

IN THE SUPREME COURT OF BELIZE, A.D. 2008

CLAIM NO. 302 OF 2007

BETWEEN:

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| BELIZE INSTITUTE FOR ENVIRONMENTAL LAW AND POLICY (“BELPO”), acting on behalf of people and communities downstream of said projects | Applicant |
| AND | |
| CHIEF ENVIRONMENTAL OFFICER DEPARTMENT OF THE ENVIRONMENT (Ministry of Natural Resources and the Environment) | First Respondent |
| ATTORNEY GENERAL OF BELIZE | Second Respondent |
| DIRECTOR OF HEALTH SERVICES (Ministry of Health) | Interested Party |
| NATIONAL EMERGENCY MANAGEMENT ORGANIZATION (NEMO) Ministry Responsible for National Emergency Management | Interested Party |
| NATIONAL METEOROLOGICAL SERVICE (Ministry of Natural Resources and the Environment) | Interested Party |
| BELIZE ELECTRIC COMPANY LIMITED | Interested Party |

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BEFORE the Honourable Abdulai Conteh, Chief Justice.

Ms. Candy Gonzalez for claimant.

Ms. Pricilla Banner, together with Mrs. Andrea McSweeney McKoy, for the defendants and the 1st, 2nd and 3rd Interested Parties.

Mr. Michael Young S.C. for the 4th Interested Party.

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JUDGMENT

Introduction

This case concerns the interpretation, application and enforcement of an Environmental Compliance Plan (ECP) concluded between the

Department of the Environment (the DOE) as represented by the Chief Environmental Officer and the developer of the project. The DOE and its Chief Environmental Officer are the first defendants in this case. The Belize Electricity Company Ltd. (BECOL), is the developer of the project in question and the fourth interested party in these proceedings. The second defendant, the Attorney General of Belize, is joined in a representative capacity. There are as well three other interested parties, namely, the Director of Health Services (Ministry of Health); National Emergency Management Organization (NEMO), in the Ministry responsible for National Emergency Management.

The claimant is the Belize Institute for Environmental Law and Policy (BELPO) and it says it is acting on behalf of the people and communities downstream of the said project. BELPO was incorporated on 18th December 1995 as a not-for-profit organization under The Companies Act. It seeks to protect the environment in its totality, including air, water, soil, flora and fauna and human environment, through the law. It says in its written submissions in these proceedings that it has, among other things, initiated and or engaged in and contributed to activities related to the awareness of the environment, health and safety implications resulting from the construction of hydro dams on the Macal River. BELPO is also a member of Belize Alliance of Conservation NGOs (BACONGO) and represented the latter on the National Environmental Appraisal Committee (NEAC) as one of two NGOs on that body, until its recent exclusion therefrom. This latter body has, as part of its remit, the scrutiny and approval of Environmental Impact Assessment (EIA) submitted by developers in respect of projects that would significantly affect the environment.

The Project

2. The Macal River itself begins in the north-western part of the Maya Mountains in the west of Belize where it joins the Raspaculo River and flows through narrow valleys to join the Mopan River. The two rivers form the Belize River just north of the twin towns of San Ignacio and Santa Elena in the Cayo District. The people who live on lands surrounding the Macal River depend largely on the river for drinking water, fishing, recreation and employment.

This river, the Macal, presently supports two hydro-electric dams: The first is the Mollejon Dam, which was constructed in 1995. However, this dam is what is called in the industry a run-of-the river dam. That is to say, instead of a reservoir, it depends on the kinetic energy of a natural free-flowing water to produce electricity. The Macal River, however, like most rivers in Belize, is not at full flow during the dry season. This, not unnaturally, presented problems for the generation of electricity. In order to overcome this handicap, the second dam on the Macal River was conceived and born. Its formal appellation is the Macal River Upstream Storage Facility (MRUSF). It is however known as the Chalillo Dam and is located upstream of the Mollejon Dam on the Macal River.

3. The Chalillo Dam blocks the Macal River with a 150 foot high wall to create a reservoir which impounds waters from the Macal and Raspaculo Rivers. The reservoir itself floods over 2,500 acres in the Chiquibul Forest Reserve and National Park in the Cayo District. The water impounded by the Chalillo Dam is released to help generate electricity at the Mollejon Hydro Station which has an installed capacity of 25.2 KW, and it also powers a new F.3 MW plant at Chalillo itself.

4. There is as well, a third projected dam on the Macal River, the Vaca Hydro Electric Facility. BELPO, the claimant in these proceedings, had sought to bring work on this project to a halt by an injunction from this Court on the grounds that the defendant and the fourth interested party had not fully executed or complied with the provisions of the Environmental Compliance Plan (ECP) for the Chalillo Dam which was concluded on 5th April 2002. But the application for the injunction was refused on the principal ground that the present proceedings were concerned with the ECP for the Chalillo Dam and not with either the EIA or ECP for the Vaca Dam, which was, in the court's view, a separate undertaking distinct from the Chalillo Dam. I gave a written ruling refusing the injunction in respect of the Vaca Dam but granted permission to the claimant to seek judicial review by way of **Mandamus** and **Declarations** to have the first defendant, the Chief Executive Officer of the Department of Environment, carry out the provisions of the Environmental Compliance Plan (ECP) for the Chalillo Dam which was executed between it and BECOL on 5th April 2002. This was an elaborate plan which ensured that the Chalillo Dam will be constructed with due regard to the environmental considerations in consonance with sustainable development. Chalillo has been completed and has been operational since November 2005.

A brief background, I think, will be in place in order to get a proper feel of the matrix of the present proceedings.

5. On 9th November 2001, the NEAC recommended approval of the EIA for the Chalillo Dam contingent on a satisfactory Environmental Compliance Plan (ECP). NEAC was involved in developing the terms and conditions of the ECP for the Chalillo Dam. It was formally concluded on 5th April 2002 between the first defendant and the fourth interested party. (This ECP is at the heart of this case. More on it later).

6. However, soon after the conclusion of the ECP, which, in effect, gave the green light for the construction of the Chalillo Dam, BACONGO launched a judicial challenge against the EIA of the Chalillo Dam project. A battle royal ensued between the proponents of the dam, principally the developer, BECOL, the fourth interested party and the first defendant on the one hand and the protagonists of the dam on the other. The principal theater for this battle was the Courts of Belize. This went up to the Judicial Committee in London where by a bare majority (3 – 2) the Board upheld the judgments of both the trial court and the Court of Appeal in Belize in favour of the EIA.
7. Approval of the EIA for the Chalillo Dam was formally communicated by the first defendant acting through the Chief Environmental Officer (Mr. Ismael Fabro) to the fourth interested party BELCO, on 5th April 2002. The letter informing the decision stated among other things that: “Environmental Clearance has been granted to BELCO for the project”, and that “This Environmental Clearance is granted subsequent to the signing of the Environmental Compliance Plan (ECP) prepared by the Department of the Environment (DOE) on April 5, 2002” and it continued:
- “Kindly be informed that Belize Electricity Company Limited is required to comply with all the terms and conditions incorporated in the Environmental Compliance Plan. Disregard of any of the terms and conditions stipulated in the compliance plan will result in the revocation of Environmental Clearance and/or legal action being taken against Belize Electricity Company Limited.
- No changes or alteration to what has been agreed to in the ECP will be permitted without the written permission of the Department of the Environment.” (Emphasis added).

8. In a sense, these proceedings are BACONGO's fight redux with the Department of the Environment and BECOL except that these proceedings engage and concern the ECP signed between them and not the EIA. Also, though BACONGO is not formally a party to these proceedings, it is however one of the constituent members of BELPO, the claimant in the present proceedings. The claimant's standing in these proceedings has properly, not been challenged. In my view, this cannot be questioned or doubted from the brief description of the claimant in the introduction to this judgment. The claimant I find, pursuant to Order 56.2(1) and (2)(c) and (e) of the Supreme Court Civil Procedure Rules 2005, has adequate and sufficient standing to pursue these proceedings: see in particular **R v Inspectorate of Pollution ex parte Greenpeace Ltd. (No. 2) (1994) 4 All E.R. 329**; and **R v Secretary of State for Foreign and Commonwealth Affairs ex parte World Development Movement (1995) 1 WLR 386** (the Pergau Dam case).
9. The claimant has, in these proceedings, taken issue with **four** aspects of the ECP concluded between the defendant and BECOL, in respect of the construction of the Chalillo Dam. In particular the claimant argues that the defendant has through inaction or neglect, failed to monitor and ensure compliance with the terms of the ECP by BECOL, the fourth interested party.
10. The gravamen of the claimant's case is that the defendant, the Chief Environmental Officer of the Department of the Environment, has failed and or refused to carry out the directives of the ECP for the Chalillo Dam and to have BECOL, the fourth interested party comply with the obligations specified in the ECP.
11. The areas of the ECP the claimant has taken issue with relate to i) Emergency Preparedness Plan in case of a dam break; ii) The Monitoring

of mercury levels in fish in the Macal River; iii) Testing the water quality in the Macal River and iv) Public information and participation relative to the ECP.

12. I must say here that in the context of this case these are not unimportant issues given the fact that the project itself (or rather the Chalillo Dam) is constructed and situated on the Macal River upstream from the village of Cristo Rey and the twin towns of San Ignacio and Santa Elena at not too great a distance from these human habitats.

The Environmental Compliance (ECP) for Chalillo Dam

13. This plan is the backdrop of the claimant's case. It was put in evidence and I have had the benefit of reading it. The ECP itself has its basis in section 20(7) of the Environmental Protection Act (which provides that "a decision by the (DOE) to approve an (EIA) may be subject to conditions which are reasonably required for environmental purposes." Moreover, by Regulation 2 of the Environmental Impact Assessment (Amendment) Regulations 2007 – S.I. No. 24 of 2007, an ECP is defined as meaning "*a legally binding document developed by the Department of the Environment ... consisting of a set of legally binding environmental conditions, guidelines, policies and restrictions, which the developer or his representative agrees to in writing to abide by as conditions for the project approval.*"
14. Therefore, I think, the legal nature and effect of the ECP is not in doubt and I do not get the parties to be in dispute about this. It imports duties and obligations on a developer in respect of the project for which it is granted.

15. The ECP in this case was in fact developed in concert with a working group of NEAC in consultation with BECOL, the developer of Chalillo and the fourth interested party in these proceedings. The ECP was signed on behalf of the DOE and BECOL on 5th April 2002 and it was expressly stated that subject to compliance with it that the DOE granted environmental clearance for the project.
16. However, since the allegations of the claimant under each of the four heads, they have advanced (as briefly stated in para. 11 of this judgment) raises the same contention between the parties, namely, the defendant's failure to carry out their public duty to monitor and ensure compliance with the ECP by the developer (BECOL), it is necessary, I think, to take these heads in turn, and examine the evidence in order to reach a determination as to whether the claimant's case in relation to any of them is made out or not.
17. I shall therefore set out the provisions of the ECP in relation to each head and examine the evidence in order to reach a determination in respect of each area of complaint.

A. The Dam Break Emergency Preparedness Plan (EPP)

18. The claimant has asserted that the defendant failed to carry out its duties either by inaction or negligence, to ensure that BECOL put in place an EPP in case of a dam break in compliance with the ECP for the Chalillo Dam.

There should in my mind, be no doubt about the seriousness of a dam break. It holds the potential of serious and dire consequences not only for the environment but the persons and things in the path of rushing waters from a dam break. The ECP for Chalillo, not unnaturally, provides for this

eventuality, however, unlikely the sanguine may think it to be. Under condition 3 dealing with hydrometeorology and disaster preparedness, the ECP provides in relation to EPP as follows:

- 3.04 *BECOL shall prepare an Emergency Preparedness Plan in consultation with appropriate stakeholders including interalia, NEMO, DEMO and CEMO. This plan shall be in place before the completion of the MRUSF. BECOL will provide the meteorological office with digital or analog signals for at least three threshold reservoir levels (Albert, Warning and Emergency Phases). These signals would be relayed to the meteorological office using the NOAA satellite, mentioned in 3.03.4, for immediate transmission and dissemination.*
- 3.05 *BECOL shall complete a “DAM BREAK” analysis and provide worst-case scenarios of flash flood in the Macal, Mopan, Raspaculo and Belize rivers, and the impact on down stream communities in the event of a dam break.*
- 3.06 *As an integral component of the Flash Flood Early Warning System, BECOL shall establish the necessary communication to relay a Dam Break Flash Flood warning (as determined in 3.04) to target communities along the lower Macal and Belize river watersheds. The DAM BREAK Early Warning System shall be in place at completion of the MRUSF. It is imperative that routine testing or simulation be conducted to test the effectiveness of the System, especially during the rainy season.*
- 3.07 *BECOL shall ensure that releases for maintenance purposes from the proposed Chalillo reservoir, during the dry season, shall be a minimum of $1\text{m}^3/\text{s}$ or the natural inflow into the reservoir, whichever is less, ensuring that flows in the river downstream of Chalillo shall be maintained at or above their natural levels for environmental purposes. (Emphasis added).*

19. The obligations on BECOL under this segment of the ECP can, I think, reasonably be summarized as follows:

- i) BECOL was to prepare an Emergency Preparedness Plan in collaboration with appropriate stakeholders including among others, NEMO, DEMO and CEMO. And that this plan should have been in place **before** the completion of the Chalillo Dam, that is, November 2005. However in my view, it is reasonable to say that appropriate stakeholders who should be consulted in the preparation of the EPP would necessarily include the communities down stream of Chalillo who perforce would be impacted in the event of a dam break; the very eventuality the EPP was being prepared for. That this is so is borne out by the very next obligation incumbent on BECOL in this segment of the ECP namely:
 - ii) that BECOL was to complete a “DAM BREAK” analysis providing a worst-case scenario of flash flood in the Macal, Mopan, Raspaculo and Belize rivers and the impact on down stream communities in the event of a dam break.

Surely any meaningful EPP in the context of the Chalillo Dam must include a worst-case scenario of a flash flood eventuating in a dam break and the possible impact of this disaster on communities down stream of the dam.

- iii) A third obligation flowing from the preceding is that BECOL was to have in place at the completion of the construction of the Chalillo Dam, a Flash Flood Warning System which should have the necessary communication to relay a dam break flash flood warning to target communities along the lower Macal

and Belize river watersheds. And to test the effectiveness of this early warning system, it was imperative that routine testing or stimulation be conducted, especially during the rainy season.

20. The fourth obligation incumbent on BECOL in this part relates to releases of water from the Chalillo reservoir for maintenance purposes during the dry season should be such that the flows in the Macal River downstream of the dam are maintained at or above their natural levels for environmental purposes. It is a fact that dams can kill rivers. This obligation was perhaps to prevent this possibility ever happening to the Macal River. However, I do not understand the claimants to be taking issue with this aspect of the ECP relating to hydrology; or the provision of equipment by BECOL to the meteorological office, which was in fact on the evidence, done.
21. However, the principal complaint of the claimant under this head is lack of information on and the availability of the EPP in the event of a dam break.
22. The parties filed copious affidavit evidence with exhibits in support of their respective positions. Mr. Ismael Fabro, the CEO of the first defendant was also cross-examined by Ms. Candy Gonzalez on behalf of the claimant.
23. The heart of the claimant's case in this regard is that there is no EPP as mandated by the ECP or ready access to it and that the first defendant has neglected or failed to ensure, as it is bound to do, that BECOL, the developer and interested party in these proceedings, comply with this requirement of the ECP. The claimant avers as well that there was no adequate or proper consultation by BECOL in the preparation of the EPP and that there is an alarming lack of information about it – see for example the affidavits filed for the claimant, in particular the affidavit of Judy du

Plooy dated 28th August 2007, at paras. 6, 7, 10, 12, 13, 14 and 17 and paras. 13, 16 and 17 of Godsman Ellis' second affidavit.

24. The defendants and BECOL for their part put in an impressive array of affidavits and exhibits to the effect that there is, in fact, an EPP for the Chalillo Dam in place and an early warning system as well in the event of a dam break. The first affidavit of Ismael Fabro dated 26th November 2007 especially at paras, 13, 14, 15, 16, 21, 22 and 23 bear this out. Also, paras. 12, 13, 14, 15, 16, 17, 20, 21 and 22, of Joseph Suknandan, the project manager of BECOL, bear this out as well.
25. I have reviewed the materials in this case and from this I find that there is evidence that an EPP in the event of a dam break was prepared. But this is however posted on the internet. And as Mr. Suknandan stated in his affidavit, at para. 21: *“In fact, NEMO had placed this plan [that is, the EPP] on their website for access by the general public: http://www.nemo.org.bz/Publications/BECOL_Emergency_Preparedness_Plan.pdf and the plan was in place by September 2005, before the filling of the Reservoir.”*
26. It is contended for the claimant however, that this was only a draft plan and not **the** EPP itself required by the ECP for the Chalillo Dam.
27. Be that as it may, this plan was however posted on the internet. This I must say was on the supposition that everyone has access to the internet. It is at present a reality of Belize and particularly in the areas that might be affected by a dam break, that not everyone is a traveler on the information super-highway that the internet is. The near ubiquity of this medium does not, in my view, meet the requirements that the likely-to-be-affected communities in Santa Elena/San Ignacio and Cristo Rey and others in the vicinity of the dam be informed and know of the EPP.

28. Also, the EPP for the Chalillo Dam mandated by the ECP for it, is, I find, project-specific. That is to say, what preparations should be in place in the event of an emergency arising from the operations of the dam. This I think, is separate from what plans NEMO might have for emergencies in general. The two, that is the Chalillo EPP and NEMO's general plans are, no doubt, linked and one may overlap into the other; for ultimately NEMO, as its name implies, has the remit to deal with national emergencies. These could include emergencies which may flow from the operations of Chalillo.
29. It is however, an undoubted fact that a critical factor in any emergency is **timing**. I pose the somewhat rhetorical question in this regard: is the EPP for Chalillo such as to meet this critical requirement of timing? In my view, a key consideration in the circumstances must be knowledge and information of the EPP. Without readily available and easily accessible information on and knowledge of the EPP, by the people likely to be impacted by the emergency in question, the plan could well be academic.
30. Therefore, I find and hold that in order to be compliant with its ECP, the EPP for the Chalillo Dam must be readily accessible and available, particularly to the communities in its vicinity likely to be impacted first by any possible emergency flowing from its operation.
31. I will therefore order that a copy of the EPP for the Chalillo Dam and the early warning system in the event of a dam break be placed and made available in Town Halls and libraries in the vicinity of the Chalillo Dam. That is to say, in San Ignacio/Santa Elena, and Cristo Rey. The finalized Cayo District Flood Plan of Action (the draft of which is exhibited to Mr. Sheldon DeFour's affidavit) be also put in place with the EPP.

32. I further order that the Dam Break Early Warning System and the communication of this system to relay a possible Dam Break Flash Flood, should be routinely tested or stimulated to test its effectiveness, particularly between June and November each year, in order to be compliant with the ECP for the Chalillo Dam. This no doubt, will help hone the reflexes of those in charge of the EPP and the Early Warning System, as well as increasing the awareness of the communities likely to be impacted in the event of a dam break.

B. Mercy Tests and Risk Management

33. The ECP specifically provides in conditions 8.26 to 8.29 under the rubric **Mercury Risk Management** as follows:

“To prevent potential health effects to fish consumers, a risk management program shall be put in place during the period of elevated mercury levels (i.e., for five years or until background levels are achieved). The program shall be designed by BECOL in liaison with the DOE, Fisheries Department and the Public Health Bureau. The following shall be conducted:

8.26 Monitoring of mercury levels in fish, in particular focusing on species consumed by local population. Collection of fish samples shall be done at least three (3) times per year and the number of fishes collected shall be in accordance with statistical principles;

8.27 Sampling shall take place in the reservoir area, the river section between the MRUSF and Mollejon, and downstream from Mollejon;

8.28 The collection of samples for the analysis by independent laboratories shall be sub-contracted to an independent local consultant under the supervision of the Fisheries Department. The independent reports of both the local consultant and independent laboratories doing the bioassays shall be provided

to BECOL for submission to both the Fisheries Department, the Public Health Bureau and DOE;

8.29 An information program explaining the health risks associated with the consumption of fish contaminated with the high levels of mercury shall be developed and disseminated to the local population. The public information program associated with the monitoring of mercury levels shall use the following means of information dissemination: town hall meetings, press releases, meetings with health officials and radio and local cable television communications. Fish consumption advisories ensuring safe mercury exposures to consumers shall also be done via radio at that time.”

34. The clear objective of this condition of the ECP is to periodically monitor the potential health hazards involved in eating fish containing mercury that may likely result from the construction and operation of the Chalillo Dam, and to inform the local population accordingly.
35. In order to achieve this objective the condition required a risk management programme to be put in place during the period of elevated mercury levels; that is, for five years, presumably, after the construction and filling of the Chalillo reservoir. This risk management programme shall be designed by BECOL in liaison with the DOE, Fisheries Department and the Public Health Bureau. For this purpose, the risk management programme would include the following:
 - (a) Monitoring of mercury levels in fish, focusing particularly on species consumed by the local populations. For this purpose fish samples shall be collected at least three times a year and the number of fishes to be in accordance with acceptable statistical principles.
 - (b) The fish samples shall be from the reservoir area, the river section between Chalillo Dam and the Mollejon Dam, and downstream from the latter dam.

- (c) An independent local consultant under the supervision of the Fisheries Department shall be sub-contracted for the collection of the samples of fish for analysis by independent laboratories. The reports of both the local consultant and the laboratories doing the bioassays on the fish samples shall be provided to BECOL who shall submit them to the Fisheries Department, the Public Health Bureau and the DOE.
- (d) An information programme explaining the health risks associated with high levels of mercury shall be developed and disseminated to the local population. The information programme shall use the following means of dissemination, namely, town hall meetings, press releases, meetings with health officials and radio and local cable television outlets. Also, fish consumption advisories on safe mercury exposures to consumers shall at the same time be done via radio.

36. It is in the light of this condition that that the claimant has contended in these proceedings that no proper or adequate tests for the levels of mercury in fish as required by the ECP has been conducted. Ms. Gonzalez, for the claimant, submitted that in fact there was no test for mercury in fish that was compliant with the ECP in this case; and that the at-risk communities who live in the vicinity of Chalillo Dam and consumed fish from the Macal River, do not have any information on the level of mercury in these fish. The claimant relies on the affidavit of Dr. Mark Chernaik who states in para. 17 of this affidavit that the only sampling the public has been informed about is the one that took place prior to the completion of the Chalillo Dam.

37. From the evidence, there were problems in procuring the right size, species and quantity of fish on which the level of mercury testing would be conducted (see in particular paras. 33 to 40 of Fabro's 1st affidavit; and para. 32 – 33 of Suknandan's affidavit of 20 November 2007). This has

resulted in no consistent information on the level of mercury in fish being available.

38. The people in the vicinity of the Chalillo Dam who however consume fish have not unnaturally been anxious about this issue and they tried to obtain information from **the authorities** (see in particular paras. 4, 5, 8, 9, 10, 11, 14, 15, 16, 17, 18 and 19 of Cecilio Pech's affidavit of 25 August 2007. Mr. Pech, a resident of Cristo Rey Village and former chairperson of that village). But these attempts to get information have not met with success.

There is evidence of attempts between DOE and BECOL because of the difficulties in obtaining fish samples for mercury testing, to reduce the trice yearly testing stated in the ECP to one per year (see paras. 47, 48, 54, 55, 56 and 57 of Fabro's 1st affidavit). BECOL however, relied on the affidavit of Mr. Steven Usher dated 20th November, 2007 especially at para. 8 and exhibited thereto as **SU 2** are results of tests of fish for mercury.

39. It cannot therefore be said from the evidence, that there has been an outright failure to monitor the level of mercury in fish in this case. But there has not been consistent and reliable information on this made available to the people in the vicinity of the Chalillo Dam and the Macal River who consume fish. They have a right to this information through advisories issued by the Department of Health.
40. Although I am prepared to accept the submission on behalf of the defendant and the fourth respondent BECOL, that because the programme for monitoring mercury levels in fish is a multi-agency one and involving the cooperation of the DOE, Fisheries, Public Health authorities and BECOL, it might not be a suitable case to order a mandamus, I find however, that to be ECP-compliant, the information on mercury testing

and its level in fish, should be made available to the local population in the vicinity of the Chalillo Dam.

41. An information programme explaining the health risks associated with the consumption of fish contaminated with mercury is necessary. Such information may be disseminated through town hall meetings, press releases, meetings with health officials and radio and local cable broadcasts. This is a requirement of the ECP in this case. I am not satisfied that this was done in this case. Mr. Suknandan at para. 37 of his 2nd affidavit states that the information has not been released because the Public Health Department has not approved the release of the information. And at para. 29 he refers to a **proposed** information programme. Getting the necessary information out to the public is important and this is clearly mandated in the ECP.
42. I will accordingly order that the DOE shall ensure that BECOL carry out the public information programme explaining to the local population the health risks associated with high levels of mercury in fish.

C. Water testing quality

43. It cannot be doubted that the construction of a dam in a river will have consequences for the quality of the water both in the part of the river adjacent to the dam and in the water that collects in or runs off from the dam itself. This may have serious consequences for the health of the communities which live near the dam and depend on the river for drinking and their livelihood.
44. The ECP in issue in this case therefore provided for the monitoring of the hydrology and meteorology in the Mountain Pine Ridge and Raspaculo River sub-basins in which the Chalillo Dam is situated. BECOL, the

project developer and fourth interested party in these proceedings, was required to establish these monitoring programmes to be jointly managed by it and the National Meteorological Service. The ECP recommended continuous monitoring of certain hydro-meteorological parameter which it listed as:

- (i) River stage (river water levels)
- (ii) Flow and discharge
- (iii) Water temperature
- (iv) Turbidity
- (v) Rainfall
- (vi) Humidity
- (vii) Radiation
- (viii) Wind direction and wind speed
- (ix) Evaporation and Evapo-transpiration
- (x) Rainfall distribution within the sub-basins
- (xi) Other relevant, water quality parameters such as:
alkalinity, hardness, colour, total dissolved oxygen,
hydrogen potential or pH, chlorides, conductivity,
salinity, and ammonia.

The ECP further provided that the following parameters shall be measured at quarterly intervals for the first two years of operation of the Chalillo Dam, (that is, 2005 and 2007): nitrates, sulfate, phosphorous (phosphate) hazardous chemicals including heavy metals (e.g. mercury, lead, arsenic, cadmium, iron), and depending on the outcome of the monitoring programme, the intervals for measuring may be varied to an annual basis.

45. In condition 3.02 on water quality and quantity monitoring programme, the ECP provided:

“3.02 A water quality and quantity monitoring program shall be established to monitor all relevant water quality parameters at Mollejon and within the Chalillo reservoir area at different water levels using a data logger type equipment. The GPS coordinates for these monitoring points shall be recorded to ensure consistency and comparability of date over an extended period of time. A copy of the water quality monitoring program shall be submitted to the Hydrology Unit of the Meteorology Department and DOE for approval, and the results of the monitoring program submitted to the Hydrology Unit and the Department of the Environment on a weekly basis for the first two years after the filling of the reservoir or until water quality parameters stabilize and on a quarterly basis thereafter.”

46. The claimant has contended that there is no adequate or proper testing to monitor the quality of water and that information on this is lacking: see in particular, **Exhibit GG 4** to the first affidavit of Mr. George Gonzalez being a joint letter of 6th August 2006 to the authorities seeking information on the water quality and levels of mercury in fish in the Macal River. Villagers have also expressed worries and concerns about the condition of the Macal River and as to how the Chalillo Dam affects the water quality and quantity – see in particular, the affidavit of Mr. Cecilio Pech, a former chairperson of Cristo Rey Village, the first village downstream of the Chalillo Dam. The affidavit of Mr. John Fleming, dated 13th August 2007 and the exhibited photographs attest as well to concerns about the quality of the water from the Macal River. Mr. Fleming is described as the owner and operator of The Lodge at Chaa Creek, in Cayo.
47. The claimant relies especially on the affidavit of Dr. Mark Chernaik, to whom it sent water quality monitoring data provided by BECOL. Dr. Chernaik, a biochemist by training, avers especially in paras. 21.1, 21.2, 21.3 and 21.4 of his affidavit as to why in his view the water quality monitoring data submitted by BECOL is deficient. He states as well that

the water quality analysis for the first two years were done on a monthly basis rather than on weekly basis as required by condition 3.02 of the ECP.

Mr. Harold Vernon was also relied upon by the claimant to buttress its complaint about the testing of the water quality. Mr. Vernon in his affidavit of 2nd November 2007 does not seem to rate highly the fitness of the Belize Brewing Company's laboratory used by BECOL for the purposes of analyzing the water quality.

48. The defendant and BECOL for their part tried to refute the claims of the claimant. They filed affidavit in answer to the allegations made by the claimant regarding the water quality: see in particular, the second affidavit of Mr. Ismael Fabro dated 22nd February 2008, and the affidavit of Mr. Stephen Usher of 20th November 2007, especially at paras. 10 and following.
49. I have anxiously considered the evidence and the materials placed before me on this score and I find that the defendant could have insisted that BECOL comply with the ECP in certain particulars such as the frequency of the tests for water quality. The ECP requires submission of the results of the monitoring programmes to the DOE on a **weekly** basis for the first two years after the filing of the reservoir (the Chalillo Dam) **or** until water quality parameters stabilize. From the evidence, Mr. Usher in his affidavit states at para. 11 that BECOL continues to conduct **monthly** tests of water quality; and he admits at para. 12 that BECOL did not test for radiation and iron, two of the several parameters the ECP specified.
50. It is therefore reasonable to conclude that there was non-compliance with the ECP in this respect. I am however satisfied that the Reports of water

quality tests are submitted by BECOL to the DOE: see **Exhibit SU 3** (a sample copy of such Reports).

51. The claimant however put some store on Dr. Chernaik for the assertion that the water quality test in this case is deficient. In particular, he states in paragraph 21.3 of his affidavit as follows:

“21.3 BECOL has not provided any data about biological parameters of water quality, in apparent violation of section 3.09 of the ECP which requires that “A water quality and quantity monitoring programme must be established to monitor all relevant water quality parameters.” The single most relevant parameter for water quality in a river is the taxa richness found by benthic microinvertebrate surveys that characterizes the source. By not monitoring taxa richness of benthic communities in the Macal River, BECOL is failing to provide DOE and the public with the most important measure of water quality of the Macal River.”

52. Actually, the monitoring of all relevant water quality parameters within the Chalillo reservoir area **is** a requirement of condition 3.02 of the ECP. However, though the “taxa richness” as a parameter of the measure of the water quality is not specifically mentioned among the parameters to be monitored or measured in the ECP, it cannot however be doubted that given the importance of the quality of water to the health and livelihood of the people around the Mollejon and Chalillo Dams, this must be a relevant water quality parameter.
53. BECOL has properly indicated that it is quite willing to include this parameter for monitoring and testing if it is believed that this should be

included. This, of course, is a matter for scientific evidence; but the evidence of Dr. Chernaik as to the singular importance as a parameter of the quality of water taxa richness, stands unchallenged or unrefuted. I will accordingly, order that this be added as a relevant parameter in monitoring and testing the quality of water within the Chalillo Dam. This I am confident resonates with the provision of the ECP on post-development review of the Chalillo project. This provides in terms:

“After the construction period, the exercising of sound environmental ethic shall not end, but rather provisions shall be made for the monitoring of all facilities in the post-construction period. A system shall be put in place for reporting negative impacts as well as a means of co-opting project proponents to implement corrective mitigation measures when the need arises.

Additional monitoring shall be carried out to ensure that the various pollution control features and facilities installed are functioning and maintained properly.”

Surely testing for taxa richness of benthic communities in Chalillo is a proper gauge of the quality of its water and that of the Macal River as envisaged in the ECP.

54. Indeed, the deficiencies and inadequacy of the means and methods of analyses of river water quality presently available in Belize is graphically explained in the affidavit of Mr. Harold Vernon.

D. Public Awareness and Education

55. The claimant has also taken issue with the provision by BECOL of public information, awareness and education on the project as contained in its ECP. It cannot be doubted that the construction of a dam on a major river, such as the Chalillo Dam on the Macal River in the Cayo District will excite public interest, anxiety and concerns. This is so, if only for the possible impact the project might have on the environment, lives and livelihood of the local population. There may be those among them who would view the whole enterprise with suspicion, if not outright disfavour. Yet, there may be some who would welcome it and be possibly favourably disposed toward it. Whatever the disposition may be, however, it is necessary that there be public awareness of the project and its impact on the environment and that the local population in particular, be aware of the conditions under which environmental clearance has been granted to the project.
56. The ECP for Chalillo therefore provides in this connection as follows:

“Public Awareness/Education

8.24 After the signing of this compliance plan, BECOL shall commence a series of public information sessions to inform the general public of the information contained in the final EIA report and the conditions under which environmental clearance has been issued. A series of at least four (4) sessions shall be held within a six (6) month period in different areas of the country. A program for this requirement shall be developed by BECOL and submitted to the DOE for its approval. The approved program and its schedule shall be advertised at least two (2) weeks consecutively in two of the most widely circulated newspapers in the country and announced publicly on the radio. The program shall ensure that these sessions shall be held in San Ignacio and three other major populated areas of the country.

8.25 *BECOL shall establish a Public Participation Committee. The intended purpose of the Committee shall include working with BEL/BECOL to promote the following:*

8.25.1 *Regular information exchange between BEL/BECOL and the various stakeholders;*

8.25.2 *Monitoring of community concerns and issues related to the MRUSF Project (emphasis on tourism industry and riverbank residents);*

8.25.3 *Maximization of local benefits through identifying opportunities for increased participation in the Project;*

8.25.4 *Enhanced participation of women in the Project; and*

8.25.5 *In addition to BECOL and the Department of Environment, representation on the Public Participation Committee shall be not more than five (5) persons and shall be drawn from: San Ignacio and Santa Elena Town Board, the Tourism Industry, Belize Water Services Limited, Ministry of Health, Ministry of Human Development, local NGO's and communities along the rivers."*

57. It must be said from the evidence, the claimant's case was triggered off by what it perceived as lack of relevant or timely information despite expressions of requests and concerns relating to the project and its possible effects on the local people to the DOE and other authorities. As the claimant states in its written submissions and arguments at para. 4.52:

"On numerous occasions, people of the area raised concerns about the colour of the river water, the smell from the river, the rashes people experienced once they had been in the river, the safety of eating fish,

concerns related to dam safety and a warning system in case of a dam failure, and rumours about cracks in the dam.”

The claimant then referred to the several affidavits filed in support of its claim: the first affidavit of Cecilio Pech at paras. 3, 4 and following; the affidavit of George Gonzalez at paras. 2, 3, 5 and following; the first affidavit of Judy du Plooy at paras. 3, 4, 15 and 16; first affidavit of Heather du Plooy at paras. 2, 4, 5, 8 and 9; and the first affidavit of John Michael Fleming at paras. 5 to 9. The claimant has argued that there was no response from either the defendant, or the fourth respondent BECOL that competently addressed these concerns.

58. I have deliberately left out of the account on the requests and concerns raised, the affidavit of Ms. Candy Gonzalez. She acted as the attorney for the claimant in these proceedings and rules of evidence would therefore preclude her account as relevant testimony. I should add here however, though not a member of the Belize Bar Association, she commendably presented the claimant's case before this court. Apart from the unacceptable attempt to communicate with the court in relation to the recent Tropical Storm Arthur, I find her conduct of the claimant's case otherwise competent and commendable.
59. The claimant has complained in these proceedings that the defendant failed to ensure that BECOL carry out a public awareness and education programme on the EIA and ECP for Chalillo that is compliant with the conditions stated in conditions 8.24 to 8.25.5 of the ECP.
60. In the first place, the claimant states that whereas the ECP required BECOL to hold **at least four** (4) sessions of public information within six months period of signing the ECP (April 2005), it only held **three** in Belize City, Dangriga Town and Orange Walk in January 20 – 22, 2003. San

Ignacio in the Cayo District is the only place specifically mentioned in the ECP as one of the four “mayor population areas of the country” in which it must be ensured that the public information and awareness on the EIA and ECP be held. Ms. Dawn Sampson, the manager for Corporate information for BECOL however, in her affidavit speaks at para. 9 of her affidavit of a large, well attended hearing/meeting at Santa Elena in January 2003. This , it must be observed, was outside of the six months period after the signing of the ECP in April 2002 and more fundamentally it was not pursuant to condition 8.24 of the ECP but rather in compliance with a public hearing the court had ordered in its judgment of December 2002, involving BACONGO and the defendant and the fourth interested party. Therefore I find that the public information/awareness and education session held in Santa Elena in January 2003 was not compliant with the ECP. Moreover, this meeting as Ms. Sampson states in para. 9 of her affidavit, was organized and held by the DOE. The burden of the public awareness and education sessions was put on BECOL to be discharged in a programme it shall develop and submit to the DOE for approval.

61. Secondly, the publicity for the sessions was, in addition to publication in two of the most widely circulated newspapers, to be public **radio** announcements. There is some evidence of newspaper publication (see para. 6 of Ms. Sampson’s affidavit and Exhibits **DS 1 a-d** annexed thereto). But there is no evidence of any **radio** announcement. This is not ECP compliant. The medium of the radio, no doubt, is its near ubiquity and out of consideration of the fact that the local population might have more ready access to it than newspaper or television or any other medium.
62. In the third place, the claimant has expressed dissatisfaction with the compliance or non-compliance with the public participation component of

the ECP. The provisions relating to this are set out in condition 8.25 of the ECP. This requires BECOL to establish a Public Participation Committee (PPC) whose intended purpose is to work with Belize Electricity Ltd. (BEL) and BECOL to promote certain objectives set out in conditions 8.25.1 to 8.25.5 of the ECP. These are largely to promote information exchange between BEL/BECOL and the various stakeholders. Surely, in this context, stakeholders must include the local population or its representation. The objectives of the PPC also include the monitoring of community concerns and issues relating to the Chalillo Dam with emphasis on the tourism industry in the area and the river bank residents. Also, the PPC should promote the maximization of local benefits from the project by increased participation therein. The PPC is required as well to promote enhanced participation of women in the project.

In addition to BECOL and DOE, representation on the PPC which shall be no more than five persons, shall include a representative of San Ignacio and Santa Elena Town Board. There is provision for others as well from the Tourism Industry, Belize Water Services Ltd., Ministry of Health, Ministry of Human Development, local NGOs and communities along the rivers.

63. I have set out at para. 59 above of this judgment the gravamen of the claimant's case and its evidence in relation to the issue of public awareness, education and participation on both the EIA and ECP of Chalillo.
64. I must agree with the claimant's contention that the clear intent of the ECP in this respect was to have a committee that would promote greater participation of the likely-to-be-affected communities and with enhanced participation of women.

65. I am afraid, neither the defendant nor the fourth interested party has refuted or effectively countered the claimant's case on this score. Rather the evidence, such as it is from both the defendant and BECOL, in my view, falls a long way short of answering the case of the claimant. For example, Mr. Fabro in his first affidavit at paras. 24 to 26 does not answer at all the claimant's case, apart from general statements about BECOL conducting public information sessions. There is no reference as to whether the programme for these sessions were submitted to or approved by the DOE. Mr. Fabro, it should be noted, is nominally, as the Chief Environmental Officer in the DOE, the first defendant in these proceedings. Nor does Mr. Fabro address the medium of advertising the public sessions by radio. Mr. Fabro, as well, singularly failed to address the issue of the Public Participation Committee in condition 8.25 of the ECP.
66. I find as well that from the evidence, BECOL has failed to meet the case of the claimant on this score. For example, in para. 39 of Mr. Joseph Suknandan's affidavit of 20th November 2007, he simple states:

“PUBLIC AWARENESS/EDUCATION

39. In relation to the Public Awareness/Education required by the ECP, the responsibility for this undertaking was assigned to Ms. Dawn Sampson, Public Relations Manager and it was dutifully spearheaded, organized and carried out by her.”

67. For her part, I am not satisfied that Ms. Sampson in her affidavit, has satisfactorily answered the claimant's case on this score. Her averment in para. 5 of her affidavit that

“5. BECOL has conscientiously carried out its undertaking to hold public information sessions as mandated by the ECP...”

is, I am afraid, not borne out by the evidence. There is, for example, no evidence that the information sessions she averred that she was present at were part of a programme developed by BECOL and submitted to DOE for its approval. This is a requirement of the ECP for public information sessions meant to inform the general public of the information contained in the final EIA report and the conditions under which environmental clearance was issued for the project. This exercise cannot be solely at the instance or inclination of BECOL. The programme for this should be developed by BECOL and submitted to the DOE for its approval. Therefore, helpful as the informational exercises that BECOL, from the evidence embarked upon, and particularly, exhibits DS 2 and DS 3, to Ms. Sampson’s affidavit (Information Booklet on Chalillo and video presentation at these informational sessions), they do not strictly meet the requirements of condition 8.24 of the ECP in so far as approval of the programme by DOE is concerned, nor as to the medium of announcement of the sessions (no evidence of radio announcement), nor for that matter the venue of the public information session. There is evidence of sessions in Belize City, Dangriga Town and Orange Walk Town, but none in **San Ignacio** as condition 8,24 of the ECP stipulated.

68. Moreover, although Ms. Sampson in para 11 talks of the formation of the PPC by BECOL and its membership, she, with respect, misconceives the **raison d’etre** of this Committee: it is not simply, as she puts it, “*to be the vehicle for input and communications between BECOL and various government bodies and the local population.*” This conception of the PCC only addresses paragraph 8.25.1 of the ECP. Equally important is that the PPC shall monitor community concerns and issues relating to the Chalillo Dam,

maximizing local benefits through identifying opportunities for increased participation in the project and enhancing the participation of women in the project.

69. It is for all these reasons that I am not satisfied that there was complete or adequate compliance with conditions 8.24 and 8.25 of the ECP on public awareness and education.

Conclusion and Relief

70. Although I have in this judgment considered each of the complaints by the claimant as free-standing, and indeed each was separately urged on me by the claimant and the defendant and the fourth respondent in their arguments and written submissions as such, I however view them as interrelated in the context of the ECP itself. Each head was meant to secure, safeguard and advance environmental protection in the round. It is in this context that I think that the ECP should be viewed.
71. I am however mindful of the fact that the ECP in issue in this case, is the first ever issued in Belize in respect of a project following an EIA.
72. I have indicated in the judgment the areas that I find, on the evidence, the defendant could and should get the fourth respondent, BECOL, to do more in the light of the express provisions of the ECP.
73. The claimant however seeks orders of mandamus directed against the defendant and a Declaration that it is unlawful for the defendant to refuse to monitor and enforce the ECP for Chalillo Dam.
74. Let me say that there should be no doubt about the power of this court in an appropriate case, to issue an order of mandamus. As the learned

authors, the later Professor H.W.R. Wade and Professor C.F. Forsyth, stated in their work **Administrative Law** 9th Ed. (Oxford University Press, 2004), in discussing the nature of mandamus as a remedy:

“The commonest employment of mandamus is as a weapon in the hands of the ordinary citizen, when a public authority fails to do its duty by him ... mandamus deals with wrongful inaction.

The essence of mandamus is that it is a ... command ... ordering the performance of a public legal duty. It is a discretionary remedy and the court has full discretion to withhold it in unsuitable case” at pp. 615 and 616.

75. In the Supreme Court Civil Procedure Rules 2005 in order 56, Rule 1(3) provides “judicial review” (such as the present claim before me) includes the remedies (whether by way of a writ or order

(c) *Mandamus, for requiring performance of a public duty ...”*

76. The discretionary nature of the remedy should equally not be in doubt: the court will only order it in a clear and appropriate case.
77. In condition 9 of the ECP in issue in this case, it is expressly provided on **Enforcement and Monitoring** as follows:

“The implementation of this Environmental Compliance Plan shall be the direct responsibility of BECOL and/or its successors. The Department of the Environment in conjunction with other relevant

agencies, in particular members of NEAC, shall carry out compliance monitoring to ensure that this Compliance Plan is being adhered to.”

78. Accordingly, in light of my findings and conclusions in this judgment,
- i) I order and declare that the ECP imports duties on BECOL the fourth respondent which the defendant the DOE is lawfully bound to see implemented and fulfilled;
 - ii) I order that copies of the EPP for the Chalillo Dam be placed and displayed in Town Halls and libraries in San Ignacio/Santa Elena and Cristo Rey and these be updated as necessary;
 - iii) I order that the Dam Break Early Warning System and the communications system to relay a possible dam break flash flood be routinely tested or simulated for effectiveness, particularly between June and November each year;
 - iv) I order the DOE to require BECOL to carry out public information programme explaining to the local population along the Macal River in the vicinity of the Chalillo Dam, the health risks associated with high levels of mercury in fish;
 - v) I order that the taxa richness of benthic communities be included as a relevant parameter in monitoring and testing the water quality in Chalillo;
 - vi) I order that a programme for public information sessions informing the general public of the EIA for Chalillo and its ECP be prepared and developed by BECOL for the approval of the DOE and that such public information session be held in San Ignacio, Cayo

District. I also order that BECOL in accordance with condition 8.25 of the ECP constitute or reconstitute the PPC so as to promote the purposes set out in the said condition. I realize of course that Chalillo is now operational, but it is never late to get the necessary information about it to the public, especially the local population.

A. O. CONTEH
Chief Justice

DATED: 30th June 2008.