# RAMSAY, MONTANA

# A HISTORY OF ITS BUILT ENVIRONMENT

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Boundaries of Area Surveyed



NOT TO SCALE

#### INTRODUCTION

Located on Interstate 90 seven miles west of Butte, Ramsay is a small community within the consolidated city/county of Butte-Silver Bow. Characterized by regular streets of houses with uniform facades, the village was the product of the World War I industrial boom. As the copper mining on the nearby Butte hill expanded during the war, its operations consumed increasing amounts of explosives. As a result, the E.I. du Pont de Nemours and Company, a leader in the explosives industry, decided to locate a dynamite manufacturing plant close to Butte to capture the lucrative mining market. In 1916-1917, DuPont erected a small plant near Butte and a village named Ramsay to house its employees and their families. However, when a post-World War I economic recession descended upon the nation, both the copper and explosives industries were seriously affected. As a consequence, the DuPont Company shut down its Ramsay plant in 1921 and supplied the Butte mines from other factories. In that year, DuPont transferred or laid off its workers, leaving Ramsay vacated except for only two employees.

Construction of Ramsay was part of DuPont's social welfare program which emphasized greater control of workers through employer-provided housing. A concept prevalent in the early twentieth-century, company towns contained certain typical characteristics. These elements were reflected in the design of Ramsay.

Today, Ramsay still clearly conveys its origins as a planned DuPont Company town from the World War I era. Few new buildings or demolitions of original buildings have altered the uniformity of the village. Determined a potential historic district, in 1986 the Butte-Silver Bow Historic Preservation Office undertook an historic resources inventory of Ramsay as part of the Office's on-going contract with the Montana State Historic Preservation Office.

The Preservation Officer inventoried the structures within the Ramsay Townsite, an addition to Butte-Silver Bow. This neatly separated buildings which the DuPont Company erected from other non-related dwellings. Within Ramsay, forty-four structures were inventoried. At the explosives plant site are numerous foundations, four brick magazines, an office building, two corrugated-metal covered sheds and a water tower. These buildings were not covered in the scope of the Ramsay survey. However, remnants of the Ramsay plant will be inventoried at a later date.

Based on the results of the inventory, this report is a narrative overview of the history of Ramsay's built environment and the historic context in which the DuPont Company constructed the village. The report concludes that Ramsay's historic buildings and structures are significant because they represent the village's history as a DuPont Company town. Included is a methodology discussing generally the research procedure and the types of sources consulted. To provide an historic context, the report discusses the DuPont Company's housing program and phases of DuPont company towns. After noting elements of company towns, the narrative describes Ramsay in light of these characteristics. Before concluding with a statement of significance, the report details the construction and short life of the Ramsay explosives plant and village.

### METHODOLOGY

In order to assess the historic significance of the town Ramsay, the contractor conducted a two-part research methodology. Field work began first, which included photographing, descriping and noting alterations of all buildings in Ramsay. At that time, specific landscape features were also recorded. Research in historical records occurred after the field work. While searching for any secondary historical material available on the history of dynamite manufacturing and company towns, the author also identified available primary sources concerning Ramsay. Because the DuPont Company owned all the land and buildings in Ramsay which remained a small unincorporated town in Silver Bow County, few of the usual records revealed information about the town and its original occupants. The DuPont Company archival holdings in the Hagley Library and Museum in Wilmington, DE provided the best information on the built environment of Ramsay.

Historical research involved use of both primary and secondary sources. The location and usefulness of these records is described below:

DuPont Company Archives: Held in the Hagley Library and Museum in Wilmington, DE, these records proved the greatest source of information concerning the building of Ramsay. After contact by telephone and letter, the Hagley staff searched for material on Ramsay in their large DuPont Company holdings. They sent xeroxed copies of DuPont Company Departmental Meeting Minutes, Engineers' Reports for locating Ramsay, Monthly Budget Reports pertaining to Ramsay and background on DuPont Company policies. The Hagley Library holds over 180 photos of the construction of Ramsay and the dynamite plant, taken by the engineer in charge. Because of budget constraints, the contractor was only able to purchase twelve slides of these photos. The labeled and dated photos were invaluable in determining the series of construction in the town and the DuPont Company's types of housing in Ramsay.

County Records: Among the county records which were useful in researching Ramsay were the deeds, school census reports 1916-1942, plat map filed by the DuPont Company with the County Surveyor's Office in 1916 and some tax rolls after 1942. Silver Bow County deeds showed the DuPont Company's land acquisition prior to erecting the town and plant. Importantly, the deeds named subsidiary explosives companies and certain individuals which could then be traced in other records. Found in the Surveyor's Office, the plat map for Ramsay showed the order of construction in the town as well as labelled structures with a specific use. School census records helped indicate the fluxuation of Ramsay residents and also provided family names. Tax rolls were of limited use prior to 1942 as the DuPont Company owned all land and structures until that year. In 1942, George Russell bought the entire townsite from the Company and gradually sold parcels to individuals but this was after Ramsay's period of significance.

Newspapers: Both the <u>Anaconda Standard</u> and the <u>Butte Miner</u> were randomly searched for news reports of Ramsay. The newspapers did not provide much material. Because Ramsay is a small town in the county without its own newspapers, news from there appeared only sporadically in larger papers.

Oral Informants: As most DuPont Company employees lived in Ramsay only between 1916 and 1921, oral informants are limited. However, Mr. William Cullen, an original Ramsay dynamite plant worker and his wife Ethel still live in Butte and provided invaluable information about the plant and village. Several sons of original Ramsay plant workers reside in the village. The fathers of Bill and Patrick Mullins (now living in Butte) and Jim Wedin were the only two DuPont employees retained by the Company in Ramsay after the plant closed. Consequently, these men remembered much about Ramsay over the passage of time. Telephone conversations with local historians in the DuPont Company towns of DuPont, Washington and Louviers, Colorado helped place Ramsay into the context of other DuPont Company towns.

Mining Journals: Ramsay attracted little attention in the <u>Engineering</u> and <u>Mining Journal</u> although small reports announced the construction of the dynamite plant. This journal, and the <u>Mining and Scientific Press</u> did provide significant background material concerning explosives shortages and production during World War I.

Miscellaneous: Family photos lent by Bill Mullins and field observation augmented other primary historic sources concerning Ramsay. In some instances, photographs established original building character. Field observation in other company towns such as DuPont, Washington and Louviers, Colorado as well as Ramsay helped spot existing characteristics of a planned community. A primary source article about Hopewell, Virginia gave a point of comparison between another World War I DuPont town.

Secondary Sources: Although these sources did not mention Ramsay in particular, several publications discussed DuPont Company social welfare and housing programs. Leifur Magnusson's <u>Housing by Employers in the United States</u> alluded to housing in two DuPont Company towns which set a precedent for Ramsay. Mott Linn in his undergraduate thesis, "The E.I. du Pont de Nemours & Company's Housing of its Workers," examined the Company's philosophy of housing, typical aspects of company housing and the progression of DuPont Company town planning. The <u>History of the Explosives Industry in America</u> by Arthur Pine Van Gelder and Hugo Schlatter mentioned the building of the Ramsay plant and gave a brief biography of William Ramsay.

Sources Not Available for Ramsay: Many usual sources which indicate original residents and their occupations, dates of construction, ethnic makeup and type of construction were unavailable for Ramsay. Due to the small size of the town, there were no city directories and Sanborn Fire Insurance Maps. Building permits were not issued in Silver Bow County until 1982 and the 1920 Census is not yet published. As the DuPont Company owned all land and structures, deeds and tax rolls did not reflect occupants until at least 1942 when the DuPont Company sold the village.

Determining dates of construction and histories for individual buildings in Ramsay followed a relatively simple pattern. From dated photographs and maps and corroborated by oral inteviews, it was apparent that the DuPont Company constructed the cottages along Laird Street first in 1916. A newspaper article and unpublished report on the village by

Ramsay resident Jim Wedin confirmed that the same construction company which built the explosives plant erected the village. The DuPont Company then contracted for residences along Palmer Street in 1917. Work Order Authorization Cards from the DuPont Company Records in Wilmington, DE indicated the cost of construction for each of the three basic housing styles in Ramsay. Oral interviews were the main source of information about occupants in the cottages between 1916 and 1921.

Most of the buildings in Ramsay have sustained some alterations since their period of significance, 1916-1921. However, the writer gave careful consideration to determine if each building still retains its historic integrity. Ramsay conveys a strong sense of being a company town with streets of uniform facades as the majority of Ramsay's houses fall into only three styles. The houses sit in three rows on evenly spaced lots with identical setback from the street. In establishing integrity, location, design and setting were the most important historic elements which Ramsay buildings needed to retain historic integrity. Each house is an intrinsic component in a planned community of similar buildings. Therefore, each residence must retain its original lot location, setting within the village, basic architectural design and visual appearance as one of many houses of the same style. However, some changes did not seriously compromise the design if the addition did not alter the basic architectural plan. Windows modified with the removal of the double-hung sash and replaced with a single fixed-pane were acceptable if the new window filled the same space as the original window. The underlying criteria was that any addition could not obscure the original style of the building. If it was apparent that a house was an identical style to other houses in Ramsay, despite minor additions, the contractor considered integrity sufficient for National Register eligibility.

The addition of siding, asbestos roofing and the replacement of wooden front porches with metal and concrete porches most often compromised historic materials. These alterations somewhat weakened integrity. However, they do not affect the important elements of location, setting and design and are in keeping with the original character of the building. Therefore, buildings with such alterations retain a fairly high degree of historic integrity.

All of the material gathered in historical research and field work was transferred to Montana Historical and Architectural Inventory forms for each building or structure. The contractor made evaluations of historic significance from this information in accordance with the National Register Criterial for Evaluation, as established by the National Park Service, United States Department of the Interior:

The criteria are the National Register's standards for evaluating the significance of properties. The criteria are designed to guide the states, federal agencies, the Secretary of Interior and others in evaluating potential entries for the National Register [of Historic Places.]

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association, and:  a. that are associated with events that have made a significant contribution to the broad patterns of our history; or

b. that are associated with the lives of persons significant in our past; or

c. that embody the distinctive characteristics of a type, period, or method of construction, of that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d. that have yielded, or may be likely to yield, information important in prehistory or history.

Furthermore,

In order to qualify for the National Register, a property must be significant in American history, architecture, archeology, engineering, or culture. The property (1) must represent a significant theme or pattern in the history of a locality, a state, or the nation; and (2) must possess characteristics that make it a good representative of that theme or pattern.

Individual buildings or structures were determined to be individually eligible for the National Register (or "significant") or either contributing or non-contributing, within the context of specific themes and a time period (the "period of significance"). According to official standards,

A <u>contributing</u> resource conveys the architectural qualities, historic associations, or archeological values for which a property is significant because it a) was present during the period of significance, and b) possesses historic integrity reflecting its character at that time or, in the case of archeological resources, enabling it ot yield important information about the period.

The above definition applies to resources pivotal in illustrating the events, associations or architectural characteristics for which a property is significant, as well as those that, as part of a property's historic setting during the period of significance, add to its veracity of past time and place.

A <u>noncontributing</u> resource does not reflect the historic associations, architectural characteristics or informational potential for which a property is significant because it a) was not present during the period of significance, or b) due to alterations, disturbances, additions or other changes, no longer possesses historic integrity reflecting its character at that time or, in the case of archeological resources, enabling it to yield important information about the period.

Thes definition applies to resources that, even if compatible with the functions and architectural character of a property, were built or substantially altered after the period of significance.

## GROWTH OF THE DUPONT COMPANY

Since the early 19th century, the DuPont name has been important in the history of the explosives industry. In 1802, Eleuthere Irenee du Pont built his first powder mill on the Brandywine Creek near Wilmington, DE and began commercial manufacture of black powder. Thus began a company which would become the largest commercial explosives producer in the United States.(1)

Miners had used black powder since the 1600s in the Cornish tin mines. The technology transferred over to the settling of the New World, where settlers and engineers used black powder to build transportation networks, for blasting in mines for coal, iron, limestone, and other industrial purposes. Because of Lammot du Pont's substitution of cheaper Chilean saltpeter for the more-costly potassium nitrate in black powder the explosives industry, and with it the DuPont Company, experienced an upsurge in consumption until 1917.(2)

The burgeoning industrialism which transformed the United States after the Civil War also brought great changes to the DuPont Company. In 1872, several large powder companies formed the Gunpowder Trade Association in order to find a solution to left-over powder from the Civil War. By then a large regional business, the DuPont Company dominated the Association. New technology and advancing industrialization soon demanded increased amounts of explosives. The Company began expanding to meet the growing explosives consumption. Between 1876 and 1902, it bought out its competitors. By 1902, the DuPont Company ruled the Association and the entire explosives industry.(3)

After Alfred Nobel's discovery and patenting of the first dynamite in 1867, "Nobel's Safety Powder" began replacing black powder for blasting purposes. A mixture of nitrogycerin and diatomacious earth, dynamite had a higher detonation velocity which made it more powerful than black powder and broke up rock rather than just moved it. As it was brought into use in the early 1870s, further improvements to dynamite took place.(4)

Although initially the president of DuPont, Henry du Pont, believed that nitroglycerin and dynamite were too unsafe to market, his nephew, Lammot du Pont, convinced him of the future in dynamite. In 1880, the DuPont Company formed the Repauno Chemical Company to produce dynamite in New Jersey with Lammot as its president. Expanding rapidly, Repauno became the largest dynamite factory in the world and by 1902, the DuPont Company was the leading dynamite producer in the nation. Once the success of Repauno became fully apparent and the demand for dynamite grew tremendously, the Company engaged wholeheartedly in dynamite production. Between 1894 and 1927, DuPont erected six new dynamite plants and acquired two others across the nation.(5)

## DUPONT'S SOCIAL WELFARE PROGRAM

From its beginnings in 1804, the DuPont Company had a strong reputation for producing high-quality explosives. As increasing demand for their products pressured the firm to manufacture larger quantities at lower costs, the Company tried not to sacrifice safety and quality for quantity. In order to encourage these goals, the DuPont Company instituted a social welfare program. The U.S. Bureau of Labor Statistics in 1913 defined "welfare work" as "anything for the comfort and improvement, intellectural or social, of the employees over and above wages paid, which is not a necessity of the industry nor required by law." Companies used programs like these to attract and keep the more-qualified, skilled workers who theoretically had better safety records.(6)

Part of DuPont's social welfare philosophy included providing housing for its employees near the usually isolated explosives plants. Whether out of expediency or magnanimity, the DuPont Company became a leader in providing company housing. Why DuPont chose to place its best social welfare efforts into employee housing was obvious. Because of the nature of the explosives industry, manufacturing plants had to be located in rural, secluded areas at best near their source of raw materials or consumption. Usually in these places, an adequate labor force and housing were scarce or nonexistant. To lure skilled workers who would remain with the business, the employer needed to provide adequate housing. The benefit of improved living conditions was also thought to promote a greater sense of loyalty among workers to their employer and therefore discourage attempts to unionize. The underlying motiviation for a welfare program providing employee housing was the "desire for control over workers." (7)

Workers also benefited from DuPont's housing program. They secured comfortable living quarters close to their place of employment and were able to bring their families with them. The DuPont Company not only erected affordable, attractive residences for married workers and their families but also built other community and social ammenities, such as stores, dormitories for single workers, social and recreational clubs, churches and schools. In some cases, the Company even provided transportation, such as shortline railroads, so that commuting employees could reduce the amount of time and money spent in traveling to work.(8)

# THE PREVALENT IDEA OF COMPANY HOUSING AT 1900

The DuPont Company was by no means the only United States industry interested in "welfare work" for its employees. As industrialization matured and competition increased, more corporations became concerned with efficiency and greater productivity from their workers. Many businesses began researching and instituting "scientific management" of the workplace. Management of the factory led to the belief that employer needed to control the worker in the home as well. Charles Richmond Henderson, in <u>Citizens in Industry</u> wrote in 1915, "Those who are seeking the conditions of highest efficiency in the shop will find some of the most important of them in the home." Capitalists engaged professional planners and sociologists to design company-built towns which would provide both better living conditions and greater worker efficiency.(9)

Although company towns existed before 1900, planned communities built in the early twentieth century differed from these earlier models. Companies which provided housing after 1900 generally did so on a much larger scale. For instance, DuPont had erected only a small amount of housing near their original works on the Brandywine River and the Iowa Powder Works before 1900. However, between 1900 and 1914, the chemical company erected 10,790 individual dwellings increasing their housing capacity to 65,000.(10)

Twentieth-century capitalists considered company towns a matter of sound economic planning rather that philanthropic gestures. Professional planners and architects designed the towns for efficiency and to increase the productivity of the workers. Through these techniques, industrialists also gained more control of their workforce and attempted to forestall the growing unionism and threatening progressive reforms.(11)

Despite the failure of industrialist George Pullman to create a model company town in 1894, the idea of welfare work and industrial town planning continued to grow into the early twentieth century. Promoted by such organizations as the National Civic Federation and the League for Social Service which publicized the success of various model towns, more companies began building. Manufacturers stated that most often their reason for constructing company towns was a shortage of affordable accomodations near their plants.(12)

#### DUPONT COMPANY TOWNS--DIFFERENT ERAS

DuPont Company-sponsored employee housing programs clearly exemplified the prevalent ideas about the ben fits of company towns after 1900. Mott Linn, in "The E.I. DuPont De Nemours and Company's Housing of its Workers," divided the housing activities of the Company into four phases; pre-World War I housing, emergency war housing, post-war housing and the selling of the properties.

Although the DuPont Company had erected some housing for employees earlier, from 1881 until 1914 the Company began actively developing and refining their housing program. During this period, the chemical firm built at least nine company towns although only a few of these were complete villages. Most of the residences were single-family, detached frame houses with five or six rooms, commonly in the bungalow style. Erected on large lots, the houses contained modern conveniences such as running water, electricity, and steam or hot air furnaces in the cellars. The DuPont Company retained ownership of the houses and rented them to laborers and their families for about \$144 to \$200 per year. Single workers lived in dormitories or boarding houses. The Company provided water and sewer systems, street lights, concrete sidewalks, graded and paved the streets and built recreational facilities such as baseball fields, tennis courts, club houses. Company-built churches and schools were donated to the community. In the larger villages, DuPont also erected some commercial buildings. However, the DuPont Company did not operate business enterprises, prefering to rent the structures.(13)

Two examples of pre-war DuPont Company housing were DuPont, Washington and Louviers, Colorado. Platted in 1909 in a scenic woodland setting on the southern tip of Puget Sound, DuPont, Washington contained fiftyeight houses, including two large residences for the manager and assistant manager. Later, in 1912, 1915, 1916 and 1917, the explosives firm added more houses as the plant expanded. A local business district included two stores, butcher shop, club house, hotel and a playground. DuPont owned all the structures and rented only to their own employees. Intending to create a model company town, the DuPont Company engaged a Tacoma landscape designer to lay out the streets, lawns, playgrounds and parking areas. It also hired gardeners to tend the rose gardens surrounding the two managers' mansions. The Company provided all services, such as electricity, water system including fire hydrants at each corner, sewer system, and streetlights. Designed on a rectangular grid pattern, the streets in the village were named for either important men in the DuPont Company or DuPont Company plants throughout the nation.(14)

Generally, the residences in DuPont, Washington belonged to a limited number of architectural styles, creating the image of uniformity. Sitting opposite each other at the entrance into the village were the large homes of the manager's and assistant manager's houses. Surrounded by two and a half acres of land, the manager's house contained 15 rooms and a basement. Somewhat smaller, the assistant manager's house had 10 rooms with a basement and sat on one acre of land. Considered a functional, efficient style, the bungalow predominated the design for workers' housing in two variations. Most prevalent were the one and half story, hip roofed rectangular dwellings which had a extended gableroofed dormer in the rear and a half-hip roofed dormer in the front. A cutaway porch with wooden steps and balustrade characterized the front entryway. These became known as DuPont-style cottages. More elaborate but within the bungalow genre were the one and half-story, rectangular dwellings with a gable roof. In the front was a dormer with a shed roof and a porch extending from the gable roof. Large knee braces and eave brackets ornamented the porch and eaves. The porch had no posts, only a turned-spindle balustrade. Both of these styles had wood shingle siding.(15)

Louviers, Colorado, about fifteen miles south of Denver, was also part of the DuPont Company's pre-war housing period. Production started up in the explosives plant at Louviers in 1908. At that time, living conditions were considered "very poor as there were only available a few shacks and a general boarding camp left by the Construction department." By 1912, the DuPont Company had improved the village by building a number of small houses for married employees, "a boarding house and store equipped with all modern convieniences [sic] and very comfortable quarters for the men." With only 125 employees in 1912, the village was not large enough to support a social club. Residences in Louviers divided into two groups "designed along similar lines to those at DuPont." Most common were square-shaped, one-story, hip-roofed dwellings, called workers' cottages in other parts of the nation. Within the DuPont Company, this housing design became known as the Louviers-style cottage. A water, electric light and sewer system serviced the village.(16)

In 1913 the Company undertook an extensive landscaping project in Louviers. Workers set out trees and shrubs, planted grass, graded and terraced unlevel areas, built roads and paths and installed an irrigation system. Set on large lots, each house had a lawn and a parking strip separating the street from the yard. A green boulevard divided the wide main street. Also in 1913, plans were underway to construct a three-room school building, which the Company would construct and rent to the local school board. DuPont agreed to supply the hot air heating system, toilets and school furniture. (17)

When World War I broke out in Europe in 1914, demand for both black powder to be used in munitions and dynamite to supply the crucial metal mines increased tremendously. To furnish the growing war effort, especially after the United States entered the war in 1917, the DuPont Company began constructing several new plants. Housing workers at these new factories became a critical problem as burgeoning industrial areas expanded rapidly causing housing shortages and high rents. The war pulled available manpower into the armed services and the result was a nationwide labor shortage. Employers found they needed good living facilities to attract scarce, skilled workers. Consequently, the DuPont Company began building more new villages as well as expanding existing towns.(18)

During World War I, DuPont constructed one of their largest and most well-known towns. Plans for a Hopewell, Virginia explosives plant and village actually began before the war. However, with the increased war demands for munitions, the firm converted and expanded the plant to produce smokeless powder. Plans for a small village of twenty houses and a boarding house grew into a town housing 6,800 employees in 1918, 55.8% of its entire Hopewell work force.(19)

The residential area of Hopewell consisted of three different sections, each with different types of housing. DuPont Company management officials, technical staff and the higher-salaried employees with families lived in detached houses. Containing five to seven rooms and a basement, these residences had the modern conveniences of hot-air furnaces, hot and cold running water and electric lighting. The houses were, "attractive and comfortable, and of fairly substantial construction, being sided (clapboarded) or shingled on the outside and plastered inside." Lots on which the houses sat were large and landscaped with lawns, trees, bushes and flowers. For single salaried employees, DuPont constructed a hotel lodging 365 men, 325 of whom either rented a separate room or shared with another person. This part of the village contained the housing DuPont considered permanent.(20)

Other areas within Hopewell reflected the immediate need for temporary housing for DuPont's swollen war-time labor force. Semi-permanent were the houses in the rubberoid village. Constructed with a covering of a tar-paper material called rubberoid, these dwellings had a calculated life of only seven years. Although temporary, the houses were four to five rooms, and most had bathrooms, sewer, water and electric lighting. Behind the homes, was a lot large enough for a garden. DuPont also constructed numerous temporary dormitories for single men and women.(21)

During the construction of the Hopewell plant in 1914-15, DuPont erected a series of bunkhouses for craftsmen. Later, the chemical firm converted these into two-room apartments for families. Covered with rubberoid, long rows of barracks contained 580 apartments but had no indoor sanitary facilities. Separate quarters housed single black men, black women and immigrants. However, these were rarely full. Married blacks generally used rubberoid two-room cottages.(22) Outside the enclosed village, was another settlement exclusively for white employees. In 1914-15, contractors erected eighty houses with two three-room apartments of rubberoid construction. Plans provided for an exterior washhouse, two outside toilets and a wash room for every four houses.(23)

For its workers in Hopewell, the DuPont Company furnished all community services as well as social and recreational facilities. Garbage collection occurred daily in the executive's village and four times a week elsewhere. Police and fire protection, street cleaning, street lighting, electricity and sanitary rule enforcement came with living in company housing. DuPont built schools, supplied land and electricity to churches and supported local Y.M.C.A.'s. Employees could take advantage of baseball fields, tennis courts and a trap and gun club.(24)

## DUPONT DIVESTURE OF COMPANY TOWNS

After World War I, the DuPont Company gradually abandoned its housing program and began selling their company towns. After the 1920s, the importance of providing employee housing diminished. Better transportation networks and the increasing use of the automobile gave workers greater mobility to live farther away from their workplace. Companies found that rents did not cover expenses for town maintenance. In a letter to DuPont, Washington residents disclosing its intent to sell company housing, the Company cited their reasons: "Due to the expansion of other residential areas, advancement in transportation, and the fact that village accomodates only a percentage of those currently employed at Du Pont Works, the company feels the original reason for operating the village has disappeared."(25)

During World War II and throughout the 1940s, 50s and 60s, the DuPont Company sold their towns. Current tenants had first option then former company employees. Not looking for profit from the sale of the houses, the Company generally sold the dwellings under a variety of sales plans. Installment payments could be as low as the rent had been. In DuPont, Washington, the Company allowed a full year from the time they announced prices in 1951 to arrange the purchase or find other living quarters. In this village, retired employees and widows could chose to remain as tenants. Newly-formed town governments received community buildings, water, sewer and electric systems, parks and children's playgrounds as donations. Businesses could buy their structures from DuPont.(26)

## GENERAL CHARACTERISTICS OF COMPANY TOWNS

Most villages that large companies, such as DuPont, constructed in the twentieth-century were similar in design and construction. Leifur Magnusson's <u>Housing By Employers in the United States</u>, published in 1920, contained a description of the general characteristics of these company towns. Magnusson based his summary on his review of 213 of the "best and most representative work being done by employers to provide housing accommodations for their employers." Included in the survey were two explosives companies and four associated company villages. At least one of the companies and three of the towns belonged to DuPont. Magnusson rated DuPont-created housing higher than contemporary private developments surrounding them saying, "the company developments compare more than favorably with the privately exploited community in point of attractiveness of the houses, provision of sanitary convenienences, care and maintenance of streets and alleys, provision of parked roadways, and quality and character of the houses." In comparison with a general standard for company housing, DuPont's villages also fared better than the norm.(27)

In his study, Magnusson found that the "chief characteristic of every company town is its uniformity, due to a tendency to erect houses of similar plan and type and to arrange them along rectangular lines of survey." Although the communities lacked landscaping with trees, grass or shrubs, they usually included wide, unpaved streets and large lots without the crowding characteristic of more urban development. Most company towns did not have a sewer or piped water system, sidewalks, or gutters. Owned and controlled by large private industrial corporations, the villages usually had no local government and being industrial satellites of larger cities, rarely belonged in any larger governmental unit. Responsibility for community maintenance, such as street cleaning, lighting, health and sanitary regulation fell entirely to the controlling organization and varied greatly according to the company and loca ity.(28)

According to Magnusson, "the typi al company house was a single or detached frame house consisting generally of four rooms...." Although most had electric lighting, the mejority lacked modern sanitary plumbing. Typical design, plan and construction material became standardized in a specific locality so that certain types characterized different sections of the nation. For instance, Magnusson found that the "semidetached frame house of stereotyped plan and exterior, with all houses in each community painted the same color" appeared in eastern mining communities. The most common style of company housing was the "small four room hip-roofed frame cottage or bungalow" found not only in the south and southwest, but also in Western mining camps. In the northern mining and steel manufacturing towns, companies erected the "conventional story-and-a-half or two-story gable cottage of frame." Generally, companies fabricated the type of house built by private contractors in the region. Construction costs for company housing varied. However, usually the small frame cottages cost between \$600 and \$1,000 while the ready-made dwellings were more expensive, from \$1,200 to \$1,500.(29)

By the twentieth-century, most companies erecting company towns used basic principles of town planning in their housing programs. Even so, the most common street pattern continued to be the rectangular grid system. Benefits from this design were many. Not only were straight streets cheaper to build and maintain, they were easier to survey and construct when the ground was level. Generally people were used to straight streets which provided greater accessibility for emergencies, such as fire. Most companies planned to keep their communities small so could not justify constructing diagonal streets. The rectangular pattern also promoted the most efficient use of space, allowing the greatest number of houses per acre.(30) Wide streets and alleys also characterized the planned company community. Almost all of the towns Magnusson surveyed had streets of "ample width." Few towns had all of its streets paved and those that did used asphalt, concrete or brick. "Alleys are the rule in company towns," Magnusson discovered, their prevailing width between fifteen and eighteen feet. This rear roadway allowed residents to keep their garbage and rubbish to the rear of their homes, enhancing the visual attractiveness of the village.(31)

Public utilities serviced a large majority of company towns, although sometimes in only part of the community. Most villages had a water system, sanitary sewers, electric lights, some street paving, sidewalks and gutters. Less common were gas lines into the dwellings and storm sewers.(32)

#### DESCRIPTION OF RAMSAY

In southwestern Montana near Butte, the small town of Ramsay clearly illustrated these aspects of company town planning described by Magnusson. Built by the E.I. du Pont de Nemours and Company in 1916-17, it was part of a social welfare program which created first-rate housing for its employees. The physical layout of the village epitomized characteristics of the planned community and demonstrated that the DuPont Company furnished amenities better than the standard company village.

Seven miles west of Butte along the highway to Anaconda, Ramsay lies on on level ground where Brown's Gulch Creek flows into Silver Bow Creek. The original Butte-Anaconda highway divided the village from the explosives plant to the north. Most of the plant has been torn down. However, the office, brick storage magazines, several corrugated-iron buildings and a water tower still exist among numerous foundations. Now, Interstate 90, with a high overpass, blocks the view between Ramsay and the reminants of the plant. Ramsay is also situated along the Butte, Anaconda and Pacific Railway. Still visible is the bed of the BAP railroad spur that left the mainline at the village and proceeded north for about one half mile to the explosives magazines.

Constructed along a grid system of four streets, Ramsay consists of thirty-four residences, twenty-eight of which belong to only three original architectural styles. These dwellings line two wide streets, Palmer and Laird, which run north-south and intersect two east-west streets, Beulah and Russell. Large, regularly-spaced lots surround each house. Wide alleys down the center of the blocks divide the rear lots of each residence. On the south end of the village, Laird Street extends beyond the grid system. In this area, three structures sit apart from the rest of the village. Homes for DuPont Company managers, the buildings are larger than the stylized dwellings and have a different architectural style. Across the street from the superintendent's house is a park with a warming shelter, obviously used for a skating rink in the winter. The Ramsay Consolidated School stands on the west side of the village, behind the two rows of residences. To the north of the school, is a large open park area. Four original communal garages still exist within Ramsay, three in the southeast corner and one in the northwest corner of the town.

Twenty-eight of the homes fall into three architectural catagories. The DuPont Company named each style after one of their company towns where apparently the design arose. Most of the dwellings (nineteen) are DuPont-style cottages including all of the Palmer Street residences. These are a rectangular-shaped wood frame residences with a hip roof. Half-hip roofed dormers extend from the roof on the fronts of the building, making the cottages one-and-a-half story. Under roof eaves are slightly-curved eave brackets. Originally, all windows were doublehung sashes. Characteristically, in the front was a wooden cut-away porch with shingled posts and a small balustrade that has turned spindles, square posts and wooden steps. Although initially DuPontstyle houses had wood-shingling siding, numerous later owners have covered their homes with metal siding. The house at 2 Laird is the best example in Ramsay of the DuPont style. DuPont, Washington features many residences of this architectural design. As the Company erected DuPont, Washington earlier than Ramsay, it probably used the same architectural plan when it built Ramsay.

Six Hopewell-style cottages clump together on the southwest end of Laird Street. These buildings have a distinctly East coast flavor, their design originating in the DuPont Company town of Hopewell, Virginia. They are rectangular-shaped wood-frame dwellings with a gable roof. Protruding from the gable roof is a dormer with a shed roof. Eave brackets extend under the dormer and main roofs. Windows are six-light double hung and framed with decorative shutters. Originally, Hopewell cottages were wood-shingled but over time most have been sided with metal. Apparently, the front porches consisted of wooden steps and a shed roof with eave brackets over the main entrance supported by plain wood posts. In Ramsay, 22 Laird best represents the Hopewell style.

Only three Louviers-style cottages exist in Ramsay, all sitting together on the northeast side of Laird Street. One of the most basic designs for workers' housing, these houses are square, of wood-frame construction and have hip roofs. Windows are double-hung sash. In the front of the houses are porches which initially had shed roofs and wooden posts. Now, all of these porches have been enclosed to provide additional space. All three have their original siding covered with lapped metal siding. The DuPont Company built Louviers, just south of Denver, Colorado, in 1908. There the square, hipped roofed workers cottage predominates and presumably set a precedent for a building type in Ramsay.

Other original residences which do not fall into these three design catagories are the homes of the DuPont executives at the south end of Laird Street. Largest and most elaborate is the superintendents' house at 21 Laird. This two-and-a-half story Colonial Revival residence with a hip roof has wood shingles on the first floor and beveled lap siding on the second. The double-hung windows have six-lights, exist in pairs and are flanked by decorative shutters. To the south, is a one-story sunporch with twelve-light windows. A dormer with a shallowly-arched roof and two 8/8 double hung windows projects from the roof. On the west side of the building is a polygonal bay with five 4/4 double hung windows and a porch consisting of concrete steps, a gabled overdoor and Tuscan posts. Next door to the south of the superintendent's house is the assistant manager's residence, 23 Laird. Smaller than the Ramsay superintendent's home but larger than worker's cottages, this modified bungalow is rectangular in shape with a gable roof. Under the eaves are simple eave brackets and kneebraces. A dormer with a shed roof and two pairs of double-hung windows runs the full length of the west pitch of the gable roof. Also on the west side is a porch which has an extended gable roof, Tuscan posts and a wooden balustrade. This residence may have orignally possessed the same architectural style as 26 Laird.

Across the street from the assistant manager's house is another residence, 26 Laird, which is somewhat larger than the worker's housing. Along with the two executive's residences, this building sits at the south of the village, slightly apart from the rows of cottages. Although, the style of this house is unique in Ramsay, the exact design is found throughout DuPont, Washington. One-and-a-half stories, the structure has a rectangular shape with a gable roof. Projecting from the east pitch of the gable is a dormer with a shed roof and two doublehung windows. The gable extends on the east side to form the roof of the front porch. Decorative kneebraces support the porch roof. The wooden porch has a wooden balustrade with turned spindles.

A few stone dynamite storage buildings still exist in Ramsay. A 1916 map indicated that originally six of these magazines paralleled a railroad spur. Three stone magazines survive and are located southwest of the school. Massively constructed of stone, the structures are rectangular-shaped with gable roofs.

Evidence that the DuPont Company included elements of landscaping for greenery and open areas remains in Ramsay. Cottonwood trees line Laird Street and on Palmer Street a few yards still contain original juniper trees. All the lots are large and are planted in lawns. Ramsay has two parks, one next to 26 Laird which is used for a skating rink in the winter, and another behind the north end of Laird Street. Due to the dry, harsh climate, Ramsay could never support the lush vegetation found in DuPont, Washington. However, in planning Ramsay, the DuPont Company did try to landscape with trees and shrubs appropriate to Montana's weather.

Unlike many companies of the era, the DuPont Company built Ramsay with a rather extensive infrastructure. At the plant site, contractors dug a well for water and erected a water tower in which to pump the water. This water also supplied the village. Water lines ran down the east side of Laird Street and the alley between Laird and Palmer. Sewer pipes collected refuse from cottages and gathered it into a main drain pipe which took the sewerage to Brown's Gulch Creek. Manholes provided On the east side of Palmer Street, workers dug a access to the sewers. ditch for an open drain. This apparently collected rain water and diverted it through a drain to the creek. A network of electric streetlights illuminated Ramsay. Along the two main streets, Laird and Palmer, contractors laid concrete sidewalks. As Ramsay was isolated, the DuPont Company maintained its own simple fire equipment. Fire hydrants attached to the water system were evenly spaced along Laird and Palmer Streets. At each end of the village were hose reel houses containing fire hoses which could be connected to the hydrants.

# HISTORY OF BUILDING RAMSAY

The location of the Ramsay explosives plant and village seven miles west of Butte, Montana was directly related to the vast copper industry on the Butte hill. Begun in the 1880s when silver miners discovered large quantities of high-grade copper, Butte copper mining experienced a boom which continued until the 1920s. By 1915, one company, the Anaconda Copper Mining Company, grew to dominate the local economy and emerged an international giant in the copper industry. Under the astute leadership of men such as John D. Ryan, the Company consolidated the underground workings on the Butte hill, erected advanced reduction works and smelters at Anaconda, Great Falls, and East Helena, acquired lumber operations, coal fields and many ancillary smaller industries supportive to copper mining and processing. By 1915, Anaconda Company assets totaled \$118 million making it the world's largest copper company.(33)

In 1914, when Europe erupted into war, need for wartime materials, such as copper and zinc, increased dramatically. Unable to manufacture their own products, European allies turned to the United States to provide essential commodities. The United States' entrance into the conflict in 1917 served to eccelerate demands. As a result, the American economy experienced a tremendous boom in the 1910s. For instance, in the metal mines of the United States, miners produced thirty million more tons of ore in 1916 than two years earlier in 1914. Wartime demands greatly affected the already-expanding copper industry. Mines on the Butte hill worked at full capacity as prices for copper reached the historic high of 36 cents per pound in 1917. Reaping immense profits, the Anaconda Company doubled their assets between 1910 and 1918.(34)

Hardrock mining, as practiced in Butte copper mines, required the extensive use of explosives. Miners first used black powder, then later dynamite, to blast the ore out of the earth. Breaking up the rock effectively was an important step in the mining process. As the mining industry expanded into full production during World War I, the need for larger amounts of explosives proportionately increased. The U.S. Bureau of Mines estimated that during 1916 alone, the consumption of dynamite grew by 23%. Aggravating the situation, was the conversion of some explosives plant to munitions production, such as DuPont, WA, in order to supply the war effort. As a result, some mining areas experienced a shortage of explosives.(35)

With already-high wartime costs for wages, mining supplies and freight, came enormous boosts in the price for explosives. Between 1914 and 1916, the price of DuPont's forty percent nitroglycerin dynamite, used by most large mining companies, rose 73.5%, from \$11.25 per hundred pound to \$19.75 per hundred pound. High dynamite prices did not as severely affect industries which received a war-inflated price for their metal, such as copper, as metal mines that received steady prices, such as gold and silver. By 1917, the <u>Engineering and Mining</u> <u>Journal</u> claimed that explosive prices "advanced about every 30 days or six weeks." DuPont and Giant (a subsidiary of DuPont) black powder more than doubled in price since the beginning of the war. Because the <u>Journal</u> felt that "the high cost of powder has now become a most serious matter in western mining districts," it advocated fixing the price of the necessary material. DuPont profits between 1914 and 1916 reflected this tremendous expansion. Although the Company expended sixty million dollars in plant construction between these years, it earned a net profit of \$82 million in 1916 alone, up from \$5 million in 1914.(36)

By the 1890s, several explosives companies supplied the miners in Butte with dynamite and black powder. However, in 1899, all sources listed in the Butte Polk City Directories were subsidiaries of the DuPont Company except the Anaconda Copper Mining Company: California Powder Works, the Giant Powder Company, and Repauno Chemical Company. After 1900, one other firm appeared in the City Directory, the Western Mining (Independent Powder Company), but DuPont seemed to dominate the field. Apparently, the California Powder Works and the Repauno Chemical Company stored their products perhaps as early as 1898 in at least two stone magazines near the Butte, Anaconda and Pacific Railway stop at Dawson, just west of present-day Ramsay. When these two subsidiaries of DuPont sold their holdings to the E.I.du Pont de Nemours & Company, the parent organization, in 1907, the sale included these two magazines.(37)

Attracted by the rich copper mining in Butte, the DuPont Company may have considered building an explosives plant near the Mining City as early as 1907. That year, the DuPont Company began acquiring land near the Dawson magazines holdings from their subsidiaries. In 1912, a DuPont representative reviewed the vicinity for possible locations. Throughout the next two years, the Company contemplated a Montana plant. In 1913, concern arose over the tumultuous labor situation in Butte and the city's Socialist city government. Because DuPont was a non-union business, one of their managers, W.C. Howard, worried that "Politically and from the labor standpoint it does not seem to me that the situation in Butte is any too good....The labor situation and laws that might be enacted are points which are worth considering in connection with the building of this plant." (38)

As the Anaconda Copper Mining Company consumed immense quantities of explosives in its copper mines, obtaining a close source of dynamite was in the best interests of the Company. At least by 1913, John D. Ryan, President of the Amalgamated Copper Company (soon to become the Anaconda Copper Mining Company in 1915) was negotiating with DuPont representatives for an explosives plant near Butte. Ryan told DuPont officials that if they built a plant in Montana, his company would not consider buying explosives from any other company. Also, the ACMC "expected to have its sulphuric acid plant to supply acid for their leaching plant completed by the middle of 1915," which could provide DuPont with an important ingredient in dynamite. Anxious to have exclusive sales with the ACMC, DuPont offered to give Anaconda a fifty cent per hundred pound reduction in price. This meant a savings of Worried that Ryan might bargain with \$30,000 a year for the ACMC. another explosives firm, a DuPont executive thought it "necessary to build a plant there for the reason that he (Ryan) has an idea in his mind, and if we do not do so, it seems very natural that he should call in some other powder interest or individual to figure with." Sure that if DuPont constructed the facility Ryan would not negotiate with anyone else, he advised that the DuPont Executive Committee decide about a Montana plant by the beginning of 1914.(39)

On January 28, 1914, the Executive Committee of the E.I. du Pont de Nemours Powder Co. unanimously passed a resolution to build a dynamite plant with an eight million pound capacity in Montana. Plans for the new factory #36 began soon after the decision to proceed. DuPont sent their chief engineer, Harry F. Pierce, to Montana in the spring of 1914. He "went carefully over the country in the vicinity of Butte and Anaconda to find available sites for a dynamite plant." In his report to H.M. Barksdale, a Director for DuPont, Pierce discussed four different possible locations and recommended his choice.(40)

Certain transporation and geographical limitations conscribed possible plant sites. The factory needed access to railroads and be near Butte. Because Butte was surrounded by mountains on three sides which would increase freight costs, the logical solution was to locate the plant west of the Mining City. There, three railroad lines ran parallel over level grades; the Milwaukee, the Northern Pacific, and the ACMC-owned Butte, Anaconda and Pacific Railway. Another important consideration for location of the factory was the availability of water needed in the industrial process. Because most streams east of Deer Lodge (forty miles west of Butte) went dry in the summer, Chief Engineer Pierce narrowed suitable sites to "the area between Butte and a point 30 miles west of Butte" on the Milwaukee Railroad.(41)

Possible plant locations farthest west of Butte seemed to have the least likely potential. Pierce suggested two sites near Anaconda close to present-day Opportunity, but regarded them as "hardly worth considering" until DuPont found other, better sites impossible to build. Because labor conditions were somewhat better in Anaconda, another chosen site was five miles east of Anaconda. It had the necessary requirments and was near enough to Anaconda to run work trains from the Smelter City.(42)

However, the site that Pierce recommended to DuPont in several variations appeared to him "the most logical and economic site for the location of a plant should we decide to build in Montana." Near Dawson just west of Silver Bow, the DuPont Company already owned land and kept its magazines. J.C. Frank, the DuPont magazine keeper at the Dawson magazines, had recently bought land adjacent to DuPont land. This area controlled the mouth of Brown's Gulch Creek and ownership gave "considerable right in the spring." Pierce suggested DuPont acquire the Frank land so that DuPont could control the "entire reach of Brown's Gulch creek...so that we can use it below our intake for water supply to dispose of our waste products." DuPont could use creek and well water for the industrial process and spring water for drinking. Besides the DuPont and Frank-owned land, Pierce considered 880 other acres--the Charles Gardner and F.A. Peck ranches totalling 520 acres, a forty acre area of unknown ownership and 320 acres of Northern Pacific Railway land. In summary, the engineer estimated that the DuPont Company needed \$45,500 to buy a 1,040 acre site for their plant near Dawson. (43)

The future Ramsay location had many obvious advantages. Primarily, it was close to its center of consumption, Butte, which was only seven miles to the east. Just one and a quarter miles west of Silver Bow junction, the area was an ideal transportation site--the Northern Pacific, Milwaukee and Butte, Anaconda and Pacific Railways bordered the DuPont land and Silver Bow was a transfer point south to the Oregon Short Line. In addition, the Anaconda Highway, at that time a main road, cut through the area.(44)

Good water, both for drinking and industrial use, supplied the proposed location from three sources--Brown's Gulch Creek, wells at Dawson and near the creek and the spring on the Gardner ranch. Silver Bow Creek, into which the Brown's Gulch Creek flowed at Dawson, would provide waste disposal. Pierce did not worry about polluting the stream stating, "Silver Bow creek is so highly contaminated that nothing we would put in it would make it any worse."(45)

DuPont Company executives carefully considered labor conditions in Butte before building their manufacturing plant. As a non-union company, DuPont was concerned about labor disturbances which had occurred in Butte in 1914. Because of division within the miners' union, unknown persons had blown up the Miners' Union Hall and another Amalgamated Copper Mining Company building. As a result of the turmoil, the Amalgamated Copper Company (which became the Anaconda Copper Mining Company in 1915) refused to recognize the Butte Miners' Union, the largest labor organization in the Mining City. Unrest continued throughout World War I and federal troops occupied the city to insure the production of copper, considered essential for the war effort. In 1913, John D. Ryan, President of Amalgamated, had advised DuPont officials that to avoid trouble DuPont "would have to unionize" but that the unions could be controlled. Ryan "insisted that where he had unions that all his men go into them, for the reason that if this policy was not pursued the unions would be filled with the radical element only. With all his men in, that is, the conservative element, it enables him to get along pretty well with the unions." Although perhaps fearing of a strike during a time of high profits, the DuPont Company apparently decided that the profits earned from a Montana plant would offset the danger from labor troubles. During its operation between 1917 and 1921, the Ramsay dynamite workers did not belong to any union.(46)

Most likely because of the tense situation in Butte and shortage of workers, Pierce recommended in his report that DuPont erect employee housing near the new factory. Although a work train could run from Butte to the site, the chief engineer said, "it would be considered more desirable to house as many of the employees as we could in the present buildings at Silver Bow and build additional houses there."(47)

At the urging of Ryan "that the plant be built as soon as possible," DuPont began acquiring land for the plant and village at the recommended site in 1915. With the assistance of Mr. Daniel Cauffiel of Wilmington, Delaware, (who may have worked for DuPont as Pierce mentioned discussing the location with him in his location report) and the Rokeby Realty of Delaware, DuPont either bought land or transferred the deed to itself from its subsidiaries. Cauffiel bought land from the Northern Pacific Railroad in June, 1915. That year, he also purchased portions of the Charles Gardner ranch with water rights and springs. These deeds then transferred to the du Pont de Nemours and Company of Delaware. Between 1904 and 1909, du Pont Powder Company and the Rokeby Realty of Delaware had collected numerous holdings in the area from other explosives companies-Judson Dynamite and Powder Company, the California Powder Company, the Giant Powder Company and the Repauno Chemical Company. These lands became property of the du Pont de Nemours and Company in 1915.(48)

# CONSTRUCTION OF PLANT AND VILLAGE

By 1916, once the land was in the name of the DuPont Company, the firm began construction of the Montana village and plant. To construct both facilities, DuPont hired the contractors, Clifton, Applegate and Toole, headquartered in Spokane, Washington.(See Appendix) Resident engineer supervising the construction was W.J. Laird. A Mr. Palmer apparently assisted Laird in directing the construction.(49)

Construction work on the plant began in the spring of 1916. By June, the Butte Miner reported, "almost 100 buildings rapidly springing up under the hands of 300 workingmen." The plant area was divided into four sections. On the easternmost side, was a row of "processes houses of various sizes and shapes stretched along a side track." Then. a row of long buildings which appeared to be warehouses formed another portion of the facility. Although a few structures in these first two rows were substantially built of brick, most of these structures were small buildings of frame construction, sided and roofed in corrugated iron. The contracting firm had completed seven nitroglycerine and dynamite magazines to the west of the factory at the base of low-lying hills. Cribwork supporting earthern embankments surrounded these structures on three sides in order to guide an explosion away from the other magazines. An electrified siding of the Butte, Anaconda and Pacific Railway connected the magazines and plant with the trunk line to Butte. In the center of the facility, laborers worked on a number of frame buildings.(50)

To temporarily house their laborers, Clifton, Applegate and Toole constructed a camp of small cabins and tents to the southwest of the plant site and parallel to the Anaconda highway. A row of rubberoid cabins and white tents, each flying an American flag, encircled a central flagpole with another flag. A large boardinghouse and cookhouse faced the appropriately-named DuPont Avenue. Other buildings included the contractor's office, a barber shop, pool room and grocery store. Apparently, enough of the men in the construction camp had families to warrent construction of a temporary school.(51)

By late summer of 1916, the contractors had begun construction of the village. Photographs taken on September 5, 1916 show the three Louviers cottages and a DuPont-style residence on the east side of Laird Street mostly complete. On the same date, the framework for four Hopewell-style houses existed directly across the street from the Louviers cottages. By September 19, five Hopewells and a DuPont-style residence lined the west side of Laird and three Louviers and four DuPont-style houses fronted the east side. Within a month, these houses were complete, the Hopewells painted white and the DuPonts alternating green and brown. Contractors finished the executives' houses at 21 Laird and 26 Laird by the end of October. By that date, workers had dug a ditch along Laird and laid the water and sewer pipes under the street.(52) Throughout the early planning and construction phase of the explosives factory and village near Butte, the DuPont Company generally referred to the site as the Montana plant. However, in late September, the Company named the factory and town Ramsay in honor of William G. Ramsay who died on September 28, 1916. Ramsay had been the former chief engineer for the DuPont Company since 1902 and as such, had directed the building of some of the largest explosives plants in the United States.(53)

Work continued within the village during the winter and early spring. Carpenters erected a large two-and-a-half story boarding house for single men at the north end of Laird Street. Across from the boardinghouse, four DuPont-type houses, built at a cost of approximately \$3,450-3,725 each, joined the Hopewell residences. On April 3, 1917, DuPont executives authorized four additional cottages at a total cost of \$13,700.(54)

Construction during the spring of 1917 ran into an unexpected delay when a "rather severe flood" occurred in Ramsay. Beginning March 27, the flood left water standing in Laird Street as late as April 13. Water flooded the entire village, filling the cellars, extinguishing the fires in the furnaces and leaving Ramsay residents without heat. DuPont workers dug ditches to drain the water and established a surface drainage system for the village. The Company appropriated \$1,300 for the necessary repairs.(55)

In 1917, the final stage of the formation of Ramsay took place. On May 15, 1917 DuPont authorized work order cards of twelve additional cottages in the village. The appropriation request of July 3, 1917 indicated that the cost of these houses totalled to \$49,695 or about \$4,141 each. The Company also added communal garages for its employees in 1917. Three of these were grouped in the southeast corner of Ramsay, the other in the northwest corner. The garages cost approximately \$810 to construct. Also in 1917, workers erected a woodframe school for DuPont employee's children at a cost of \$3,000.(56)

By fall of 1916, the explosives plant was virtually complete. However, production did not start until the first of January, 1917. At that point, the DuPont Company transferred management officials and technicians from other DuPont factories to Ramsay. Plant executives lived at the south end of the village in an area colloquially called "Wilmington Row." The DuPont Company hired mostly local men as laborers. Almost all of the employees resided within the village, only a few commuting from nearby ranches. Single workingmen lived and ate in the boarding house, run by Lena and Tula Kestler of Durant, MT. Married employees and their families occupied the cottages. DuPont provided a separate residence, 26 Laird, for the single managementlevel men who ate at the hotel. Unlike other DuPont company towns which had housing shortages, Ramsay families did not take boarders into their cottages.(57)

Life-long Ramsay occupants and former employees did not remember any ethnic groups in the village during the plant operation. Ramsay school census records listed non-Anglo-Saxon names but apparently most of the families were at least first generation Americans. Bill Cullen, who worked in the Ramsay plant, did not recall that any of the DuPont employees were immigrants.(58)

Solicitous about the community it had erected, the DuPont Company also provided recreational facilities for their employees. During plant construction in 1916, the Company built a "very good baseball field" and workers organized a "good competitive" baseball team. Throughout the summer and fall of 1916, the DuPont team consistently won their games with other teams from the mines league in the Butte area. Ramsay's baseball diamond, "which surpasses the playing ground of the Butte league teams," lay north of the village between the cottages and Anaconda highway.(59)

A location map from 1916 showed DuPont planned a tennis court to the east of the baseball diamond. By June, 1916 the court was almost completed. Oral informants Bill Cullen and Pat and Bill Mullins did not recall these tennis courts. However, residents used the park area between 22 and 26 Laird for a tennis court in the summer and a skating rink in the winter.(60)

The old stone magazines in Ramsay also housed some recreational activities. Bill Mullins remembered that Ramsay youths had used one of the storage buildings as a basketball court. To make more room, they cut the joists out of the ceiling. As a result, the roof caved in and the structure was torn down. Being large and open, residents for a short time utilized another of the magazines as a dancehall.(61)

## PLANT CLOSURE, 1921

In 1918, with the cessation of World War I in Europe, the tremendous demand for war-time products abruptly ended. As a result, the United States, which had greatly increased its production between 1914 and 1918, experienced a post-war economic depression. The end of the war and the recession seriously affected the copper industry, as well as metal mining in general. World copper consumption plummetted, from three billion pounds in 1918 to one-a-half billion pounds in 1921. Recovery of copper scrap from the battlefields and unused military equipment provided a cheap source of the red metal without the expense of mining and processing. Enormous war-time mining also left companies with huge stockpiles of copper valued at the government-fixed price of twenty-six cents but only worth half that on the post-war market.(62)

A world leader in the copper industry, the Anaconda Copper Mining Company also suffered large losses when the war ended. In 1921, the worst year of the depression, the Company lost \$17,000,000 which contributed to the closing of the Anaconda mines in Butte that year. Both copper consumption and production in the United States and worldwide fell to new lows.(63)

As metal mining dwindled, need for explosives correspondingly diminished and profits for the DuPont Company shrank. In 1921, the total consumption in the United States of industrial explosives and blasting agents was only 372,108 thousand pounds as compared to 537,955 thousand pounds the year before. In some western mining districts, the DuPont Company cut their prices for dynamite to remain competitive with other explosives companies.(64) Aiming to decrease expenses and increase profits, the DuPont Company decided to economize their operations. Because of the industrial recession in Montana and the West, the Company believed that they could supply the Montana mines with explosives cheaper by shipping in their products from other DuPont plants. Therefore, the Company decided to close the Ramsay facility in May 1921. Although in 1927 DuPont maintained the plant in "standby condition so that it can be operated again if the demand for explosives should warrant it," some dismantling of the factory took place shortly after closure.(65)

With closure of the plant and termination of work in 1921, most DuPont employees moved out of Ramsay. Many of the locally-hired laborers and their families apparently remained in the Silver Bow County area and generally did not transfer to other DuPont factories. Management- and professional-level officials who the DuPont Company had sent to Ramsay in 1917 were able to move to other DuPont towns.(66)

The DuPont Company left two men on their payroll after the Ramsay operations shut down. Sig Wedin remained as the Magazine Keeper. At the factory site, the Company kept the well-protected brick magazines intact. DuPont shipped explosives into these magazines on the Northern Pacific Railroad from Louviers, CO and DuPont, WA. Dynamite was stored in the structures until the Butte, Anaconda and Pacific Railway moved it to the Butte mines. Wedin's job was to supervise this transfer. Richard Mullins, who had been foreman of the outside "workgang," stayed in the village as caretaker.(6<sup>(</sup>)

Throughout the 1920s, most of the houses in Ramsay stood vacant. Perhaps only as few as three houses held occupants throughout the decade. The Mullins family lived in 2 Laird and the Wedins in 5 Laird. Bill Cullen, a former DuPont employee who became a teacher at the Ramsay School, resided at 6 Laird. With no single workingmen to occupy it, the hotel remained empty after 1921. Used only briefly to hold classes after a fire in the school, the building burnt down in the 1950s.(68)

Beginning in the late 1920s and during the 1930s, the homes in Ramsay filled up with tenants once again. Most new residents worked in Butte and commuted the distance from Ramsay everyday. Apparently attracted to housing in Ramsay because it was inexpensive, only \$19.75 per month during the Depression, these tenants seemed to have had no unifying characteristics other than having the DuPont Company for a landlord. Because occupants during the 1930s could not own their homes in Ramsay, few of them remained in the village.(69)

In 1927, George Russell, former DuPont employee returned to Ramsay. Russell had worked in the Ramsay plant and upon its closure, transferred to the DuPont, Washington factory. After a stint in DuPont facilities in Chile, Russell and his wife, Tula Kestler Russell who had run the Ramsay boardinghouse, came back to Ramsay and moved into #20 Laird. From 1927 until the 1940s, George served as the clerk for the Ramsay School District, drove the school bus and provided janitoral services in the school building.(70)

After twenty years of owning and maintaining Ramsay which held only two

men on their payroll, the DuPont Company decided to divest itself of the village in the early 1940s. In 1942, rather than spent the time and effort advertising and arranging real estate sales with individuals, the Company conveniently sold the entire town to their former employee, George Russell and his wife, Tula. Between 1942 and 1951, the Russells repaired the residences and re-sold them to their occupants or interested people mainly from Butte. During this time, Russell changed very little in the town but he did add several small alterations which reflected his influence. Russell added names to two previously-unnamed streets: the east-west street on the north end of the village became Beulah Street after a niece of Russell's, and the east-west street at the south end which ran next to his home was called Russell Street. Russell also filed a plat for Ramsay as an addition to Silver Bow County in 1947.(71)

Today, Ramsay appears much as it did when the DuPont Company constructed it in 1916-1917. After a devastating fire, the boarding house was torn down in the late 1950s. Subsequent property owners have erected two new homes on the site. Another new residence occupies the former location of one of the original stone magazines next to the school. In 1985, the U.S. Postal Service placed a pre-fabricated post office across from 2 Laird. Other than modern garages behind the residences, these are the only additions to the village. Current owners have altered some of the homes but Ramsay still looks like a company town.

### CONCLUSION AND STATEMENT OF SIGNIFICANCE

The historic town of Ramsay is significant because it is an intact example of an early twentieth-century company town. Built and owned by the E.I. duPont de Nemours and Company between 1916 and 1917, Ramsay is part of the company's employee housing program and one of many such villages DuPont erected nationwide.

As the DuPont Company rose to become a leader in the explosives industry, by the early twentieth-century it had developed a social welfare program for its employees. A general concept at that time, the idea of benefits for workers to improve productivity, including company-provided housing, was prevalent among many large companies. Firms, such as DuPont, wanted to attract skilled, stable workers, promote greater efficiency and exert more control over their labor force through managment of employees' living conditions.

Although DuPont constructed some worker housing earlier, by 1900 it had refined its program and had erected numerous villages adjacent to explosives manufacturing plants. In its pre-World War I phase, DuPont built two communities which set a precedent for later building in Ramsay. In DuPont, Washington, a one-and-a-half story, rectangular, hip roofed dwelling with a cutaway front porch became standardized as the "DuPont-style cottage." This same architectural style predominates in Ramsay. At Louviers, Colorado, the DuPont Company fabricated a town with many square, hip roofed, wood-frame residences, known throughout the United States as workers' cottages. The company named this design the "Louviers cottages" and used it for three houses in Ramsay. Also concerned about infrastructure, landscaping and social amenities in its towns, the DuPont Company tried to provide quality living in its towns. During World War I, the DuPont Company tremendously increased their production of explosives, both to supply munitions and industries supporting the war effort. During this period, the company erected new plants and expanded their existing facilities. With shortage of workers in these isolated explosives manufacturing locations, DuPont found it necessary to build more employee housing. Hopewell, Virginia became the site of both a large munitions factory and vast new DuPont village. The rectangular, gable-roof residence from Hopewell set the example for housing in other World War I era DuPont towns, such as Ramsay.

The tremendous boom in copper mining at Butte, Montana during World War I prompted the DuPont Company to erect an explosives plant near the Mining City. Reviewing various potential locations, DuPont selected the Ramsay site for its geographic advantages, its proximity to three railroad lines and the mines at Butte, and because DuPont and its subsidiaries owned land in the area. Construction of Ramsay facilities began in the spring of 1916 and continued into 1917. The result was a small factory with a capacity of 750,000 pounds of dynamite a month situated north of the Anaconda highway. Next to the railroad lines a half a mile south of the plant was the village of Ramsay with thirtyone new residences, a boarding house, and a school.

Ramsay contained characteristics of the standard early twentiethcentury company town as well as typifing the DuPont style of village. Because most dwellings DuPont erected belonged within only three architectural designs and stood on a grid system of wide streets, Ramsay's general appearance was one of uniformity. The DuPont Company owned all the residences and rented them only to its employees. As in many company towns, these houses were detached wood-frame cottages. Standard architectural styles from earlier DuPont towns linked Ramsay with other similar communities across the nation. DuPont provided its villages with a good infrastructure and utility system. A water system, sanitary sewers, electric lights and streetlights serviced Ramsay. Sidewalks lined the wide streets. Concerned about cultural and aesthetic amenities, DuPont provided landscaping, parks and recreational facilities within the village.

After World War I, the nation sank into a business depression. By 1920, the economic situation had seriously affected both copper mining and the explosives industry. The DuPont Company found that it was cheaper to ship in explosives to the Butte copper mines from its other plants than keep its Montana facilities in production. As a consequence, in 1921 the company shut down the Ramsay plant, laid-off its laborers and transferred men in managerial positions to other DuPont factories.

Except for two men left to care for the village and magazines, former DuPont employees vacated the village. Throughout the 1920s, only three or four families lived in Ramsay. During the Great Depression of the 1930s, DuPont opened up the houses for non-company tenants. Most of these families found Ramsay rents less expensive than in Butte and commuted by automobile to the Mining City. In the early 1940s, DuPont decided to divest itself of Ramsay. Rather than dispense of the property individually, in 1942 the company sold the entire village to a former employee, George Russell and his wife, Tula. Throughout the 1940s and early 1950s, Russell improved the houses and re-sold them to individuals. Today, Ramsay is little changed from its original appearance.

Ramsay's significance stems from its purpose, location and its uniformity. The characteristics of a DuPont Company town link it with with other communities throughout the nation. Construction of DuPont's Ramsay facilities in 1916 was directly related to World War I and the tremendous industrial growth it inspired. Copper mining in Butte during the war required enormous quantities of explosives which encouraged DuPont to erect a factory nearby. As industry and especially copper mining slumped after World War I, DuPont decided to close its Montana plant. When most DuPont employees left Ramsay in 1921, Ramsay's significance as a DuPont Company town ended.

### NOTES

(1) "History of Explosives," author unknown, title unknown, xerox copy in writer's possession, p.2 (hereafter cited as "History of Explosives").

(2) Ibid., p. 3.

(3) Mott Linn, Jr., "The E.I. Du Pont De Nemours and Company's Housing of its Workers," (Honors Thesis; University of Delaware, 1983), pp. 1-2 (hereafter cited as "Housing for its Workers").

(4) "History of Explosives," p. 6.

(5) Ibid.

(6) Linn, "Housing for its Workers," p. 2.

(7) Linn, "Housing for its Workers," pp. 4-6; Gwendolyn Wright, <u>Building the Dream: A Social History of Housing in America</u>, (New York: Pantheon Books, 1981), p. 184.

(8) Linn, "Housing for its Workers," p. 13.

(9) Wright, Building the Dream, p. 177.

(10) Wright, <u>Building the Dream</u>, p. 182; Linn, "Housing for its Workers," pp. 29, 64.

(11) Wright, Building the Dream, p. 182.

(12) Wright, <u>Building the Dream</u>, p. 183; Leifur Magnusson, <u>Housing by Employers in the United States</u>, U.S. Bureau of Labor Statistics, Bulletin No. 263 (Miscellaneous Series) (Washington: Government Printing Office, 1920), p. 20.

(13) Linn, "Housing for its Workers," pp. 23-25.

(14) Linn, "Housing for its Workers," pp. 25-26; May Munyon, <u>DuPont--The Story of a Company Town</u>, (Puyallup, WA: Valley Press, Inc., 1972), pp. 62-63; J. Thompson Brown, "Welfare Work of the High Explosives Operating Department," in Minutes of the High Explosives Operating Department Superintendents' Meeting, No. 36, 11 May 1914, p. 566, located in the Hagley Museum and Library, Wilmington, DE (hereafter cited as "Welfare Work" HML).

(15) Munyon, DuPont, p. 62; writer's observation.

(16) "Living Conditions of Our Workmen," in Minutes of the High Explosives Operating Department Superintendents' Meetings, Program No. 12, Meeting No. 34, 23 April 1912, pp. 304-304, located in the Hagley Museum and Library, Wilmington, DE (hereafter cited as "Living Conditions of Our Workmen", HML); "Welfare Work," HML, p. 566; writer's observation.

(17) "Welfare Work," HML, p. 567.

(18) Linn, "Housing for its Workers," pp. 28-31.

(19) Linn, "Housing for its Workers," pp. 35-36; Magnusson, Housing by Employers, p. 187.

(20) Magnusson, Housing by Employers, pp. 188-198.

(21) Ibid., p. 189.

(22) Ibid., pp. 189-190.

(23) Linn, "Housing for its Workers," pp. 36-43; Magnusson, Housing by Employers, p. 190.

(24) Linn, "Housing for its Workers," p. 42; Magnusson, <u>Housing</u> by <u>Employers</u>, pp. 191-193.

(25) Linn, "Housing for its Workers," pp. 58-60; Munyon, <u>DuPont</u>, p. 77.

(26) Linn, "Housing for its Workers," pp. 58-61; Munyon, <u>DuPont</u>, pp. 77-78.

(27) Magnusson, <u>Housing by Employers</u>, pp. 9, 187; Linn, "Housing for its Workers," p. 65.

(28) Magnusson, Housing by Employers, p. 12.

(29) Ibid., pp. 13-14.

(30) Ibid., p. 30.

(31) Ibid., pp. 31-32.

(32) Ibid., pp. 38-39.

(33) "Anaconda," Fortune, (December 1936), p. 91.

(34) <u>Engineering and Mining Journal</u>, 14 October 1916; "Anaconda," <u>Fortune</u>, (December 1936), pp. 93-95.

(35) Engineering and Mining Journal, 14 October 1916.

(36) <u>Engineering and Mining Journal</u>, 14 October 1916, 13 October 1917; Mining and Scientific Press, 3 March 1917.

(37) Butte Polk City Directories, 1885-6, 1889, 1900-1915, Butte-Silver Bow Public Archives, Butte, MT; Deeds 85-277, 27-234, 67-317, 85-275, 143-52, 126-173, Butte-Silver Bow Clerk and Recorder's Office, Courthouse, Butte, MT (hereafter cited deeds, B-SB).

(38) Deeds, B-SB; Report to H.M Barksdale from Harry F. Pierce, Chief Engineer, 26 May 1914, Hamilton Barksdale Papers, Acc. 500, Series II, Part 2, Box 1024, in Hagley Museum and Library, Wilmington, DE (hereafter cited as Pierce Report, HML); W.C.Howard, Manager to

Charles Patterson, Vice-President, 22 April 1913, Hagley Museum and Library, Wilmington, DE.

(39) "Montana Dynamite Plant," Memo for Report to Executive Committee, 19 December 1913, Hagley Museum and Library, Wilmington, DE (hereafter cited as "Montana Dynamite Plant," HML).

(40) "Advice of Action," 30 January 1914, Hagley Museum and Library, Wilmington, DE; Pierce Report, HML.

(41) Pierce Report, HML.

(42) Ibid.

(43) Ibid.

(44) Ibid.

(45) Ibid.

(46) Kenneth Ross Toole, <u>Twentieth-Century Montana; A State of</u> <u>Extremes</u> (Norman: University of Oklahoma Press, 1972), pp.132-138; "Montana Dynamite Plant," HML; Interview with William Cullen, Butte, October 10, 1986.

(47) Pierce Report, HML.

(48) Unsigned letter to Coleman duPont, President, 2 June 1914, Hagley Museum and Library, Wilmington, DE; Deeds 125-431, 93-108, 67-317, Butte-Silver Bow Clerk and Recorders' Office, Courthouse, Butte, MT.

(49) Jim Wedin, "Ramsay," n.d., xerox copy in writer's possession, p. 1 (hereafter cited as Wedin Report); Arthur Pine Van Gelder and Hugo Schlatter, <u>History of the Explosives Industry in America</u>, (New York: Columbia University Press, 1927), pp. 606-607.

(50) Butte Miner, 23 July 1916.

(51) <u>Butte Miner</u>, 23 July 1916; Interview with Pat Mullins, Butte, October 9, 1986.

(52) Photographs, 5, 19 September 1916, 17 October 1916, Pictorial Collections at Hagley Museum and Library, Wilmington, DE (hereafter cited as Photographs, HML); Interview with William Cullen; Departmental Meeting Minutes, October 1916, located in HML.

(53) Van Gelder, History of the Explosives Industry, p. 593.

(54) Work Order Cards, 13 February 1917, 13 April 1917, copies obtained from HML.

(55) Departmental Meeting Minutes, 6 April 1917, HML; Photographs, HML; Departmental Meeting Minutes, 15 May 1917, HML.

(56) Departmental Meeting Minutes, 17 April 1917, 3 July 1917, 15 May 1917, 15 June 1917, HML.

(57) Wedin Report, p. 1; Interview with Bill Mullins, October 1, 1986, Ramsay and Pat Mullins, Butte, October 9, 1986.

(58) Interviews with William Cullen, Bill Mullins and Pat Mullins.

(59) Wedin Report, p. 1; Butte Miner, 23 July 1916.

(60) <u>Butte Miner</u>, 23 July 1916; Interviews with William Cullen, Bill Mullins and Pat Mullins. Location Map--Ramsay Works, 19 September 1916, located in Butte-Silver Bow Surveyor's Office, Courthouse, Butte, MT.

(61) Interviews with William Cullen, Bill Mullins and Pat Mullins.

(62) "Anaconda," Fortune, (December 1936), p. 94.

(63) Ibid., pp. 94-95.

(64) "History of Explosives," pp. 10-11; <u>Engineering and Mining</u> Journal, 18 November 1920.

(65) Van Gelder, <u>History of the Explosives Industry</u>, p. 607; Interviews with William Cullen, Fill Mullins and Pat Mullins.

(66) Interview with William ullen.

(67) Interviews with William Cullen, Bill Mullins and Pat Mullins.

(68) Ibid.

(69) Interviews with Bill Mul ins and Pat Mullins.

(70) Interview with Bill Mulli s; Montana Standard, 3 March 1966.

(71) Deed 188-225, Butte-Silve Bow Clerk and Recorder's Office, Courthouse, Butte, MT; Interview w th Bill Mullins; Ramsay Addition Plat, Butte-Silver Bow Clerk and Recorder's Office, Courthouse, Butte, MT.

### APPENDIX

# Builders of the Ramsay Explosives Plant and Village Clifton, Applegate and Toole

In 1916-17, Clifton, Applegate and Toole erected the Ramsay explosives plant and village. Headquartered in Spokane, Washington, the company specialized mostly in road construction. During the 1930s, the firm built numerous Forest Service roads in southwestern Montana, particularily in the Big Hole and Bitterroot Valleys. Other important construction projects included the west portion of the Skalkaho Road in the 1920s, part of the Going-to-the-Sun highway, the Flint Creek Pass, the Flint Creek Valley ditch system and the second Big Hole-Bitterroot Valley road. By the 1940s, the firm had grown into a successful contracting company. According to William Applegate's son-in-law, Bill Rowley, during World War II Clifton, Applegate and Toole worked on three one million dollar projects similtaneously, constructing Spokane's Geiger Field and two other airports.

Although original partners were V.J.Applegate, Toole and Clifton, after World War II, Clifton died, leaving the business to Applegate. Toole had left the firm sometime earlier. However, Applegate continued to used the name "Clifton, Applegate and Toole." Apparently throughout the 1950s, V.J. managed the company which he passed on to his son, Jack. In the 1960s, the contracting firm ceased to exist.

William Applegate was V.J.Applegate's brother. During the Ramsay project, William probably served as assistant contractor. Born in Red Oak, Iowa, William came to Montana as early as 1911 where he played baseball on numerous Montana teams. While building Ramsay, William pitched for the successful Ramsay baseball team in the Butte Mines League. In 1916, Applegate met and married Florence Monahan of Butte, who was the teacher at Silver Bow. By 1926, Applegate ventured into road contracting on his own, constructing the original East Glacier Road from East Glacier to Browning. On this project, he lost money. A fire in American Falls, Idaho, which destroyed most of his equipment compounded his loss. William Applegate died in 1945.

Sources: Telephone interview with Carol and Bill Rowley, daughter of William Applegate, Oct. 1, 1986; <u>Montana Standard</u>, 28 September 1986.

This 1916 photo shows workers laying water pipes in Ramsay in a ditch dug with a machine. On the left Hopewell-style cottages are being constructed. DuPontstyle cottages are on the right. View to north on Laird Street.





Here laborers erect Hopewell-style cottages along Laird Street in September 1916. View to the north.

By October 1916, 26 Laird (in foreground) was completed as were the Hopewell-style cottages on the west side of Laird Street. View to the northwest.



All historic photos from Hagley Library and Museum, P.O. Box 3630, Wilmington, Delaware 32 The DuPont Company built three Louviers-style cottages in Ramsay in 1916. Here, the dwellings are nearing completion. View to the south.





During construction of Ramsay, workers laid a buried water system. In the fall of 1916, the pipes were buried. Note the Hopewell-style cottages on the west side of Laird Street.

In Marcy, 1917 a "rather severe flood" innundated Ramsay. DuPont workers dug ditches to try and relieve the flooding into houses. This photo shows completed Louviers-style cottages and the Ramsay boarding house. View to north depicting the east side of Laird Street.



The best example of a Hopewell-style cottage, 22 Laird Street retains excellent historic integrity. View to the northwest.





Of the three Louviersstyle cottages, 7 Laird is the least altered. Although the porch has been enclosed, the structure retains its original shape.

The majority of the residences in Ramsay are DuPont-style cottages. 2 Laird is a virtually unaltered example of this style.



The Neo-Classical mansion at 21 Laird was built to house the Ramsay plant superintendent and his family. Only two superintendents lived in the building.





The residence at 26 Laird has an architectural style common in DuPont, Washington although it is unique in Ramsay. Single management-level DuPont employees lived in this house.

Between 1916 and 1917, 23 Laird housed the Assistant Manager of the Ramsay plant and his family.



Taken in the fall of 1916, this shot shows a general view of the Ramsay plant in the foreground, the village to the left in the background and the construction on the right. View to the southwest.





Apparently, the DuPont Company or its subsidiaries had dynamite magazines near the Ramsay site before 1916. This stone magazine has been altered somewhat but still appears much as it did prior to 1916.

Aware of Ramsay's relative isolation and the increasing use of the automobile, the DuPont Company erected communal garages for employees' cars in 1917. This garage, facing south on Russell Street, is a good example of the five such garages in Ramsay.

