

XI. Impacts on Structures in the Study Area

Introduction

This section summarizes the Department's findings regarding mining-related impacts on overlying structures. These findings were based on information in mine operator reports, Department investigation records, property owners' questionnaires, and the federal Office of Surface Mining (OSM) survey results. In some cases, reports pertaining to the same damage incident appeared in more than one information source. After reviewing these sources, the Department found that all reported incidents were covered in either the claims database, which contains mine operators' reports and Department investigation records, or the database containing the property owners' survey results.

Properties with Structures Impacted by Mining

Based on its review of the various data sources, the Department identified 280 properties that had associated reports of structure damage. At least 125 of these reports indicated impacts to more than one structure on the property. The other reports appeared to relate to a single structure except for eight that provided no details regarding the nature or extent of damage. This information is summarized in Table XI.1. Among the 280 reports, there were 13 listing damage only to appurtenant structures such as driveways, sheds and septic systems.

**Table XI.1
Properties with Reported Structure Damage**

Category	Number of Reported Cases
Damage to a single structure	147
Damage to more than one structure	125
Damage to unspecified structure(s)	8
Total	280

Information concerning the types and numbers of damaged structures is presented later in this section. The Department decided to use the property as the basic unit of accounting because the number of properties with reported damage was found to be more reliable than figures relating to individual structures. Some reports did not list the types or number of structures that were damaged and some simply indicated damage to "buildings." In addition, many records in the claims database did not list damages to appurtenant structures. However, it was evident that most reports pertained to incidents involving damage to dwellings.

Relationship between Type of Mining and Structure Damage

Most of the structure damage reports were associated with longwall mines. Of the 280 properties with reported structure damage, 241 were situated over longwall mines. Room-and-pillar mines accounted for 36 of the damage reports. Of the 36 reports associated with room-and-pillar mines, 33 were associated with mines that practice pillar extraction. There were also three reports that could not be related to a specific mine. Table XI.2 provides a breakdown of damage reports by mine type.

Table XI.2
Type of Mining vs. Properties with Structure Damage

Type of Mining Operation	Number of Reported Cases	Percentage
Longwall	241	86%
Room-and-pillar	36	13%
Undetermined	3	1%
Total	280	100%

The Department evaluated the distribution of structure damage reports spanning the period from 1993 to 1998. Damage reports were tallied on the basis of properties with structure damage. Reports were classified using the date of damage as the primary sorting criterion. The date of last mining was used as a secondary sorting criterion in cases where the date of damage was not reported. Some reports could not be related to a specific year using the information available.

Eighty percent of the reported incidents occurred after August 21, 1994. Ten percent of the incidents were reported as occurring prior to August 21, 1994 but are included since they are covered within the period of study. The remaining ten percent of the reports are under investigation by the Department since the date of damage could not be determined from the information provided. August 21, 1994 is the date when the “pre-1966” dwelling protections expired and the expanded damage repair and compensation requirements went into effect as a result of the amendments to the Bituminous Mine Subsidence Land and Conservation Act (BMSLCA). Damages reported as occurring before August 21, 1994 were not covered by BMSLCA, but may have been covered by National Energy Policy Act (EPACT). It is also possible that some damages reported as occurring after August 21, 1994 may be outside the scope of BMSLCA if the associated mining occurred before the effective date.

Reports of Irreparable Damage

Property owners, through their questionnaire responses, reported twenty-two cases where, in their view, irreparable damage had occurred. These individuals checked “yes” to the question [w]as any building damaged to the point that it had to be completely replaced or demolished. Mine operators reported settling many of these cases by agreement or compensation;

consequently, the reports of irreparable damage were not definitive. It is notable that the Department would not have concluded that damage was irreparable in any of the nine cases with which it was familiar. Available information indicated that 17 of these cases had been resolved while the remaining five remained pending.

Resolution of Structure Damage Claims

Incidents of reported structure damage were handled in a variety of ways. In some cases mine operators simply repaired or replaced the damaged structure. In some cases, the damage was resolved through some form of compensation. In some cases the compensation was made according to an agreement that was negotiated before mining or after damage occurred. In some cases damages were not repaired because the mine operators did not believe their mining to be the cause. Some cases were also reported as being at an interim stage of resolution with repairs underway or delayed pending termination of subsidence.

Table XI.3 summarizes the status of claims for the 280 properties listed as having damaged structures. Of the 280 properties, 179 had reportedly reached the stage of final resolution. Of these, 55 were settled through agreements between the mine operators and property owners. In another 50 cases, mine operators assumed responsibility for repairing the damages. In 44 cases, the mine operators compensated the property owners for the damages.

**Table XI.3
Resolution of Structure Damage Claims by Method**

Resolution	Claim by Mining Type				% of Total
	Longwall	Room-and-pillar	Not Known	Total	
<i>Completed</i>					
Settled by agreement	52	1	2	55	20%
Damaged structure repaired or replaced	47	3		50	18%
Structure owner compensated	38	6		44	16%
Mine operator not liable	21	7		28	10%
Claim settled under MSI program	1	0		1	0%
Damage insignificant	0	1		1	0%
<i>Total Completed</i>	<i>159</i>	<i>18</i>	<i>2</i>	<i>179</i>	<i>64%</i>
<i>Pending Resolution</i>					
Interim phase of resolution	36	3		39	14%
Claim status or outcome under dispute	17	2		19	7%
Status unclear from available information	17	2	1	20	7%
Claim not previously reported	8	6		14	5%
No repair or compensation provided	4	5		9	3%
<i>Total Pending Resolution</i>	<i>82</i>	<i>18</i>	<i>1</i>	<i>101</i>	<i>36%</i>
Totals	241	36	3	280	100%

In 28 cases, mine operators did not repair or compensate for damages because they did not believe they were liable for the damages. The Department was involved in 18 of these cases and came to the same determination. The Department is making follow-up inquiries on cases in which it had no prior involvement to ascertain that no liability exists.

Among the group of settled cases were two cases that fell within their own separate categories. One case involved damages that were compensated under the Department’s MSI program. The other case involved an incident of reported damage which the property owner did not regard a significant enough to warrant repair or compensation.

There were 101 cases that had not yet reached final resolution. These cases fell into five categories as indicated in Table XI.3.

Among the group of pending claims, there were 39 cases that were reportedly at an interim stage of resolution. This group included claims where settlement negotiations or repairs were underway and situations where repairs were pending the termination of subsidence. It also included claims that property owners had just recently filed with mine operators. Some of the

reports mentioned the provision of temporary repairs in situations where final repairs had to be delayed.

The group of pending claims also included a subset of 19 claims that were classified as “under dispute.” These cases involved situations where mine operators had taken steps toward resolving claims but did not satisfy the property owner. Most disputes involved the scope of repair work or the quality of repair work. In some cases, the dispute involved the selection of the contractor or whether the property owner had the right to demand compensation in lieu of allowing the mine operator to arrange for repairs. There was also one case where a property owner refused the mine operator access to inspect the reported damage. The Department is conducting follow-up investigations to track the resolution of these 19 cases.

Among the group of pending claims were 20 cases where the current status could not be determined on the basis of available information. The Department is making follow-up contacts with property owners and mine operators to determine the actual status of these cases.

Another subset of pending claims involved 14 cases that had not previously been reported to the Department or the mine operator. These cases were all reported through the property owners’ survey. The Department is conducting follow-up investigations on all 14 of these cases since the property owners’ questionnaires were regarded as formal reports of claims.

There were also 9 cases reported via the property owners’ survey where no repair or compensation had been provided. These claims were placed in a separate category because it could not be determined if these observations represented the final disposition of the claims in question. The Department is making follow-up contacts to determine the actual circumstances involved in each of these cases.

Information relating to property owner satisfaction was available from the property owners’ questionnaires. There were 69 questionnaires describing claims that had reached the final stage of settlement. Within this group, there were 47 questionnaires indicating that the property owner was satisfied with the final settlement. The other 22 questionnaires did not indicate satisfaction and most went on to describe the reasons for dissatisfaction. Reasons for dissatisfaction included:

- Insufficient compensation
- Not all damage repaired
- Repairs done cheaply
- Subsidence is continuing
- Stress and inconvenience

Department records show that only four of these property owners had contacted the Department prior to expressing dissatisfaction through their responses in the property owners’ survey.

Premining Surveys

The Department reviewed the records of reported damage to determine whether or not premining surveys had been performed. Premining survey information was viewed as important in distinguishing damages that are due to mining and in ensuring that damage is fully repaired. Premining surveys were not specifically required until June 13, 1998, when the Department amended its regulations. However, the Department received positive confirmation that mine operators had conducted premining surveys in more than 65% of the cases reported.

Types of Structures Impacted by Mining

For many records, it was possible to determine the types of structures that were reported to be damaged. For primary structures, such as dwellings, barns, garages, commercial buildings and churches, it was also possible to develop approximate numbers of damage reports. Reports relating to these types of structures usually mention them by name. Table XI.4 presents summary figures for damage to these primary structures.

Table XI.4
Primary Structures Damaged by Mine Subsidence

Type of Structure	Number Reported Damaged
Dwellings (including mobile homes)	245
Garages	68
Barns	29
Commercial buildings	7
Churches	1
TOTAL	350

For structures outside the primary group, the record was less clear. This secondary group included those structures that would typically fall under the regulatory definition of “permanently affixed appurtenant structures.” Examples include patios, decks, porches, septic systems, driveways, sidewalks and other structures that tend to be less significant than the primary structures on the properties on which they are located. Damages to these structures sometimes went unreported by mine operators as indicated by the Department’s comparison of reports from the claims database and property owners’ survey. Table XI.5 presents summary figures for these secondary structures based on those reports with available information.

**Table XI.5
Appurtenant Structures Damaged by Mine Subsidence**

Type of Structure	Number Reported Damaged
Driveways	39
Patios, decks, porches and pavilions	27
Sidewalks	26
Sheds and other buildings	28
Septic systems	21
Fences	15
Swimming pools	14
Retaining walls	8
Silos	4
Ponds	1
TOTAL	183

Observations of Surface Subsidence Agents

Department inspectors reported some general observations based on their twelve months of fieldwork in areas where longwall mining was conducted. They found that many structures located above longwall panels experience some amount of damage and that the damage is usually concurrent with coal extraction. They observed that the degree of damage is dependent on a number of factors. The most critical of these are the structure type, the structure’s orientation with respect to the direction of mining, the rate of coal extraction, the thickness and nature of the overburden, the thickness and inclination of the coal seam, and the surface topography.

The inspectors have also reported observing various types of repairs on damaged structures. These included rebuilding or replacing parts of foundations, and, in some cases, entire foundations. They have also observed the patching and painting of minor cracks in walls, floors and ceilings and the repair of leaking roofs.

The inspectors found that it is common for property owners and mine operators to enter into premining agreements. They have also encountered disputes where one or both parties had failed to adhere to the terms of their agreements. In some cases, the inspectors found that mine operators were doing more than the law requires by agreeing to repair damages that existed prior to mining and by paying “inconvenience money” to property owners.

Study of Structures Considered Likely to Subside

As part of its evaluation of structure impacts, the Department reviewed the information on a smaller subset of the properties with structures that were viewed as “likely to subside.” The study had two purposes. One was to determine how many of these properties had an associated

report of structure damage. The other purpose was to see how many of the owners of these properties had responded to the Department’s survey.

In making this assessment, the Department first identified those structures that would be likely to subside as a result of mining within the study period. This assessment was made from the six-month maps which show structures and mining. Structures that fell within a 15-degree angle of draw of high-extraction mining were identified as likely to subside. (The Department’s regulations at section 89.142(c) use a 15-degree angle to determine the area for structures that are to be supported). The Department then proceeded to identify the properties on which these structures were situated and to examine property owners’ questionnaires and claims database records for reports associated with those properties.

Based on the initial assessment, the Department identified 755 properties as having structures that were likely to subside. After reviewing property owners’ questionnaires and claims records, the Department found that 449 of the owners of these properties had returned survey questionnaires. This represented a 59 percent rate for that targeted population. The Department also found reports pertaining to 28 additional properties in the claims database. Altogether, the Department had information relating to 477 properties from both information sources.

Among the 477 collected reports, there were 291 reports of properties, or 61%, which had no structure damage despite having structures that were designated as likely to subside (see Table XI.6). The remaining 186 reports contained information indicating that some sort of damage had occurred to one or more structures on the property.

Table XI.6
Reported Impacts on Properties with Structures
Considered Likely to Subside
(Based on Property Owners’ Survey)

Reported Impacts	Properties Covered	Percentage
No damage	291	61%
Some damage to structures	186	39%
Total	477	100%