subsurface investigations at all facilities that dispose of CKD as part of an effort to establish minimum technical standards for the on-site management of CKD.

The Clean Water Act, through existing effluent guideline regulations, NPDES permits, water quality standards, and existing and forthcoming storm water permits, provide considerable authority to control risks associated with contamination of surface waters by the management of CKD.13 However, EPA has identified releases of CKD to surface waters, and to ground water as well. In its investigation of CKD waste, the Agency uncovered 14 cases of water damage, of which seven involved ground water. Both ground water and surface water damages were major factors cited for including two CKD disposal units on the CERCLA NPL. Furthermore, only 17% of all CKD management units nationwide have ground water monitoring systems, while 25 of 91 cement manufacturing facilities (27 percent) were reported in a 1991 industry survey to be located within one mile of a public drinking water well.

Based on the above analysis, the Agency believes the following factors warrant additional environmental controls for CKD: (1) The general lack of current regulations applicable to contaminant discharges to ground water for protection of human health and the environment; (2) the general lack of ground water monitoring systems at CKD disposal units; and (3) the existence of damages to ground water and air that are persistent and continuing, and for which no requirements exist to address the risks posed via these pathways.

At the federal level, authorities exist to address site-specific problems posing imminent and substantial danger to human health or the environment under RCRA section 7003 and CERCLA sections 104 and 106. However, the Agency believes that cost-effective controls that prevent contamination are preferable to cleaning up after contamination and damages occur.

## *C. Step 3: What Would Be the Operational and Economic Consequences of A Decision To Regulate Under Subtitle C?*

The Agency has determined that industry-wide regulation of CKD under full Subtitle C, including land disposal restrictions, would impose extremely high costs on a substantial portion of the U.S. cement industry. While the Agency believes that CKD waste minimization and reclamation/recycling options exist that could limit the cost exposure for many plants, there is considerable uncertainty and disagreement at this time regarding their general technical availability and ability to serve as low cost substitutes for land management of CKD.

Thus, it is likely that full Subtitle C regulation could impose compliance costs in excess of 20 percent of sales value for a significant part of the industry and a resulting inability to compete. Expected economic consequences include a combination of reduced domestic cement capacity and production, sharply higher prices for cement (particularly in interior regions of the country), and substantially increased imports. Substantial adverse secondary effects on regional construction industries and on communities experiencing losses in cement industry-related employment could also be expected.

Thus, based on the factors in RCRA section 3001(b)(3) and section 8002(o), full RCRA Subtitle C regulation is unwarranted. However, the Agency also believes that special Subtitle C regulations tailored to local cement plant conditions could be developed using the broad regulatory flexibility provided by RCRA, including section 2002, section 3001(b)(3)(C), and section 3004(x). These regulations could be based on either technology or performance standards or a combination of both. These regulations could be implemented at far lower cost at most plant locations requiring controls to prevent contamination of ground water. In addition, regulations for CKD to prevent releases to the air can be improved or implemented under CAA authority, and releases to surface water are regulated under CWA authority. These authorities provide the Agency with additional flexibility to prevent releases of CKD to the environment, while at the same time minimizing the burden on the regulated community.

The cement industry's voluntary CKD management proposal, submitted as a comment on the RTC, tends to support this conclusion. This tailored program for constructing and operating CKD monofills would include the following site-specific features: a hydrogeological assessment, water inflow modeling, ground water monitoring, surface water management in accord with NPDES and storm water discharge permits, run-on/ run-off controls, fugitive dust emissions control measures, personnel training, a written closure plan, financial assurance, and post-closure care, including security and maintenance and repair of the cap and vegetation as suggested by periodic inspections. Thus, special tailored standards under Subtitle C of RCRA as well as under other Agency authorities can be expected to pose far less dire consequences for the U.S. cement industry and the economy as a whole than would regulation under full Subtitle C.

## IV. Regulatory Determination for Cement Kiln Dust

Pursuant to RCRA sections 3001(b)(3)(C) and 8002(o), EPA has determined that additional control of CKD is warranted. The Agency's concerns about the harm to human health and the environment posed by CKD suggest the need for regulation under RCRA Subtitle C authority. However, the Agency recognizes that certain of these areas of concern (those related to releases to air and surface waters) are more appropriately controlled under other EPAadministered statutes. In order to avoid unnecessary duplication among regulatory programs, EPA would rather use the other existing regulatory programs to control risks where appropriate, and develop a more creative, affordable, and common sense approach that would control the adverse effects of CKD.

The Agency will develop, promulgate, and implement regulations for CKD as necessary to protect human health and the environment by using a variety of statutes. This regulatory program will apply to CKD from all cement manufacturing facilities, regardless of the type(s) of fuels used in the manufacturing process, or other factors. In particular, the Agency will develop and implement additional controls/ activities to limit releases to the air using its Clean Air Act authority. For surface waters, the Agency believes that existing regulations and the planned general permit under the NPDES permitting program will provide an adequate mechanism for controlling point source discharges and for managing storm water that contains CKD. Thus, no additional water controls, beyond these already planned, are considered necessary.

The Agency will evaluate the need for additional controls for a limited number of off-site uses of CKD (such as use as a lime fertilizer on agricultural fields) in its regulatory proposal. However, for most off-site uses (e.g., in waste stabilization or certain construction uses) EPA's current record indicates there are no significant risks. The Agency will restrict its focus to those

<sup>&</sup>lt;sup>13</sup> In fact, the Agency believes that once the storm water permits are fully implemented, no further water permits or regulations will be needed to address releases to surface water.