visit of the ECMG environmental team to the Project facilities including: the MPT, the concrete Batching plant area, WPs 1, 12, and 15 in the Bhagyam field and WPs 2, 7, and 9 in the Aishwariya field
- meetings of the ECMG social team included:
 - o Corporate Social Responsibility (CSR), Stakeholder Relations and land acquisition teams;
 - o the CSR and communication management in Gurgaon;
 - o the consultant hired by CEIL for the preparation of the Community Development Framework document;
 - o the land acquisition management in Gurgaon;

- o Enterprise Center (EC) in Barmer and the International Centre for Entrepreneurship and Career Development (ICECD), the implementing Non Governmental Organization (NGO);
 - o a school in Kawas and a self help women's group in Madpura (Aishwariya field); and
 - o land losers at the Bothia and Bathka villages (Bhagyam field).
- Participation to the malaria awareness program in Bathia.

The final closeout meeting was conducted at CEIL's Gurgaon offices on October 8th, 2010, and the information presented in this meeting has formed the basis for this report. The information, observations, and opinions presented in this report are those of D'Appolonia and are independent of those of CEIL and IFC.

EXECUTIVE SUMMARY

The Project is in the construction phase of the Bhagyam WPs while activities at the Aishwariya field have not started yet but early civil work tendering to local companies is on-going and contracts expected to be awarded by the end of October – beginning of November 2010. Land acquisition required for the WPs and the RoU has been completed in the Bhagyam field while in the Aishwariya field only small parcels of land still need to be acquired. It should be noted that the Project is acquiring the land for both the WPs and the RoU on a permanent basis from the original landowner.

The Project has developed an overall construction strategy for the Bhagyam field that includes two main stages: Stage I and II. Stage I includes early civil works, major civil works and the construction of the in-field corridor. At the time of the ECMG visit, early civil works was on-going at some of the already acquired WPs areas.

CEIL has developed a robust Corporate EHS structure and documentation that is at the base of Project specific EIA commitments. In addition, the EMP developed by the Project includes the general requirements, standards, and overall framework for mitigation measures, roles, and responsibilities, including subcontractors, environmental management, training, and inspection related to the project activities. Overall, the Project and its main contractor, has developed the necessary documentation to cover all aspects of EHS including detailed Standard Operating Procedures (SOPs) for specific field activities.

Early civil work was assigned to local subcontractors that, according to Project management, are required to follow CEIL EHS requirements. ECMG recognizes that ensuring correct and continuous implementation of the Project EHS requirements, in particular with local Contractors, is a constant challenge and good progress has been observed in the field. The regular presence of CEIL supervisor in the field and their coaching of the local workforce can ensure compliance with Project procedures and standards.

CEIL developed a robust EHS management structure that is consistent with Project commitments and requirements and covers all key managerial positions and supporting staff. Overall, the EHS management structure and field personnel appear to be sufficient to ensure a complete coverage of the Project activities. In addition, the main contractor EHS organization and staffing has been developed and appears to be sufficient to provide full compliance with Project and IFC standards and procedures.

Currently in the Bhagyam WPs areas both early civil work or major civil work activities are ongoing. During the site visit, mitigation measures (e.g. wetting of the areas) were observed at WP15 and have been reported to be implemented along access roads and work site. Furthermore, the Project has identified specific areas where working activities could significantly increase dust in the ambient air and where abatement measures will be focused.

According to the information provided, ambient air monitoring of the Project areas has been subcontracted out to J.M. Environet PVT Limited and reports are issued monthly. Results of the monitoring campaigns conducted from May to August, 2010 indicate that in the Project area (sampling point located near the Bhagyam well 7) Particulate Matter (PM)-10 values were recorded consistently higher than the National Ambient Air Quality limit of 100 µg/m³ for industrial areas and the 50 µg/m³ for IFC standards. Also, PM-2.5 values were recorded higher than the National Ambient Air Quality limit of 60 µg/m³ for industrial areas and the 25 µg/m³ for IFC standards. However, as also indicated by PM baseline values, the area is subject to very dry and at times (summer months) high wind conditions that significantly increase dust suspension in the ambient air and therefore directly affect PM field measurements. The Project should continue to ensure that working areas where excavation and/or grading is on-going and access roads to the sites are thoroughly wetted to reduce particle suspension. The Project may also want to consider the possibility of limiting some activities in particular those that tend to facilitate dust suspension, during periods of intense wind. Stack emission tests were conducted at the end of September 2010 by Nakshatra Enviro Services. It included testing of DGs located at working WPs and units at the cement batching plant and fabrication yard. A review of the reports indicated that none of the parameters analyzed (PM, SO₂, and NO_x) was detected at abnormal levels. In addition to PM-10 and 2.5, ambient air measured parameters also include NO₂, SO₂, Ozone, Pb, CO, Benzene, Ammonia, Benzo(a)pyrene(BaP), Arsenic, Nickel, Volatile Organic Carbon (VOC), and hydrocarbon. No exceedances were detected in any of the other analyzed parameters.

The current Project needs for water include industrial water for the civil work and domestic water for drinking purposes. Industrial water is provided totally from local sources as the Project's continued efforts to provide opportunities to the nearby business, although the Project has the capability of meeting its need through the RO plant in the MPT. Drinking water is drawn from two source wells by a single local provider and is transported to the WPs by tankers. At sites, drinking water is stored in plastic containers and delivered by a spigot. Chlorinated tablets are regularly added to the onsite drinking water tanks and chlorination is checked three times per week with a portable kit. Furthermore, drinking water samples are collected at the source and/or user end and tested for a complete set of parameters to ensure water is within drinking quality standards. Bottled water is used at all CEIL and IOTL field offices.

CEIL continue its monitoring program with monthly analysis of ambient air (PM-10, PM-2.5, SO₂, NO₂, O₃, Pb, CO, benzene, VOC, Hydrocarbons, Ammonia, Ni, As, Benzo(a)pyrene), noise, and drinking water quality. Review of the data collected from May to August 2010 indicates that no analyte was detected in exceedances of Project and/or local standards. It should be noted that on the May 2010 report, noise level at residential areas located near the field were detected above the National Ambient Air Quality and IFC standards for residential areas (55 dB for daytime and 45 dB for nighttime). However, measurements at the Bhagyam field location did not exceed the standards for industrial sites and are unlikely to be the cause of the problem.

A soil assessment of the Bhagyam area has been carried out indicating that soil is characterized by low fertility and productivity. Therefore, top soil preservation and conservation is not a critical issue in the area. The Project has outlined an overall approach to greenbelt development identifying the number and types of species that will be used that best suit the Project area arid environment. The beginning of plantation at each site will strictly depend on the construction completion and the favorable monsoon season. The greenbelt program also consists of planting along the access roads that, according to the Project, will likely take place through partnership with local communities. The Project should start developing a detailed strategy on access road planting, identifying the number of trees/shrubs to be planted, identify local partners, and define overall roles and responsibilities.

CEIL and the main contractor have developed a comprehensive waste management plan, consistent with Project requirements, and is carrying out adequate implementation in the field. The Project has provided each working areas with separate waste bins and has constructed a Central Waste Accumulation Area at the main contractor's field cement batching site. Waste streams are registered through a waste tracking sheet and all recyclable waste (e.g. paper, plastic) is regularly picked up twice per week by a licensed recycler that has been recently audited by CEIL. Food waste is reported to be processed at the composting facility located at the Mangala Processing Terminal while oil contaminated materials (e.g. rags, Personal Protective Equipment), although small in quantities, are reported to be sent to an authorized disposal facility. Given the newly commissioning of an incinerator at the MPT and the imminent completion of a hazardous material cell at the MPT landfill, the Project should segregate all contaminated material, incinerate it, and dispose it at its MPT landfill facility. Each WP and field office area is provided with portable toilets that empty to septic tanks that, according to field representative, will be emptied on need (no cleaning has yet been done) and the contents disposed of at the Balotra treatment facility. However, given the small quantities of wastewater expected to collect at all portable toilet facilities, the Project should process this wastewater through the two Sewage Treatment Plants located at the Mangala terminal.

The main contractor has finalized its hazardous chemical handling, storage and disposal plan that have been approved by CEIL. An appropriate central storage area for hazardous material has been constructed at the contractor cement batch plant site. The area is paved, bermed and provided with a roof cover. Diesel drums are kept in a locked brick storage room. However, this storage place is not provided with sufficient ventilation and a way (e.g. raised bricks by the door entrance) to prevent potential spills to impact the surrounding soil. All Diesel Generators (DG) observed to have secondary containment as they were placed on concrete skids provided with berms.

CEIL has fully adapted available health and safety plans to the specific Project. In addition, the main contractor has developed its own EHS plan, job safety analysis and work tasks risk evaluation, and specific SOPs that have been approved by CEIL. EHS inductions and training of all work forces is well implemented throughout the Project and all employees are undergoing medical and security screening at the time of hiring. It should be noted that the medical screening is not a mandate from the local legislation but is a CEIL requirement. Additional task specific training (e.g. environmental awareness, working at

heights, rigging, confined space, etc.) is also been provided and employees involved in specialist jobs undergo competency tests. Site supervisors are reported to conduct regular toolbox meetings and EHS awareness shows (Road Show) have been delivered by CEIL at various work sites. Near misses are reported regularly as part of the daily EHS activities.

CEIL is also conducting regular (weekly and monthly) site audits and inspections and reports issued where open and resolved issues are described. Specific equipment inspections are also carried out on a regular basis and scaffolding and shuttering are erected under CEIL supervision. Specific plans for heavy materials lifting and loading/unloading have been introduced and only competent riggers are used for critical lifting operations.

Required Personal Protection Equipment (PPE) has been observed to be fully implemented at all work sites and EHS warning signs have been observed to be posted near critical areas throughout the Project. Portable toilets have been placed at all WPs where work is on-going and at all field office sites and housekeeping has been observed to be generally good at all visited sites.

First aid rooms have been set up at both CEIL's and the main contractor's field office sites. Both facilities are manned by a paramedic and have sufficient medical supplies to cover the number of personnel on site. Each site has a dedicated ambulance with driver. In addition, an emergency vehicle is present just outside any WP where workers are present. Well stocked first aid kits have been observed at all visited sites and, according to field management, about 36 site supervisors have received training in first aid intervention by the local paramedic personnel. No major incidents have been reported since the start of the Project.

HS drills (e.g. evacuation, rescue from cellar pit, heat stroke) have been conducted at work sites while a drill with the participation of local authorities (hospitals, fire fighting, etc.) is planned for the future.

At the main contractor batching plant few dozens cement bags, used for minor cement work at the WPs, are stored in a locked trailer with insufficient ventilation and significant cement dust covering the floor area. Cement bags should be stored in a well ventilated area that is kept clean and free of any cement dust on the floor and walls to prevent cement particle inhalation by personnel moving the bags in and out of storage.

The interactions with the communities are carried out by three different teams, with different tasks: the Corporate Social Responsibility (CSR) team, dealing mainly with development programs; the land team, managing the land acquisition activities; and the recently established "Stakeholder Engagement" (or Stakeholder Relationship, SR) team.

The SR team, according to CEIL documents, coordinates with CSR, land and security teams in order to manage stakeholders. The Head-Stakeholder relationship gives overall direction to the consultation process and guide the teams in the implementation of the Public Consultation and Disclosure Plan (PCDP). The SR team is composed by former police officers, very knowledgeable of the region, who "interacts with the population in case of possible conflicts, such as experienced in the past (road blocks; threats to project's staff; thefts of project's properties). According to project's staff and the SR team itself, the intervention of the SR team is limited to providing support as and when problems arise. This is undertaken by keeping a dialogue approach, using the experience of the team members and ensuring the respect of the laws, in the framework of the company's policies (including the PCDP). The ECMG team met the SR team and visited some villages with them. There were no sign of particular distress or conflict. Whereas the ECMG team acknowledges CEIL's preoccupations with security and ensuring the smooth progress of operations, it strongly recommends that the focus be maintained on dialogue and collaboration with the stakeholders. ECMG recommend that the three teams interacting with communities (CSR, Land, SR) complement one another, work in coordination and transmit consistent messages with consistent approach. The subordination of CSR team to the SR head should not mean a prevalence of the security concerns on social responsibility.

A specific PCDP for the Bhagyam-Aishwariya project has been prepared, which is adequate and consistent with the Rajasthan Framework PCDP, with the exception of minor gaps (the document does not specify the delay to respond to public queries and grievances). CEIL should amend the Bhagyam PCDP as suggested and disclose and communicate it in an adapted way to local stakeholders and contractors.

The CSR programs for the Bhagyam and Aishwariya fields are part of the general Community Development program for the Rajasthan operations (Upstream project). CEIL is preparing a

comprehensive Community Development Framework for the Mangala Development Pipeline Project, which will include the development activities for the Bhagyam-Aishwariya project.

CEIL organization of the CSR is evolving but it is not yet finalized. According to the Project, the number of CSR field officers for the Rajasthan operations should increase by four plus one manager for the Enterprise Center based in Barmer. Therefore, ECMG recommends expediting the recruitment of these officers, as the present number of field staff (two) is insufficient to follow the ongoing activities relative to the Rajasthan block Project plus the new construction operations of the Bhagyam-Aishwariya Project.

In the frame of the development projects related to health and education, managed by CSR and implemented in collaboration with NGOs and relevant local government, in the Bhagyam and Aishwariya area, the following activities are being carried out: health camps, which offer free of charge diagnostic health care and medicines; a mobile health van program (926 camps organized and 23,787 patients treated since September 2009); an awareness program on malaria using media like magic show, skit play, quiz competition and puppet show. CEIL CSR also finance health awareness IEC material and sponsors special events and continue medical education workshops for Barmer doctors. Of note is the collaboration with UNICEF for the health and education programs, with some schemes replicated by UNICEF in other areas.

The focus of the education programs is on improving the quality of education by motivating teachers and students through: school infrastructure renovation; reading rooms (25 schools, 4 in Bhagyam); and English relay training (10 schools). The theatre in education (TiE) program ended its first phase but will be continued. A TiE handbook for teachers has been prepared.

As for economic development and employment opportunities for project affected people, the Enterprise Center (EC), established in 2007 in partnership with IFC, and managed by ICECD, organizes training for micro and small enterprise development (2,452¹ trainees linked to contractors or business opportunities) and local vendor development (around 200 registered). The home-based handicraft program for women in affected villages has linked 1,526 women to market through textile contractors and key chain exporters. Around 400 women have been involved in Self Help Groups and entrepreneurship development training for women is also supported. A training program in agriculture has involved farmers to grow new cash crops. The joint funding IFC-Cairn to EC will come to an end in December 2010. The future scope and organization of the EC is still in discussion but should be presented in the Community Development Framework document in preparation. Consequently, the EC team has focused its intervention on capacity building of local NGOs through training of trainers program (21 organizations in course of training). The objective is to transfer skills and make them able to manage the training programs at medium term.

The CSR team developed an animated video on gas pipeline security that has been showed to communities and school children. ECMG commend the use of visual and theatrical tools (like the ones used for the malaria awareness), ECMG strongly recommends an evaluation of the effectiveness of these tools; make improvements if necessary; and ensure a timely production and dissemination of this kind of tools for other Health and Safety (HS) aspects of the project, such as construction hazards, road safety and HIV/AIDS prevention.

The ECMG team could visit some of the villages where socio-economic development initiatives are ongoing, and had a positive feedback on these activities. Overall, communities met evaluate positively the presence of CEIL activities for the development of the area and also appreciate the project's infrastructure development as the connecting roads used by locals as well. ECMG review of the documentation of the programs (progress reports) found encouraging results notwithstanding difficulties such as low literacy, cultural constraints, and difficult access. However, expectations are high and the perception in communities is that most benefits from compensation, employment, and contracts go to the land losers.

ECMG noticed that some of the farmers' houses are quite near to working sites. Direct interactions between contractors and surrounding population are likely to be frequent during construction. Some misunderstanding between farmers and contractors was noticed during fieldwork (concerning land leased out by a farmer to a contractor for depositing construction materials). The Project should look for feedback from the affected communities on an ongoing basis to minimize nuisances and develop mitigation measures as needed. Contractors should be briefed on CEIL's policies and approach in engaging with local communities and affected parties. During construction, one on-site liaison officer

¹ These figures refer to the whole Upstream project area, including Bhagyam and Aishwariya fields.

should be at all times available to offer an initial immediate feedback to any complaint or query arising from local people. All interactions with local stakeholders should be recorded and complaints and grievances should be logged.

According to project, land acquisition operations are completed. The land-losers (LL) met by the ECMG team did not raise any major issue. However, expectation for employment and contracts for LL is very high. Cairn should carefully evaluate the actual employment and contracts opportunities and adequately inform LL on issues related to employment, contracts, and small business opportunities with the project. Following past experiences, CEIL should avoid training local people without a clear outcome.

A complete census of all land-losers (including the Bhagyam-Aishwariya project) has been completed. As already recommended, vulnerable households among LL should be identified to prioritize them in employment opportunities and target them for specific economic development activities.

A Land Acquisition and Compensation Plan (LACP) specific for the Bhagyam-Aishwariya project should be prepared and communicated to all stakeholders.

The report on land and RoU acquisition presented to ECMG provides details on the size of land acquired (by the different project phases) and the number of villages and land owners affected. It also includes "Challenges" and "Observations" paragraphs that present the lessons learned during the process. The report is an improvement in comparison to the non-commented database provided before. However, ECMG suggests to (i) present more clearly the overall impact in terms of number of affected land owners and (ii) expand the "lessons learned" paragraphs on issues and solutions adopted.

The number of workers in the Bhagyam and Aishwariya fields is currently limited. Fifty skilled and semi-skilled workers are accommodated in four rented houses in Barmer. The quality of the accommodation appears satisfactory.

Table 1.1: Follow-up Issues

Mission/ Issue No.	IFC Policy / ESIA Compliance	Description	Status	Comments	Priority
EHS Management Organization and Resources					
M1.1	IFC PS1	The Project should transfer all relevant EHS documentation developed in previous activities (e.g. Rajasthan Block Project) to the current project	Closed		N/A
M1.2	IFC - PS1	The Project should ensure that all relevant EHS standards/procedures are implemented at the field level at all Project sites	Closed	This is an on-going effort that should continue throughout the life of the project	N/A
M1.3	EIA and EMP	CEIL should carefully review the requested subcontractor's EHS documentation to verify it complies with Project and IFC requirement/standards	Closed		N/A
M1.4	EIA and EMP	CEIL should take more decisive actions (e.g. field mentoring of local contractor supervisors, direct control of field activities, etc.) to provide the necessary supervision in the field so that Project standards and requirements are met	Closed	This is an on-going effort that should continue throughout the life of the project, in particular where local contractors are involved	N/A
M1.5	IFC – PS1	The Project should ensure that the EHS personnel presence and expertise in the field provides the necessary coverage for all project's EHS aspects	Closed		N/A
M1.6	IFC – PS1	The Project should ensure that subcontractor (IOTL) EHS personnel are sufficient in number and experience to provide full compliance with Project and IFC standards and procedures	Closed	CEIL should ensure that IOTL field supervisors are familiar with Project procedures and standards and have the sufficient experience to implement them	N/A
Air Quality					
M1.7	IFC – PS3 EIA and EMP	The Project should ensure that working areas where excavation and/or grading is on-going and access roads to the sites are thoroughly wetted to reduce particle suspension	Pending	On-going	N/A
Reclamation, Revegetation, and Topsoil Management					
M2.1	IFC EHS Guidelines for Onshore Oil and Gas Development p. 131 EIA §4.5.6	The Project should start developing a detailed strategy on access road planting, identifying the number of trees/shrubs to be planted, identify local partners, and define overall roles and responsibilities	New		Medium

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Mission/ Issue No.	IFC Policy / ESIA Compliance	Description	Status	Comments	Priority
Waste Management					
M1.8	IFC – PS3	IOTL to submit a detailed waste management procedure for approval before civil work starts.	Closed		N/A
M2.2	IFC – General EHS Guidelines §1.3 and 1.6	The Project should segregate all contaminated material, and manage and dispose it as per the approved waste management plan and in compliance to applicable regulations and IFC standards	New		Medium
M2.3	EMP §7.0	The Project should process portable toilets wastewater through the two Sewage Treatment Plants located at the MPT.	New		Medium
Hazardous Materials Management and Pollution Prevention					
M1.9	IFC – PS3 EIA and EMP §7.0	The Project should ensure that all hazardous chemicals storages, including temporary staging areas, are properly built to prevent potential spill to impact the surrounding soil.	Closed		N/A
M2.4	IFC – PS3 EMP §7.0	The diesel storage area should be provided with adequate ventilation and a way (e.g. raised bricks by the door entrance) to prevent potential spills to impact the surrounding soil	New		Medium - low
Health and Safety Management and Occupational Health					
M1.10	IFC – PS2 EIA and EMP	The Project should ensure that required PPE is worn and that effective EHS supervision is implemented in the field.	Closed		N/A
M2.5	IFC – General EHS Guidelines p.70	Cement bag trailer should provided with adequate ventilation and its floor kept clean of any cement dust	New		Medium
Social management					
M1.10	IFC PS 1 , §17 Organizational Capacity	Provide sufficient management sponsorship and human and financial resources on an ongoing basis to achieve effective and continuous social performance	Pending		High
Stakeholders Engagement - Public Consultation and Communication					
M1.11	IFC PS 1 Corporate framework PCDP	Prepare a Public Consultation and Disclosure Plan (PCDP) for the Bhagyam-Aishwariya project and brief stakeholders	Closed	The PCDP should be amended as suggested and disclosed	N/A
M1.12	Framework PCDP (§1.1 Key Principles; § 3.5 Record of consultations; §4.3 (Modified)	Contractors should designate a liaison person for community interactions and grievances at each site. This person should speak the local languages and be introduced to communities, authorities and land-losers. All interactions should be recorded. Contractors should be briefed on CEIL's policies and approach	Pending		High

ECMG

Mission/ Issue No.	IFC Policy / ESIA Compliance	Description	Status	Comments	Priority
M1.13	Monitoring and Evaluation)	Keep tabulated records of all community interactions and prepare a progress report (quarterly or monthly during construction phase)	Pending		Medium
M1.14	PS 1, § 19 Community Engagement, §23 Grievance mechanism §25 Reporting	Establish regular information meetings including information on project's progress, grievance procedure and liaison persons in charge, employment and business opportunities, with time and number limits, and HSE awareness (Modified)	On-going	Meetings should include information on project's progress, grievance procedure and liaison persons, employment and business opportunities with time and number limits, HSE awareness.	High
Stakeholder Engagement – Development Program					
M1.15	IFC PS 1 § 19 Community Engagement	Prepare a Community Development Plan for the Bhagyam-Aishwariya project in the frame of the general Community Development Framework (Modified)	Pending	In Preparation	High
Land Acquisition					
M1.16	IFC PS5 Corporate framework LACP	Prepare a specific LACP for the Bhagyam-Aishwariya Project.	Pending		Medium
M1.17	IFC PS5 Corporate framework	Brief CA and staff on LACP/PCDP and IFC PSs and maintain a copy in the local languages, at each local office	Pending		High
Community Health, Safety and Security					
M1.18	PS 4 Community Health, Safety and Security: §6,	Include awareness programs on H&S, environment and HIV-AIDS	Pending	Awareness programs have been implemented for gas pipeline safety and malaria	High
M1.19	Infrastructure and Equipment Safety; §10, 11 Community Exposure to Diseases	Use school programs to build safety awareness amongst children	Pending		Medium
Labor and Working Conditions					
M1.20	PS 6 Labor and working conditions:	Brief contractors and workers on IFC PS 2 (Modified)	Pending		Medium

ECMG

Mission/ Issue No.	IFC Policy / ESIA Compliance	Description	Status	Comments	Priority
M1.21	§6 Human Resources Policy; §7, 8 Working conditions and terms of employment; §13 Grievance mechanism, §16 Occupational Health and Safety; §17 Non-employee workers	Brief local workers in their own language on employment conditions and their rights. Display wages on site in local languages	Pending		High
M1.22		Develop a transparent procedure for recruitment of land-losers and local workers and a transparent communication on criteria for wages.	Pending		High
M1.23	Cairn Group Corporate Responsibility Guiding principles (§3.2.1)	Ensure adequate grievance procedure for workers and record grievances	Pending		Medium

SECOND SITE VISIT OF THE D'APPOLONIA ECMG TO THE BHAGYAM AND AISHWARIYA DEVELOPMENT FIELDS PROJECT INDIA, OCTOBER 2010

1 CONSTRUCTION STATUS

The Project is in the construction phase of the Bhagyam WPs while activities at the Aishwariya field have been limited to on-going land acquisition phase. As reported by Project management, land acquisition required for the WPs and the RoU has been completed in the Bhagyam field while in the Aishwariya field only small parcels of land still need to be acquired. It should be noted that the Project is acquiring the land for both the WPs and the RoU on a permanent basis from the original landowner.

The Project has developed an overall construction strategy for the Bhagyam field that includes two main stages: Stage I and II. Stage I includes early civil works, major civil works and the construction of the in-field corridor. Early civil work includes fencing, cutting, filling, leveling, compaction, and grading of the site as a preparation for subsequent civil work and is subcontracted out directly by CEIL to local companies. At the time of the ECMG visit, early civil works was completed at WPs 4, 5, 7, 9, 10, 12, and 14 while it is on-going at WPs 6, 11, and 8. Early civil work at these three WPs is expected to be completed by mid October. Major civil work, which include the construction of the drill cutting pits, well cellars, drilling rig supporting tracks and other facilities necessary to carry out drilling activities (e.g. above ground storage for diesel, hazardous material storage area, etc.), has been awarded to Indian Oil Tanking Limited (IOTL) and is on-going at WPs 1, 2, 3, 13, and 15. These WPs are expected to be ready for drilling activities by the end of October with WP 1 and 15 scheduled to be drilled first. Concomitant to these activities the Project is working on the cutting, leveling and grading of the in-field corridor that will be used by the Project to connect all WPs. (e.g. RoU for pipeline, roads, overhead power lines, etc.). Mechanical (e.g. package, equipment, and piping) and electrical work have been reported to be in the tendering phase with work scheduled to begin by mid November 2010.

Stage II includes post drilling civil works, completion works, and in-field corridor completion. Construction works will be carried out after drilling activities have been completed. It will include foundations for small processing plants and equipment (e.g. air compressor, chemical injection skid, etc.), foundation for the instrument room and sub-stations, pipe supports. Completion work will include piping hook-up and electrical and instrumentation installation. Section of the in-field corridor will be asphalted and the greenbelt development started.

According to Project management, activities at the Aishwariya field have not started yet but early civil work tendering to local companies is on-going and contracts expected to be awarded by the end of October – beginning of November.

2 EHS MANAGEMENT ORGANIZATION

Project Strategy:

CEIL environmental, health, safety and social commitments are contained and grouped under the overall CEIL Corporate Responsibility Management System and are outlined in project specific ESIAs and EMPs. In addition, CEIL requires that all its subcontractors, as part of their contractual obligations, develop their respective EHS and Social plans in line with CEIL commitments and standards.

A Project EIA and EMP have been developed and are an integral component of CEIL Project overall planning, design and implementation. In addition, the Project has developed a detailed Health, Safety, Environmental, and Security Requirements document to cover early civil work activities.

Observations:

CEIL has developed a robust Corporate EHS structure and documentation that is at the base of Project specific EIA commitments. The EIA identifies the projects management programs and outlines specific mitigation measures expected to reduce potentially adverse impacts to acceptable levels. The EMP developed by the Project includes the general requirements, standards, and overall framework for mitigation measures, roles, and responsibilities, including subcontractors, environmental management, training, and inspection related to the project activities. In addition, the EMP outlines the requirements for environmental monitoring in order to verify the effectiveness of mitigation during all phases of the projects. The Project has developed the necessary documentation to cover all aspects of EHS including detailed SOPs for specific field activities.

Early civil work was assigned to local subcontractors that, according to Project management, are required to follow CEIL EHS requirements. ECMG recognize that ensuring correct and continuous implementation of the Project EHS requirements, in particular with local contractors, is a constant challenge and good progress has been observed in the field. The regular presence of CEIL supervisor in the field and their coaching of the local workforce can ensure compliance with Project procedures and standards.

The Project was finalized the contract with IOTL that, as requested by CEIL, has developed a series of EHS documents (e.g. Environmental Management Plan, Waste Management Procedures, Environmental Monitoring Procedures, Spill Management Procedures, etc.) that have been approved by CEIL management.

According to the information provided to ECMG, the Quality Health, Safety, and Security management team involved in the construction activities at the Mangala field (part of the Rajasthan Block Project) are in place and appear to be adequate to cover the current Project activities. In addition, IOTL has developed its project specific EHS organograms that appears sufficient for the on-going work activities.

<i>IFC Policy Action Items</i>

Nil

<i>ESIAs/EMPs Action Items</i>

Nil

Recommendations for Improvement:

- a. CEIL EHS field supervisors should maintain a regular presence in the field and continue their pro-active coaching of the local workforce to ensure continuous compliance with Project procedures and standards.

3 ENVIRONMENT

3.1 ENVIRONMENTAL ORGANIZATION AND STAFFING

Project Strategy:

At company level, Health, Safety, Environment, Security, and CSR all fall under the umbrella of CEIL Corporate Responsibility Management System. According to the information provided to the ECMG team, two environmental managers, one for the Aishwariya and one for the Bhagyam fields, report directly to the construction manager. While the complete EHS structure for the Aishwariya field will be defined at a later stage, the draft structure for the Bhagyam field has been defined. Assisting the EHS manager will be a series of EHS coordinators in charge of the WPs, a training instructor, a scaffolding supervisor and a site paramedic.

Observations:

CEIL developed a robust EHS management structure that is consistent with Project commitments and requirements and covers all key managerial positions and supporting staff. CEIL appointed a Project EHS manager that oversees one HS manager and one Environmental manager to the Project. The HS manager directs 5 EHS field coordinators, assigned to WPs locations, one paramedic, one equipment inspector, and one scaffolding supervisor. The Environmental manager coordinates the activities of two people that are in charge of field supervision, data collection, and training. Overall, the EHS management structure and field personnel appear to be sufficient to ensure a complete coverage of the Project activities.

The EHS organization and staffing for IOTL has been developed and include a Project EHS manager that oversees an Environmental officer, a HS officer, and two paramedics. The officers coordinate seven field EHS supervisors and three safety stewards. Overall, IOTL personnel assigned to EHS appear to be sufficient in number to provide full compliance with Project and IFC standards and procedures.

As reported by field personnel, IOTL submits weekly and monthly EHS reports to CEIL management. In addition, daily briefing between IOTL and CEIL key EHS personnel are reported to be conducted. CEIL field management submits regular EHS monthly reports to corporate management. Overall, the EHS reporting scheme developed appears to be robust and sufficient for the Project needs.

IFC Action Items

Nil

ESIA/EMP Action Items

Nil

Recommendations for Improvement:

- a. CEIL should ensure that IOTL field supervisors are familiar with Project procedures and standards and have the sufficient experience to implement them; and
- b. CEIL EHS personnel should strongly implement the developed plan, continue their direct supervision in the field, maintain close communications with IOTL key personnel, and provide the necessary EHS guidance and training to enhance subcontractor performance.

3.2 AIR QUALITY

Project Strategy:

The Project EIA recognizes dust as the main potential impact on air quality during the construction phase. Dust impacts are only temporary and limited to those areas in close proximity of the sites where work is ongoing and along routes frequently used by Project trucks. Dust is associated with civil work activities including excavation work, trenching, material hauling, dumping, site grading, backfilling activities, as

well as from increased vehicular traffic in the area. Other gaseous emissions are mainly generated from operation of DGs and vehicular exhausts; however, these emissions were evaluated to be minor, localized, and transient in nature.

The control measures to mitigate fugitive dusts, as outlined in the Project's EIA (§ 4.4.3) and EMP (§ 7.0) include watering of the working areas and of those roads where Project traffic is intense. In addition, the use of cover sheets on topsoil and/or soil piles and of covers on all vehicles delivering construction materials containing fine particles (e.g. sand, aggregates, etc.) to/from the site should be implemented. Nose masks are required as standard Personal Protection Equipment (PPE) for workers involved in operations that may entail potential dust inhalation.

Gaseous emissions are mitigated through proper operation and maintenance of all equipments and any construction equipment (e.g. DGs) should have sufficient exhausts height to ensure adequate dispersion. The Project has committed to implement dedicated air monitoring programs for both dust and gaseous emissions control. Air quality parameters to be checked during the construction phase are summarized in Table 2, Section 10.0 of the project EMP.

Observations:

Currently in the Bhagyam WPs areas both early civil work or major civil work activities are ongoing. The nature of early civil work (e.g. cutting, filling, leveling, compaction, and grading) generates a considerable amount of dust suspension in the air, in particular in the dry and desert setting of the area. During the site visit, mitigation measures (e.g. wetting of the areas) were observed at WP15, where major civil work was on-going, and has been reported to be implemented along access roads and work site. Furthermore, the Project has identified specific areas where working activities could significantly increase dust in the ambient air and where abatement measures will be focused. The Project should continue to ensure that working areas where excavation and/or grading is on-going and access roads to the sites are thoroughly wetted to reduce particle suspension. The Project may also want to consider the possibility of limiting some activities, in particular those that tend to facilitate dust suspension, during periods of intense wind.

According to the information provided, ambient air monitoring of the Project areas has been subcontracted out to J.M. Environet PVT Limited and reports from May to August 2010 submitted for review. Ambient air measured parameters include Particulate Matter (PM) 10 and 2.5, NO₂, SO₂, Ozone, Pb, CO, Benzene, Ammonia, Benzo(a)pyrene(BaP), Arsenic, Nickel, Volatile Organic Carbon (VOC), and hydrocarbon.

Results of these monitoring campaigns indicate that in the Project area (sampling point located near the Bhagyam well 7) PM-10 values ranged from 287.56 µg/m³ (May reading) to 83.12 µg/m³ (August reading) with concentration consistently higher than the National Ambient Air Quality limit of 100 µg/m³ for industrial areas and the 50 µg/m³ for IFC standards. Ambient air PM-2.5 values at the same sampling location range from 63.8 µg/m³ (May reading) to a minimum of 42.0 µg/m³ (August reading). Again, these values are higher than the National Ambient Air Quality limit of 60 µg/m³ for industrial areas and the 25 µg/m³ for IFC standards. However, as also indicated by PM baseline values reported in the Project EIA, the area is subject to very dry and at times (e.g. summer months) high wind conditions that significantly increase dust suspension in the ambient air and therefore directly affect PM field measurements. No exceedances were detected in any of the other analyzed parameters.

Stack emission tests were conducted at the end of September 2010 by Nakshatra Enviro Services. It included testing of DGs located at working WPs and units at the cement batching plant and fabrication yard. A review of the reports indicated that none of the parameters analyzed (PM, SO₂, and NO_x) was detected at abnormal levels.

IFC Action Items

Nil

IFC and/or ESIA/EMP Action Items

M1.7 The Project should ensure that working areas where excavation and/or grading is on-going and access roads to the sites are thoroughly wetted to reduce particle suspension (On-going).

Recommendations for Improvement:

- a. The Project should carefully monitor ambient dust, in particular during civil work, and adopt strong mitigation measures (e.g. frequent watering of the grounds, use of masks by the workforce, during windy conditions switch to activities that do not suspend dust into the ambient air, etc.) to reduce dust generation;
- b. The Project should pay particular care and attention to dust issues at those sites in the Aishwariya field where dwellings are located in close proximity of WPs. Close coordination with the CSR team should be implemented to ensure that people living near WPs are protected; and
- c. Monitoring reports should include legislative, Project specific, and IFC limits for each parameter. In addition, the reports should highlight and discuss any exceedances from the above mentioned limits.

3.3 GROUNDWATER AND SURFACE WATER*Project Strategy:*

According to the Project EIA, water requirements for the construction and operational phase will be sourced from the already existing facilities (e.g. Thumbli extraction field and Reverse Osmosis Plant at MPT) that service the Rajasthan Block Project. The daily water consumption during the construction period is estimated to be about 100 m³/day for a period of one year (Section 2.4.3.2 of the EIA). However, the recently approved EMP indicates that water requirements for contractor activities could be sourced from local sources or from groundwater abstraction, previously obtaining the necessary permits from the local authorities (Section 7.0 of the EMP). Water consumption during drilling activities has been estimated to be 40 to 50 m³/day sourced either by local suppliers and supplemented by saline water from the MPT.

Domestic drinking water during the construction phase will be supplied from groundwater/package water or water transported via tankers to the construction site (Section 4.4.3.4 of the EIA).

Observations:

The current Project needs for water include industrial water for the civil work and domestic water for drinking purposes. Industrial water is provided totally from local sources as the Project's continued efforts to provide opportunities to the nearby business, although the Project has the capability of meeting its need through the RO plant in the MPT.. According to the documentation provided, water consumption for construction increased from about 240,000 liters (approximately 8 KL/day) in July to over 600,000 liters (approximately 20 KL/day) in August. Drinking water is drawn from two sources well by a single local provider and is transported to the WPs by tankers. At sites, drinking water is stored in plastic containers and delivered by a spigot. Chlorinated tablets are regularly added to the on site drinking water tanks and chlorination is checked three times per week with a portable kit. Furthermore, drinking water samples are collected at the source and/or user end and tested for a complete set of parameters to ensure water is within drinking quality standards. Bottled water is used at all CEIL and IOTL field offices.

IFC Policy Action and ESIA/EMP Actions Items

Nil

Recommendations for Improvement:

- a. The Project should work in concert with CSR to gradually phase out local supply of industrial water and replace it with other sustainable initiative for the local businesses.

3.4 MONITORING

Project Strategy:

Monitoring of key environmental parameters is both a Project commitment and an IFC requirement. The Project EIA and EMP clearly outlines CEIL's Environmental Monitoring program to cover both the construction, the drilling, and operational phases of the Project. Monitoring shall include direct measurements and recording of quantitative information of physical and chemical indicators to characterize ambient environmental quality in the project areas. Monitoring should be designed and implemented to ensure that Project commitments are met and to ensure compliance with statutory and corporate requirements. In particular, the Project has developed specific parameters and monitoring schedules to be carried out during the construction phase. These parameters and schedules are summarized in Table 6.1, Section 6.2.2.1 of the EIA and Table 2, Section 10 of the EMP. Monitoring reports should include legislative, Project specific, and IFC limits for each parameter.

Observations:

CEIL continue its monitoring program with monthly analysis of ambient air (PM-10, PM-2.5, SO₂, NO₂, O₃, Pb, CO, benzene, VOC, Hydrocarbons, Ammonia, Ni, As, Benzo(a)pyrene), noise, and drinking water quality. Review of the data collected from May to August 2010 (ambient air results are discussed in Section 3.2) indicates that no analyte was detected in exceedances of Project and/or local standards. It should be noted that on the May 2010 report, noise level at residential areas located near the field were detected above the National Ambient Air Quality and IFC standards for residential areas (55 dB for daytime and 45 dB for nighttime). However, measurements at the Bhagyam field location did not exceed the standards for industrial sites and are unlikely to be the cause of the problem.

Table 3.1: Monitoring Parameters

Project Phase	Medium	Parameter	Frequency
Construction	Ambient Air	SPM, RPM, SO ₂ , NO _x , CO, Pb	Monthly
	DG Emissions	SO ₂ , NO _x , CO, Hydrocarbons	Periodic
	Noise	L _{eq} L _{dn} , L _n	Monthly/Quarterly
	Water	Physical characteristics, TDS, Ca, Mg, Cl, B, SO ₄ , F, NO ₃ , Na, K, C ₆ H ₅ OH, CN, Cd, As, Cu, Pb, Mn, Fe, Cr ⁺⁶ , Se, Zn, Al, Hg, Pesticides, E-coli, Total Coliform	Periodic
Drilling	Ambient Air	SPM, RPM, SO ₂ , NO _x , CO	Once
	Noise	L _{eq} L _{dn} , L _n	Once
	Soil	Physical characteristics, P, K, Mg, Na, Cl, SO ₄ , C, Al, Fe, Mn, Zn, B.	Pre and post Drilling
	Water	Physical characteristics, TDS, Ca, Mg, Cl, B, SO ₄ , F, NO ₃ , Na, K, C ₆ H ₅ OH, CN, Cd, As, Cu, Pb, Mn, Fe, Cr ⁺⁶ , Se, Zn, Al, Hg, Pesticides, E-coli, Total Coliform	Pre and post Drilling

IFC and ESIA Action Items

Nil

Recommendations for Improvement:

- Monitoring reports should include legislative, Project specific, and IFC limits for each parameter.

3.5 RECLAMATION, REVEGETATION, AND TOPSOIL MANAGEMENT

Project Strategy:

The Project EIA and EMP define general measures to prevent and mitigate the impacts on soil resources. Potential impacts of concern include reduction of topsoil fertility and increased erosion due to surface disturbance, vegetation removal, and inadequate reclamation. CEIL is committed to implement actions for the protection and preservation of topsoil in the RoU along the pipeline and at WPs. Preserved topsoil should then be used during reclamation. Erosion minimization through temporary and permanent erosion control measures in disturbed areas is also part of the Project strategies. Revegetation and the development of greenbelt areas around permanent facilities (e.g. the WPs and along roads) are other Project commitments. As per EIA outline, a minimum 10 m wide greenbelt will be planted around the Project facilities.

Reinstatement and top soil management will be done with due regard for local development plans and compatible with the surrounding land use. Restoration will be carried out so that the site will be returned to near original conditions. As part of the reinstatement process, the Project recognizes the importance of the correct management and preservation of topsoil during construction activities. Topsoil stripped during site clearance should be properly stored to preserve its physico-chemical characteristics and to avoid loss due to erosion.

The Project recognizes the particular value of vegetation in the arid climate of the region and has made a strong commitment for the revegetation and the development of greenbelts around permanent facilities. In the construction phase, particular care will be taken to minimize flora disturbance and tree cutting and the project proposed the development and maintenance of a nursery to facilitate the revegetation process. The greenbelt programme and revegetation activities should be concomitant with site clearing activities and, as per Project commitments, the number of trees replanted should be at least twice the number of the trees cut during site preparation activities. Furthermore, the greenbelt extension should be no less than 25% of the total area covered by the permanent facility.

Observations:

Soil assessment studies of the Bhagyam area have been carried out indicating that soil is characterized by low fertility and productivity. Therefore, top soil preservation and conservation is not a critical issue in the area. However, the Project is committed to implement any measures to conserve top soil in those areas where evidences indicate its presence.

The Project has outlined an overall approach to greenbelt development identifying the number and types of species that will be used that best suit the Project area arid environment (21% of the selected species) and have some aesthetic values but with medium water requirements (46%). In addition, the Project has already determined the total number of trees and shrubs it will plant at each WP. The beginning of plantation at each site will strictly depend on the construction completion and the favorable monsoon season. The greenbelt program also consists of planting along the access roads that, according to the Project, will likely take place through partnership with local communities. The Project should start developing a detailed strategy on access road planting, identifying the number of trees/shrubs to be planted, identify local partners, and define overall roles and responsibilities.

To date no tree has been cut during the clearing of the WPs at the Bhagyam field. Some tree cutting will likely occur during the in-field pipeline corridors with records carefully taken by the Project.

IFC and ESIA/EMP Policy Action Items

- M2.1 The Project should start developing a detailed strategy on access road planting, identifying the number of trees/shrubs to be planted, identify local partners, and define overall roles and responsibilities.

ESIA/EMP Actions Items

Nil

Recommendations for Improvement:

Nil

3.6 WASTE MANAGEMENT

Project Strategy:

According to the Project EIA and EMP:

- “The solid wastes such as paints, lubricants, oil diesel containers or any other non-biodegradable wastes that have leaching characteristics will be disposed at landfill site proposed to be constructed near Mangala terminal”;
- “A waste management plan will be prepared before the commissioning of activity.....”;
- “The waste, such as sanitary wastes will be treated in a septic tanks followed by soak pits of appropriate size and technology”;
- “Use of municipal or external wastewater/sewage treatment facility shall only be considered as last option”;
- “Workshop areas for the maintenance of vehicles, drilling rigs, DG set locations and fuel storage areas would be surrounded by drains.....”;
- “All oil handling and storage areas will be provided with concrete paving and secondary containment”; and
- “A Central Waste Accumulation (CWA) area shall be demarcated and all the non-perishable segregated wastes shall be accumulated.....”.

A general Waste Management Plan (WMP) has been developed at the corporate level, by CEIL. This plan includes minimum requirements for the management of hazardous and non-hazardous wastes generated during the construction phase at CEIL operations. A Waste Management Procedure, developed for other CEIL projects, providing general requirements for the waste identification, segregation and storage, record keeping, and final disposal at all project construction areas is available. A general action plan with activities, waste generation locations, actions to be undertaken and responsibilities/accountabilities for final disposal are included in the document as well as an example of a waste disposal register. According to the procedure, Project sub-contractors are required to develop and implement specific waste management programs that include the proper identification, classification, temporary storage, and final disposal strategies. A waste management strategy with segregation at source of the different types of wastes will be implemented at all Project locations. According to the plan, the collected materials will be transferred to a central waste collection yard and all recyclable items will be sent to authorized/licensed waste handlers. The use of a common integrated engineered landfill and incinerator, located within the MPT boundaries, for the disposal of hazardous waste is foreseen.

Observation:

CEIL and IOTL have developed a comprehensive waste management plan, consistent with Project requirements, and is carrying out adequate implementation in the field. The plan calls for segregation of recyclable waste at the source and CWA area. As observed in the field the Project has provided each working areas with separate waste bins and has constructed a CWA area in the IOTL field cement batching site. As reported by IOTL field personnel, waste streams are registered through a waste tracking sheet and all recyclable waste (e.g. paper, plastic) is regularly picked up twice per week by a licensed recycler. CEIL had conducted an audit of the recycling enterprise (M/s Friends Suppliers located in Barmer) on August 20th, 2010 and found that its facilities and operations are in line with Project and IFC standards. Food waste is reported to be processed at the composting facility located at the MPT while oil contaminated materials (e.g. rags, PPE), although small in quantities, are reported to be sent to an authorized disposal facility. However, given the newly commissioning of an incinerator at the MPT and the imminent completion of a hazardous material cell at the MPT landfill, the Project should segregate all contaminated material, incinerate it, and dispose it in compliance to the waste management plan, applicable regulatory requirement, and IFC standards, including the use of the MPT landfill and incinerator facility, as required for hazardous waste disposal

Each WP and field office area is provided with portable toilets that empty to septic tanks. According to IOTL field representative, provisions are in place to empty the tanks when full and the contents disposed of at the Balotra treatment facility. However, given the small quantities of wastewater expected to collect at all portable toilet facilities, the Project should process this wastewater through the two Sewage Treatment Plants located at the MPT.

ESA/EMP and IFC Policy Action Items

- M2.2 The Project should segregate all contaminated material, and manage and dispose it as per the approved waste management plan and in compliance to applicable regulations and IFC standards.

ESIA/EMP Action Items

- M2.3 The Project should process portable toilets wastewater through the two Sewage Treatment Plants located at the MPT.

Recommendations for Improvement:

Nil

3.7 HAZARDOUS MATERIALS MANAGEMENT AND POLLUTION PREVENTION

Project Strategy:

The Project strategy for the management of hazardous materials is outlined in the relevant EIA and EMP as follows:

- “Workshop areas for the maintenance of vehicles, drilling rigs, DG set locations and fuel storage areas would be surrounded by drains.....”;
- “All oil handling and storage areas will be provided with concrete paving and secondary containment”;
- “Material Safety Data Sheets (MSDS) have to be maintained for all hazardous chemicals and the storage and handling points”; and
- “All hazardous material storage areas, fuels storage areas, DG set installations shall be paved with bermes and collection pit for spills and contaminated run-off. These facilities will be within a dedicated enclosure with roofing and side cladding to prevent rain water ingress. Closed storage areas will be well lit with adequate ventilation.....”.

Observations:

IOTL has finalized its hazardous chemical handling, storage and disposal plan that have been approved by CEIL. IOTL has constructed a proper central storage area for hazardous material at its cement batch plant site. The area is paved, bermed and provided with a roof cover. Diesel drums are kept in a locked brick storage room. However, this storage place is not provided with sufficient ventilation and a way (e.g. raised bricks by the door entrance) to prevent potential spills to impact the surrounding soil. All Diesel Generators (DG) observed to have secondary containment as they were placed on concrete skids provided with berms. MSDS are present at all site visited and are posted/available near hazardous material storage areas.

IFC and ESIA/EMP Compliance Action Items

- M2.4 The diesel storage area should be provided with adequate ventilation and a way (e.g. raised bricks by the door entrance) to prevent potential spills to impact the surrounding soil

ESIA/EMP Action Items

Nil

Recommendations for Improvement:

Nil

4 HEALTH AND SAFETY

4.1 HEALTH AND SAFETY MANAGEMENT AND OCCUPATIONAL HEALTH

Project Strategy:

CEIL has adopted a Corporate Responsibility Management System that incorporates health, safety, environment, security and corporate social responsibility. The system includes well defined performance standards, procedures and guidelines, and key performance indicators (e.g. lost time incidents, total recordable incidents etc.), which are used to track compliance with annual HS targets.

Observations:

CEIL has fully adapted available health and safety plans to the specific Project. In addition, IOTL has developed its own EHS plan, job safety analysis and work tasks risk evaluation, and specific SOPs that have been approved by CEIL.

EHS inductions and training of all work force is well implemented throughout the Project and all employees are undergoing medical and security screening at the time of hiring. Medical screening covers all contractor and subcontractors employees and workers and include records of the general medical history, specific exams (e.g. CBC, ESR and blood group tests, complete lipid profile, urine analysis, ECG, chest X-rays, eye exam, etc.). It should be noted that this medical test is not mandated by the local legislation but is a CEIL requirement. Although only about 360 people are currently working in the Project, over 1,250 people have received basic EHS training upon employment and continue to receive regular training as outlined by the Project comprehensive training schedule. Furthermore, over 260 personnel received task specific training (e.g. environmental awareness, working at heights, rigging, confined space, etc.) and employees involved in specialist jobs undergo competency tests. Site supervisors are reported to conduct regular toolbox meetings and EHS awareness shows (Road Show), using pictures and examples, have been delivered by CEIL at various work sites. Near misses are reported regularly as part of the daily EHS activities.

CEIL is also conducting regular site audits and inspections. So far CEIL has conducted six internal audits and one corporate audit. As reported by field personnel, CEIL also conducts monthly audits at selected sites and generates the relative reports. Weekly site inspections are carried out by CEIL supervisors and reports, where open and resolved issues are described. Specific equipment inspections are also carried out on a regular basis with over 390 plants and equipment already checked. Each site where open issues and/or faulty equipment were found is responsible for taking action for closing the issues. Scaffolding and shuttering are erected under CEIL supervision and a tagging system implemented to ensure safety. Specific plans for heavy materials lifting and loading/unloading have been introduced and only competent riggers are used for critical lifting operations.

Required PPE has been observed to be fully implemented at all work sites. Special equipment (e.g. blasting hoods, half masks for spray painting, etc.) have been procured and used in the field. Housekeeping has been observed to be generally good at all visited sites. EHS warning signs have been observed to be posted near critical area throughout the Project. Portable toilets have been placed at all WPs where work is on-going and at all field office sites.

First aid rooms have been set up at both CEIL and IOTL field office sites. At CEIL field camp one paramedic is available daily (from 8 am to 8 pm) along with an ambulance and its driver. The first aid medical supply at this site is sufficient to cover the number of personnel on site. IOTL first aid room is well stocked with medical supplies and is attended by two paramedics ensuring 24 hours coverage. The site also has a dedicated ambulance with two dedicated drivers (one per shift). Also, IOTL has an emergency vehicle just outside any WP where workers are present. Well stocked first aid kits have been observed at all visited sites and, according to field management, about 36 site supervisors have received training in first aid intervention by the local paramedic personnel. No major incidents have been reported since the start of the Project.

HS drills (e.g. evacuation, rescue from cellar pit, heat stroke) have been conducted at work sites while a drill with the participation of local authorities (e.g. hospitals, fire fighting, etc.) is planned for the future.

At the IOTL batching plant few dozens cement bags, used for minor cement work at the WPs, are stored in a locked trailer with insufficient ventilation and significant cement dust covering the floor area. Cement

bags should be stored in a well ventilated area that is kept clean and free of any cement dust on the floor and walls to prevent cement particle inhalation by personnel moving the bags in and out of storage.

IFC Policy Action Items

M2.5 Cement bag trailer should provided with adequate ventilation and its floor kept clean of any cement dust

ESIA/EMP Plan Action Items

Nil

Recommendations for Improvement:

- a. CEIL should consider keeping a master log of all EHS issues found during audits and inspection to help determine trends and keep track of the time needed to close each issue;
- b. CEIL should plan to conduct in the near future at least one EHS drill with the participation of local authorities.

5 SOCIAL ISSUES

5.1 SOCIAL MANAGEMENT

Project Strategy:

The social aspects of the Project are managed by Cairn Corporate Social Responsibility (CSR) department. CSR is part of the general Cairn Corporate Responsibility Management Plan that also includes Environment, Health and Safety and Security.

The CSR staff who deals with the Upstream project, including the Bhagyam and the Aishwariya fields comprises of a CSR manager, based in Gurgaon, and two field officers, one of them a woman, based in Barmer. In the frame of CSR activities, several NGOs have been carrying out a number of community development projects (see §5.2).

In 2008, a Corporate Social Responsibility Policy, a framework Public Consultation and Disclosure Plan (PCDP) and a framework Land Acquisition and Compensation Plan (LACP) were issued by CEIL followed by more specific PCDP and LACP for the Rajasthan Block project. A Rapid Environmental Impact Assessment (REIA) for the Bhagyam field was published in November 2007. The REIA assesses as insignificant or minimal the nuisances and negative impacts on neighboring communities and evaluate as positive the impact on employment and overall socio-economic development in the area. However, no monitoring system is recommended to follow up the social impacts of the Project. The REIA presents the proceedings of the Public Hearing held in Barmer on October 10th, 2007. The concerns expressed during the meeting were associated to potential pollution, land acquisition; sources of water supplied by local distributors and expected socio-economic development programs. The concerns and expectations raised during the meeting were addressed in the last version of the REIA as relevant.

Observations:

The CEIL organization of CSR is evolving but it is not yet finalized. According to the Project, the number of CSR field officers for the Rajasthan operations should increase by four plus one manager for the Enterprise Center based in Barmer. Therefore, ECMG recommends expediting the recruitment of the officers, as the field staff of two is insufficient to follow the ongoing activities relative to the Rajasthan block Project plus the new construction operations of the Bhagyam-Aishwariya Project.

CEIL is preparing a comprehensive Community Development Framework for the Mangala Development Pipeline Project. The framework should make reference to the specifics of stakeholder engagement and development activities for the Bhagyam-Aishwariya project (see § 5.2).

IFC Policy Action Items

M1.10 Provide sufficient management sponsorship and human and financial resources on an ongoing basis to achieve effective and continuous social performance.

Recommendations for Improvement:

- a. CEIL should expedite the recruitment of the CSR field staff.

5.2 STAKEHOLDERS ENGAGEMENT

Project Strategy:

Public Consultation and Communication

The communication program for the Bhagyam and Aishwariya fields is implemented in the frame of the PCDP for the Rajasthan operations (Upstream project). A specific PCDP for the Bhagyam-Aishwariya project has been prepared.

Since 2003, CEIL has been interacting with the District administration officials in the frame of the land acquisition process and to plan and implement socio-economic development measures on a long term basis. The possible synergy and convergence of the public programs with CEIL interventions are discussed in the

Barmer Development Forum, chaired by the District Collector and Magistrate, and including representation from the other departments of the district administration (education, health, forest, etc.).

The interactions with the communities are carried out by three different teams, with different tasks: the CSR team, dealing mainly with development programs; the land team, managing the land acquisition activities; and the recently formed "Stakeholder Engagement" team. The Stakeholders Engagement (or Stakeholder Relationship, SR) team, according to CEIL documents², coordinate with CSR, land and security teams in order to manage stakeholders. The Head of the SR gives overall direction to the consultation process and guide the teams in the implementation of the PCDP.

Recently, the CSR communication team developed an animated video on gas pipeline security that was shown to communities and school children with dedicated shows to women, are planned. Skit plays, quiz competition, and puppet show are used in the health awareness shows (see also below, Development Programs).

Observations:

The Bhagyam PCDP presented to the ECMG is adequate and consistent with the Rajasthan Framework PCDP. However the Bhagyam PCDP does not include the paragraph on Response (reference to § 3.5.1 of Rajasthan Framework PCDP) specifying the lapse of time (30 days) for responding to queries and complaints. Furthermore, in § 5.3 (Grievance Redress Mechanism) the Bhagyam PCDP does not mention the maximum delay of 15 days for acknowledging a grievance. CEIL should amend the Bhagyam PCDP and disclose and communicate it in an adapted way to local stakeholders and contractors.

The Bhagyam PCDP includes the presentation of the newly formed Stakeholders Relationship team. The SR team is composed by former police officers, very knowledgeable of the region, who interacts with the population in case of possible conflicts, as experienced in the past (e.g. road blocks, threats to project's staff, thefts of project's properties, etc.). According to project's staff and the SR team itself, the intervention of the SR team is limited to react in case problems arise by keeping a dialogue approach, using the experience of the team members, and to ensure the respect of the laws in the framework of the company's policies (including the PCDP). The team's tasks are in fact midway between communication with stakeholders (both authorities and communities) and security. It is one of the responses of the project to the difficulties encountered in managing stakeholders in some areas. The ECMG teams meet the SR team and visited some villages with them. According to ECMG observations, the SR team appears to have a sufficiently good relationship with the communities interviewed by the ECMG team, as no sign of particular distress or conflict was noticed during fieldwork.

ECMG acknowledge CEIL preoccupations on security and smooth operations, but strongly recommend that the focus be maintained on dialogue and collaboration, avoiding any intimidation. The three teams interacting with communities (CSR, Land, SR) should complement one another, work in coordination, and transmit consistent messages with a common approach. The subordination of CSR team to the SR head should not mean a prevalence of the security concerns on social responsibility.

ECMG noticed that some of the farmers' houses are quite near to working sites (see also § 5.4). Therefore, direct interactions between contractors and the surrounding population are likely to be frequent during construction. Some misunderstanding between farmers and contractors was noticed during fieldwork (e.g. land leased out by a farmer to a contractor to be used as a deposit for construction materials). Contractors should be briefed and be familiar with CEIL's policies and approach methodologies in engaging with local communities and affected parties. During construction, a contractor's liaison officer, knowledgeable of CEIL policies and engagement procedures, should be available onsite at all times to offer an initial immediate feedback to any complaint or query arising from local people. All interactions with local stakeholders should be recorded and complaints and grievances should be logged.

ECMG consider the animated video on gas pipeline safety a very relevant and opportune initiative realized with a style adapted to the public. The same can be said of the skit plays used for health awareness. Such communication tools should be utilized more often by the Project. ECMG strongly recommend an evaluation of the effectiveness of the tools; make improvements if necessary, and ensure a timely production and dissemination of this kind of tools for other aspects of the Project such as construction hazards, HS, and HIV/AIDS prevention.

² See Bhagyam PCDP, §3.2.

Development Programs

The CSR programs for the Bhagyam and Aishwariya fields are part of the general Community Development program for the Rajasthan operations (Upstream project). From the beginning of its presence in Rajasthan, CEIL has been supporting various development initiatives either directly and/or in collaboration with local NGOs. Also, public investments are sponsored by CEIL following the request of local authorities and communities affected by land acquisition.

Since 2007 CEIL has also been supporting an Enterprise Centre (EC) in partnership with IFC and implemented by the International Centre for Entrepreneurship and Career Development (ICECD), which provides technical assistance and training. The EC organizes training for micro and small enterprise development (2,452³ trainees linked to contractors or business opportunities) and local vendor development (around 200 registered) including website preparation. A specific program has been developed for rural women in affected villages, engaging them in home-based handicraft, linked to market through textile contractors and key exporters (1,526 women linked to contractors). Organization of women in Self Help Groups (around 400 women involved) and entrepreneurship development training for women is also supported. A training program in agriculture has involved farmers to grow new cash crops. In the last months, the EC team has focused its intervention on capacity building of local Non Governmental Organizations (NGOs) through training of trainers program (21 organizations in course of training). The objective is to transfer skills and make them able to manage the training programs at medium term. In fact, the joint funding IFC-Cairn will come to an end in December 2010. The future scope and organization of the EC is still in discussion.

Projects related to health and education are implemented in collaboration with NGOs and the relevant local government. In the Bhagyam area, a number of programs related to health are being carried out: health camps, which offer free of charge diagnostic health care and medicines, chaired by specialized doctors in the area of pediatrics, gynecology, orthopedic, ophthalmology and others; a mobile health van program, which includes a doctor, a pharmacist and a social worker, who visit 14 villages once a week (926 camps organized and 23,787 patients treated since September 2009); and an awareness program on malaria using magic shows, skit plays, quiz competitions and puppet shows. CEIL CSR also finances health awareness IEC material and organizes sponsorship of special events and continue medical education workshops for Barmer doctors in collaboration with government programs and relevant institutions. Of particular notice is the collaboration with UNICEF for the health and education programs, with some schemes replicated by UNICEF in other areas.

With respect to education, the focus is on improving the quality by motivating teachers and students through: school infrastructure renovation; reading rooms (25 schools, 4 in Bhagyam); and English relay training (10 schools). The theatre in education (TiE) program ended its first phase but will be continued. A TiE handbook for teachers has been prepared.

The overall strategy for the Community Development program of the project is in course of finalization. As far as the Upstream project is concerned, the strategy will reportedly focus on the revised role of the EC and the collaboration with the Government programs and ITI (Information Technology Institute, also based in Barmer).

Observations:

The ECMG team could visit some of the villages where socio-economic development initiatives are ongoing, and had a positive feedback on these activities. There was evidence of participation and appreciation for the health and education programs. Women participating in the income generation program carried out by the EC are enjoying some benefits from their activities. However, expectations are high and the perception in communities is that most benefits from compensation, employment, and contracts go to the land losers. Overall, communities met evaluate positively the presence of CEIL activities for the development of the area and appreciate Project's infrastructure development like the access roads that can be also used by locals.

ECMG review of the documentation of the programs (progress reports) found encouraging results notwithstanding difficulties such as the low literacy and cultural constraints and difficult transportation.

³ These figures are relative to the entire Upstream project area.

Particularly interesting are the case studies (e.g. the effectiveness of TiE in improving students' performance).

ECMG team had the opportunity of discussing the preparation of the Community Development Framework with the Project's staff and the consultant assigned to the task. The ECMG stressed the importance of taking into explicit consideration IFC's requirements and of developing a comprehensive, consistent, and user-friendly monitoring and evaluation (M&E) system, including reporting. The M&E system should be: (i) participatory, therefore involving beneficiaries; and (ii) using both quantitative and qualitative indicators (including cases studies).

<i>IFC Policy Action Items</i>

<i>IFC and ESIA/EMP Actions Items</i>

- | | |
|-------|--|
| M1.12 | Contractors should establish a liaison person for community interactions and grievances at each campsite. This person should speak the local languages and be introduced to communities, authorities and land-losers. All interactions should be recorded. Contractors should be briefed on CEIL's policies and approach (Modified) |
| M1.13 | Keep tabulated records of all community interactions and prepare a progress report (quarterly or monthly during construction phase) |
| M1.14 | Establish regular information meetings including information on project's progress, grievance procedure and liaison persons in charge, employment and business opportunities, with time and number limits, and HSE awareness (Modified) |
| M1.15 | Prepare a Community Development Plan for the Bhagyam-Aishwariya project in the frame of the general Community Development Framework (Modified) . |

Recommendations for Improvement:

- a. Amend the PCDP as suggested and disclose it to contractors and other stakeholders;
- b. Develop visual and theatrical tools for public awareness on other aspects of the project (construction H&S);
- c. Identify vulnerable Project Affected Person and prioritize them for employment and other economic activities; and
- d. In the preparation of the Community Development Framework, consider:
 - taking into explicit consideration IFC compliance standards and requirements; and
 - developing a comprehensive, consistent and user-friendly M&E system, including reporting. The M&E system should be (i) participatory, that is involving beneficiaries; and (ii) using both quantitative and qualitative indicators (including cases studies).

5.3 LAND ACQUISITION

Project Strategy:

According to the REIA, the Bhagyam Project will develop 15 WPs and related flow lines to and from the MPT. The land requirement for each WP is about 4.4 ha, for a total of about 66 ha, spread over several land parcels in Bhagyam field area. The land required for the infield pipelines will consist of a 30 m wide corridor running about 40 km to the MPT. The land is permanently acquired in accordance with the Land Acquisition Act. Crop and land compensation is paid as determined by the revenue officials and the land will be reinstated to its original condition once the pipeline is laid. According to the REIA, the locations of

the proposed WPs are away from settlements and at a safe distance from public utilities. No resettlement or displacement of people is expected.

The National Land Acquisition Act procedure has been used for the acquisition of the land needed for all the Upstream Projects, as detailed in the Rajasthan LACP. The Government of Rajasthan has nominated the nodal official, namely the Land Acquisition Officer (LAO) based in Barmer to ensure that all due processes as required under the law is carried out for the proposed land acquisition.. The price for land is determined by the Land Acquisition Officer (LAO) according to Government parameters, which CEIL increased substantially. According to local authorities and CEIL staff, the sums given for compensations have been generally much higher than market value and no construction was started before compensation for the land was paid.

For the Rajasthan Project, a Grievances Redress Committee (GRC) has been formed that includes representatives of the local administration, CEIL, and the LAO. A log of grievances is kept by LAO and Cairn. Land-losers are classified by importance of land surface taken by the Project with minor contracts and employment offered accordingly.

A complete census of all land-losers (including the Bhagyam-Aishwariya project) has been completed. A progress report on Land Acquisition, Land Purchase, and RoU Acquisition dated August 2010 has been presented to the ECMG.

Observations:

According to the Project, land acquisition operations have been completed and land-losers (LL) met by the ECMG team did not raise any major issue. However, expectation for employment and contracts for LL is very high. CEIL should carefully evaluate the actual employment and contracts opportunities and adequately inform LL on issues related to employment, contracts, and small business opportunities with the Project.

The EC team is trying to find possible alternatives for local employment and income generation. Following past experiences, CEIL should avoid training local people without a clear outcome.

As recommended in the past, vulnerable households among land losers should be identified to prioritize them in employment opportunities and target them for specific economic development activities.

A LACP specific for the Bhagyam-Aishwariya project should also be prepared and communicated to all stakeholders. In addition, CEIL should brief LAO and staff on LACP/PCDP and IFC PSs and maintain a copy in the local language at each location office

The report on land and RoU acquisition presented to ECMG describes the procedures followed to acquire and purchase the land for the project. The report gives details on the size of land acquired (by the different project phases) and the number of villages and land owners affected. It also includes a "Challenges" paragraph and an "Observations" paragraph that present the lessons learned during the process. The report is an improvement in comparison to the non-commented database supplied before, however the ECMG have the following remarks:

- The synthetic table presented in § 4.6, should also show the total of land owners affected by the land acquisition for the project (in fact the details given in historical order - per project phase - do not account for possible double count). The same number should also be given for land purchased in the Midstream project (§ 8.1);
- The number of grievances received to date from the land owners (pending and closed), including a review on main issues, should also be included; and
- The paragraphs on lessons learned are very interesting. However, some more information on problems encountered, complaints received and how the project dealt/is dealing with them would be useful.

IFC Policy Action Items

M1.16 Prepare an Acquisition and Compensation Plan (LACP) for the Bhagyam-Aishwariya project. Brief LAO and staff on LACP/PCDP and IFC PSs and maintain a copy in the local languages, at each local office.

M1.17 Brief LAO and staff on LACP/PCDP and IFC PSs and maintain a copy in the local languages, at each local office

ESIA Action Item

Nil

Recommendations for Improvement:

- a. Develop more appropriate criteria to identify vulnerable households among land-losers and prioritize them for employment and contracts award.

5.4 COMMUNITY HEALTH, SAFETY AND SECURITY*Project Strategy:*

The EHS system is expected to prevent and minimize air and water pollution, noise, and risks of accidents (see Section 2 and 4). A community health awareness program on malaria and a health and safety awareness program specific to gas pipeline are implemented in the frame of CSR activities in Rajasthan (see § 5.2).

Observations:

According to ECMG observations, the construction fields for the WPs and the roads are in some cases very close to small settlements (dhani). The Project should look for feedback from the affected communities on a regular basis to minimize nuisances and should develop mitigation measures as needed. All construction sites should have a liaison officer to directly deal with the local population on construction related issues (see also § 5.2). Dust is likely to be the major problem. From past experience in the Rajasthan block Project, CEIL should also seek a solution for light pollution during the night (see also REIA 4.5.6.2). In addition, similar to the MPT construction phase, the construction phase creates favourable conditions for the introduction of toilets in dhanis as construction activities disrupt people's (and especially women's) habits.

As mentioned in the previous report, an awareness campaign to avoid HIV-AIDS and other sexually transmitted diseases for both the external workers and the communities is needed. ECMG strongly recommend starting such a campaign as soon as possible.

An awareness campaign should also be implemented regarding the presence of vehicles and machinery and other relevant safety issues. The campaign should have children as a priority target. The campaign could use tools like those developed for the gas pipeline safety and malaria awareness campaign (see also § 5.2).

IFC Policy Action Items

M1.18 Include awareness programs on H&S, environment and HIV-AIDS (IFC PS 4).

M1.19 Use school programs to build construction safety awareness amongst children.

Recommendations for Improvement:

- a. Develop and present a video on H&S issues relative to the construction works as the one developed for the gas pipeline; and

- b. Consider the launch of a toilet program in dhans around construction sites.

5.5 LABOR AND WORKING CONDITIONS

Project Strategy:

Cairn has a human resources policy, which is in compliance with Indian law, core International Labor Organization conventions, and IFC PS 2. The Human Resources (HR) policy and procedures are documented in various ways throughout the organization and are available on the Cairn portal. Any new policy, directive, and/or procedure is communicated to all employees through individual emails and announced on the Cairn intranet portal.

During construction, the works will be assigned to contractors who have an agreement with CEIL to recruit the majority of the local workforce, for unskilled tasks, from local communities if available. In addition, the contractor is bound to make the best efforts to source skilled workers preferably from the Rajasthan state. Among local candidates, members of land-losers families will be prioritized. Wages for unskilled workers are calculated on the basis of national minimum wages. Wages will be given each month in the presence of a CEIL administrative person.

The contractors have also to comply with Cairn guidelines for workers' accommodation.

Observations:

Works have started in Bhagyam field while are only about to begin in the Aishwariya field and currently the number of workers is quite limited (about 280 people). About 50 skilled and semi-skilled workers are accommodated in four rented houses in Barmer. The quality of the accommodation appears satisfactory.

A grievance mechanism for workers should be set up, similar to the one implemented by L&T at the MPT, and workers' grievances should be recorded. Also, a log of local workers according to provenance and land-loser status should be kept as was previously done at the MPT. Minimum wages should be displayed on site and in local language. Following past experience, CEIL should monitor that the procedures for recruitment of land-losers and local workers are transparent as well as the criteria for wages.

IFC Policy Action Items

- | | |
|-------|---|
| M1.20 | Brief contractors and workers on IFC PS 2 (modified). Brief local workers, in their own language, on employment conditions and their rights. Display wages on site in local language |
| M1.21 | Brief local workers, in their own language, on employment conditions and their rights. Display wages on site in local language |
| M1.22 | Develop a transparent procedure for recruitment of land-losers and local workers and transparent communication on criteria for wages. |
| M1.23 | Ensure adequate grievance procedure for workers and keep record of grievances. |

ESIA Action Items

Nil

Recommendations for Improvement:

- a. Keep records of local workers according to provenance and land-loser status.

ANNEX A

**TRIP SUMMARY- 2ND MISSION BY D'APPOLONIA FOR
THE BHAGYAM AND AISHWARIYA FIELD DEVELOPMENT
PROJECT, OCTOBER 2010**

For the second mission, three EHS team members and one Social specialist visited the Bhagyam and Aishwariya Project, and associated facilities. The Project is currently in the construction phase.

Field:

October 2 – Barmer: The EHS and Social team travel to Barmer.

October 3 – Barmer: The EHS team held a kick off meeting at CEIL field office. In the afternoon the EHS team visited the IOTL cement batch plant and field offices area and WPs 1, 12, and 15 all located in the Bhagyam field. The social team met the CSR and land team in CEIL office. Subsequently the social team attended a malaria awareness event in Bothia, where a meeting with land losers was also held. In addition, the social team visited a land loser's household in Bhadka and had a community meeting in the village.

October 4 – Barmer: The EHS team visited WPs 2, 7, and 9 in the Aishwariya field and four rented houses for IOTL personnel. The social team had a meeting at EC with the implementing NGO (ICECD) and with the Stakeholders Relations team. Subsequently the social team visited the Kawas Upper Primary School and has a meeting in Madpura village with a self help women's group and a lady who set up a micro enterprise (shop). In the afternoon, an informal close out meeting for the Bhagyam and Aishwariya Project was held at MPT.

October 5 – The EHS and Social team traveled to Delhi

Gurgaon:

October 6 – Gurgaon: The EHS team reviewed available documents collected in the field, held meeting with key CEIL EHS management personnel. The social team had a meeting in Cairn office with the CSR and Communication department and attended a presentation related to the Community Development Framework document preparation and video productions.

October 7 – Gurgaon: The EHS team reviewed available documents collected in the field, held meeting with key CEIL EHS management personnel. The social team had a meeting with the Land Acquisition GM, reviewed available documents collected in the field and prepared the close out meeting.

October 8 – Gurgaon: In the afternoon, a close out presentation was held by the ECMG at Cairn offices with the participation of Cairn management and high level staff.

October 9 – Gurgaon: The team departed from New Delhi.