CX QUINSAM 77(1)B

GEOLOGY AND COAL RESOURCES

OF THE

QUINSAM PROPERTY

VANCOUVER ISLAND

PHASE I REPORT

CX-QUINSAM 77(1)B

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INTRODUCTION

In August 1976, Luscar Ltd. entered into agreement with Weldwood of Canada Ltd. to conduct a geological exploration program on Weldwood's coal licenses on the northeast side of Vancouver Island. Previous exploration by Weldwood had determined that a potential for surface recoverable coal reserves existed in the Quinsam Lakes area, west of Campbell River. This area, hereafter referred to as the Quinsam Property, was targeted for the initial phase of exploration by Luscar Ltd.

It is within the scope of this report to present the proven "in place" coal reserves, occuring under less than 200 feet of overburden within the confines of the study area where exploration drilling was concentrated. Conclusions relating to the quality of the coal measures are based on analyses of cores by Luscar's laboratory facilities. The geologic framework and stratigraphic succession within the study area has been interpreted from the geologic data collected during this phase of exploration.

SUMMARY

The Quinsam property encompasses approximately 56,000 acres between latitude 49^{0} 48' north and 50^{0} 00' north by longitude 125^{0} 32' west and the eastern coast of Vancouver Island. The study area (3840 acres) comprises the northern third of the property, situated 17 road miles inland from the town of Campbell River along a plateau extending southward from Campbell Lake to the Iron River.

Coal seams of economic importance occur in a series of north easterly tilted fault bound basins which terminate along a granitic mountain front on the western margin of the property and are down thrown along a major fault trend on the eastern margin. The northern third of the property can be considered as a single coal basin, dissected into three structural blocks by major east-west trending transverse faults. Three coal seams are present in this area; their thickness and relative stratigraphic positions are listed in descending order as follows:

Seam	Thickness Raw Coal	Stratigraphic Separation
No. 3	5.8 ft. - 8.2 ft.	
		100 ft.- 130 ft.
No. 2	1.4 ft. - 4.2 ft.	
		60 ft.- 80 ft.
No. 1	9.1 ft. - 12.0 ft.	
	Total Coal Zone Thickness	160 ft. - 210 ft.

The No. 1 and No. 2 seams persist throughout the area, but the No. 3 seam is known only to occur in the southern structural block between the Quinsam and Iron Rivers. Four major factors have affected seam continuity within the area:

1) Normal Faulting

At least seven major normal faults have disrupted the coal measures causing displacements ranging from 5 to 50 feet. The downthrown block has been rotated, causing a steeper dip on the footwall. This style of brittle fracture is dominant; folding and thrust faulting are insignificant.

2) Glacial Erosion

Erosion by moving glacial ice has truncated the coal seams in the middle and northern blocks to depths ranging from 60 to 150 ft. This has effectively reduced the amount of shallow recoverable coal in these areas.

3) Irregular Surface of Deposition

The coal measures were deposited on an irregular paleotopographic surface. As a consequence, the lower No. 1 seam pinches out and shales out along these old basement highs. The stratigraphically higher seams are not affected.

4) Intrusion

Intrusion of plutonic stocks and igneous dykes through the coal measures has caused local metamorphic upgrading in the rank of the coal seams and a metosomatic increase in the inorganic sulphur content up to a maximum of 5%. It appears that these effects are limited to the southern block where the sediments are in contact with intrusive rocks.

QUALITY

Core samples from each of the three coal seams were analysed excluding partings greater than 1" in thickness. The coal is classified as High Volatile Bituminous A with the following average analysis on a raw air dried basis:

Proximate Analysis (air dry)

Seam	Number of Samples	Moisture %	Ash %	Sulphur %	Btu/lb.	FSI
No. 1	8	2.63	16.13	0.56	11,489	1 1/2
No. 2	2	2.58	16.44	3.99	11,515	2 1/2
No. 3	1	2.19	23.01	3.81	10,742	2

Ash content varies from 9.0% to 23.4% and is directly related to the amount of bone material associated with the seam.

Sulphur content ranges from 0.19% to 4.91% increasing directly with FSI of the coal, indicating a metamorphic upgrading in rank of the coal and a metasomatic enrichment in sulphur, usually in the form of pyrite.

RESERVES

The reserves for the Phase I Study Area are to be considered in the proven in place category. Calculations are based on the following parameters.

1) The coal seams are considered continuous up to a maximum distance of 500 feet from known drill hole information or outcrop.

2) The in place density of the coal is 90 lbs./cu. ft. or 1.2 tons/cu. yd.

3) Average in place clean coal thickness applies to the area of influence of the drill hole.

The reserves are presented in three overburden depth categories by seam as follows:

TABLE 1: RESERVE SUMMARY

Depth of Overburden (feet)	Overburden Volume (cu. yds. x 10^6)	Proven Tons (short tons x 10^6)			Overall Ratio (Cu. yd./tons)
		Seam No. 1	Seam No. 2	Seam No. 3	
0 - 120	33.52	3.05	0.99	.785	6.9:1
120 - 160	38.93	2.23	0.80	.325	11.6:1
160 - 200	62.78	3.73	1.05	.294	11.4:1
		9.01	2.84	1.40	
Total	135.23	13.25			10.2:1

CONCLUSIONS

1. A total of 13.25 million tons of raw in place coal has been proven to exist in the Quinsam study area. This reserve includes all coal that is greater than 3 feet thick on an individual seam basis and occuring beneath less than 200 feet of overburden.

2. Quality analyses on the raw coal (excluding partings greater than one inch) indicates that the ash content can be reduced to less than 10% by washing at specific gravities ranging from 1.7 to 1.9. The subsequent product yield ranges from 80% to 90%. The total sulphur content ranges from 0.19% to 0.34% for 8 of the 9 samples of the No. 1 seam, and cannot be economically reduced beyond 2.0% for the No. 2 and No. 3 seams by gravity separation. Of the total in place reserve, 9 million tons can be classified as low sulphur coal (less than .5%) with the remaining 4.2 million tons having sulphur contents greater than 2%. The low sulphur - high sulphur distribution is 2.1:1

3. Geologic mapping and aero magnetic data indicate that the coal bearing formation extends to the south and east of the Phase I study area. Coal seam outcrops occur along Chute Creek and the Iron River extending south to the Oyster River, over an area roughly twice the size presently being studied. A similarly large isolated sedimentary basin occurs to the southeast of the property. These two areas warrant further investigation for the following reasons:

(a) There is an extremely good chance that additional surface recoverable reserves occur in this area, quite possibly enough to double the present reserve figures.

(b) Glacial erosion is limited in the southern area, thereby increasing the potential for near surface, low ratio coal.

(c) Aeromagnetic data indicates the eastern basin has not been structurally disturbed to the extent of the study area. Additionally, there are less intrusive bodies in the areas south and east of the study area. It is therefore reasonable to assume that the metamorphic effects related to intrusion which increase the sulphur content of the coal seams will be less pronounced in these areas.

LOCATION

The Quinsam Property encompasses approximately 56,000 acres between latitudes 49° 48' north and 50° 00' north by longitude 125° 32' west and the eastern coast of Vancouver Island (Fig. 1).

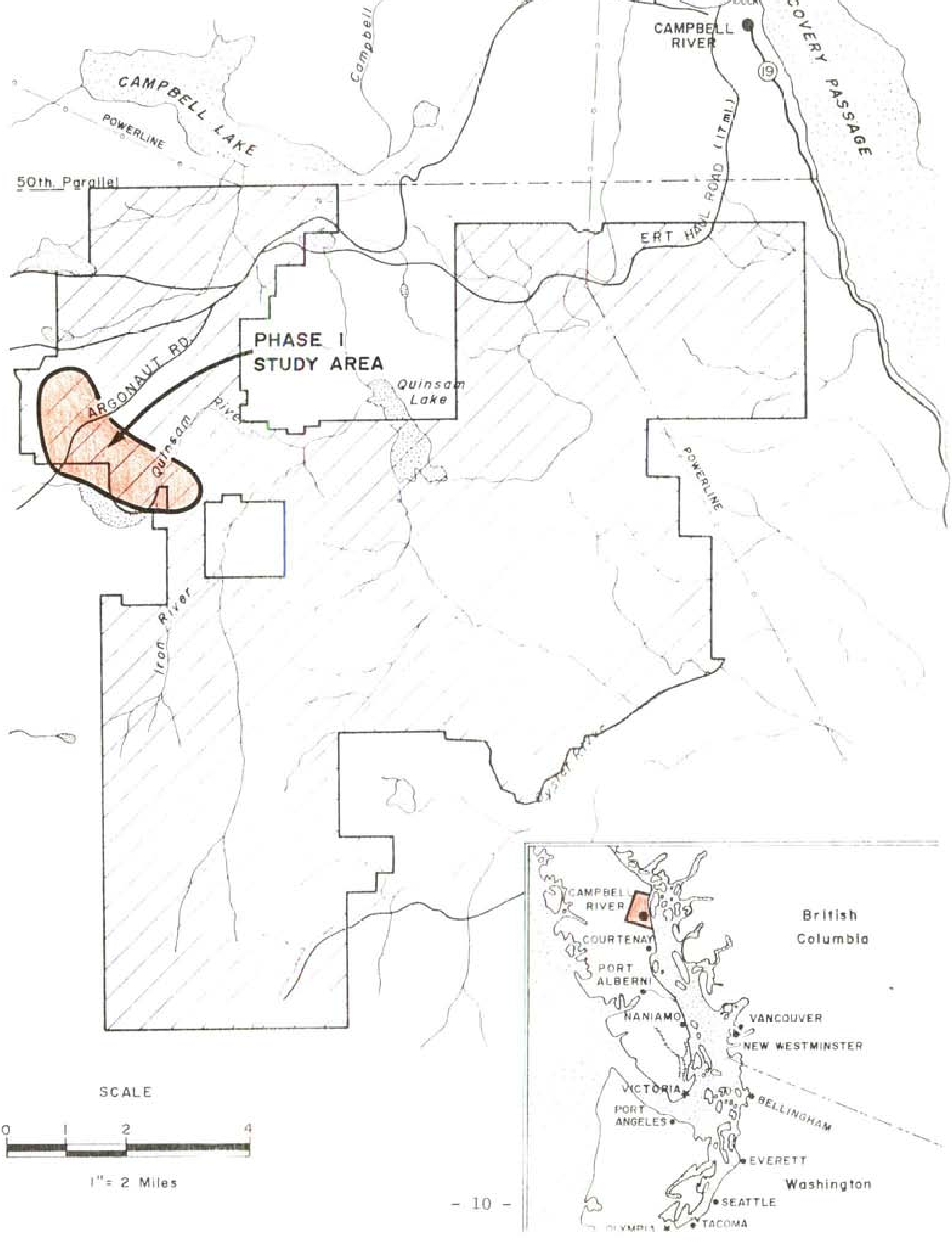
The boundaries are defined along a series of disjointed rectangular timber blocks, extending 12 miles westward from Beaver Tail Lake to the coast along the 50th parallel and southward from here to the Oyster River, a maximum distance of 14 miles. The Phase I study area lies in the extreme northwest corner of the property, trending south east along the western side of Gooseneck and Middle Quinsam Lakes to Long Lake, immediately south of the Quinsam River. The area is roughly 3 miles long by 2 miles wide, encompassing some 3840 acres within its boundaries.

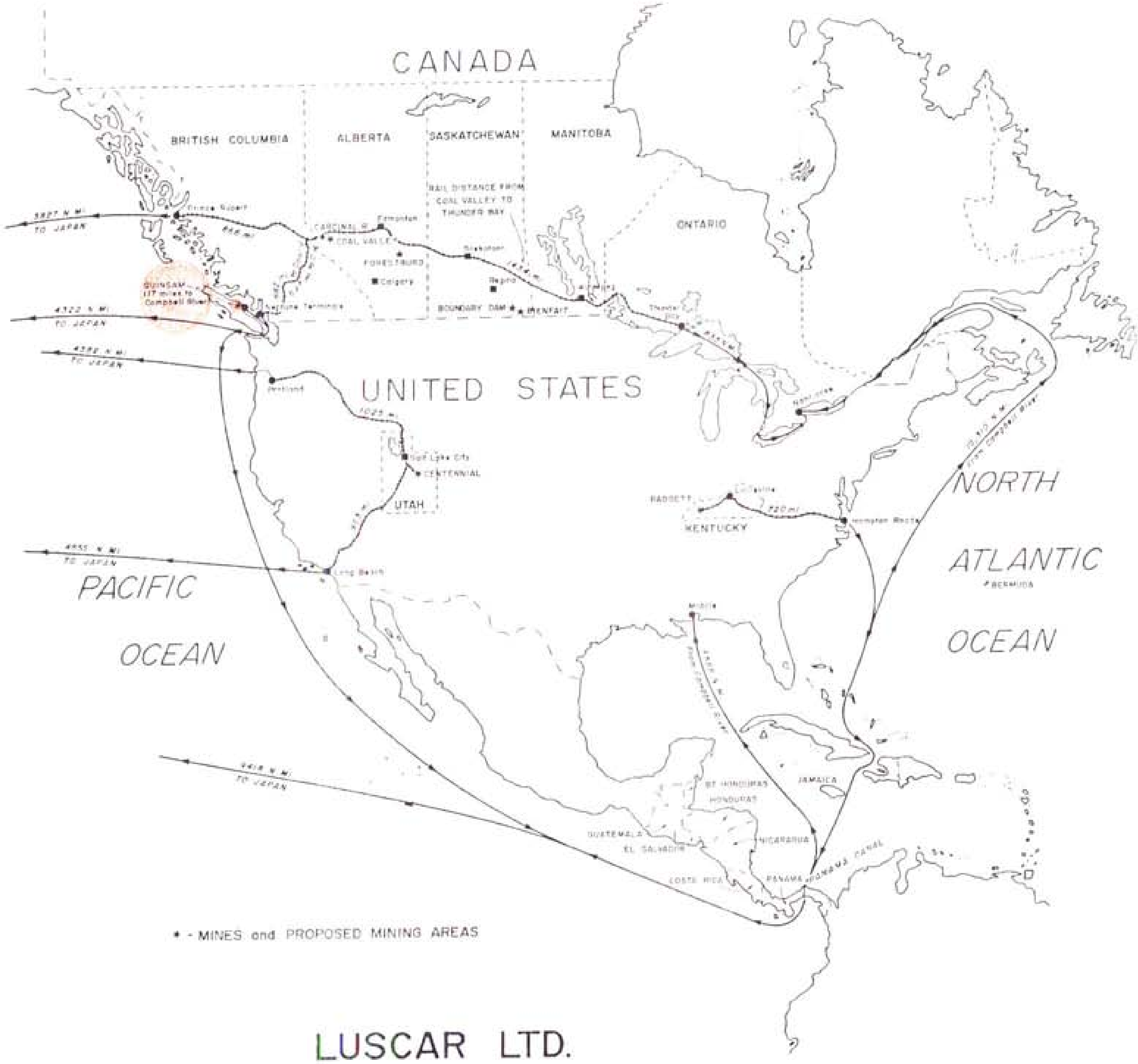
The study area is accessable from the town of Campbell River by travelling 13 miles west along the Gold River Highway and branching off southward onto a gravel haul road for an additional distance of 4 miles. The gravel road forms part of the Elk River Timber haul route which also connects with Campbell River over a 16 mile distance. Numerous secondary logging roads and trails provide access throughout the area.

The town of Campbell River (pop. 10,000) is the major community in the area, providing accommodation and services including regular scheduled airline flights to Vancouver and dock facilities from which ore and timber products are shipped from the region. The feasibility of shipping large tonnages of coal from these facilities is presently under study.

QUINSAM PROPERTY

FIGURE I





LUSCAR LTD.

COAL EXPORT SHIPPING ROUTES

NOVEMBER 25, 1976

FIGURE 2

PHYSIOGRAPHY

The Quinsam Property is part of the Nanaimo Lowlands belt that extends along the eastern coast of Vancouver Island. It is bounded to the west by the Insular Mountain Range, to the north by Campbell Lake, to the south by the Oyster River and to the east by the Straits of Georgia. Elevations increase inland from the coast reaching a maximum of 2000 ft. A.S.L. along the western margin of the property. The topography consists of a series of low rolling hills and plateaus separated by narrow valleys, aligned in a northeasterly direction parallel to the mountain front. A large glacial valley occupied by Beavertail, Snakehead, Gooseneck and Middle Quinsam Lakes forms the northwestern boundary of the property. Other isoated lakes (Quinsam Lake, Echo Lake, Wowo Lake) are scattered randomly throughout the area.

Three major river systems drain the area flowing discordant to the terrain in a northeasterly direction. In the northern part of the property, the Campbell River drains Campbell Lake into the Straits of Georgia. This stream is a major salmon spawning course. The Quinsam River and Iron River drain the central part of the area. The Oyster River drains the southern part of the property. The river valleys are steep sided and the channels contain many cataracts. Near the coast, the valleys and river channels broaden out.

The area is covered by a dense growth of vegetation, typical of the northwest Pacific coast. The top story consists primarily of Douglas fir trees with minor spruce, cedar and hemlock. Secondary growths of alders are prevalent in old logging areas. The understory is occupied by a variety of ferns, bushes and low shrubs. Outcroppings of bedrock are almost entirely restricted to steep river gorges and man-made roads and excavations.

The seasonal climate varies with elevation. Along low lying coastal area, maritime influences restrict freezing during the winter months whereas frost and snowfalls are common in the western part of the property from late November to mid March. The mean annual temperature throughout the region is 48° F. Total precipitation, mostly in the form of rainfall, varies from 58 inches to 40 inches annually. At least 75 percent of this precipitation occurs during the six month winter period. The dry period occurs from July to August. The Maximum rainfall recorded for a 24 hour period is 4 1/2 inches.

TECHNICAL INVESTIGATIONS

During the period commencing October 5 through to December 13, 1976, 48 test holes were completed in the Phase I Study Area for a total logged footage of 10,600 feet. Ten of these holes were cored to obtain coal samples from the No. 1, No. 2, and No. 3 seam. The test holes were spaced at 500 foot intervals along cut lines trending at 90^0 to the strike of the formation. These lines were arranged 1000 to 1500 feet apart along regional strike from the northern to the southern boundaries at the area (Fig. 3).

Rotary drilling was performed with two of Lexco Testing Ltd.'s air-water combination drill rigs and one top drive rig contracted from Ken's Drilling in Victoria. Down-hole air driven hammers were employed to penetrate the rocky till layer that overlies the coal measures.

A wire-line coring system was used to recover coal samples. The cores were logged and sampled and sent to Lexco Lab in Edmonton for analysis. The remaining roof and floor rock was stored on site. Geophysical logging of the test holes was performed by Canadian Arctic Survey Systems of Calgary, employing a three curve gamma-density-resistance sonde.

Additional projects included:

(a) An Aeromagnetic Survey of the Quinsam Property conducted and interpreted by Aqua Terra Consultants Ltd. (Calgary), designed to outline intrusive bodies and map the structure of the volcanic basement rocks.

(b) Surficial geologic mapping conducted by Bayrock and Reimchen

Ltd. (Vancouver) designed to outline the glacial erosional edge of the coal measures.

All field operations and interpretations were supervised by Mr. Steven Gardner, Luscar's Project Geologist for the Quinsam Area. Coal quality testing and presentation of quality data was supervised by Mr. Ali Khair Eldin, Head of Lab Services for Lexco Testing.

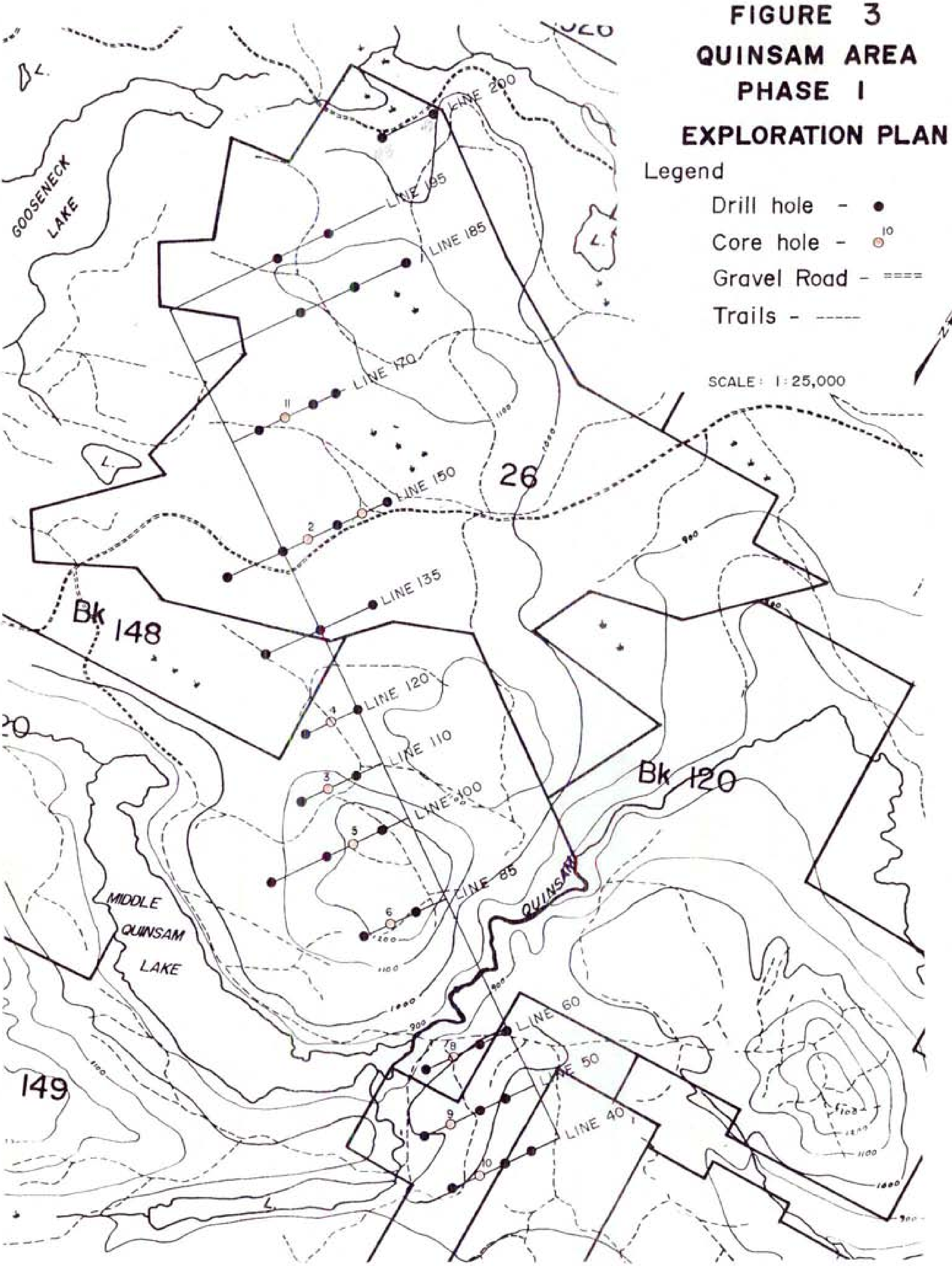


FIGURE 3
QUINSAM AREA
PHASE I
EXPLORATION PLAN
Legend
Drill hole - ●
Core hole - ○
Gravel Road - ====
Trails - -----
SCALE: 1:25,000
GOOSENECK LAKE
MIDDLE QUINSAM LAKE
QUINSAM
LINE 200
LINE 195
LINE 185
LINE 170
LINE 150
LINE 135
LINE 120
LINE 110
LINE 100
LINE 85
LINE 60
LINE 50
LINE 40
26
Bk 148
Bk 120
149

GEOLOGY

REGIONAL GEOLOGY

Coal seams of economic importance occur in the Late Cretaceous Comox Formation. The Comox Formation is distributed in three isolated fault bound basins within the Quinsam property, aligned in a northwest-southeast orientation. The basins are disrupted by several major normal and transverse fault systems, producing a series of northeast dipping, slightly warped fault blocks.

The stratigraphic thickness of the Comox Formation increases in a wedge-like fashion from 200 feet along the western boundary of the property to 1000 feet near Campbell River on the eastern margin of the property. The sedimentary sequence consists mainly of medium-grained, thick bedded arkosic sandstone interbedded with minor shale and coal seams. Locally a coarse conglomerate unit known as the Benson Member occurs at the base of the formation. The Comox formation is characterized by great lateral variation and lenticularity of the sandstone, shale and coal units.

The base of the Comox Formation lies with angular unconformity on top of the Jurassic to Triassic Vancouver Group. The Vancouver Group is exposed in the central part of the Quinsam Property where it has been uplifted and brought into fault contact with the Comox Formation to the east and west. It consists of a typical eugeosyncline sequence of alternating marine shales and limestones interbedded with a thick series of pillow lava basalts and andesitic pyroclastics. The stratigraphic thickness of this series is in excess of 3000 feet. The predominant basalt units are metamorphically altered and recrystallized. They are intruded by a cross cutting series of quartz veins, some of which are mineralized.

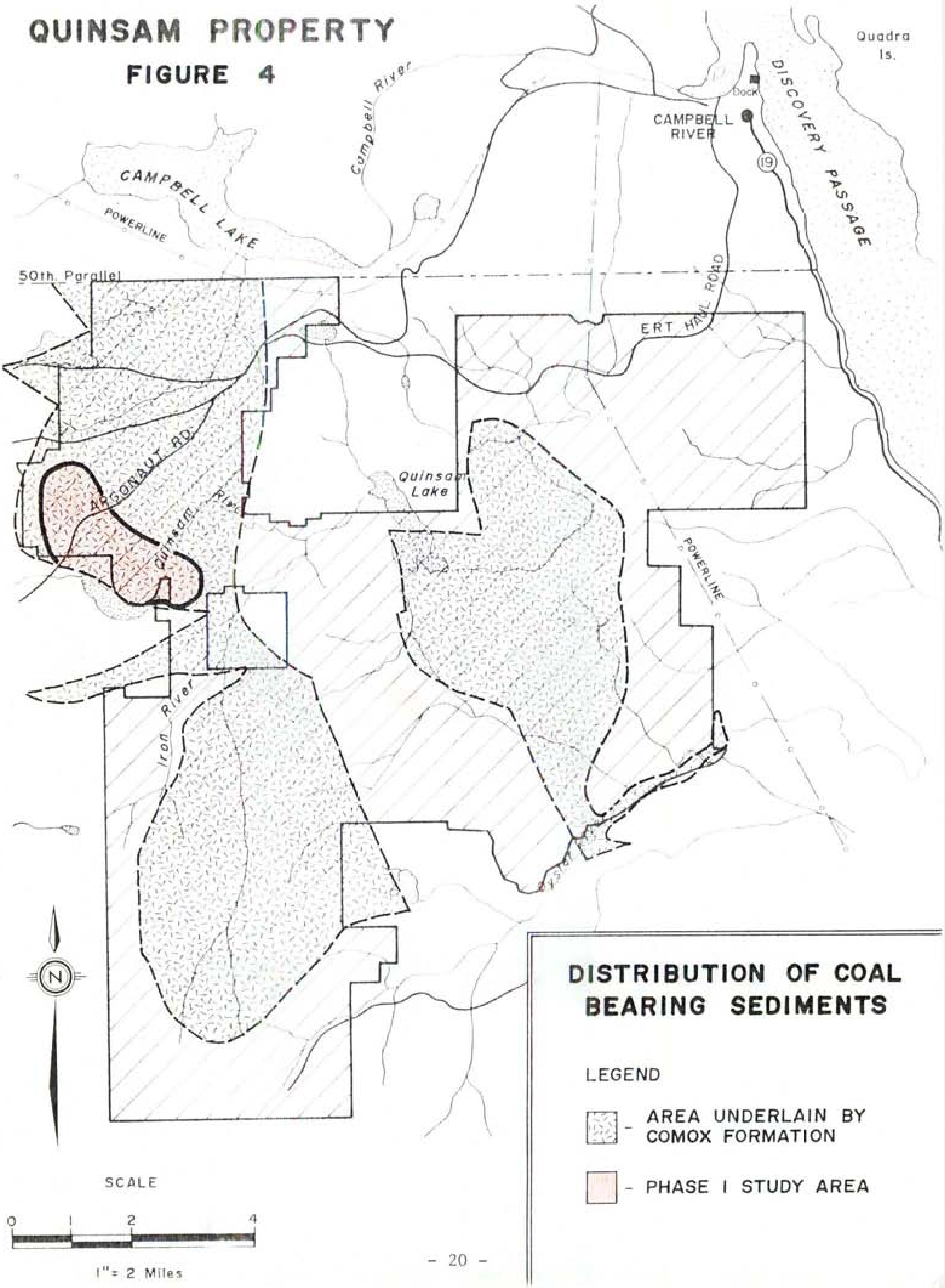
The erosional unconformity on top of the Vancouver Group is quite irregular. This irregularity has greatly affected and constrained the lateral persistance of the lower members of the overlying Comox Formation.

A large granite batholith forms the western boundary of the Quinsam Property. It is Late Cretaceous in age and was uplifted during the Coast Range Orogeny. It consists predominatly of coarse to medium grained granodiorite with minor inclusions of diorite. The inplacement of this large batholith was partially penecontempouranous with the deposition of the upper part of the Comox Formation as evidenced by the predominance of arkosic sandstones in this series. Uplifting during the Late Cretaceous tilted the depositional basin to the northeast and possibly culminated in faulting the Comox strata.

In Post-Cretaceous times the Comox Formation was intruded by isolated plutonic stocks and basic dykes. One of these isolated stocks is exposed along the Iron River near Middle Quinsam Lake. This magnetite-hematite rich body intrudes the Comox Formation, developing a series of radial faults and uplifted blocks in the surrounding strata. The Comox Formation has been metamorphically altered near the contact. Metasomatic mineralization, primarily in the form of pyrite, is developed in sedimentary strata in a annular zone surrounding the intrusion.

A thick layer of glacial deposits covers most of the northwestern and eastern parts of the Quinsam Property. On the coastal lowlands this layer consists of stratified, cross-bedded sands and gravels.

In the northwestern part of the area above the 700 foot contour level, bedrock is covered by a thick layer of glacial till. The till varies in thickness from 3 feet along this plateau to greater than 150 feet in the valley formed between Gooseneck and Middle Quinsam Lakes. It consists primarily of scattered granitic boulders in a matrix of cemented dark brown clay. This till is a morraine deposit formed along the glacial erosion edge of the Comox Formation. These deposits thin out south of the Quinsam River. The bedrock extending from here to the Oyster River is covered by a thin mantle of weathered rock.


QUINSAM PROPERTY
FIGURE 4
Quadra Is.
DISCOVERY PASSAGE
Dock
CAMPBELL RIVER
19
Campbell River
CAMPBELL LAKE
POWERLINE
50th. Parallel
ERT HAUL ROAD
ARGONAUT RD.
Quinsam River
Quinsam Lake
POWERLINE
Iron River
N
SCALE
0
1
2
4
1" = 2 Miles
DISTRIBUTION OF COAL BEARING SEDIMENTS
LEGEND
- AREA UNDERLAIN BY COMOX FORMATION
- PHASE I STUDY AREA

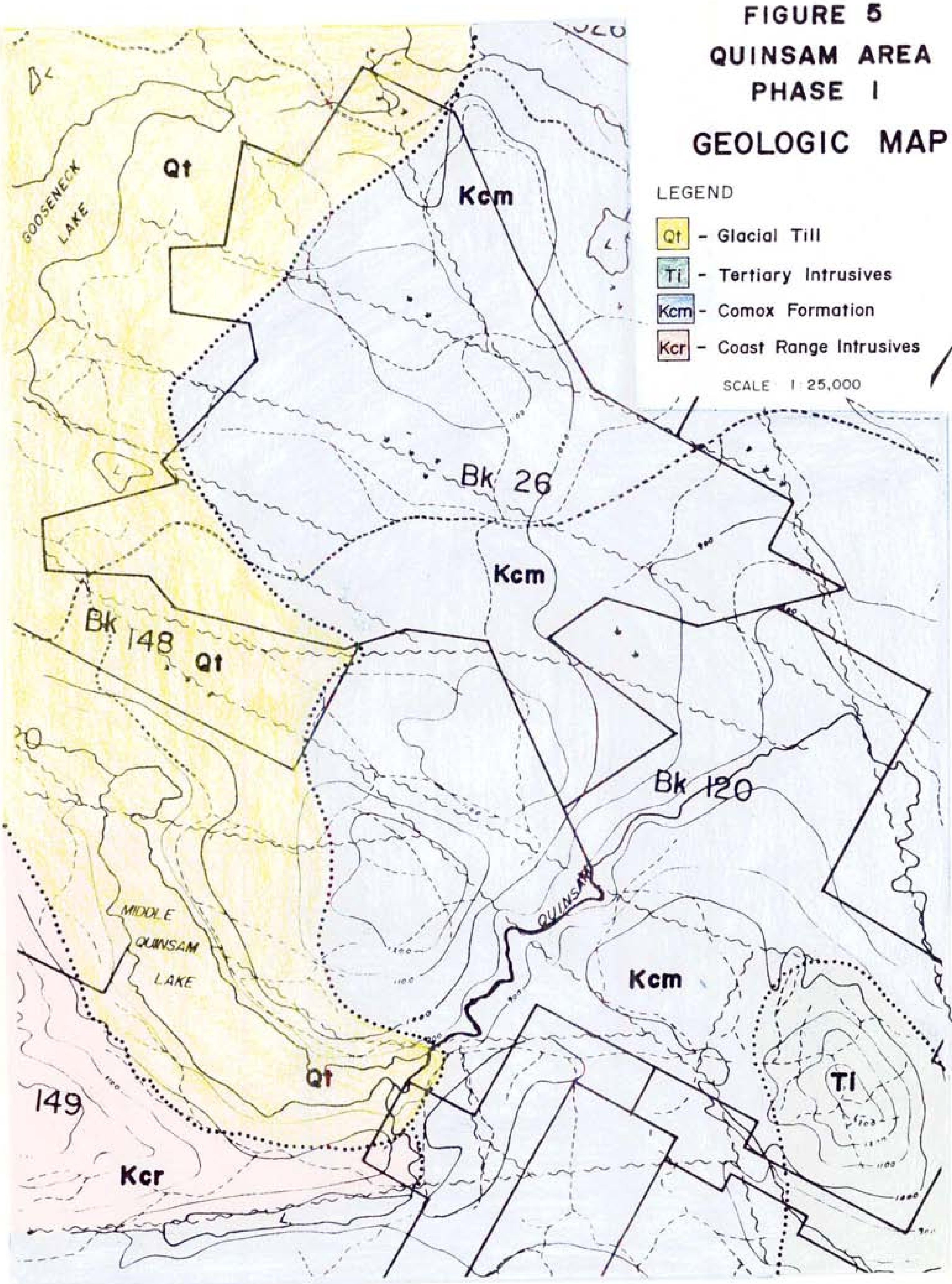


FIGURE 5
QUINSAM AREA
PHASE I
GEOLOGIC MAP
LEGEND
Qt - Glacial Till
Ti - Tertiary Intrusives
Kcm - Comox Formation
Kcr - Coast Range Intrusives
SCALE 1:25,000
N
GOOSENECK LAKE
Qt
Kcm
Bk 26
Kcm
Bk 148
Qt
Bk 120
QUINSAM
MIDDLE QUINSAM LAKE
Kcm
Ti
Qt
149
Kcr

STRATIGRAPHY OF THE COAL BEARING FORMATION

Because no significant outcroppings of the Comox Formation occur on the property a stratigraphic sequence has been reconstructed from drill hole logs and core descriptions. The sequence of deposition throughout the area is quite variable and susceptible to lateral facies changes over relatively short distances. In addition, the maximum thickness intersected during this phase of exploration was 320 feet, and the Comox is known to exceed 1000 feet in thickness in the Campbell River area adjacent to the east.

Within the exploration area, the Comox can be roughly divided into two cycles of deposition from different source rocks. The upper cycle consists primarily of coarse to medium grained arkosic sandstone derived from the granitic Innsular Mountains which form the western boundary of the property. The lower cycle consists of finer grained siltstones and sandstones containing many volcanic clasts in their matrices. These sediments were probably eroded from the Triassic Vancouver Group which forms the basement rock in the area.

The lower cycle contains the No. 1 coal seam and extends upward from an angular unconformity on the Vancouver Group to the base of the No. 2 seam. The thickness of this cycle ranges from 100 to 160 feet, dependent on the paleotopographic irregularities expressed by the basalt basement.

The lowermost sediments consist of a series of dark reddish siltstones overlain by a sequence of interbedded dark grey siltstone, dark brown mudstone and massive greenish grey, medium grained sandstone, accumulating to a maximum thickness of 60 feet. Visual examination of the sandstone units indicate they are composed predominantly of volcanic and quartz clasts.

The No. 1 seam lies on top of this lower series, usually seated on a dark brown mudstone floor. However, when deposition encroaches on paleotopographic basement highs, the lower series is missing and the No. 1 seam shales out. In situations where deposition has not been interrupted, the No. 1 seam consists of a zone ranging from 10 to 16 feet containing from 6.6 to 12.1 feet of coal separated by two or three mudstone partings and bone layers, none of which exceed 1 foot in thickness. The No. 1 seam attains a maximum thickness in the central part of the property and gradually thins and pinches out along a depositional margin north of line 185.

In the central and southern parts of the area, a thin rider seam ranging in thickness from 1.5 to 2.5 feet occurs from 1 to 12 feet above the No. 1 seam.

Upward from the No. 1 seam to the top of the lower cycle at the base of the No. 2 seam, the sequence consists predominantly of thinly bedded dark grey siltstones interbedded with massive medium grained sandstone lenses. Some of these sandstone lenses contain minor pebble bands, and all exhibit cross bedding and some color banding. This sequence of alternating fine and coarse clastics is extremely variable throughout the property and correlation of individual units is difficult at best.

The No. 2 seam occurs 60 to 80 feet above the No. 1 seam and is identified as the base of the upper cycle, although the hiatus in deposition may occur in the interfingering unit between the two seams. This seam forms a coal horizon attaining a maximum thickness of 6 feet containing from 4.6 to 1.0 feet of coal with an average coal thickness of 2 feet. Usually the

No. 2 seam is divided into an upper and lower part by a thin mudstone parting. It is the upper part which increases in thickness as the seam extends from the southern to the northern part of the property. The No. 2 seam is typically overlain and underlain by brown mudstone containing numerous coaly streaks and partings.

The sequence above the No. 2 seam extending upward to the No. 3 seam consists of a relatively homogeneous sequence of massive, medium to coarse grained arkosic sandstones interbedded with layers of thin siltstone and mudstone. The sandstones are light to medium gray in color, composed of uniform sized sub-angular clasts in a calcareous or siliceously cemented matrix. Cross bedding and banding are expressed in some of the finer grained layers.

The No. 3 seam is the uppermost coal horizon in this region, occurring 100 to 130 feet above the No. 2 seam. It occupies an interval ranging from 12 to 15 feet thick containing 5.8 to 9.9 feet of blocky coal, usually in four sub-equal bands separated by brown mudstone partings. It is typically directly overlain by sandstone and seated either on a mudstone or sandstone floor. The No. 3 seam exhibits extreme lateral variation but can usually be identified by its distinctive four coal band kick on a density log.

At present, the No. 3 seam is known only from the southern part of the area,(south of the Quinsam River). Future drilling has been planned down dip of the No. 2 seam in the central and northern parts of the area to locate the No. 3 seam and extend its continuity.

The sequence above the No. 3 seam continues as arkosic sandstone which outcrops on surface as a rust weathering, friable unit or is truncated and buried by glacial deposits.

The contrast between the relatively homogeneous characteristics of the upper cycle and extreme variability of the lower cycle reflect the difference in depositional styles that were active as the Comox formation was being laid down in this area. The lowermost sediments and the No. 1 seam were deposited in a series of paralic basins between topographic highs on the old volcanic basement as the land was slowly emerging during late Cretaceous times. Obviously this was a low energy environment as evidenced by the lack of coarse grained clastics, protected inland from the sea in quiet lagoons and estuaries. As the depositional basin slowly subsided under the sediment load, or was tilted by the rising granitic mountain range to the west, the old basement topography was buried and deposition of the No. 2 and No. 3 seams took place in the upper cycle. The range of this cycle was much more widespread since the restricting highs were now buried. Also, deposition of the upper cycle must have been more rapid as evidenced by the predominance of coarser grained clastics. Indeed the lack of a seat earth beneath the No. 3 seam suggests an accumulation of plant material in a large estuary by river action rather than static accumulation in a bog or lagoon.

The economic significance of this depositional history means that the No. 3 and No. 2 seams are much more likely to be persistent than the No. 1 seam within the area.

TABLE 2

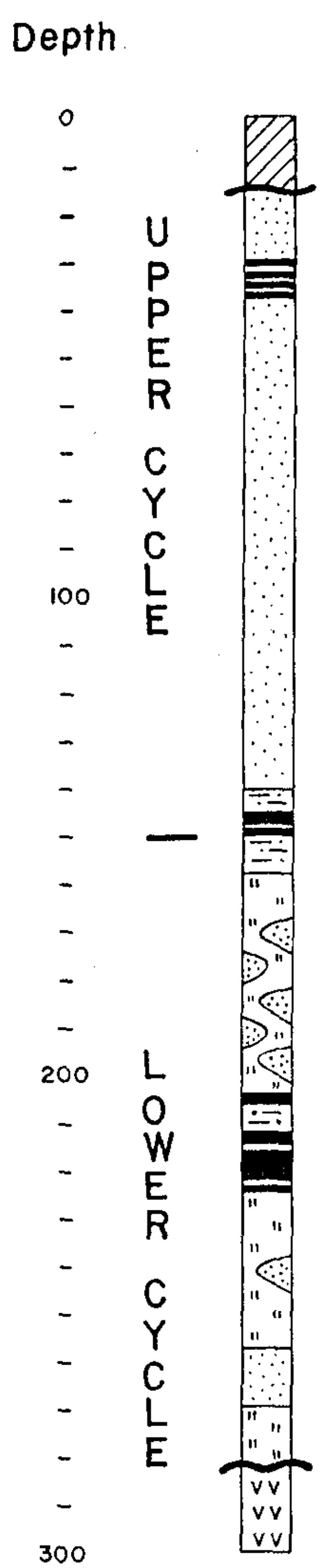
Table of Formations

PERIOD	FORMATION	LITHOLOGY
Recent	Alluvium	- fluvitile sands and gravels, clays, weathered bedrock
Pleistocene	Glacial Till and Outwash	- stratified sands and gravels compacted clay rich boulder till
	Unconformity	
Tertiary	Plutonic Stocks Igneous Sills and Dykes	- porphyritic dacite, quartz diorites, skarn deposits and breccias
	Disconformity	
Upper Cretaceous	Coast Range Instrusives	- granodiorite, minor quartz diorite
	Disconformity	
	Comox Formation	- arkosic sandstone, minor siltstone, mudstone, conglomerate and coal seams
	Unconformity	
Jurassic and Triassic	Vancouver Group	- amygdaloidal pillow basalts, andesitic tuffs and breccia, minor limestone and argillites

Stratigraphic Column

Figure 6

Comox Formation
Quinsam



Unit	Thickness	Lithology
Glacial Till	0 – 150'	Compacted and cemented clay w/ boulders.
		Sandstone, m.- gr., arkosic.
No. 3 Seam	12'–15'	6.0'-10.0' coal w/3 partings.
	100'-130'	Sandstone m.- cs. gr. arkosic massive, minor siltstone and mudstone partings.
No. 2 Seam	5'– 1'	4.5'-1.0' coal w/1 parting.
	60'–80'	Interbedded dk. grey siltstone w/greenish grey sandstone.
No. 1 Rider	2.0'-1.0'	1.5'-1.0' coal.
		Mudstone.
No. 1 Seam	10'– 16'	6.5'-12.0' coal w/3 minor partings.
	0 – 60'	Primarily dk. grey siltstone w/green sandstone lenses, red siltstone at base.
Vancouver Gp.		Metavolcanics argillites.

STRUCTURE

In the Quinsam area, tectonic activity has produced a series of down faulted blocks of Comox sediments trending northwest and dipping from 3^{0} to 17^{0} northeast. A series of secondary transverse faults branch off from the main northwest trending normal faults and dissect the Comox formation in a radial fashion, primarily alined in an east-west orientation. Minor high angle reverse faulting occurs along the western boundary of the area where the Comox formation has been affected by an uplift of the granitic Innsular Mountain Range. In these situations, the footwall has been rotated downward to a greater dip than the hanging wall.

The predominant style of faulting is brittle fracture at angles ranging from 60^{0} to near vertical. Displacements range from in excess of 300 feet along some of the major northwest trending normal faults to 5 feet or less along the subsiduary imbricate reverse faults. Flexure folding and overthrusting are limited to the immediate area of some of the more prominent faults as minor drag phenomena along the planes of slippage. No evidence of structural thickening or thinning is apparent in the coal seams although minor rolls were documented in the underground workings in the Comox area to the south. In areas where the Comox formation has been intruded by plutonic stocks or igneous dykes, an extremely complex pattern of radial faults and closely spaced joints is developed. Very limited work has been done in these areas and it is not within the scope of this report to deal with them further.

Within the confines of the study area, the Comox formation occurs in a single basin, down thrown to the east by a major normal fault which trends northwest from a 90^{0} bend in the Quinsam River to the western shoreline of Beaver Tail Lake. The southern boundary of this area is defined along a major transverse fault which runs parallel to two elongated lakes south of the Quinsam River in a west to east direction, roughly at 90^{0} to the major east bounding fault. The northern and western boundaries are defined along the glacial erosion edge of the Comox formation which extends along the eastern margins of Beaver Tail, Snakehead, Gooseneck and Middle Quinsam Lakes. Fig. 7 illustrates the structural framework of the study area.

The study area has been dissected by a series of seven, sub-equally spaced, transverse faults trending in an east-west direction. A secondary series of four high angle reverse faults intersect these transverse faults at approximately 30^{0} and effectively uplift and increase the dip of the strata.

For the purposes of this report, the study area has been divided into three adjoining structural blocks identified as the northern, middle and southern blocks. Each block in turn has been subdivided into sub-blocks labled A, B, C. Detailed maps (Appendix II Maps 1, 2, 3 and 4) were constructed using drill hole information and air photo interpretation to illustrate the structural framework of the study area. These maps show the surface expression of all known faults and the structure contour and overburden thickness isopach on the top of the No. 1 and No. 3 seams. Detailed descriptions of each of the three structural blocks follows:

1. Northern Block

The northern block extends southward from grid line 200+00 to 130+00. The northern limit is defined along the depositional margin of the coal measures. The western boundary is marked by the erosion edge of the coal measures and the eastern margin is defined along the 200 foot overburden limit on top of the No. 1 seam. The block is subdivided into four subblocks by four major east-west trending transverse faults and one high angle reverse fault. Subblocks D and C lie to the north and south respectively of a major transverse fault which marks the northern boundary of the block. These two subblocks exhibit the structural pattern on top of the No. 2 seam as the No. 1 seam has shaled out in this area. The strata strikes 336^{0} N and dips 6^{0} to the northeast in subblock D, and strikes 350^{0} N and dips 3^{0} to the northeast in subblock C. The major transverse fault separating the two areas has uplifted D to a maximum of 45 feet with respect to C and increased the dip of the strata to the northeast. Cross sections 195+00 and 185+00 illustrate this structural relationship. Information is limited in the area and the boundaries of these subblocks have been arbitrarily drawn using a 500 foot confidence limit on the drill holes.

Subblock B includes all the strata extending southward from gridline 185+00 to 130+00. The northern and southern boundaries are marked by two major transverse faults trending 265^{0} N and 240^{0} N respectively. The area is roughly bisected in an east-west fashion by a subsidiary transverse fault trending 260^{0} N. Displacement along this fault attains a maximum throw of 10 feet. The strata within subblock B strikes 330^{0} N and dips 3^{0} to the northeast. The uniform, gently dipping nature of the coal seams within this block is illustrated on cross sections 170+00 and 150+00.

Subblock A lies immediately south of subblock B, separated by a high angle reverse fault trending 287° N. It has been downthrown and rotated along this fault to a maximum displacement of 25 feet with respect to subblock B. The strike is 300° N and the dip is 12° to the northeast. Glacial erosion has truncated the subblock to the south and west. Cross section 150+00 illustrates the relationship between A and B.

2. Middle Block

The middle block lies adjacent to the south of the northern block, separated and downthrown from it a distance of 25 feet by a major transverse fault. It extends southward from here to the Quinsam River where it is separated from the southern block by another major transverse fault. The western boundary is defined along the glacial erosion edge of the coal measures and the eastern boundary is marked by the 200 foot overburden limit on the top of the No. 1 seam.

The middle block is divided into three subblocks by transverse faulting. The subblocks are labled A to C proceeding in a south to north direction. The faults trend roughly east-west across the block, uplifting south over north. The resulting pattern is such that subblock A is displaced 25 feet upward with respect to B and B uplifted 35 to 40 feet with respect to subblock C. The strike ranges from 321° N to 327° N within the middle block and the dip increases progressively southward as each uplifted subblock tilts slightly more to northeast.

Subblock C dips 7^0 to the northeast, B dips $7\frac{1}{2}^0$ northeast and A dips at 8^0 to the northeast. A complex structural zone is developed where two major faults join along the boundary between subblock B and C, creating a possible fourth structural subblock. The drill hole information in this region is not sufficient to make any inference about the structure. Cross sections 120+00, 110+00 and 100+00 illustrate the structural patterns of subblocks C, B and A respectively.

3. Southern Block

The southern block extends southward from the Quinsam River to a major transverse fault running parallel to Long Lake. The western boundary is marked by the outcrop of the No. 1 seam and the eastern margin lies along the 200 foot overburden limit on top of the No. 3 seam. The area is bisected by a major fault trending 318^0 north which intersects the north and south bounding faults at approximately 90^0. This fault is joined at 30^0 in the southern half of the block by a smaller high angle reverse fault. The resulting pattern is subdivided into three subblocks; A on the eastern side of the main fault, B on the western side of the fault and C in the wedge shaped area between the intersection of the two faults.

The action along the main fault is complex. It appears to be hinged along an east-west axis in the northern part of the block near grid line 60+00. At this location, there is little or no displacement between subblock A or B. North of this axis subblock B has been downthrown to a maximum of 45 feet and rotated 20^0 southward with respect to subblock A. The dip of the strata increases from 7^0 east in subblock A to $8\frac{1}{2}^0$ northeast in subblock B. On the south side of the axis, as is illustrated on cross section 50+00, subblock B has been uplifted 40 feet with respect to subblock A. The minor reverse fault that intersects the main fault south of Line 50+00 thrusts subblock A a maximum of 30 feet upwards with respect to subblock C, forming a southwesterward plunging graben between subblocks A and B. Cross section 40+00 shows the relationship between A and C. The major transverse fault forming the southern boundary intersects the middle block along a plane dipping at 82^{0}; displacing the No. 3 coal seam 80 feet downward south of this block.

This complex fault system has been developed by the uplifting, tilting and rotation of subblock B with respect to A. The tectonic action was generated by the rising granitic mountains to the west. The stress must have been compressional in the north half of the block where A is uplifted relative to B. The graben formed by subblock C would then have been developed by extentional forces as subblock A and B were torn apart. This is evidenced by the radical difference in strike between A and B, ranging from 305^{0} N to 275^{0} N respectively.

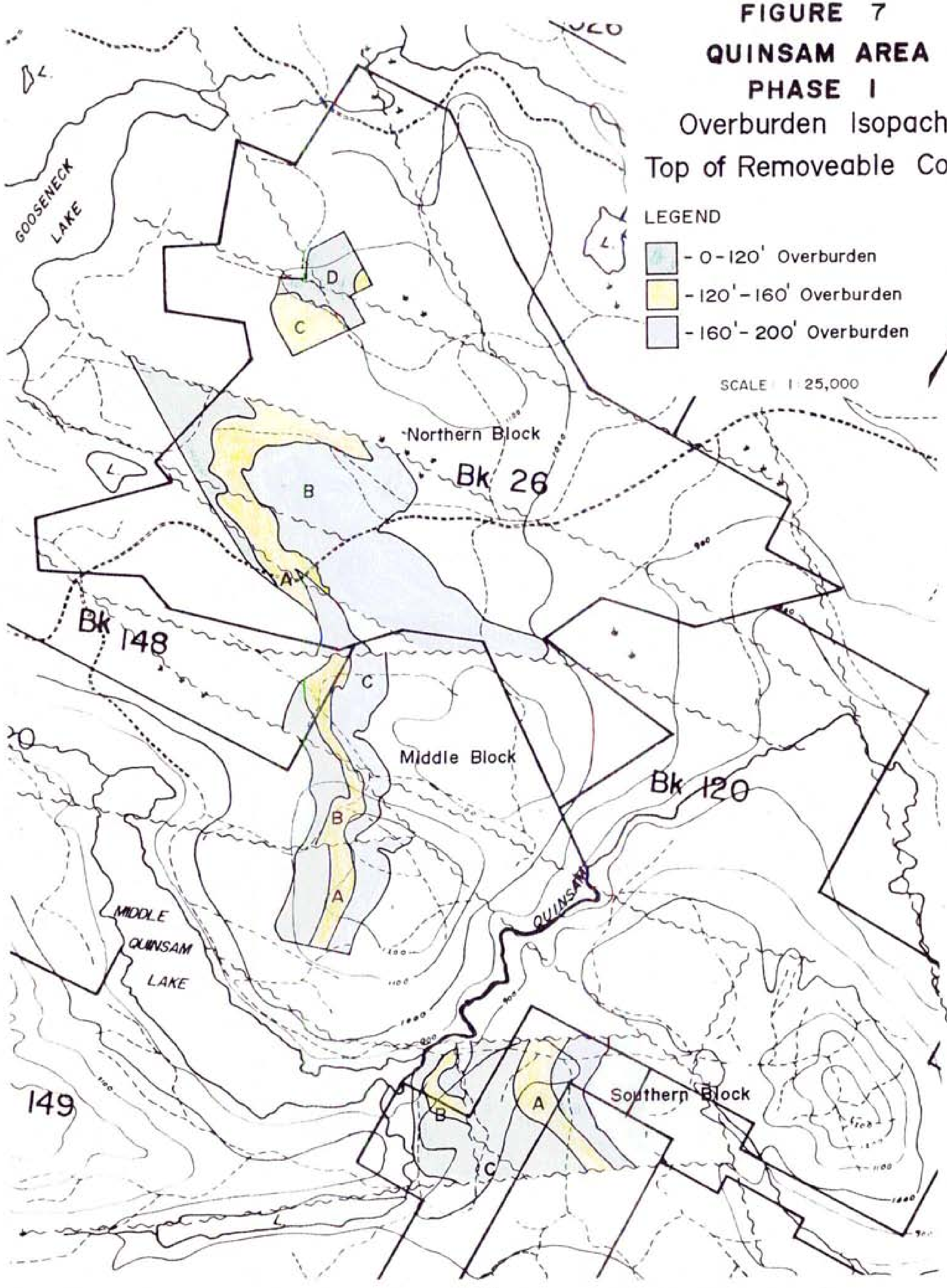


FIGURE 7
QUINSAM AREA
PHASE I
Overburden Isopach
Top of Removeable Coal

COAL QUALITY

I. TEST PROCEDURES

1. Coal studied in this report was obtained by coring and recovered in plastic tubes. Partings greater than 1" in thickness were omitted from the samples.

2. Head Sample Preparation and Analysis:

The sample preparation procedure is outlined in the flow-sheet shown in Fig. 8. Each sample to be tested is air-dried according to A.S.T.M. specification and then crushed under controlled conditions in Hammer Mill crusher to give (1) inch top size.
The sample is then split 3 to 6 times (depending on the original weight) to give a representative sample of raw coal which is subjected to Proximate Analysis (Inherent Moisture, Ash, Volatile Matter and Fixed Carbon), Calorific value, Free Swelling Index and Total Sulphur. A composite of cores 1 to 11 was established for Ultimate Analysis, Ash Fusion and Mineral Analysis of ash.

The rest of the sample is first screened (each size has been analyzed for the percentage of ash)
Coal + ½", ½ x 28 mesh and 28 x 100 mesh (Core hole No. 4,5,6,10, Composite of 8, Composite of 9 and Composite of 11).
Coal + ¼", ¼" x 28 mesh and 28 x 100 mesh (Core hole No. 1,2 and 3) is subjected to Float-sink separation at specific gravities 1,3,1.35,1.40, 1.45, 1.50, 1.55, 1.60, 1.70, 1.80 and 1.90 using organic liquid of standardized specific gravity.
Each specific gravity fraction is assayed for Ash, Total Sulphur and BTU/lb.

3. Graphical Representation:

Washability Curves -

i)	Cumulative Float	ii)	Cumulative Sink
iii)	Elementary Ash	iv)	Specific Gravity Distribution

were plotted for each fraction and combined fractions.

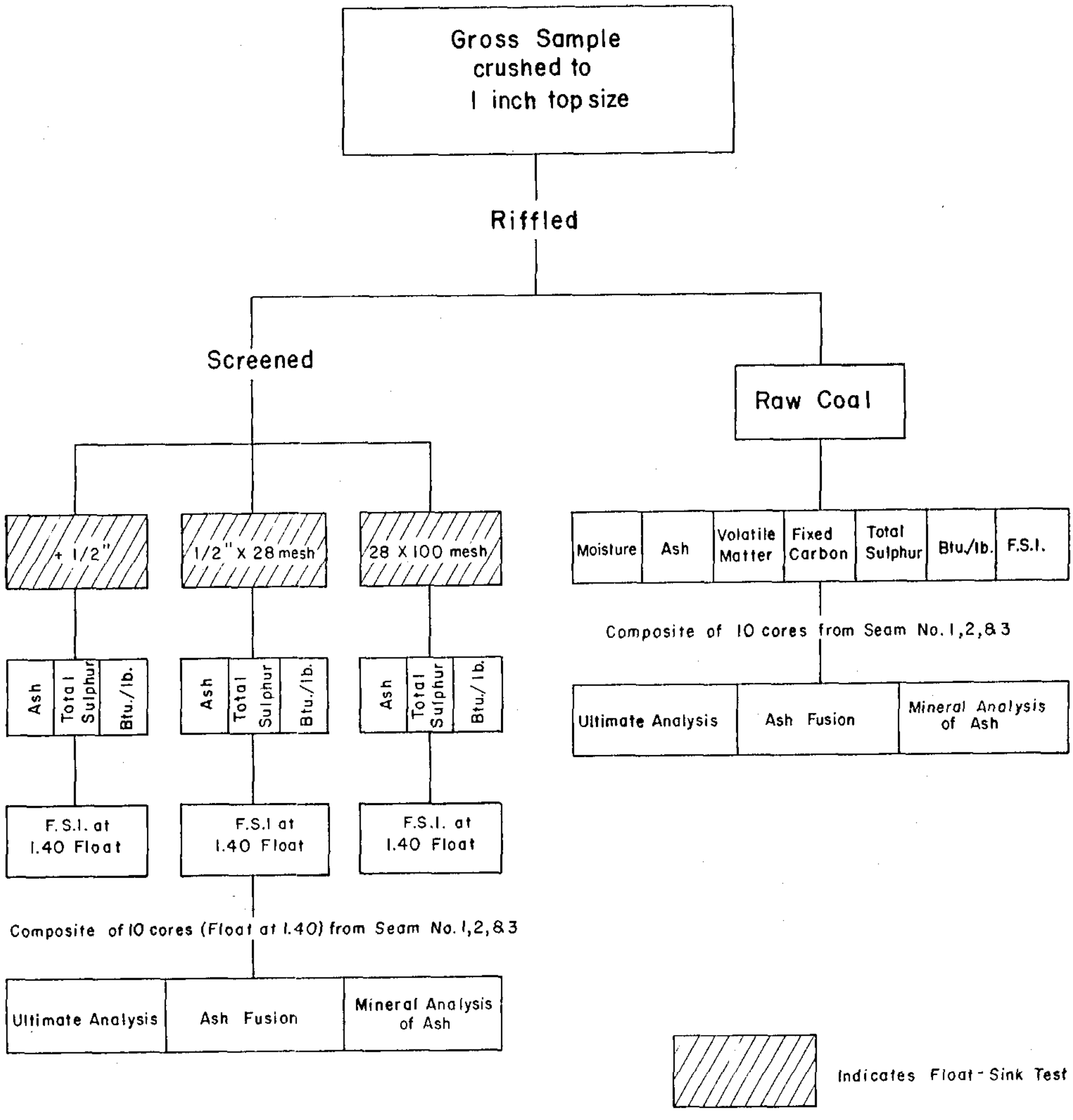


FIGURE 8: *FLOW DIAGRAM SHOWING SAMPLE PREPARATION AND ANALYSIS*

II. PROXIMATE ANALYSES ON RAW COAL

Table 3

1. Raw Coal Analysis
on air dry basis

Lab #	Core Hole #	Bed Thickness	Moisture %	Ash %	Vol. Matter	Fixed Carbon	Total Sulph	FSI	BTU/lb
1065	1 (Seam 1)	192.4-197.4	3.03	16.22	34.41	46.34	0.27	1½	11,289
1068	1 (Seam 1)	198.7-199.2	2.78	12.32	35.25	49.65	0.21	1½	12,083
1066	1 (Seam 2)	131.6-134.75	2.65	14.78	38.49	44.08	2.52	1½	11,874
1067	1 (Lower Seam 2)	139.1-140.2	2.40	18.97	37.88	40.75	4.40	1½	11,270
1069	2 (Seam 1)	174.0-186.0	2.59	23.37	32.52	41.52	0.19	1½	10,369
1070	3 (Upper Rider 1)	108.7-110.4	2.45	14.58	38.33	44.64	2.54	1½	11,999
1071	3 (Seam 1)	113.1-123.3	2.82	9.88	37.30	50.00	0.20	1½	12,626
1085	4 (Rider 1)	165.05-167.1	2.54	11.54	38.87	47.05	3.47	1	12,232
1074	4 (Seam 1)	173.6-185.4	2.58	10.11	37.67	49.64	0.30	1½	12,402
1083	5 (Rider 1)	183.6-184.6	2.10	25.09	34.76	38.05	0.41	1	10,199
1072	5 (Seam 1)	187.3-198.0	2.73	11.54	36.40	49.33	0.27	1½	12,105
1082	6 (Rider 1)	254.0-255.6	2.09	20.32	38.21	39.38	2.92	2	10,903
1073	6 (Seam 1)	255.3-264.0	2.66	13.23	36.25	47.86	0.34	1½	11,923
1089	6 (Lower Seam 1)	264.5-265.4	2.43	25.39	31.91	40.27	1.76	1½	9,826
1081	8 (Rider)	38.62-39.73	1.76	17.48	38.02	42.74	4.73	1½	11,209
1086	8 (Seam 3)	47.94-49.99	2.09	18.73	37.14	42.04	1.91	2½	11,260
1084	8 (Seam 3)	52.0-53.19	2.45	34.82	31.19	31.54	6.49	1½	9,051
1076	8 (Seam 3)	53.82-56.31	2.04	15.47	37.59	44.90	3.04	2	11,915
1090	8 (Seam 2)	164.4-165.5	3.14	17.97	35.79	43.10	4.14	1½	10.670
1075	9 (Seam 1)	115.8-121.1	2.40	14.47	38.05	45.08	1.79	2	11,989
1077	9 (Seam 1)	122.0-125.7	1.90	29.58	31.15	37.37	0.93	1½	9,480
1080	10(Seam 2)	149.23-152.82	2.14	14.02	36.87	46.97	4.91	2½	12,246
1078	11(Seam 1)	146.0-148.5	2.90	9.03	36.18	51.89	0.21	1½	12,579
1079	11 (Seam 1)	149.9-158.0	2.79	18.36	34.12	44.73	0.30	1½	11,199
1087	No. 1 - Iron River		3.97	16.37	37.53	42.13	2.03	0	10,600
1088	No. 3 - Iron River		7.78	10.96	43.50	37.76	0.54	0	9,292

		Moist. %	Ash %	Vol. Matter	Fixed Carbon	Total Sulph	FSI	Btu/lb
1.	Average (Seam 1)	2.63	16.13	35.10	46.14	0.56	1.5	11,489
	Standard Deviation (Seam 1)	0.30	6.72	2.30	4.49	0.60	0.1	1,073
2.	Average (Rider 1)	2.29	17.88	37.54	42.29	2.34	1.5	11,333
	Standard Deviation (Rider 1)	0.23	6.03	1.88	4.27	1.34	0.4	953
3.	Average (Seam 2)	2.58	16.44	37.26	43.72	3.99	2.3	11,515
	Standard Deviation (Seam 2)	0.42	2.41	1.18	2.58	1.03	1.8	692
4.	Average (Seam 3)	2.19	23.01	35.31	39.49	3.81	2.0	10,742
	Standard Deviation (Seam 3)	0.22	10.36	3.57	7.03	2.39	0.5	1,500
5.	(Rider 3)	1.76	17.48	38.02	42.74	4.73	1.5	11,209

2. Proximate, Sulphur and Calorific Value

Average (Seam 1)	Moisture %	Ash %	Volatile Matter	Fixed Carbon	Total Sulph	FSI	Btu/lb
As analyzed	2.63	16.13	35.10	46.14	0.56	1.5	11,489
Dry basis	-	16.57	36.05	47.39	0.58	1.5	11,799
On 6.00% moisture	6.00	15.58	33.89	44.55	0.54	1.4	11,091
Average (Seam 2)							
As Analyzed	2.58	16.44	37.26	43.72	3.99	2.5	11,515
Dry basis	-	16.88	38.25	44.88	4.10	2.5	11,820
On 6.00% moisture	6.00	15.87	35.96	42.19	3.85	2.5	11,111
Average (Seam 3)							
As Analyzed	2.19	23.01	35.31	39.49	3.81	2.0	10,742
Dry basis	-	23.53	36.10	40.37	3.90	2.0	10,983
On 6.00% moisture	6.00	22.12	33.93	37.95	3.67	2.0	10,324

1. The average as-received ash content is ranging from 16.0 - 22.0%, Seam No. 3 has higher ash than seam 1 and 2.

2. The average as received volatile matter is ranging from 34.00 - 36.00%.

3. The average as-received sulphur content is ranging from 0.55 - 4.0%. The highest sulphur occurs in seam 2 and 3, in general sulphur content is low in northern part and high in southern part.

4. As-received heat value averages between 10,300 - 11,000 btu/lb
   Seam 1 and 2 have higher heat value than seam 3
   On Moist Mineral Matter free basis the coal range 13,500 - 14,000 btu/lb

5. Coal has weak coking properties, FSI ranging 1½ to 2½.
   Seam 2 and 3 have 2.0 - 2½ FSI while seam 1 has 1½.

6. Coal classified as high volatile ~~A~~ C bituminous coal. ??

RESERVES

PARAMETERS

The in place surface recoverable coal reserves for the Quinsam study area were calculated under the following parameters:

1) The coal seams are considered continuous up to a maximum radius of 500 feet from known drill hole information or outcrop.

2) Coal thickness is based on the in place raw coal within each seam, excluding partings, and this thickness applies to the area of influence of each drill hole intersection.

3) The in place density of the raw coal is 90 lbs./cu. ft. or 1.2 tons/cu. yd.

4) Coal seams less than 3.0 feet in thickness are not considered to be economically recoverable unless they overlie thicker seams.

5) Recoverable in place coal volumes are presented in three categories based on the following maximum depths of overburden:

   120 feet - single pass dragline stripping

   160 feet - drag line stripping with rehandle

   200 feet - shovel and truck stripping

The reserves are to be considered in the proven category; no areas outside the confidence limits have been included.

METHODS

Overburden isopach maps were constructed on a 1" = 200' scale (Appendix II, Maps 1, 2, 3 and 4) to illustrate the 120 foot, 160 foot and 200 foot overburden limits above the recoverable coal seams within each of the structural blocks. The areas between each overburden limit were calculated by planimetering the maps and these were converted to square yards. The volume of coal was calculated by multiplying the average raw coal thickness by the surface area with each structural block. Coal volume was converted to tonnage and overburden volumes were estimated by multiplying surface area by mean overburden thickness. A raw in place tons of coal to cubic yards of overburden ratio was calculated for each structural block.

Throughout the study area,the overburden limits were calculated to the top of the No. 1 seam with two exceptions. In the northern block, the No. 1 seam is missing in sub blocks C and D, so the overburden isopachs were drawn on the top of the No. 2 seam. In the southern block, the No. 1 seam is too deep to be economically recovered in sub block A so the overburden isopach is constructed on top of the stratigraphically higher No. 3 seam.

The results of the reserve calculations are summarized as follows. Table 5 through 7 list the detailed calculation for each individual sub block included in the reserves.

TABLE 4 PROVEN IN PLACE RESERVES

(Short Tons x 10^6)

A. Northern Block

Depth of Overburden	Seam No. 2	Seam No. 1	Overall Ratio
0 - 120 feet	.868	1.273	8.7:1
120 - 160 feet	.689	1.175	12.4:1
160 - 200 feet	.894	2.569	12.2:1
Sub Total	2.451	5.017	11.5:1

B. Middle Block

Depth of Overburden	Seam No. 2	Seam No. 1	Overall Ratio
0 - 120 feet	.124	1.028	6.1:1
120 - 160 feet	.115	.822	8.6:1
160 - 200 feet	.152	1.093	11.1:1
Sub Total	.391	2.943	8.6:1

C. Southern Block

Depth of Overburden	Seam No. 3	Seam No. 1	Overall Ratio
0 - 120 feet	.785	.751	5.1:1
120 - 160 feet	.325	.232	13.5:1
160 - 200 feet	.294	.071	17.9:1
Sub Total	1.40	1.05	9.5:1

RESERVE SUMMARY

Depth of Overburden (feet)	Overburden Volume (Cu. Yds. x 10^6)	Proven Tons (short tons x 10^6) Seam No. 1	Seam No. 2	Seam No. 3	Over all Ratio (Cu. yds./tons)
0 - 120	33.52	3.05	0.99	.785	6.9:1
120 - 160	38.93	2.23	0.80	.325	11.6:1
160 - 200	62.78	3.73	1.05	.294	12.4:1
Sub total		9.01	2.84	1.40	
Total	135.23		13.25		10.2:1

Table 5

Proven In Place Reserves

Northern Block

Subblock	Seam No.	Average Seam Thickness (feet)	Overburden Thickness (feet)	Overburden Volume (Cu. Yds. x 10^6)	In Place Tonnage (Short Tons x 10^6)	Ratio (Cu. Yds./Tons)
A	No. 1	9.1	75 - 120	.54	.064	8.5:1
			120 - 160	1.80	.140	12.8:1
			160 - 200	1.87	.113	16.5:1
	No. 2	2.4	75 - 120		.017	
			120 - 160		.037	Overall Ratio
			160 - 200		.030	Mining No. 1 and No. 2
	Total	11.5		4.21	.401	10.5:1
B	No. 1	10.0	40 - 80	2.14	.428	5.0:1
			80 - 120	6.51	.781	8.3:1
			120 - 160	14.21	1.035	13.7:1
			160 - 200	40.49	2.456	16.5:1
	No. 2	3.1	40 - 80		.107	
			80 - 120		.234	
			120 - 160		.378	Overall Ratio
			160 - 200		.864	Mining No. 1 and No. 2
		13.1		63.35	6.283	10.0:1
C	No. 2	4.2	80 - 120	5.47	.276	10.8:1
			120 - 140	7.07	.274	25.8:1
	Total	4.2		12.54	.550	22.8:1
D	No. 2	3.6	60 - 120	4.44	.213	20.8:1
Total Northern Block				84.54	7.45	11.3:1

Table 6

Proven In Place Reserves

Middle Block

Sub block	Seam No.	Average Seam Thickness (feet)	Overburden Thickness (feet)	Overburden Volume (Cu. Yds. x 10^6)	In Place Tonnage (Short Tons x 10^6)	Ratio (Cu. Yds./Tons)
A	No. 1	12.0	60 - 120	2.82	.452	6.3:1
			120 - 160	2.61	.268	9.7:1
			160 - 200	5.83	.467	12.5:1
	No. 2	1.4	60 - 120		.053	
			120 - 160		.031	Overall Ratio
			160 - 200		.054	Mining No. 1 and No. 2
	Total	13.4		11.26	1.325	8.5:1
B	No. 1	12.2	55 - 120	2.55	.427	6.0:1
			120 - 160	1.80	.188	9.6:1
			160 - 200	1.97	.160	12.3:1
	No. 2	1.3	55 - 120		.045	Overall Ratio
			120 - 160		.020	Mining No. 1 and No. 2
			160 - 200		.017	
	Total	13.5		6.32	.857	7.4:1
C	No. 1	11.5	95 - 120	1.16	.149	7.8:1
			120 - 160	2.20	.217	10.2:1
			150 - 160	1.68	.149	11.3:1
			160 - 200	6.08	.466	13.0:1
	No. 2	2.0	95 - 120		.026	
			120 - 160		.038	Overall Ratio
			150 - 160		.026	Mining No. 1 and No. 2
			160 - 200		.081	
	Total	13.5		11.12	1.152	9.7:1
Total Middle Block				28.70	3.334	8.6:1

Table 7

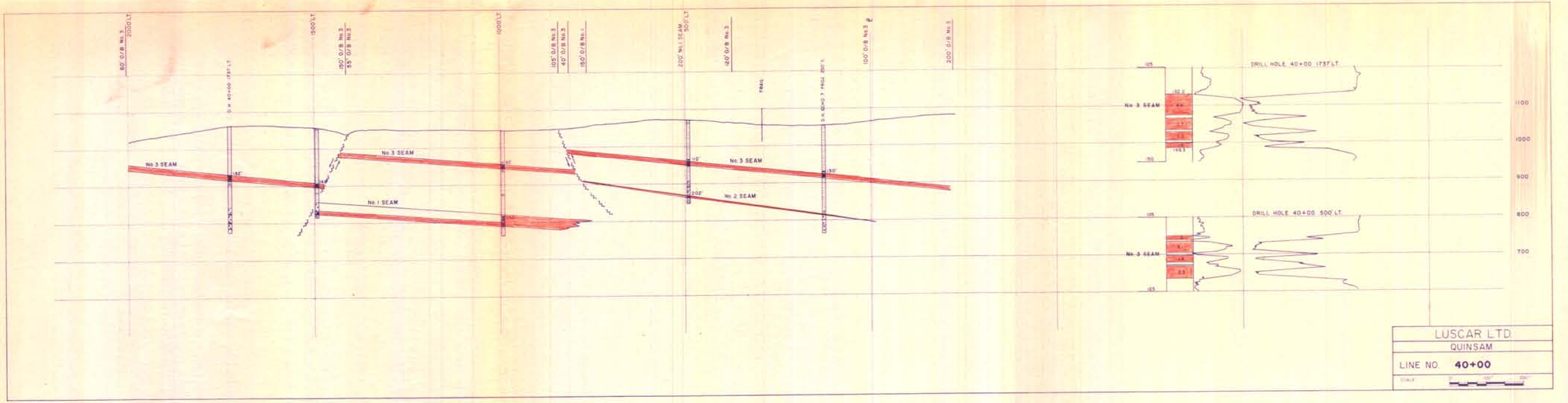
Proven In Place Reserves

Southern Block

Subblock	Seam No.	Average Seam Thickness (feet)	Overburden Thickness (feet)	Overburden Volume (cu. yds. x 10^6)	In Place Tonnage (short tons x 10^6)	Ratio (cu. yds/tons)
A	No. 3	8.2	0 - 120	3.81	.624	6.1:1
			120 - 160	4.62	.325	14.2:1
			160 - 200	5.39	.294	18.3:1
	Total	8.2		13.82	1.243	11.1:1
B	No. 1	9.2	0 - 120	4.08	.751	6.5:1
			120 - 160	2.95	.232	12.7:1
			160 - 200	1.15	.071	16.2:1
	Total	9.2		8.18	1.054	7.8:1
C	No 3	5.8	0 - 120	1.38	.161	8.6:1
Total				23.38	2.458	9.5:1

APPENDIX I

Cross Sections - Quinsam Phase I
Series 1" = 200' Scale
Sections: 40+00 and 50+00
60+00 and 85+00
100+00 and 110+00
120+00 and 135+00
150+00 and 170+00
185+00 and 195+00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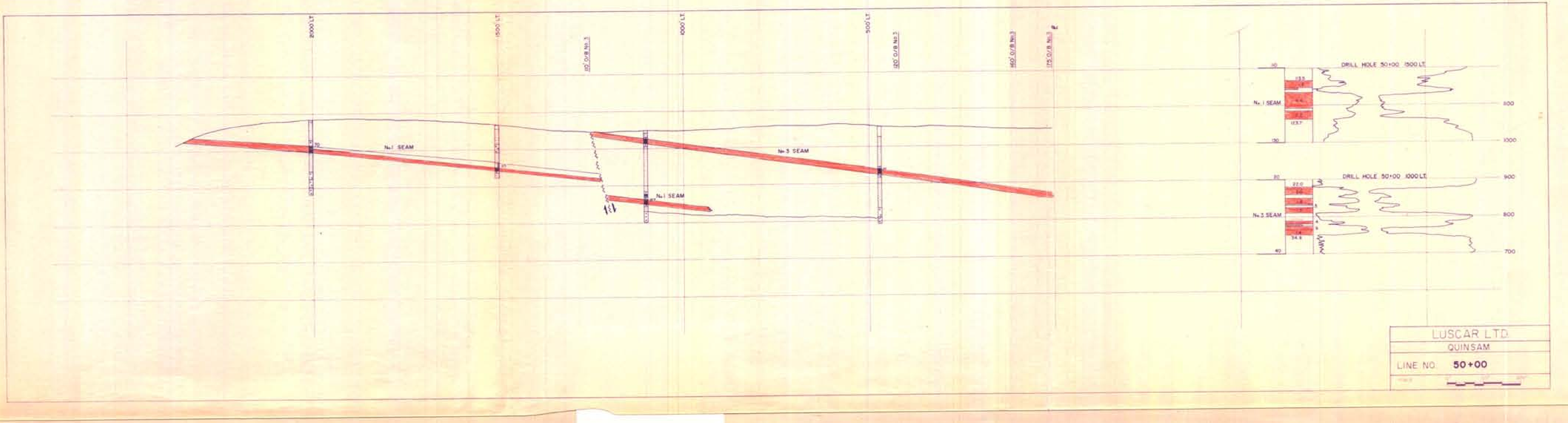
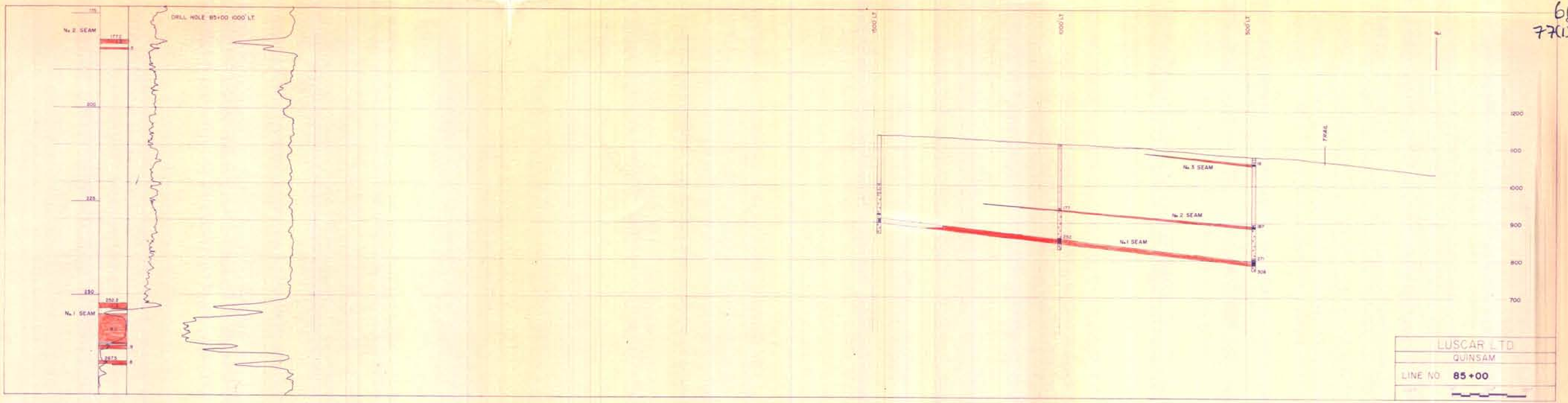
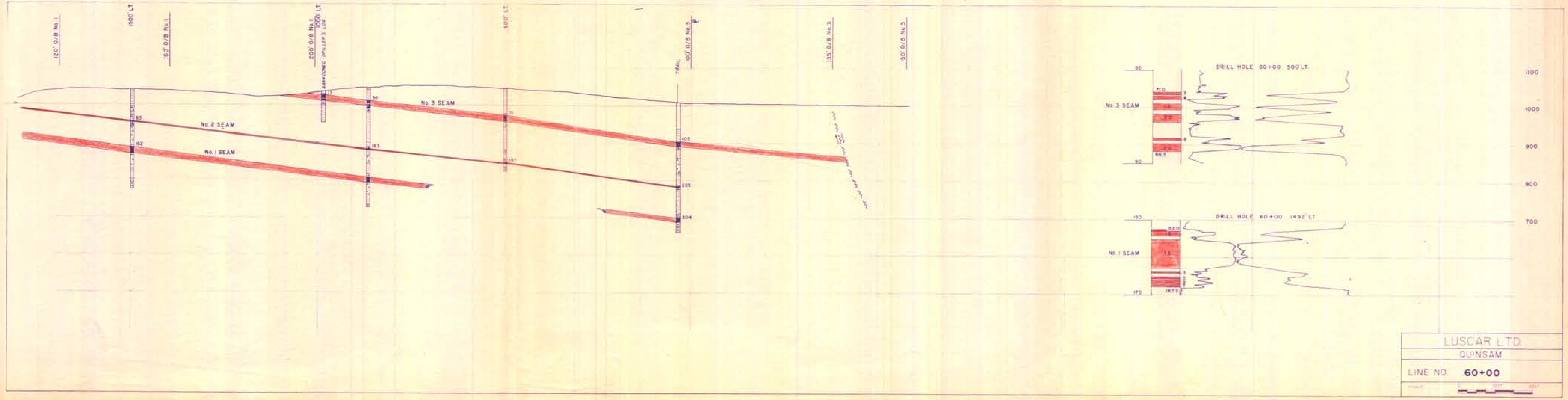
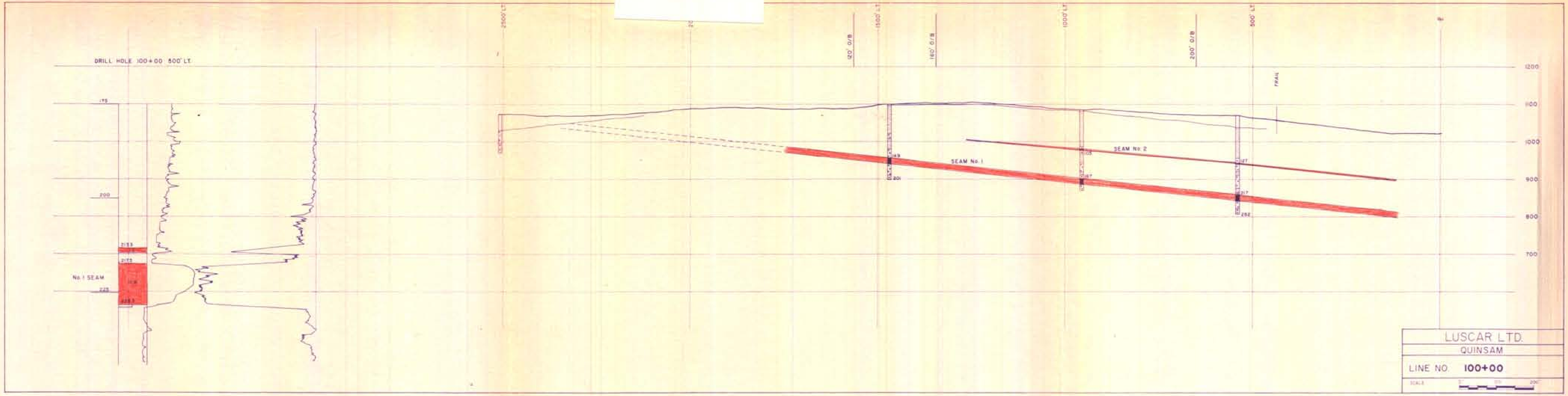
2000' LT
1500' LT
150' O/B No.3
55' O/B No.3
1000' LT
105' O/B No.3
40' O/B No.3
150' O/B No.1
200' No.1 SEAM
500' LT
120' O/B No.3
100' O/B No.3
200' O/B No.3
No.3 SEAM
No.3 SEAM
No.3 SEAM
No.1 SEAM
No.2 SEAM
DRILL HOLE 40+00 1737' LT
DRILL HOLE 40+00 500' LT
No.3 SEAM
No.3 SEAM
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 40+00

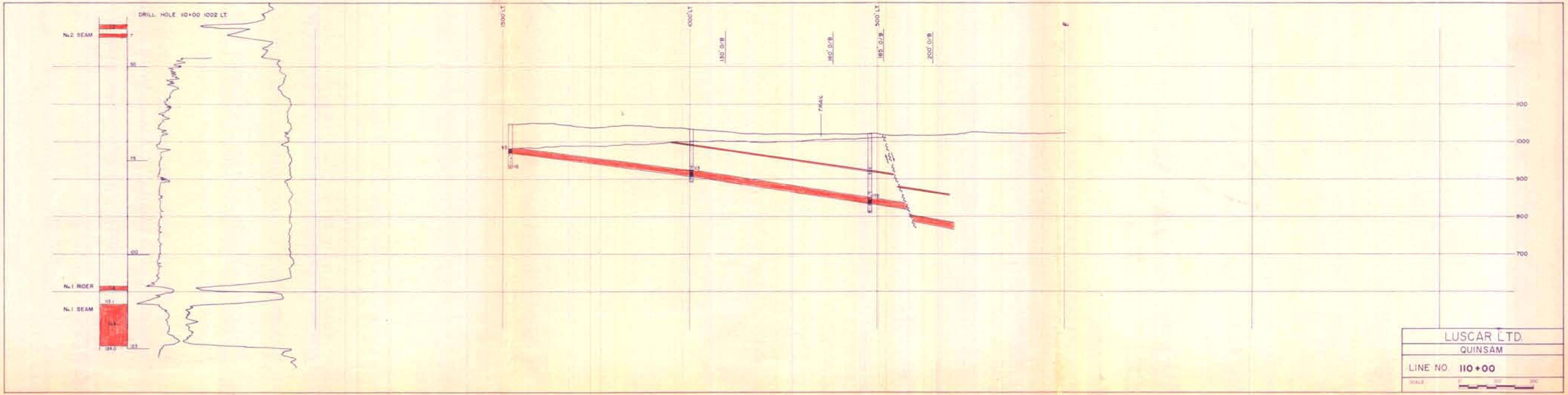

2000' LT
1500' LT
110' O/B No.3
1000' LT
500' LT
120' O/B No.3
160' O/B No.3
175' O/B No.3
No.1 SEAM
No.3 SEAM
No.1 SEAM
DRILL HOLE 50+00 1500' LT
DRILL HOLE 50+00 1000' LT
No.1 SEAM
No.3 SEAM
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 50+00

66
77(1)B


DRILL HOLE 85+00 1000' LT.
No. 2 SEAM
No. 1 SEAM
1500' LT
1000' LT
500' LT
TRAIL
No. 3 SEAM
No. 2 SEAM
No. 1 SEAM
1200
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 85+00


120' O/B No. 1
1500' LT
160' O/B No. 1
200' O/B No. 1
1000' LT
ABANDONED DRILL HOLE
500' LT
TRAIL
100' O/B No. 3
135' O/B No. 3
150' O/B No. 3
No. 3 SEAM
No. 2 SEAM
No. 1 SEAM
DRILL HOLE 60+00 500' LT.
No. 3 SEAM
DRILL HOLE 60+00 1492' LT.
No. 1 SEAM
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 60+00


DRILL HOLE 100+00 500' LT.
No.1 SEAM
SEAM No. 1
SEAM No. 2
TRAIL
1200
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 100+00


DRILL HOLE 110+00 1002 LT.
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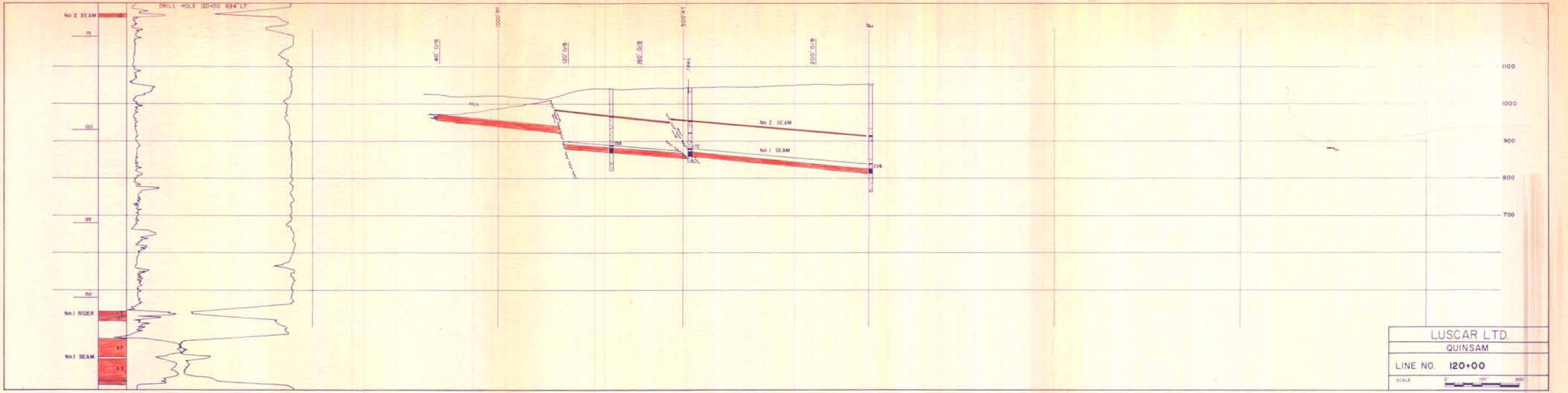
No.1 RIDER
No.1 SEAM
TRAIL
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 110+00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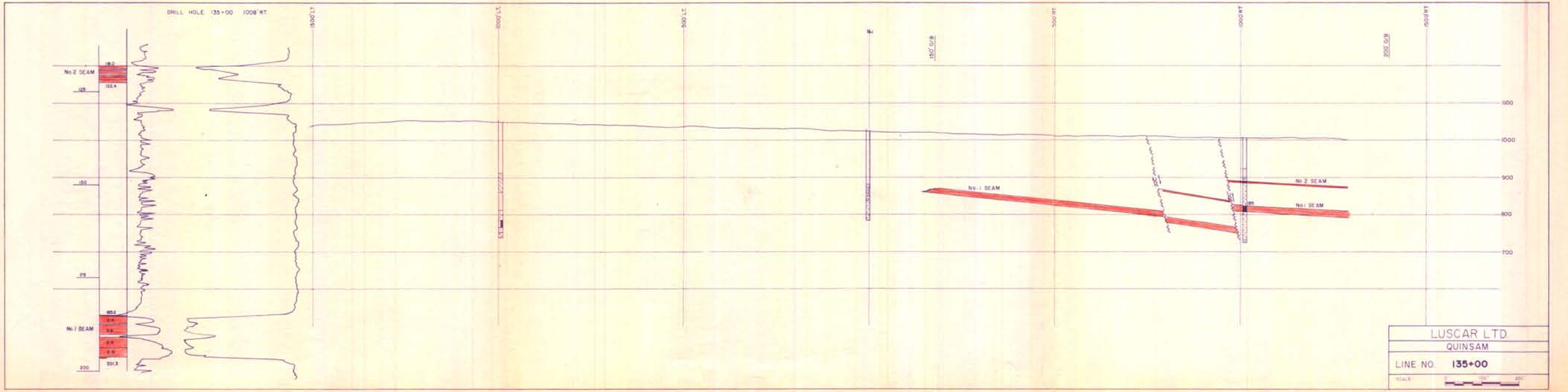
No 2 SEAM
No.1 RIDER
No.1 SEAM
1000' RT
500' RT
40' O/B
120' O/B
160' O/B
200' O/B
TRAIL
TILL
No 2 SEAM
No 1 SEAM
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 120+00
SCALE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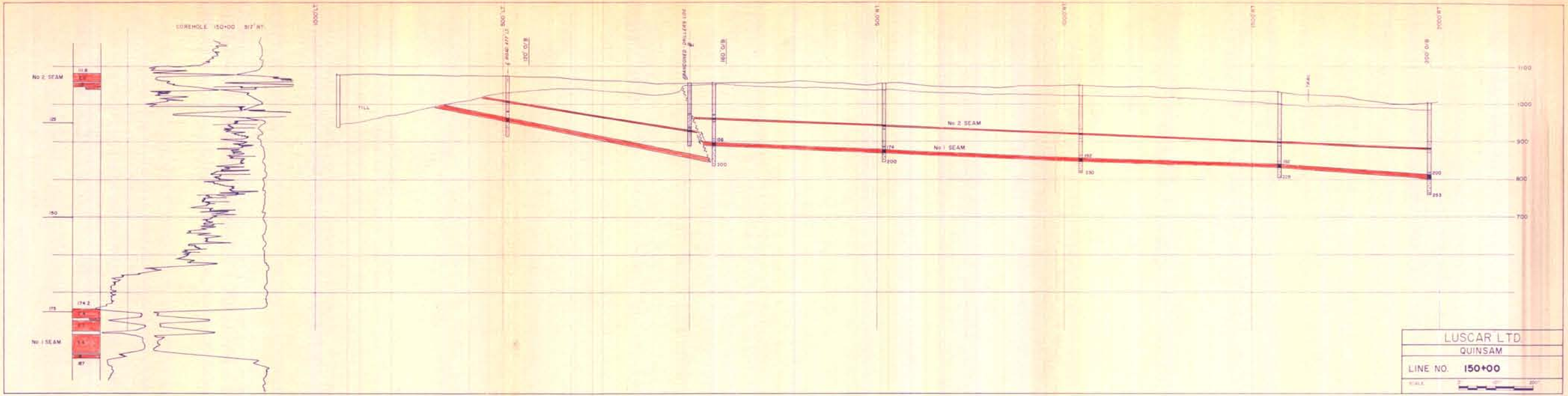
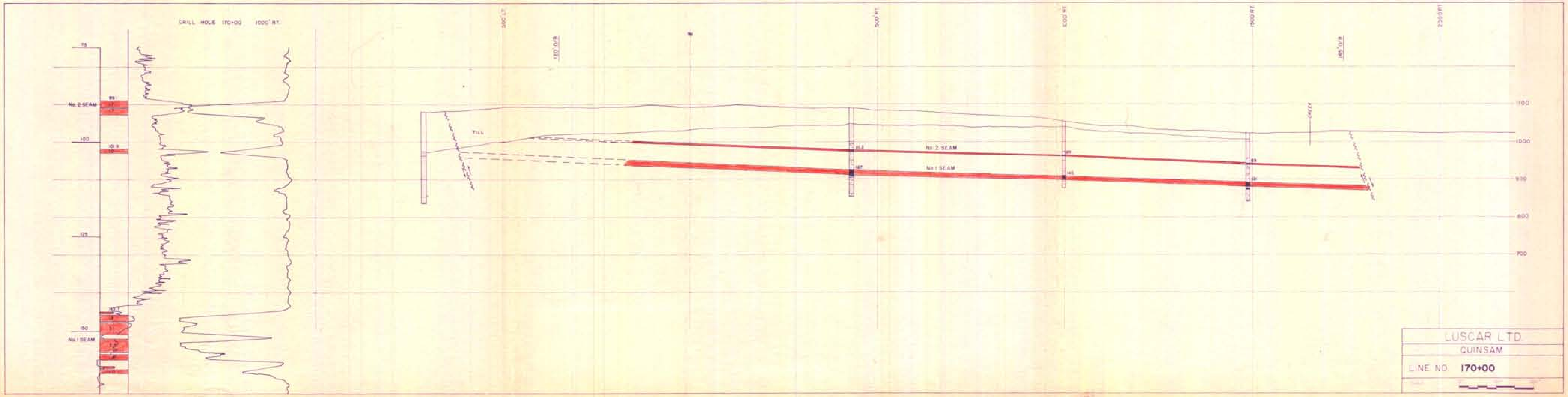
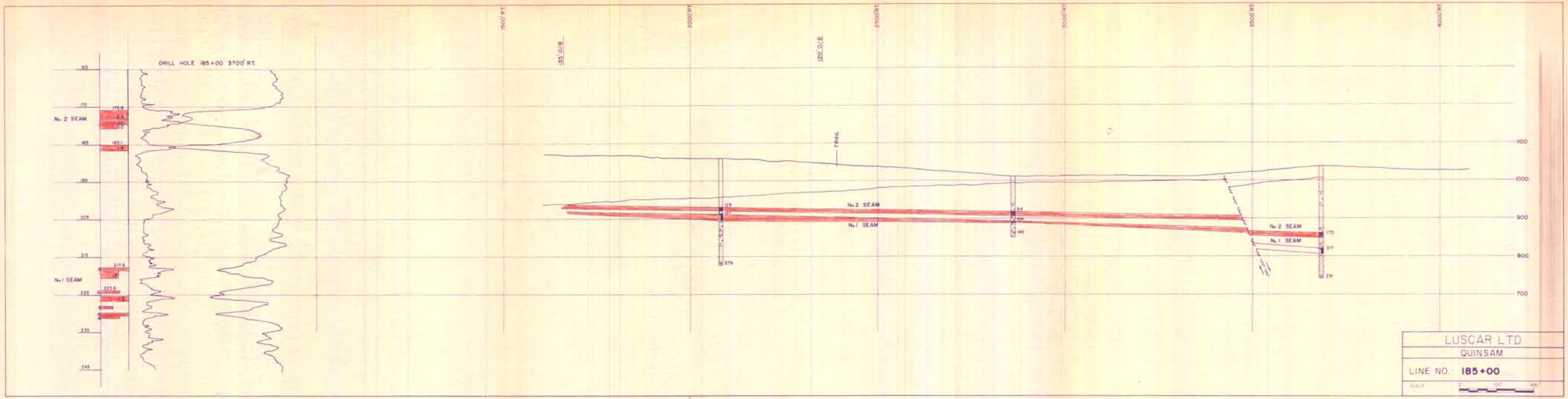
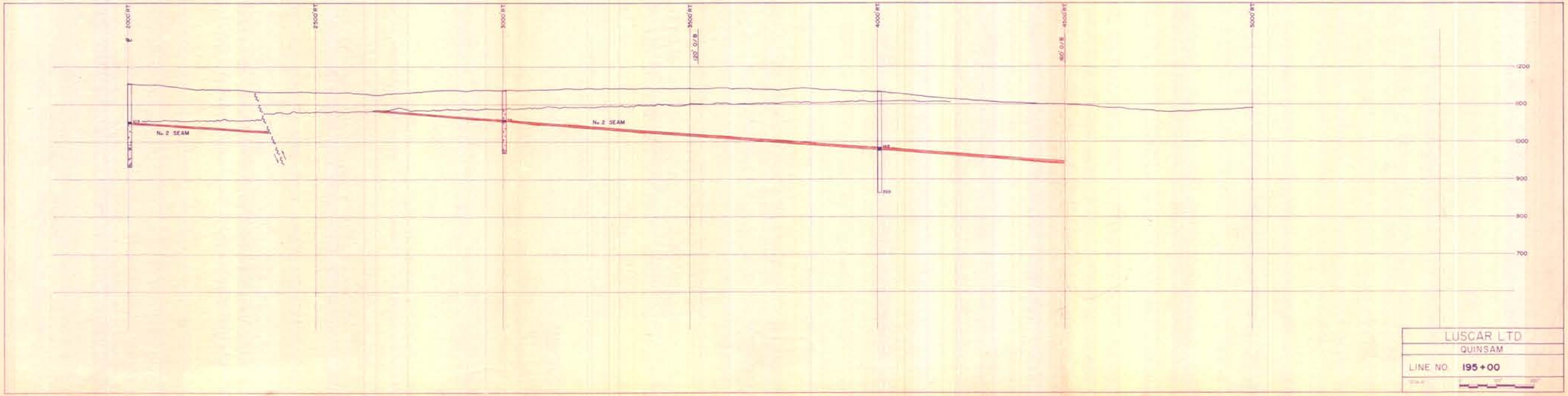
No.2 SEAM
No.1 SEAM
1500' LT
1000' LT
500' LT
500' RT
1000' RT
1500' RT
150' O/B
200' O/B
No.1 SEAM
No.2 SEAM
No.1 SEAM
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 135+00
SCALE


COREHOLE 150+00 917' RT.
No. 2 SEAM
No. 1 SEAM
TILL
No. 2 SEAM
No. 1 SEAM
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 150+00
SCALE


DRILL HOLE 170+00 1000' RT.
No. 2 SEAM
No. 1 SEAM
TILL
CREEK
No. 2 SEAM
No. 1 SEAM
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 170+00

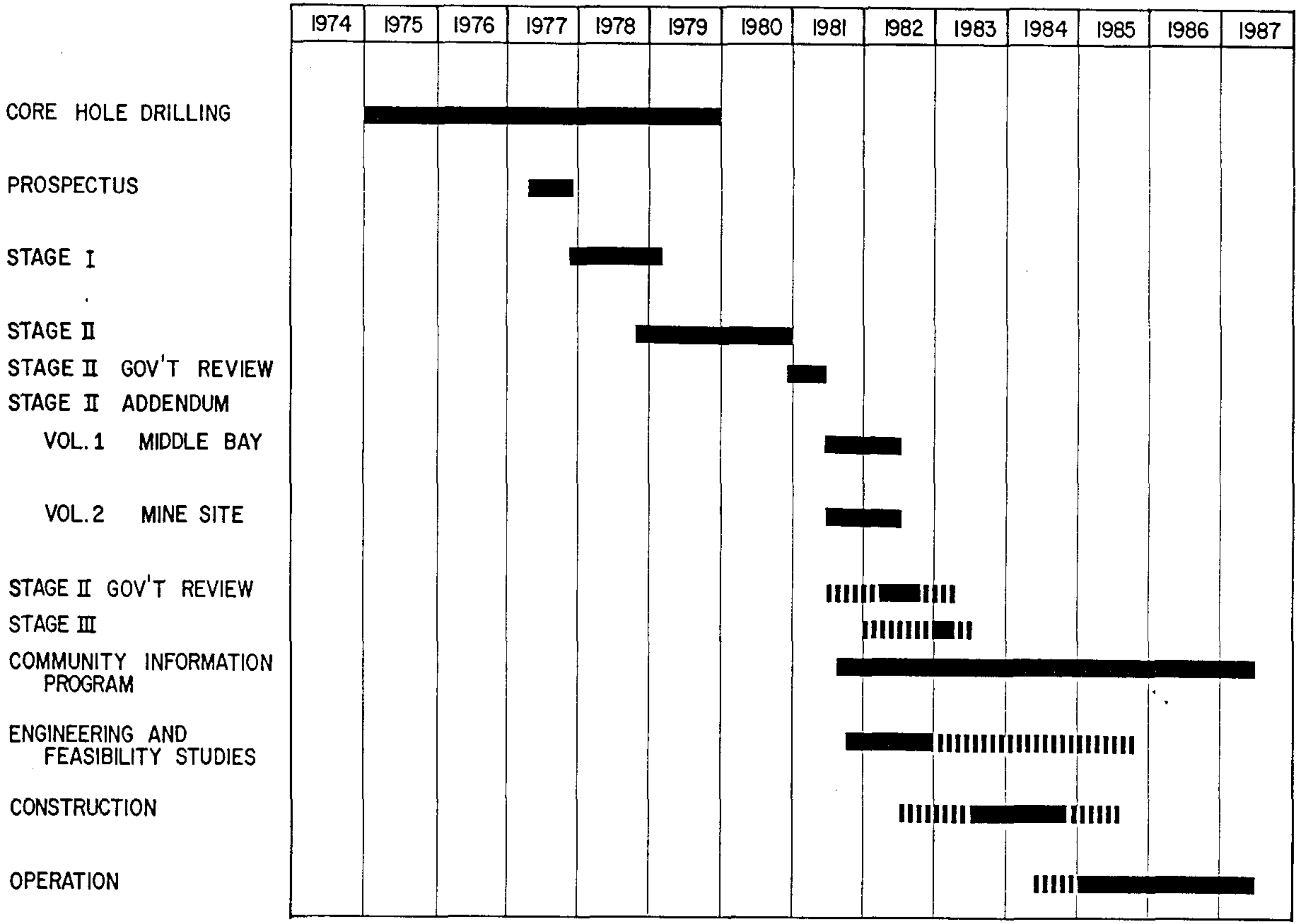


DRILL HOLE 185+00 3700' RT.
No. 2 SEAM
No. 1 SEAM
1500' RT
2000' RT
2500' RT
3000' RT
3500' RT
4000' RT
135' O/B
120' O/B
TRAIL
No. 2 SEAM
No. 1 SEAM
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 185+00



2000' RT
2500' RT
3000' RT
3500' RT
4000' RT
4500' RT
5000' RT
120' O/B
160' O/B
No. 2 SEAM
No. 2 SEAM
1200
1100
1000
900
800
700
LUSCAR LTD.
QUINSAM
LINE NO. 195+00

QUINSAM COAL LIMITED
SUMMARY OF ACTIVITIES



A BRIEF HISTORY OF QUINSAM COAL LIMITED

Quinsam Coal Limited was incorporated as a joint venture company in 1976 by Weldwood of Canada Limited and Luscar Limited of Edmonton, Alberta, to explore and develop Weldwood's coal reserves in the Campbell River area.

On August 19, 1981, Weldwood and Brinco jointly announced that Brinco would assume Luscar's interest in Quinsam Coal, which included the management of the project.

THE QUINSAM COAL PROJECT

The project is located in Electorial area D, which is within the Regional District of Comox - Strathcona. The topography consists of a series of low rolling hills and plateaus separated by narrow valleys. The total project area consists of 1,400 acres of which only 200 to 300 acres will be mined at any one time. Access to the property is by a 22 km paved road and 5 km of gravel logging roads.

GEOLOGY

Three coal seams occur on the Quinsam property. Two of these seams persist throughout the area. The third seam occurs only in the southern structural block.

To date a total of 503 geophysically logged holes, and 56 cored exploration holes have been drilled to define the coal reserves.

Presently Brown, Erdman consultants are reviewing the property geology from a hydrological point of view. Numerous additional drilled holes will be necessary to complete this investigation.

MINING

OPEN PIT MINING/RECLAMATION

Present open pit mine planning is based on developing seven pits to a maximum depth of 61 meters. Variations of raw coal quality will necessitate the operation of two to three pits at one time in order that the various coals can be blended.

The material to be mined in the open pits above the

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

MEMORANDUM

To: A. Matheson
Coal Inventory

Date: May 22, 1980

Our File:

Re: Middle Quinsam Coal Reserves

An estimate of the reserves has now been completed, with the following results:

Seam #3	1,250,000	tonnes
Seam #2	9,090,000	tonnes
Seam #1	15,400,000	tonnes
Total	25,740,000	tonnes

The source of all data was the drillers' logs from the 1977-78 period submitted by Weldwood of Canada Limited. In the fall of 1979 I had Ulrich Suesser draw cross-sections and some longitudinal sections through the holes to (a) establish the structural pattern and (b) facilitate seam identification. This spring I have had Greg Elliott making the calculations. He re-plotted the holes for each seam, plotting only those holes in which the seam thickness exceeded a certain minimum, 4 feet for No. 1 and 5 feet for Nos. 2 and 3. The 4-foot minimum was a mistake, but inspection shows that elimination of these eight holes would decrease the areas very little, and it would of course increase the average thickness slightly. Where the log indicated several seams separated by thin beds of shale, they were treated as one seam and the aggregate thickness of coal was used. No intersections were deeper than 1,000 feet (300 m). Rectangles were drawn around clusters of productive holes in such a manner that no part of the rectangle was more than 1,000 feet (300 m) from a productive hole. Where the side of a cluster was a row of productive holes, the side of the rectangle was placed 250 feet (75 m) beyond. An arithmetic average of the thickness was calculated for each rectangle. The computed volumes within the rectangles were summed for each seam and converted from cubic feet to metric tons. A back-calculation showed a specific gravity of 1.29 had been used in calculating the reserve for the Quinsam area given by Muller & Atchison, and that figure was used in the present calculations.

G.E.P. Eastwood

GEPE/dlb

Appendix B

Resource Classification

A meaningful reporting of Canada's coal resources must be made in the context of a classification scheme that takes into account the great diversity of the nation's coal deposits. The coal resource classification scheme used in this report (Figure 6) classifies the resources according to two basic considerations: (1) the assurance of their existence and (2) the feasibility of exploitation. Each of these considerations is subdivided into categories having defined parameters. The definitions of terms and parameters used in this scheme are given below. They are somewhat similar to those used in the United States (Averitt, 1969) but are modified to suit local conditions that are present in the Canadian coal deposits.

Definition of Resource Terms

Coal Resources

The term "coal resources" for purposes of this report is defined as the coal that is contained in seams occurring within specified limits of thickness and depth from surface.

Assurance of Existence

The terms "measured", "indicated", "inferred" and "speculative" denote the level of confidence with which given quantities of resources have been determined or estimated; they are defined as follows:

Measured Resources are resources for which tonnages are computed from information revealed in outcrops, trenches, mine workings and boreholes. The spacing of points of observation necessary to justify confidence in the character and continuity of coal seams differs from region to region according to the character of the deposits and the geological conditions. In general the points of observation should be separated by less than the following distances:

Coal regions in Canada	Maximum distance between points of observation
	(in metres)
Cordillera* (150 m in severely contorted areas)	300
Plains	
Alberta	800
Saskatchewan	800
New Brunswick	400
Nova Scotia	
Sydney Coalfield, offshore	
Harbour and Phalen seams	1 600
Other seams	800
Sydney Coalfield, onshore	800
Other coalfields	300

Indicated Resources are resources for which tonnages are computed partly from specific measurements and partly from reasonable geological projections. For the general coal regions in Canada, the points of observation should be separated by less than the following distances:

Coal regions in Canada	Maximum distance between points of observation
	(in metres)
Cordillera (300 m in severely contorted areas)	600
Plains	
Alberta	1 600
Saskatchewan	1 600
New Brunswick	800
Nova Scotia	
Sydney Coalfield, offshore	
Harbour and Phalen seams	3 200
Other seams	1 600
Sydney Coalfield, onshore	1 600
Other coalfields	600

* Cordillera region includes all British Columbia and the Foothills and Mountain regions of Alberta.

Inferred Resources are resources for which quantity estimates are based largely on broad knowledge of the geologic character of the bed or region and for which few measurements of seam thickness are available. The estimates are based primarily on an assumed continuity of coal seams in areas remote from the points of observation used to calculate measured or indicated resources.

Speculative Resources are resources for which quantity estimates are based on information from a few scattered occurrences. Resources of this description are mainly in frontier areas where coal mining or exploration have not taken place.

Future Considerations

It is realized that it would be more meaningful to express the assurance of existence (level of confidence) by a range of possible error rather than by an arbitrary spacing of the points of observation. As an example, a measured resource estimate might be stated to have a level of confidence to within plus or minus 10 per cent. To achieve this requires complex analysis. It is intended to proceed with the work so that ultimately the coal resource will be reported in this manner.

Feasibility of Exploitation

Resources of Immediate Interest consist of coal seams that, because of favourable combinations of thickness, quality, depth, and location, are considered to be of immediate interest for exploration or exploitation activities. The conditions set out below do not apply rigorously in each case, but they give a general indication of thickness and depth of coal seams included in this category. In all areas, coal beds are included that are thinner or deeper than listed below but are nonetheless being mined at this time.

Cordillera:	Coal of all ranks in beds at least 1.5 m thick that can be surface-mined.
	Anthracitic and bituminous coal seams at least 1.5 m thick to a depth of 300 m, that are too deep for surface mining but might be mined underground.
Plains: (Alberta and Saskatchewan)	Bituminous and subbituminous coal beds at least 1.5 m thick to a depth of 230 m. Lignite seams at least 1.5 m thick that can be surface mined (generally to depths less than 45 m).
New Brunswick:	Seams at least 0.4 m to a depth of 24 m.
Nova Scotia:	
Offshore:	Seams at least one metre thick to a depth of 1 200 m.
Onshore:	Seams at least 0.5 m thick to depths of 45 m and all seams at least one metre thick to depth of 1 200 m.

Resources of Future Interest consist of coal seams that, because of less favourable combinations of thickness, quality, depth, and location, are not of immediate interest but may become of interest in the foreseeable future. The following limits are applied (excluding the resources of immediate interest described above):

Cordillera:	Seams at least 1.5 m thick to depths of 750 m.
Plains: (Alberta and Saskatchewan)	Seams at least one metre thick to depths of 450 m.
Nova Scotia:	
Offshore:	Seams at least one metre thick with depths in excess of 1 200 m.
Onshore:	Seams at least one metre thick with depths in excess of 1 200 m.

Future Considerations

When new mining technologies and/or changing economic conditions have indicated the possibility of mining thinner or deeper seams, or seams that are otherwise currently excluded from the estimates, it may become necessary to change the parameters for determining the feasibility of exploitation so as to include these coals in the estimates.

DEFINITIONS & PARAMETERS

Measured Coal Reserves are those which have a maximum data point spacing of 375 metres. These are found only on those properties which have completed feasibility studies containing enough exploration information to do a detailed mine design and cost analyses.

Indicated Coal Resources allow a maximum spacing of 750 metres between data points but are not restricted to those properties having completed feasibility studies.

Inferred Coal Resources are those resources having a data point spacing of greater than 750 metres. A depth limit of 750 metres is imposed here, although economic coal seams may exist beyond this depth. Properties containing coal resources of less than one million metric tonnes are considered inferred as well.

Acceptable Data Points include boreholes (diamond, rotary and some Winkie), adits and trenches and have accurate physical measurements of seam thickness.

In Situ Coal is defined here as in place, underground coal seams of greater than 1.5 metres thick (and riders of 1.0 metres thick) which exclude the partings of greater than 10 centimetres in thickness.

Run-of-Mine Coal is in place, underground coal which excludes those partings that can be selectively mined out at the pit site, and may be more or less than the total coal seam thickness.

Clean Product Coal is that coal which is refined through the wash plant (metallurgical coal). Thermal coal may be cleaned for a partial refining.

The R.O.M. and Clean Product coal figures were obtained from the companies. Due to confidentiality requirements individual property reserves and resources were totalled by coalfields.

QUALITY

Core samples from each of the three coal seams were analysed excluding partings greater than 1" in thickness. The coal is classified as High Volatile Bituminous A with the following average analysis on a raw air dried basis:

Proximate Analysis (air dry)

Seam	Number of Samples	Moisture %	Ash %	Sulphur %	Btu/lb.	FSI
No. 1	8	2.63	16.13	0.56	11,489	1 1/2
No. 2	2	2.58	16.44	3.99	11,515	2 1/2
No. 3	1	2.19	23.01	3.81	10,742	2

Ash content varies from 9.0% to 23.4% and is directly related to the amount of bone material associated with the seam.

Sulphur content ranges from 0.19% to 4.91% increasing directly with FSI of the coal, indicating a metamorphic upgrading in rank of the coal and a metasomatic enrichment in sulphur, usually in the form of pyrite.

All samples were crushed and sink-float tests were conducted on four size ranges (from 1" to 100M). Proximate analyses were conducted for ash and sulphur on the floats separated at 1.30 to 1.90 S.G. The results of these tests indicate the following:

1) Recoveries of 90% can be achieved on floats between 1.70 to 1.90 S.G. to yield a product with a maximum ash content of 10%.

2) Sulphur content ranges from 0.20% to 0.35% for 8 of the 9 samples analized for the No. 1 seam. In the remaining No. 1 seam sample and the samples from the No. 2 and No. 3 seams, the sulphur content

000 66 (2)

Cont.

cannot be economically reduced beyond 2% by float-sink methods.

3) Most of the high ash, high sulphur coal is concentrated in the size fractions (-100 M). The percentage of fines is usually not in excess of 5% of the total raw coal.

It is conceivable that this coal could be cleaned by a jig system to yield a product with a 10% ash content. However, other methods will have to be employed to reduce the total sulphur content.

III. ASH FUSION, MINERAL ANALYSIS OF ASH AND ULTIMATE ANALYSIS

1. Ash Fusion Temperature F°

	Initial Deformation	Spherical	Hemi-spherical	Fluid
Reducing	2264	2408	2462	2516
Oxidizing	2444	2471	2498	2534

It is difficult to report specific temperature for any area or district. A composite of Raw Coal (all seams) (16% ash) gives softening temperature of 2408, 2471 on reducing and oxidizing atmospheres respectively. This softening temperature of ash is medium fusibility. The clinkering characteristics will depend on the furnace temperature, the kind of stoker and the distribution of the ash forming constituents in the coal.

2. Mineral Analysis of Ash (on 16.00% ash) All Seams

S_1O_2 %	Al_2O_3 %	Fe_2O_3 %	Cao %	Mgo %
31.24	23.82	16.90	13.41	0.65

Na_2O %	K_2O %	SO_3 %	P_2O_5 %	T_1O_2 %
0.27	0.25	8.01	0.34	2.17

3. Ultimate Analysis (on 16.00 ash) All Seams

	H_2O %	C %	H %	N %	S %	A %	O %
As Determined	2.28	64.02	4.30	0.77	2.53	16.00	12.38
Dry Basis	--	65.51	4.14	0.79	2.59	16.37	10.60

Cont

4. On Clean Coal (10.24 % Ash), Composite of all seams give the following results:

a. Ash Fusion Temperature F^{o}

	Initial Deformation	Spherical	Hemi-spherical	Fluid
Reducing	2264	2390	2444	2498
Oxidizing	2408	2475	2516	2570

The ash fusion temperature (softening) is lowered with clean coal (10.24% ash) and gives 2390°, 2475° on reducing and oxidizing atmosphere respectively.

b. Mineral Analysis of Ash (On 10.24% ash)

S_1O_2 %	Al_2O_3 %	Fe_2O_3 %	Cao %	Mgo %
24.29	21.62	15.82	18.29	0.30

Na_2O %	K_2O %	SO_3 %	P_2O_5 %	T_1O_2 %
0.25	0.32	11.61	0.53	2.21

c. Ultimate Analysis

	H_2O %	C %	H %	N %	S %	A %	O %
As determined	2.20	69.93	4.92	0.88	1.81	10.24	12.22
Dry Basis	-	71.50	4.78	0.90	1.85	10.47	10.50
On 6.00% Moisture	6.00	67.21	4.49	0.85	1.74	9.84	9.87

d. F.S.I. has not improved after cleaning the coal.

IV. WASHABILITY STUDY

From the ash percent of the size analysis, washability curves for each size and also of the combined sizes (2" x 100 mesh). These curves indicate the following: (on air dry basis)

1. Core Hole #1 - Lab. No. 1065

   a. The Coal becomes progressively dirtier with a decrease in size; the dirtiest size is 100 x 0 mesh (34.5% ash)

   b. By comparing washability curves of each size and the combined sizes:

      i) There is no cleaning advantage in crushing this coal to finer than 2" x 0.

      ii) Theoretical recovery and ash % at cut point 1.8.

FRACTION	ASH %	S %	RECOVERY %	BTU/lb.
1" x 28 mesh	8.2	0.22	88.0	12,400
+¼"	8.0	0.19	89.0	12,550
¼" x 8 mesh	8.0	0.21	88.0	12,550
8 x 28 mesh	8.0	0.22	87.0	12,600

2. Core Hole #2 - Lab. No. 1069

   a. The Coal becomes progressively dirtier with a decrease in size; the dirtiest is 100 x 0 mesh (41.8% Ash)

   b. By comparing washability curves of each size and the combined sizes:

      i) There is no need to crush this coal to finer than 2" x 0.

      ii) Theoretical recovery and ash % at cut point 1.8

FRACTION	ASH %	S %	RECOVERY %	BTU/lb.
1" x 100 mesh	10.5	0.24	84.0	12,280
+¼"	12.5	0.22	82.5	12,200
¼" x 8 mesh	10.0	0.21	83.5	12,350
8 x 28 mesh	9.0	0.23	80.5	12,300
28 x 100 mesh	9.0	0.26	74.0	12,310

3. Core Hole #3 - Lab. No. 1071

a. The cleanest size range is ½" x 28 mesh with both the coal larger and smaller than this size becoming progressively dirtier.

b. By comparing washability curves of each size and the combined sizes:

i) Theoretical recovery and ash % at cut point 1.8

FRACTION	ASH %	S %	RECOVERY %	BTU/lb.
1" x 28 mesh	8.0	0.23	95.5	12,800
+¼"	9.0	0.21	96.5	12,600
¼" x 8 mesh	7.5	0.20	95.5	13,200
8 x 28 mesh	7.0	0.24	94.5	13,250

4. Core Hole #4 - Lab. No. 1074

a. The cleanest size range is ½" x 28 mesh with both the coal larger and smaller than this size becoming progressively dirtier.

b. By comparing washability curves of each size and the combined sizes:

i) Theoretical recovery and ash % at cut point 1.8

FRACTION	ASH %	S %	RECOVERY %	BTU/lb.
1" x 100 mesh	8.5	0.23	96.0	12,500
+½"	11.0	0.23	98.0	12,400
½" x 28 mesh	8.5	0.22	96.0	12,600
28 x 100 mesh	8.5	0.22	90.0	12,590

5. Core Hole #5 - Lab No. 1072

a. The coal becomes progressively dirtier with decrease in size, the dirtiest size is 100 x 0 mesh (34.85%).

b. By comparing washability curves of each size and the combined size;

i) There is no need to crush this coal to finer than 2" x 0

ii) Theoretical recovery & ash % at cut point 1.8

FRACTION	ASH %	S %	RECOVERY %	BTU/lb.
1" x 100 mesh	8.5	0.27	92.5	12,750
+ ½"	11.5	0.26	93.0	12,590
½" x 28 mesh	8.0	0.25	93.0	12,800
28 x 100 mesh	7.5	0.30	78.0	13,000

6. Core Hole #6 - Lab. No. 1073

   a. The coal becomes progressively dirtier with decrease in sizes, the dirtiest size 100 x 0 mesh (52.16% ash)

   b. By comparing washability curves of each size and the combined sizes;

      i) Theoretical recovery and ash % at cut point 1.8

FRACTION	ASH %	S %	RECOVERY %	BTU/lb.
1" x 100 mesh	8.0	0.31	93.0	12,900
+ ½"	12.0	0.26	96.5	12,250
½" x 28 mesh	7.5	0.30	93.5	12,950
28 x 100 mesh	6.5	0.34	79.0	13,400

7. Core Hole #8 - Lab. No. X (1081, 1086, 1084 and 1076) (Composite of Seam # 3)

   a. Seam No. 3 was sampled in four sections from top to bottom omitting parting, size analysis was conducted on the four samples to examine the ash % of each in descending order through the seam, the coal becomes progressively dirtier with a decrease in size, for Rider (30.54% ash) for top (30.52% ash), for middle (30.16% ash) and for bottom (27.43% ash)

   b. Theoretical recovery and ash % at cut point 1.8

FRACTION	ASH %	S%	RECOVERY %	BTU/lb.
+ ½"	17.0	2.20	55.0	11,200
½" x 28 mesh	11.0	4.30	91.0	12,600
28 x 100 mesh	8.5	3.50	84.5	12,900

8. Core Hole #9 - Lab. No. (1075 and 1077), (Composite of Seam #1)

a. Lower part of the seam is relatively dirtier than upper part.

b. In lower part of the seam the cleanest size range is ¼" x 100 mesh larger and smaller than this size becoming progressively dirtier; In upper part of the seam the cleanest size range is 3/4" x 100 mesh.

c. Theoretical recovery and ash % at cut point 1.8

FRACTION	ASH %	S %	RECOVERY %	BTU/lb.
+½"	28.0	1.37	63.5	9,950
½" x 28 mesh	12.0	3.00	91.5	12,000
28 x 100 mesh	8.5	3.20	86.5	12,700

i) There is some improvement by crushing coal to ½" x 28 mesh.

ii) Coal is easy to wash at ½" x 28 mesh, difficult at +½"

9. Core Hole #10 - Lab. No. 1080

a. The coal becomes progressively dirtier with decrease in size.

b. By comparing washability curves of each size and the combined sizes;

i) There is no need to crush this to finer than 1" x 0

ii) Theoretical recovery and ash % at cut point 1.8

FRACTION	ASH %	S %	RECOVERY %	Btu./lb.
1" x 100 mesh	8.0	5.00	89.0	12,800
+½"	--		--	
½" x 28 mesh	8.5	5.10	91.5	13,000
28 x 100 mesh	8.5	3.50	92.5	12,700

10. Core Hole #11 - Lab. No. 1078 (Composite of upper and lower Seam #1)

a. The coal becomes dirtier with decrease in size below 100 m. The dirtiest size 100 x 0 (25.5% ash)

b. By comparing washability curves of each size and the combined sizes;

i) There is some improvement by crushing coal to ½" x 28 mesh.

ii) Theoretical recovery and ash % at cut point 1.8

FRACTION	ASH %	S %	RECOVERY %	BTU/lb.
1" x 100 mesh	11.0	0.26	89.5	12,400
+ ½"	17.0	0.23	81.0	11,000
½" x 28 mesh	11.0	0.20	91.0	12,500
28 x 100 mesh	7.5	0.28	87.5	13,100

11. Core Hole #1 - Lab. No. (1066 and 1067), (Composite of upper and lower seam #2)

a. The coal becomes progressively dirtier with decrease in size, the dirtiest size 100 x 0 mesh (39.00% ash).

b. Theoretical recovery and ash % at cut point 1.8

FRACTION	ASH %	S %	RECOVERY %	BTU/lb.
combined ¼" x 28 mesh	10.5	3.50	87.5	12,300
upper seam ¼" x 8 mesh	9.0	2.00	91.0	12,500
upper " 8 x mesh	9.0	2.00	87.0	12,550
lower " ¼" x 8 mesh	12.5	4.50	86.5	12,200

CONCLUSION

The range of recoveries, ash %, sulphur and Btu/lb at cut point 1.8

Seam 1: ½" x 28 Mesh (73.0% of Total Seam)

No. of core holes	Recovery	Ash %	Sulphur % air dry basis	Sulphur % on 6% M	Btu/lb air dry basis	Btu/lb on 6% M
7	82.0 -92.0	8.0-10.0	0.2-0.3	0.19 0.25	12,400 12,800	11,970 12,355

Seam #1 could give better recovery in 1" x 100 Mesh fraction (Recovery 90% - 10% Ash 0.2% S) than ½" x 28 Mesh fraction.

Seam 2: ½" x 28 Mesh (60.0% of Total Seam)

No. of core holes	Recovery	Ash %	Sulphur % air dry basis	Sulphur % on 6% M	Btu/lb air dry basis	Btu/lb on 6% M
3	87.5 - 91.5	8.0-12.0	2.2 4.3	2.1 4.2	12,200 12,700	11,780 12,260

Seam 3: ½" x 28 Mesh (73.0 % of Total Seam)

No of core holes	Recovery	Ash %	Sulphur % air dry basis	Sulphur % on 6% M	Btu/lb air dry basis	Btu/lb on 6% M
1	91.1	11.00	3.5 4.0	3.4 3.9	12,550 12,600	12,115 12,165

Seam # 2 and 3 could give better recovery in ½" x 28 Mesh fraction than 1" x 100 Mesh

1) The washability studies suggest that most if not all Vancouver Island coals can be readily washed to a desirable and low ash level with a minimal loss of yield.

The coal analysed excluded any out of seam dilutant and all in seam dilutant greater than 1" thickness. Therefore the recoveries determined are basically for the coal sections and do not necessarily reflect the quality of the feed to the preparation plant.

In order to establish the preparation feed quality and hence practical washing plant recovery the diluation must be calculated and washability data modified accordingly.

2) Seams No. 2, 3 and 1 (core hole 9) have a high sulphur content ranging from 2.0% to 5.0% in the clean coal. Further work should be done to determine methods of sulphur reduction other than gravity separation.

WASHABILITY
TEST RESULTS

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM
LAB NO.: 1065

HOLE NO.: No. 1 Seam No. 1
DATE SAMPLED:

LOCATION: 150 + 00 1500 RT
DATE RECIEVED:

INTERVAL: 192.4 - 197.4
DATE REPORTED:

RAW COAL SIZE FRACTION: +¼"

WT.% ____ ASH% ____ B.T.U.: ____
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		21.40	3.52	.18	13,448	21.40	3.52			100.00	15.09		
1.30	1.35		39.50	4.70	.17	13,247	60.90	4.29			78.60	18.24		
1.35	1.40		15.50	8.72	.18	12,602	76.40	5.19			39.10	31.92		
1.40	1.45		4.10	17.13	.17	11,260	80.50	5.79			23.60	47.15		
1.45	1.50		2.5	21.65	.15	10,665	83.00	6.27						
1.50	1.55		2.0	24.57	.17	9,639	84.75	6.72						
1.55	1.60		1.3	32.52	.12	8,935	86.30	7.09			17.00	58.14		
1.60	1.70		1.70	34.47	.13	8,373	88.00	7.62			13.70	65.47		
1.70	1.80		.70	47.53	.12	6,665	88.70	7.93			12.00	69.87		
1.80	1.90		1.20	54.83	---	---	89.90	8.56			11.30	71.25		
1.90			10.10	73.20	---	---	100.00	15.09			10.10	73.20		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: 1065

HOLE NO.: No. 1 Seam No. 1

DATE SAMPLED:

LOCATION: 150 + 00 1500 RT

DATE RECIEVED:

INTERVAL: 192.4 - 197.4

DATE REPORTED:

RAW COAL SIZE FRACTION: ¼ x 8 mesh

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt. %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		28.20	3.45	0.22	13,573	28.20	3.45	.22		100.00	15.76	.18	
1.30	1.35		38.50	5.21	0.20	13,223	66.70	4.47	.21		71.80	20.60	.17	
1.35	1.40		8.50	10.70	0.21	12,206	75.20	5.17	.21		33.30	38.39	.13	
1.40	1.45		4.40	16.31	0.20	11,190	79.60	5.79	.21		24.80	47.88	.10	
1.45	1.50		2.5	22.26	0.27	10,218	82.10	6.29	.21				.08	
1.50	1.55		1.2	27.95	0.12	9,[illegible]	83.80	6.56	.21				.05	
1.55	1.60		2.0	30.74	0.11	8,570	85.30	7.17	.21		17.90	59.21	.03	
1.60	1.70		1.20	33.59	0.17	7,707	86.50	7.53	.20		14.70	65.64	.02	
1.70	1.80		1.50	44.47	0.10	6,529	88.00	8.16	.20		13.50	68.49	.01	
1.80	1.90		1.50	52.76	0.09	5,547	89.50	8.91	.18		12.00	71.49	.00	
1.90			10.50	74.17	----	----	100.00	15.76	---		10.50	74.17	---	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Ouinsam

LAB NO.: 1065

HOLE NO.: 1 Seam No. 1

DATE SAMPLED:

LOCATION: 150+00 1500 RT

DATE RECIEVED:

INTERVAL: 192.4 - 197.4

DATE REPORTED:

RAW COAL SIZE FRACTION: 8 x 28 mesh

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		44.10	3.37	0.21	13,571	44.10	3.37	.21		100.00	16.66	.18	
1.30	1.35		22.10	5.48	0.21	13,158	66.20	4.07	.21		55.90	27.14	.15	
1.35	1.40		8.50	9.97	0.22	12,198	74.70	4.75	.21		33.80	41.30	.12	
1.40	1.45		4.30	17.07	0.20	11,077	79.00	5.42	.21		25.30	51.83	.08	
1.45	1.50		1.2	24.56	0.20	9,874	80.20	5.70	.21				.06	
1.50	1.55		1.4	29.29	0.19	9,369	81.25	6.13	.21				.05	
1.55	1.60		0.6	31.23	0.15	8,928	82.20	6.31	.21		19.80	61.03	.04	
1.60	1.70		2.10	34.63	0.13	7,906	84.30	7.02	.21		17.80	64.44	.02	
1.70	1.80		1.90	45.68	0.11	6,401	86.20	7.87	.20		15.70	68.43	.01	
1.80	1.90		1.70	48.36	0.10	5,749	87.90	8.65	.18		13.80	71.56	.00	
1.90			12.10	74.82	----	----	100.00	16.66	---		12.10	74.82	---	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Ouinsam

LAB NO.: 1066

HOLE NO.: 1 No. 2 Seam

DATE SAMPLED:

LOCATION: 150 + 00 1500 RT

DATE RECIEVED:

INTERVAL: 131.6 - 134.7

DATE REPORTED:

RAW COAL SIZE FRACTION: ¼ x 8

WT.% ____ **ASH%** ____ **B.T.U.:** ____

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		25.00	4.11	.75	13538	25.00	4.11	.75		100.00	13.68	1.64	
1.30	1.35		39.60	6.05	1.54	13181	64.60	5.30	1.23		75.00	16.87	1.94	
1.35	1.40		11.10	11.36	2.17	12372	75.70	6.19	1.37		35.40	28.97	2.38	
1.40	1.45		6.10	16.06	3.00	11549	81.80	6.92	1.49		24.30	37.01	2.48	
1.45	1.50		2.8	21.18	3.23	10707	84.60	7.40	1.55				2.31	
1.50	1.55		1.9	26.54	3.90	10192	86.50	7.82	1.60				2.25	
1.55	1.60		3.60	27.91	4.45	9701	88.20	8.23	1.67		15.40	48.19	2.14	
1.60	1.70		1.30	34.79	5.45	8730	89.50	8.62	1.72		11.80	54.38	1.44	
1.70	1.80		1.80	39.17	5.49	7433	91.30	9.22	1.80		10.50	56.81	.94	
1.80	1.90		1.80	47.40	-	-	93.10	9.96	1.76		8.70	60.45	0.00	
1.90			6.90	63.86	-	-	100.00	13.68	1.64		6.90	63.86	0.00	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam LAB NO.: 1067

HOLE NO.: No. 1 No. 2 Seam DATE SAMPLED:

LOCATION: 150 + 00 1500 RT DATE RECIEVED:

INTERVAL: 139.1 - 140.2 DATE REPORTED:

RAW COAL SIZE FRACTION: ¼ x 28

WT.% ____ ASH% ____ B.T.U.: ____ ANALYST: ____

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.
	1.30		7.30	5.51	1.25	13591	7.30	5.51			100.00	18.49		
1.30	1.35		30.20	6.12	2.75	13235	37.50	6.00			92.70	19.51		
1.35	1.40		20.20	9.69	3.86	12682	57.70	7.29			62.50	25.98		
1.40	1.45		10.60	14.52	4.00	11959	68.30	8.41			42.30	33.76		
1.45	1.50		5.6	20.74	6.49	11090	73.90	9.35						
1.50	1.55		2.8	22.00	7.21	10904	77.45	9.72						
1.55	1.60		3.9	24.41	7.40	10444	80.60	10.52			26.10	44.37		
1.60	1.70		2.80	29.70	7.80	9631	83.40	11.16			19.40	51.62		
1.70	1.80		3.10	35.65	8.76	7684	86.50	12.04			16.60	55.32		
1.80	1.90		2.60	40.30	9.49	7771	89.10	12.86			13.50	59.83		
1.90			10.90	64.49	-	-	100.00	18.49			10.90	64.49		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam

LAB NO.: 1066

HOLE NO.: No. 1 No. 2 Seam

DATE SAMPLED:

LOCATION: 150 + 00 1500 RT

DATE RECIEVED:

INTERVAL: 131.6 - 134.7

DATE REPORTED:

RAW COAL SIZE FRACTION: 8 x 28

WT.% ASH % B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.
	1.30		37.90	3.68	.80	13587	37.90	3.68	.80		100.00	16.53	1.41	
1.30	1.35		25.80	6.27	1.20	13182	63.70	4.73	.96		62.10	24.37	1.78	
1.35	1.40		8.70	11.36	2.17	12478	72.40	5.53	1.11		36.30	37.24	2.18	
1.40	1.45		5.20	17.54	3.17	11540	77.60	6.33	1.25		27.60	45.40	2.19	
1.45	1.50		1.6	22.40	3.08	10796	79.20	6.66	1.28				1.96	
1.50	1.55		1.4	25.95	3.88	10109	80.40	7.01	1.30				1.90	
1.55	1.60		0.9	30.15	4.23	9595	81.50	7.25	1.36		20.80	54.13	1.88	
1.60	1.70		2.40	34.06	4.71	8821	83.90	8.01	1.44		18.50	57.43	1.63	
1.70	1.80		2.20	37.58	4.79	7729	86.10	8.77	1.52		16.10	60.91	1.24	
1.80	1.90		2.00	45.78	-	6327	88.10	9.61	1.60		13.90	64.61	.69	
1.90			11.90	67.77	-	-	100.00	16.53	1.41		11.90	67.77	-	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam
LAB NO.: 1069
HOLE NO.: 2 No. 1 Seam
DATE SAMPLED:
LOCATION: 150 + 00 500 RT
DATE RECIEVED:
INTERVAL: 174.0 - 186.0
DATE REPORTED:
RAW COAL SIZE FRACTION: + 1/4"
WT.% ASH% B.T.U.:
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		14.20	3.81	.18	13,427	14.20	3.81			100.00	22.90		
1.30	1.35		33.20	6.57	.15	13,236	47.40	5.74			85.80	26.05		
1.35	1.40		10.30	8.92	.17	12,469	57.70	6.31			52.60	38.35		
1.40	1.45		6.10	15.00	.19	11,384	63.80	7.14			42.30	45.52		
1.45	1.50		3.9	21.09	.16	10,255	67.70	7.94						
1.50	1.55		3.5	24.43	.15	9,572	71.43	8.72						
1.55	1.60		3.3	28.64	.14	8,716	74.50	9.64			32.30	54.23		
1.60	1.70		4.60	36.00	.14	7,771	79.10	11.17			25.50	61.63		
1.70	1.80		3.20	44.53	.07	6,492	82.30	12.47			20.90	67.27		
1.80	1.90		2.50	51.85		----	84.80	13.63			17.70	71.39		
1.90			15.20	74.60		----	100.00	22.90			15.20	74.60		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam

LAB NO.: 1069

HOLE NO.: 2 No. 1 Seam

DATE SAMPLED:

LOCATION: 150 + 00 500 RT

DATE RECIEVED:

INTERVAL: 174.0 - 186.0

DATE REPORTED:

RAW COAL SIZE FRACTION: ¼" x 8 mesh

WT.% ASH % B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		25.80	3.08	0.21	13,677	25.80	3.08	.21		100.00	19.99	.17	
1.30	1.35		32.00	4.81	0.19	13,255	57.80	4.04	.20		74.20	25.87	.15	
1.35	1.40		8.40	9.93	0.21	12,289	66.20	4.79	.20		42.20	41.84	.12	
1.40	1.45		5.40	17.56	0.21	11,082	71.60	5.75	.20		33.80	49.77	.10	
1.45	1.50		2.2	24.18	0.20	10,333	73.80	6.30	.20				.08	
1.50	1.55		2.6	25.38	0.20	9,483	76.40	6.95	.20				.07	
1.55	1.60		4.70	27.99	0.19	8,807	78.50	7.60	.20		26.20	58.56	.04	
1.60	1.70		2.00	37.19	0.16	7,725	80.50	8.33	.20		21.50	65.24	.03	
1.70	1.80		2.80	43.35	0.18	6,634	83.30	9.51	.19		19.50	68.11	.03	
1.80	1.90		1.90	50.59	---	----	85.20	10.43	.17		16.70	72.27	.00	
1.90			14.80	75.05	---	----	100.00	19.99	.17		14.80	75.05	.00	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam **LAB NO.:** 1069

HOLE NO.: 2 No. 1 Seam **DATE SAMPLED:**

LOCATION: 150 + 00 500 RT **DATE RECIEVED:**

INTERVAL: 174.0 - 186.0 **DATE REPORTED:**

RAW COAL SIZE FRACTION: 8 x 28

WT.% ____ **ASH%** ____ **B.T.U.:** ____ **ANALYST:**

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		35.60	2.66	0.17	13,669	35.60	2.66	.17		100.00	20.82	.15	
1.30	1.35		22.60	5.01	0.17	13,287	58.20	3.57	.17		64.40	30.87	.14	
1.35	1.40		8.10	10.61	0.20	12,303	66.30	4.43	.17		41.80	44.84	.12	
1.40	1.45		5.00	20.31	0.21	10,652	71.30	5.55	.18		33.70	53.07	.10	
1.45	1.50		1.0	23.38	0.15	10,338	72.30	5.79	.18				.08	
1.50	1.55		1.7	26.00	0.29	9,431	73.85	6.27	.18				.08	
1.55	1.60		1.2	29.92	0.15	8,783	75.20	6.63	.18		27.70	60.06	.08	
1.60	1.70		2.40	36.51	0.26	7,940	77.60	7.56	.18		24.80	63.85	.06	
1.70	1.80		2.60	40.97	0.16	6,933	80.20	8.64	.18		22.40	66.78	.04	
1.80	1.90		2.40	46.75	0.16	5,834	82.60	9.75	.18		19.80	70.17	.02	
1.90			17.40	73.40	----	----	100.00	20.82	.15		17.40	73.40	.00	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam
LAB NO.: 1069
HOLE NO.: 2 No. 1 Seam
DATE SAMPLED:
LOCATION: 150 + 00 500 RT
DATE RECIEVED:
INTERVAL: 174.0 - 186.0
DATE REPORTED:
RAW COAL SIZE FRACTION: 28 x 100
WT.% ____ **ASH%** ____ **B.T.U.:** ____
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.
	1.30		8.10	2.62	0.26	13,664	8.10	2.62			100.00	24.72		
1.30	1.35		29.60	3.44	0.23	13,448	37.70	3.26			91.90	26.66		
1.35	1.40		14.40	5.16	0.23	13,205	52.10	3.79			62.30	37.70		
1.40	1.45		5.80	11.48	0.26	12,156	57.90	4.56			47.90	47.48		
1.45	1.50		2.7	16.69	---	-----	60.60	5.10						
1.50	1.55		3.1	20.17	---	-----	64.77	5.74						
1.55	1.60		4.1	25.53	---	-----	67.80	7.02			39.40	54.89		
1.60	1.70		3.10	30.35	---	-----	70.90	8.04			32.20	61.97		
1.70	1.80		3.10	37.00	---	-----	74.00	9.26			29.10	65.34		
1.80	1.90		3.10	45.00	---	-----	77.10	10.69			26.00	68.72		
1.90			22.90	71.93	---	-----	100.00	24.72			22.90	71.93		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam
LAB NO.: 1071
HOLE NO.: 3 No. 1 Seam
DATE SAMPLED:
LOCATION: 110 + 00 1000 LT
DATE RECIEVED:
INTERVAL: 113.1 - 123.3
DATE REPORTED:
RAW COAL SIZE FRACTION: + ¼"
WT.% ASH% B.T.U.:
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		19.50	4.02	.24	13174	19.50	4.02			100.00	10.61		
1.30	1.35		45.10	5.36	.22	13044	64.60	4.96			80.50	12.21		
1.35	1.40		13.40	8.94	.18	12628	78.00	5.64			35.40	20.93		
1.40	1.45		4.20	14.02	.19	11357	82.20	6.07			22.00	28.23		
1.45	1.50		3.3	17.52	.17	10361	85.50	6.51						
1.50	1.55		3.2	20.26	.15	9803	88.49	7.02						
1.55	1.60		2.4	24.84	.12	9187	91.10	7.48			14.50	34.78		
1.60	1.70		3.50	26.83	0.12	8500	94.60	8.19			8.90	42.69		
1.70	1.80		1.60	40.73	0.10	6500	96.20	8.73			5.40	52.97		
1.80	1.90		.80	44.10	-	5,676	97.00	9.02			3.80	58.12		
1.90			3.00	61.86	-	-	100.00	10.61			3.00	61.86		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam

LAB NO.: 1071

HOLE NO.: 3 No. 1 Seam

DATE SAMPLED:

LOCATION: 110 + 00 1000 LT

DATE RECIEVED:

INTERVAL: 113.1 - 123.3

DATE REPORTED:

RAW COAL SIZE FRACTION: ¼" x 8 mesh

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		37.60	3.21	0.24	13673	37.60	3.21	.24		100.00	9.48	.26	
1.30	1.35		37.60	6.42	0.30	13304	75.20	4.82	.27		62.40	13.26	.27	
1.35	1.40		9.00	10.56	0.28	12321	84.20	5.43	.27		24.80	23.62	.23	
1.40	1.45		3.50	16.72	0.28	11132	87.70	5.88	.27		15.80	31.06	.20	
1.45	1.50		2.3	21.53	0.22	10246	90.00	6.28	.27				.18	
1.50	1.55		1.5	22.80	0.21	9449	91.57	6.58	.27				.18	
1.55	1.60		1.5	24.94	0.25	9020	93.00	6.85	.27		10.00	38.27	.17	
1.60	1.70		1.60	36.70	0.21	7792	94.60	7.35	.27		7.00	44.45	.14	
1.70	1.80		1.00	38.00	0.28	6509	95.60	7.67	.27		5.40	46.74	.12	
1.80	1.90		1.50	40.09	0.24	5575	97.10	8.17	.27		4.40	48.73	.08	
1.90			2.90	53.20	-	-	100.00	9.48	.26		2.90	53.20	0.00	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam

LAB NO.: 1071

HOLE NO.: 3 No. 1 Seam

DATE SAMPLED:

LOCATION: 110 + 00 1000 LT

DATE RECIEVED:

INTERVAL:

DATE REPORTED:

RAW COAL SIZE FRACTION: 8 x 28

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.
	1.30		50.80	2.83	0.26	13680	50.80	2.83			100.00	8.99		
1.30	1.35		27.40	5.20	0.30	13253	78.20	3.66			49.20	15.35		
1.35	1.40		8.60	11.25	0.26	12197	86.80	4.41			21.80	28.10		
1.40	1.45		1.40	18.18	0.27	10857	88.20	4.63			13.20	39.08		
1.45	1.50		0.9	21.72	N.S.	N.S.	89.10	4.80						
1.50	1.55		1.4	24.10	N.S.	N.S.	90.31	5.11						
1.55	1.60		0.9	27.79	0.26	8813	91.40	5.33			10.90	43.20		
1.60	1.70		1.60	31.88	0.23	7880	93.00	5.78			8.60	47.92		
1.70	1.80		1.50	35.68	N.S.	6855	94.50	6.26			7.00	51.59		
1.80	1.90		1.20	41.85	N.S.	N.S.	95.70	6.70			5.50	55.92		
1.90			4.30	59.85	-	-	100.00	8.99			4.30	59.85		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam
LAB NO.: 1074
HOLE NO.: 4 No. 1 Seam
DATE SAMPLED:
LOCATION: 120 + 00 500 LT
DATE RECIEVED:
INTERVAL: 173.6 - 185.4
DATE REPORTED:
RAW COAL SIZE FRACTION: + 1/2"
WT.% ASH % B.T.U.:
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt. %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		25.2	4.40	0.24	13297	25.2	4 .40						
1.30	1.35		30.5	6.09	0.23	13010	55.7	5.33						
1.35	1.40		16.90	8.97	0.23	12559	72.60	6.17			44.30	19.00		
1.40	1.45		8.20	15.19	0.19	11566	80.80	7.09			27.40	25.18		
1.45	1.50		4.6	16.43	0.18	10489	85.40	7.59						
1.50	1.55		4.1	19.81	0.17	9946	88.80	8.21						
1.55	1.60		2.3	27.22	0.16	8859	91.80	8.60			14.60	33.55		
1.60	1.70		4.00	31.19	0.14	7972	95.80	9.54			8.20	42.50		
1.70	1.80		1.90	45.68	0.13	6762	97.70	10.25			4.20	53.28		
1.80	1.90		.80	58.79	-	-	98.50	10.64			2.30	59.55		
1.90			1.50	59.96	-	-	100.00	11.38			1.50	59.96		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: 1074

HOLE NO.: No. 4   No. 1 Seam

DATE SAMPLED:

LOCATION: 120 + 00   500 LT

DATE RECIEVED:

INTERVAL: 173.6 - 185.4

DATE REPORTED:

RAW COAL SIZE FRACTION: ½ x 28

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		45.90	4.26	0.23	13510	45.90	4.26			100.00	10.36		
1.30	1.35		17.60	5.54	0.23	13311	63.50	4.61			54.10	15.53		
1.35	1.40		18.20	8.90	0.22	12669	81.70	5.57			36.50	20.34		
1.40	1.45		5.30	15.21	0.21	11252	87.00	6.16			18.30	31.72		
1.45	1.50		2.9	19.11	0.19	10374	89.90	6.57						
1.50	1.55		1.9	25.52	0.17	9638	91.58	6.98						
1.55	1.60		1.3	28.84	0.16	8670	93.10	7.27			10.10	44.01		
1.60	1.70		1.50	32.88	0.13	7777	94.60	7.68			6.90	51.96		
1.70	1.80		1.40	45.62	0.12	6478	96.00	8.23			5.40	57.26		
1.80	1.90		1.50	51.79	-	-	97.50	8.90			4.00	61.33		
1.90			2.50	67.06	-	-	100.00	10.36			2.50	67.06		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: 1074

HOLE NO.: No. 4 No. 1 Seam

DATE SAMPLED:

LOCATION: 120 + 00 500 LT

DATE RECIEVED:

INTERVAL: 173.6 - 185.4

DATE REPORTED:

RAW COAL SIZE FRACTION: 28 x 100

WT.% ASH % B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		31.70	2.32	0.16	13631	31.70	2.32			100.00	13.67		
1.30	1.35		23.90	3.96	0.21	13263	55.60	3.02			68.30	18.93		
1.35	1.40		11.20	6.98	0.19	12921	66.80	3.69			44.40	26.99		
1.40	1.45		5.20	12.19	0.16	12036	72.00	4.25			33.20	33.74		
1.45	1.50		7.5	18.45	0.20	11,00	79.50	5.48						
1.50	1.55		2.6	25.47	0.19	N.S.	82.14	6.11						
1.55	1.60		2.2	28.00	0.17	N.S.	84.30	6.69			20.50	45.40		
1.60	1.70		3.00	31.89	0.16	N.S.	87.30	7.55			15.70	51.14		
1.70	1.80		2.20	37.95	0.12	N.S.	89.50	8.30			12.70	55.68		
1.80	1.90		1.90	55.00	---	N.S.	91.40	9.27			10.50	59.40		
1.90			8.60	60.37	---	---	100.00	13.67			8.60	60.37		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam

LAB NO.: 1072

HOLE NO.: 5 Seam No. 1

DATE SAMPLED:

LOCATION: 100 + 00 1000 LT

DATE RECIEVED:

INTERVAL: 187.3 - 198.0

DATE REPORTED:

RAW COAL SIZE FRACTION: + 1/2"

WT.% ASH % B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		27.40	5.18	0.28	13,429	27.40	5.18			100.00	14.66		
1.30	1.35		26.40	5.90	0.30	13,318	53.80	5.53			72.60	18.23		
1.35	1.40		19.20	11.36	0.26	12,589	73.00	7.07			46.20	25.28		
1.40	1.45		8.40	15.54	0.25	11,347	81.40	7.94			27.00	35.18		
1.45	1.50		3.5	22.94	0.18	10,477	84.90	8.56						
1.50	1.55		2.3	23.48	0.14	9,763	86.83	8.99						
1.55	1.60		1.4	32.41	0.17	9,091	88.60	9.32			15.10	48.94		
1.60	1.70		1.90	36.42	0.18	8,261	90.50	9.89			11.40	56.11		
1.70	1.80		3.00	53.51	---	6,258	93.50	11.29			9.50	60.05		
1.80	1.90		2.70	56.75	---	---	96.20	12.57			6.50	63.06		
1.90			3.80	67.55	---	---	100.00	14.66			3.80	67.55		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam
LAB NO.: 1072

HOLE NO.: 5 Seam No. 1
DATE SAMPLED:

LOCATION: 100 + 00 1000 LT
DATE RECIEVED:

INTERVAL: 187.3 - 198.0
DATE REPORTED:

RAW COAL SIZE FRACTION: ½" x 28 mesh

WT.% ____ ASH% ____ B.T.U.: ____
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt. %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		47.90	3.72	0.24	13,690	47.90	3.72			100.00	11.89		
1.30	1.35		19.30	6.06	0.27	13,352	67.20	4.39			52.10	19.40		
1.35	1.40		15.20	9.98	0.24	12,614	82.40	5.42			32.80	27.26		
1.40	1.45		3.90	17.66	0.23	11,157	86.30	5.98			17.60	42.18		
1.45	1.50		1.5	20.34	0.28	10,385	87.80	6.22						
1.50	1.55		1.5	25.94	0.33	9,639	89.27	6.55						
1.55	1.60		1.3	28.65	0.20	8,810	90.60	6.87			12.20	52.70		
1.60	1.70		1.40	37.11	0.13	7,829	92.00	7.33			9.40	60.30		
1.70	1.80		1.20	46.12	---	6,485	93.20	7.83			8.00	64.35		
1.80	1.90		1.50	52.59	---	---	94.70	8.54			6.80	67.57		
1.90			5.30	71.81	---	---	100.00	11.89			5.30	71.81		

REMARKS:

LEXCO TESTING LTD. — coal washability analysis

COAL FIELD: Quinsam

LAB NO.: 1072

HOLE NO.: 5 Seam No. 1

DATE SAMPLED:

LOCATION: 100 + 00 1000 LT

DATE RECIEVED:

INTERVAL: 187.3 - 198.0

DATE REPORTED:

RAW COAL SIZE FRACTION: 28 x 100

WT.% ____ ASH % ____ B.T.U.: ____

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		31.70	2.76	0.33	13,839	31.70	2.76			100.00	19.66		
1.30	1.35		19.60	4.17	0.31	13,537	51.30	3.30			68.30	27.50		
1.35	1.40		7.40	6.51	0.30	13,169	58.70	3.70			48.70	36.89		
1.40	1.45		5.50	9.17	0.29	12,671	64.20	4.17			41.30	42.34		
1.45	1.50		4.40	12.63	0.25	11,919	68.60	4.71						
1.50	1.55		1.90	18.22	0.22	10,988	70.95	5.04						
1.55	1.60		2.40	22.65	0.23	10,182	72.90	5.66			31.40	52.31		
1.60	1.70		2.40	31.18	0.19	8,648	75.30	6.47			27.10	57.33		
1.70	1.80		2.20	36.66	0.18	7,676	77.50	7.33			24.70	59.87		
1.80	1.90		4.20	43.36	---	4,303	81.70	9.18			22.50	62.14		
1.90			18.30	66.45	---		100.00	19.66			18.30	66.45		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam LAB NO.: 1073

HOLE NO.: 6 No. 1 Seam DATE SAMPLED:

LOCATION: 85 + 00 1000 LT DATE RECIEVED:

INTERVAL: 255.3 - 264.0 DATE REPORTED:

RAW COAL SIZE FRACTION: + 1/2"

WT.% ASH% B.T.U.: ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S %	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		41.20	6.61	.28	13,228	41.20	6.61	.28		100.00	13.64	.24	
1.30	1.35		13.50	6.84	.27	13,127	54.70	6.67	.28		58.80	18.57	.22	
1.35	1.40		12.00	10.46	.25	12,452	66.70	7.35	.27		45.30	22.06	.20	
1.40	1.45		10.20	16.65	.25	11,112	76.90	8.58	.27		33.30	26.24	.18	
1.45	1.50		8.0	19.94	.20	10,663	84.90	9.50	.26				.15	
1.50	1.55		1.8	21.58	.19	9,859	87.69	9.64	.26				.13	
1.55	1.60		3.6	21.03	.18	9,179	90.30	10.19	.26		15.10	36.90	.10	
1.60	1.70		3.00	30.81	.16	7,990	93.30	10.86	.25		9.70	45.74	.07	
1.70	1.80		3.10	39.75	.15	6,929	96.40	11.79	.25		6.70	52.42	---	
1.80	1.90		1.30	47.31	---	5,462	97.70	12.26	.24		3.60	63.33	---	
1.90			2.30	72.38	---	---	100.00	13.64			2.30	72.38		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam
LAB NO.: 1073
HOLE NO.: 6 No. 1 Seam
DATE SAMPLED:
LOCATION: 85 + 00 1000 LT
DATE RECIEVED:
INTERVAL: 255.3 - 264.0
DATE REPORTED:
RAW COAL SIZE FRACTION: ½ x 28
WT.% ____ ASH % ____ B.T.U.: ____
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		60.10	3.82	0.31	13,621	60.10	3.82			100.00	11.28		
1.30	1.35		11.10	6.43	0.29	13,621	71.20	4.23			39.90	22.51		
1.35	1.40		8.70	9.62	0.28	12,537	79.90	4.81			28.80	28.71		
1.40	1.45		4.40	15.90	0.27	11,255	84.30	5.39			20.10	36.97		
1.45	1.50		2.1	18.29	0.22	10,408	86.40	5.71						
1.50	1.55		2.6	22.00	0.21	9,603	88.50	6.22						
1.55	1.60		1.4	23.97	0.21	8,907	90.40	6.46			13.60	46.67		
1.60	1.70		1.90	29.55	0.20	7,861	92.30	6.93			9.60	56.67		
1.70	1.80		1.40	42.40	0.16	6,562	93.70	7.46			7.70	63.36		
1.80	1.90		1.40	48.61	---	4,765	95.10	8.07			6.30	68.02		
1.90			4.90	72.56	---	---	100.00	11.28			4.90	73.56		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: Quinsam

LAB NO.: 1073

HOLE NO.: 6 No. 1 Seam

DATE SAMPLED:

LOCATION: 85 + 00 1000 LT

DATE RECIEVED:

INTERVAL: 255.3 - 264.0

DATE REPORTED:

RAW COAL SIZE FRACTION: 28 x 100

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.
	1.30		45.10	2.80	0.31	13676	45.10	2.80			100.00	21.20		
1.30	1.35		12.50	4.50	0.34	13,460	57.60	3.17			54.90	36.31		
1.35	1.40		8.50	7.59	0.33	12,958	66.10	3.74			42.40	45.68		
1.40	1.45		3.80	10.67	0.38	12.414	69.90	4.11			33.90	55.24		
1.45	1.50		2.5	14.61	0.40	11,685	72.40	4.48						
1.50	1.55		1.9	17.61	0.26	N.S.	74.27	4.82						
1.55	1.60		1.6	21.04	0.21	N.S.	75.90	5.15			27.60	65.05		
1.60	1.70		1.90	29.64	0.20	N.S.	77.80	5.75			24.10	71.71		
1.70	1.80		1.60	34.61	0.16	N.S.	79.40	6.33			22.20	75.31		
1.80	1.90		1.20	39.76	---	N.S.	80.60	6.83			20.60	78.48		
1.90			19.40	80.87	---		100.00	21.20			19.40	80.87		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM
LAB NO.: X
HOLE NO.: No. 8 No. 3 Seam
DATE SAMPLED:
LOCATION: 60 + 00 1000 LT
DATE RECIEVED:
INTERVAL: 38.6 - 56.3
DATE REPORTED:
RAW COAL SIZE FRACTION: + ½"
WT.% ASH% B.T.U.:
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.
	1.30		14.20	5.63	1.96	13508	14.20	5.63	1.96		100.00	40.18	5.45	
1.30	1.35		11.70	8.68	3.04	13028	25.90	7.01	2.45		85.80	45.90	6.02	
1.35	1.40		7.10	12.58	3.54	11584	33.00	8.21	2.68		74.10	51.78	6.49	
1.40	1.45		5.90	18.48	2.15	11271	38.90	9.76	2.60		67.00	55.93	6.81	
1.45	1.50		3.80	22.32	3.47	10542	42.70	10.88	2.68		61.10	59.55	7.26	
1.50	1.55		1.6	24.00	2.50	9,471	45.30	11.10						
1.55	1.60		3.2	33.91	2.36	8,875	47.50	12.88	2.66		57.30	62.02	7.51	
1.60	1.70		3.60	40.40	3.84	8,054	51.10	14.81	2.64		52.50	64.89	7.96	
1.70	1.80		3.60	48.58	3.00	6,899	54.70	17.04	2.72		48.90	66.69	8.38	
1.80	1.90		1.40	58.71	8.92	----	56.10	18.08	2.73		45.30	68.13	8.74	
1.90			43.90	68.43	---	----	100.00	40.18	5.45		43.90	68.43	8.92	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: X

HOLE NO.: No. 8 No. 3 Seam

DATE SAMPLED:

LOCATION: 60 + 00 1000LT

DATE RECIEVED:

INTERVAL: 38.6 - 56.3

DATE REPORTED:

RAW COAL SIZE FRACTION: ½" x 28 mesh

WT.% ASH % B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt. %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		38.60	4.25	1.86	13607	38.60	4.25	1.86		100.00	15.07	3.23	
1.30	1.35		22.40	8.65	3.21	12956	61.00	5.87	2.36		61.40	21.87	4.10	
1.35	1.40		10.50	12.07	4.38	12476	71.50	6.78	2.65		39.00	29.46	4.61	
1.40	1.45		6.60	16.04	5.37	11776	78.10	7.56	2.88		28.50	35.87	4.69	
1.45	1.50		4.10	21.61	5.64	11117	82.20	8.26	3.02		21.90	41.85	4.49	
1.50	1.55		2.60	27.25	6.03	10174	84.64	8.86						
1.55	1.60		2.00	29.73	7.08	9,760	86.80	9.32	3.21		17.80	46.51	4.22	
1.60	1.70		3.00	34.76	8.13	8,901	89.80	10.17	3.37		13.20	52.84	3.39	
1.70	1.80		1.40	41.31	8.36	7,817	91.20	10.65	3.45		10.20	58.16	2.00	
1.80	1.90		1.00	44.38	8.71	7,249	92.20	11.02	3.51		8.80	60.84	.99	
1.90			7.80	62.95	----	----	100.00	15.07	3.23		7.80	62.95	0.00	

REMARKS:

LEXCO TESTING LTD.　　coal washability analysis

COAL FIELD: QUINSAM　　**LAB NO.:** X

HOLE NO.: No. 8　No. 3 Seam　　**DATE SAMPLED:**

LOCATION: 60 + 00　1000LT　　**DATE RECIEVED:**

INTERVAL: 38.6 - 56.3　　**DATE REPORTED:**

RAW COAL SIZE FRACTION: 28 x 100 mesh

WT.% ____ **ASH %** ____ **B.T.U.:** ____　　**ANALYST:**

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		44.70	3.56	1.77	13747	44.70	3.56	1.77		100.00	18.32	2.51	
1.30	1.35		14.00	5.84	2.66	13623	58.70	4.10	1.98		55.30	30.26	3.11	
1.35	1.40		8.90	10.38	3.48	12700	67.60	4.93	2.18		41.30	38.53	3.26	
1.40	1.45		5.90	13.75	4.63	12209	73.50	5.64	2.38		32.40	46.27	3.20	
1.45	1.50		3.20	18.05	4.90	11474	76.70	6.16	2.48		26.50	53.51	2.88	
1.50	1.55		2.70	22.00	5.35	10826	78.89	6.74						
1.55	1.60		1.40	27.07	5.77	10102	80.80	7.05	2.63		23.30	58.38	2.61	
1.60	1.70		2.20	32.32	5.88	9,318	83.00	7.72	2.72		19.20	65.78	1.99	
1.70	1.80		1.60	36.18	7.06	8,454	84.60	8.26	2.80		17.00	70.11	1.48	
1.80	1.90		1.60	43.46	8.71	----	86.20	8.91	2.91		15.40	73.63	.90	
1.90			13.80	77.13	---	----	100.00	18.32	2.51		13.80	77.13	0.00	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: 1075

HOLE NO.: No. 9 No. 1 Seam

DATE SAMPLED:

LOCATION: 50 + 00 1500 LT

DATE RECIEVED:

INTERVAL: 115.8 - 121.1

DATE REPORTED:

RAW COAL SIZE FRACTION: ½" x 28 Mesh

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		40.30	4.92	1.62	13440	40.30	4.92	1.62		100.00	16.26	2.14	
1.30	1.35		16.20	8.86	2.33	12870	56.50	6.05	1.82		59.70	23.91	2.49	
1.35	1.40		13.20	13.42	2.98	12102	69.70	7.45	2.04		43.50	29.52	2.55	
1.40	1.45		8.00	18.15	3.19	11395	77.70	8.55	2.16		30.30	36.53	2.36	
1.45	1.50		4.70	23.89	3.22	10678	82.40	9.42	2.22		22.30	43.13	2.06	
1.50	1.55		2.1	28.44	3.36	9,414	84.66	9.87						
1.55	1.60		2.2	31.89	3.29	9,019	86.70	10.45	2.28		17.60	48.27	1.75	
1.60	1.70		3.10	36.56	3.17	8,184	89.80	11.35	2.31		13.30	54.10	1.23	
1.70	1.80		2.00	45.86	1.85	6,579	91.80	12.11	2.30		10.20	59.44	.64	
1.80	1.90		1.90	53.42	.75	---	93.70	12.94	2.27		8.20	62.75	.34	
1.90			6.30	65.56	---	---	100.00	16.26	2.14		6.30	65.56	.22	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: 1075

HOLE NO.: No. 9 No. 1 Seam

DATE SAMPLED:

LOCATION: 50 + 00 1500 LT

DATE RECIEVED:

INTERVAL: 115.8 - 121.1

DATE REPORTED:

RAW COAL SIZE FRACTION: 28 x 100 Mesh

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		35.20	2.98	1.36	13717	35.20	2.98	1.36		100.00	15.48	1.80	
1.30	1.35		28.60	4.60	1.80	13475	63.80	3.71	1.56		64.80	22.27	2.04	
1.35	1.40		5.70	10.85	2.99	12532	69.50	4.29	1.67		36.20	36.23	2.23	
1.40	1.45		3.80	14.23	3.24	12034	73.30	4.81	1.76		30.50	40.97	2.09	
1.45	1.50		3.20	18.06	3.30	11373	76.50	5.36	1.82		26.70	44.78	1.92	
1.50	1.55		3.5	21.90	3.48	10836	79.29	6.14						
1.55	1.60		1.6	26.60	3.37	9,999	81.60	6.49	1.92		23.50	48.41	1.73	
1.60	1.70		2.50	31.51	3.22	8,969	84.10	7.23	1.97		18.40	55.36	1.25	
1.70	1.80		2.20	38.00	3.02	7,497	86.30	8.02	2.00		15.90	59.11	.92	
1.80	1.90		1.60	44.30	N.S.	N.S.	87.90	8.68	2.02		13.70	62.49	.55	
1.90			12.10	64.90	---	---	100.00	15.48	1.80		12.10	64.90	.22	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: 1077

HOLE NO.: No. 9 No. 1 Seam

DATE SAMPLED:

LOCATION: 30 + 00 1500 LT

DATE RECIEVED:

INTERVAL: 122.0 - 125.7

DATE REPORTED:

RAW COAL SIZE FRACTION: + ½"

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		7.00	8.05	1.39	13052	7.00	8.06	1.39		99.90	43.10	.84	
1.30	1.35		8.50	11.81	1.30	12458	15.50	10.12	1.34		92.90	45.74	.79	
1.35	1.40		9.00	16.56	1.25	11765	24.50	12.49	1.31		84.80	49.16	.74	
1.40	1.45		5.90	21.99	1.49	10825	30.40	14.34	1.34		75.40	53.05	.68	
1.45	1.50		3.60	28.17	1.37	9.958	34.00	15.81	1.35		69.50	55.68	.61	
1.50	1.55		1.2	34.69	1.00	8,785	37.70	16.36						
1.55	1.60		5.7	38.05	0.70	8,181	40.80	18.92	1.29		65.90	57.18	.57	
1.60	1.70		11.60	41.57	0.97	7,604	52.40	23.95	1.16		59.10	59.79	.52	
1.70	1.80		11.00	51.38	0.55	6,131	63.40	28.72	1.13		47.50	64.23	.48	
1.80	1.90		12.30	56.90	0.22	----	75.70	33.30	1.03		36.50	68.09	.33	
1.90			24.20	73.68	---		99.90	43.10	.84		24.20	73.75	.22	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM
LAB NO.: 1080
HOLE NO.: No. 10 No. 2 Seam
DATE SAMPLED:
LOCATION: 40 + 00 1500 LT
DATE RECIEVED:
INTERVAL: 149.2 - 152.8
DATE REPORTED:
RAW COAL SIZE FRACTION: + ½"
WT.% ASH% B.T.U.:
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.
	1.30		13.6	4.85	1.82	13597	13.6	4.85						
1.30	1.35		27.5	8.42	3.35	13164	41.1	7.24						
1.35	1.40		14.3	11.80	4.65	12762	55.4	8.42						
1.40	1.45		0.0	0.0	0.0	0.0	55.4							
1.45	1.50		0.0	0.0	0.0	0.0	55.4							
1.50	1.55		2.8	25.10	6.27	10580	58.2							
1.55	1.60		0.0	0.0	0.0	0.0	58.2							
1.60	1.70		0.0	0.0	0.0	0.0	58.2							
1.70	1.80		0.0	0.0	0.0	0.0	58.2							
1.80	1.90		0.0	0.0	0.0	0.0	58.2							
1.90			41.8	63.95			100.00							

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: 1080

HOLE NO.: No. 10 No. 2 Seam

DATE SAMPLED:

LOCATION: 40 + 00 1500 LT

DATE RECIEVED:

INTERVAL: 149.2 - 152.8

DATE REPORTED:

RAW COAL SIZE FRACTION: ½" x 28 mesh

WT.% ____ **ASH %** ____ **B.T.U.:** ____

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH %	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH %	S %	Btu./lb.
	1.30		36.40	4.14	2.28	13691	36.40	4.14	2.28		100.00	12.45	3.78	
1.30	1.35		38.10	7.48	5.25	13195	74.50	5.85	3.80		63.60	17.20	4.64	
1.35	1.40		7.10	11.89	4.38	12175	81.60	6.37	3.85		25.50	31.72	3.74	
1.40	1.45		3.10	17.19	5.70	11655	84.70	6.77	3.92		18.40	39.38	3.49	
1.45	1.50		1.90	21.68	6.23	11028	86.60	7.10	3.97		15.30	43.87	3.04	
1.50	1.55		1.2	25.84	5.24	10065	87.90	7.35						
1.55	1.60		1.3	31.69	3.16	9,533	89.10	7.71	4.04		13.40	47.02	2.59	
1.60	1.70		1.50	34.85	7.08	9,016	90.60	8.16	4.09		10.90	51.18	1.69	
1.70	1.80		1.10	39.54	7.12	8,380	91.70	8.53	4.13		9.40	53.79	.83	
1.80	1.90		.90	43.45	---	7,688	92.60	8.87	4.09		8.30	55.67	0.00	
1.90			7.40	57.16	---	-----	100.00	12.45	3.78		7.40	57.16	0.00	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM
LAB NO.: 1080
HOLE NO.: No. 10 No. 2 Seam
DATE SAMPLED:
LOCATION: 40 + 00 1500 LT
DATE RECIEVED:
INTERVAL: 149.2 - 152.8
DATE REPORTED:
RAW COAL SIZE FRACTION: 28 x 100 mesh
WT.% ASH% B.T.U.:
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.
	1.30		40.60	2.70	1.90	13721	40.60	2.70	1.90		100.00	12.28	2.59	
1.30	1.35		22.10	5.42	2.75	13340	62.70	3.66	2.20		59.40	18.82	3.07	
1.35	1.40		10.10	9.89	3.30	12696	72.80	4.52	2.35		37.30	26.76	3.25	
1.40	1.45		5.40	14.08	3.62	12074	78.20	5.18	2.44		27.20	33.02	3.23	
1.45	1.50		3.30	18.67	4.22	11350	81.50	5.73	2.51		21.80	37.72	3.14	
1.50	1.55		3.3	22.94	4.64	10715	84.69	6.41						
1.55	1.60		2.5	27.01	4.95	10041	87.30	6.99	2.65		18.50	41.11	2.95	
1.60	1.70		3.30	33.36	4.95	9,005	90.60	7.95	2.74		12.70	48.61	2.17	
1.70	1.80		1.80	39.56	6.26	N.S.	92.40	8.57	2.81		9.40	53.97	1.20	
1.80	1.90		1.80	42.14	---	---	94.20	9.21	2.75		7.60	57.38	0.00	
1.90			5.80	62.11	---	----	100.00	12.28	2.59		5,80	62.11	0.00	

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: 1078

HOLE NO.: No. 11 No. 1 Seam

DATE SAMPLED:

LOCATION: 170+00 1000 RT

DATE RECIEVED:

INTERVAL: 146.0 - 148.5

DATE REPORTED:

RAW COAL SIZE FRACTION: + ½

WT.% ASH% B.T.U.:

ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.
	1.30		20.50	4.34	0.22	13570	20.50	4.34			100.00	25.31		
1.30	1.35		9.80	6.50	0.21	13041	30.30	5.04			79.50	30.72		
1.35	1.40		15.40	11.84	0.20	12482	45.70	7.33			69.70	34.12		
1.40	1.45		7.00	15.27	0.19	11216	52.70	8.39			54.30	40.44		
1.45	1.50		4.90	20.33	0.23	10511	57.60	9.40			47.30	44.17		
1.50	1.55		7.4	23.17	0.24	9728	63.09	11.30						
1.55	1.60		2.5	30.20	0.13	9044	67.50	11.68			42.40	46.92		
1.60	1.70		8.10	37.00	0.16	7872	75.60	14.39			32.50	53.62		
1.70	1.80		5.60	46.19	0.13	6372	81.20	16.59			24.40	59.13		
1.80	1.90		6.20	54.40	-	-	87.40	19.27			18.80	62.99		
1.90			12.60	67.21	-	-	100.00	25.31			12.60	67.21		

REMARKS:

LEXCO TESTING LTD. coal washability analysis

COAL FIELD: QUINSAM
LAB NO.: 1078

HOLE NO.: No. 11 No. 1 Seam
DATE SAMPLED:

LOCATION: 170 + 00 1000 RT
DATE RECIEVED:

INTERVAL: 146.0 - 148.5
DATE REPORTED:

RAW COAL SIZE FRACTION: ½ x 28

WT.% ASH% B.T.U.:
ANALYST:

SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt %	ASH %	S%	Btu./lb.	Wt. %	ASH%	S%	Btu./lb.	Wt. %	ASH %	S %	Btu./lb.
	1.30		42.40	3.46	0.22	13637	42.40	3.46			100.00	15.33		
1.30	1.35		13.20	6.08	0.21	13193	55.60	4.08			57.60	24.07		
1.35	1.40		14.30	10.10	0.20	12391	69.90	5.31			44.40	29.41		
1.40	1.45		6.40	17.17	0.19	11104	76.30	6.31			30.10	38.59		
1.45	1.50		3.40	22.19	0.19	10270	79.70	6.99			23.70	44.37		
1.50	1.55		2.9	27.57	0.18	9434	82.41	7.73						
1.55	1.60		2.1	31.64	0.18	8609	84.70	8.30			20.30	48.09		
1.60	1.70		3.10	38.08	0.15	7536	87.80	9.35			15.30	54.23		
1.70	1.80		3.20	45.01	0.11	6292	91.00	10.61			12.20	58.34		
1.80	1.90		3.40	53.21	-	-	94.40	12.14			9.00	63.08		
1.90			5.60	69.07	-	-	100.00	15.33			5.60	69.07		

REMARKS:

LEXCO TESTING LTD.

coal washability analysis

COAL FIELD: QUINSAM

LAB NO.: 1078

HOLE NO.: No. 11 No. 1 Seam

DATE SAMPLED:

LOCATION: 170 + 00 1000RT

DATE RECIEVED:

INTERVAL: 146.0 - 148.5

DATE REPORTED:

RAW COAL SIZE FRACTION: 28 x 100

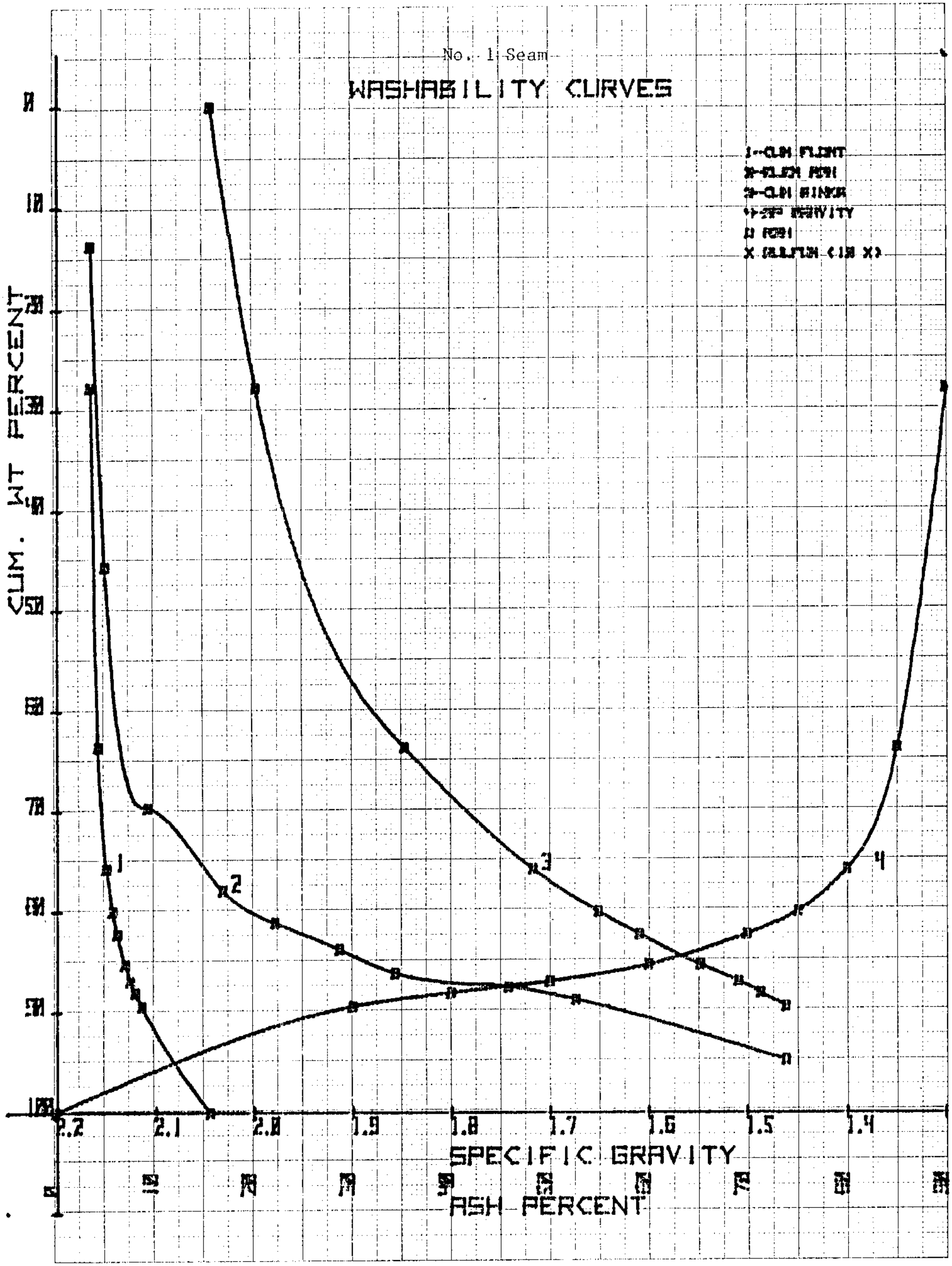
WT.% ASH% B.T.U.:

ANALYST:

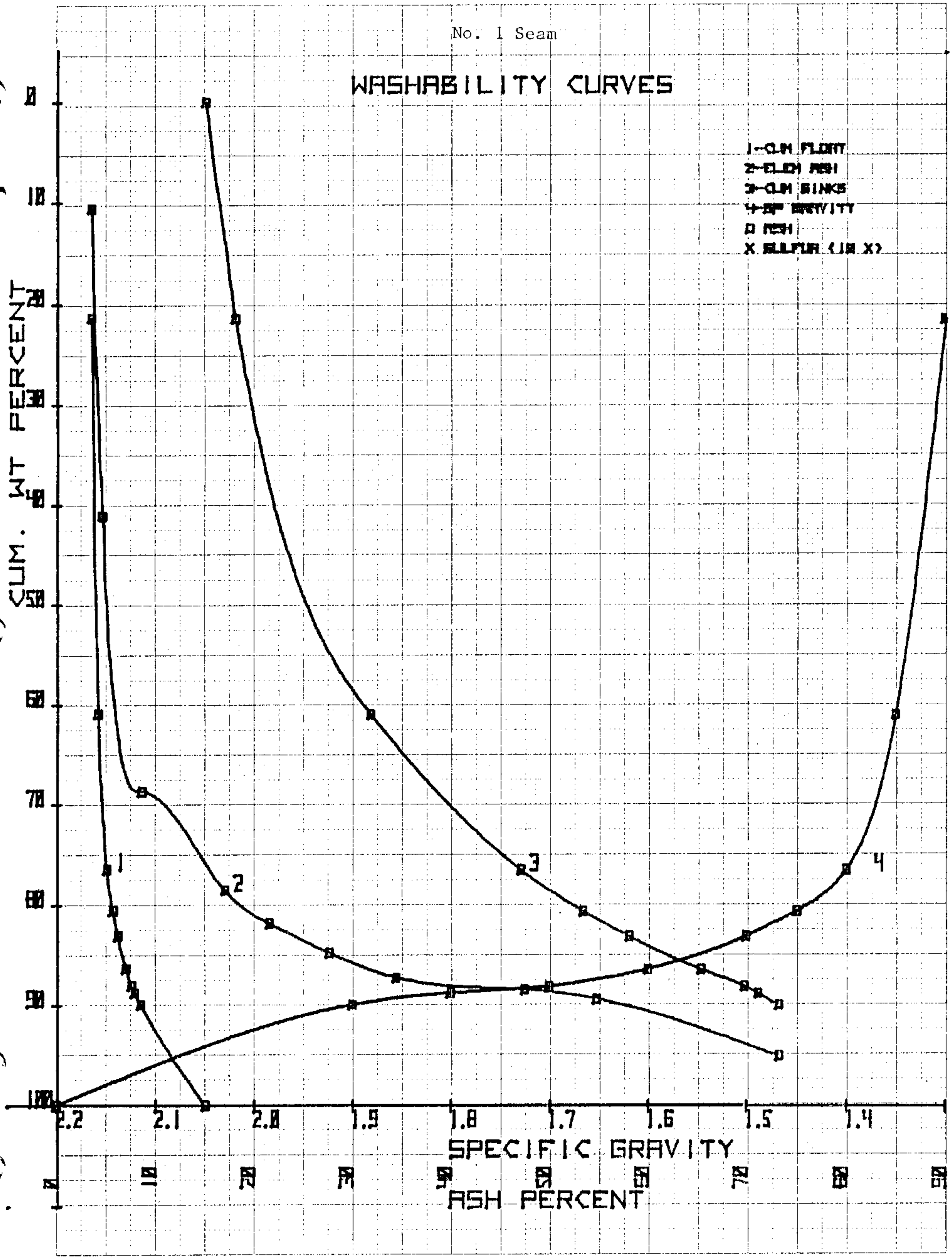
SPECIFIC GRAVITY		ELEMENTARY					CUMULATIVE FLOAT				CUMULATIVE SINK			
SINK	FLOAT	Wt.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.	Wt.%	ASH%	S%	Btu./lb.
	1.30		39.50	2.01	0.27	13747	39.50	2.01			100.00	15.18		
1.30	1.35		16.30	3.72	0.22	13456	55.80	2.51			60.50	23.79		
1.35	1.40		12.90	6.31	0.27	13159	68.70	3.22			44.20	31.19		
1.40	1.45		6.90	13.18	0.26	12519	75.60	4.13			31.30	41.44		
1.45	1.50		3.50	17.03	0.21	11038	79.10	4.70			24.40	49.43		
1.50	1.55		2.2	23.02	0.22	9986	81.17	5.20						
1.55	1.60		1.6	26.11	0.16	9260	82.90	5.60			20.90	54.85		
1.60	1.70		2.80	31.19	0.17	8,460	85.70	6.44			17.10	61.64		
1.70	1.80		1.80	41.57	0.10	N.S.	87.50	7.16			14.30	67.60		
1.80	1.90		2.20	48.41	-	6,272	89.70	8.17			12.50	71.35		
1.90			10.30	76.25	-	-	100.00	15.18			10.30	76.25		

REMARKS:

WASHABILITY CURVES

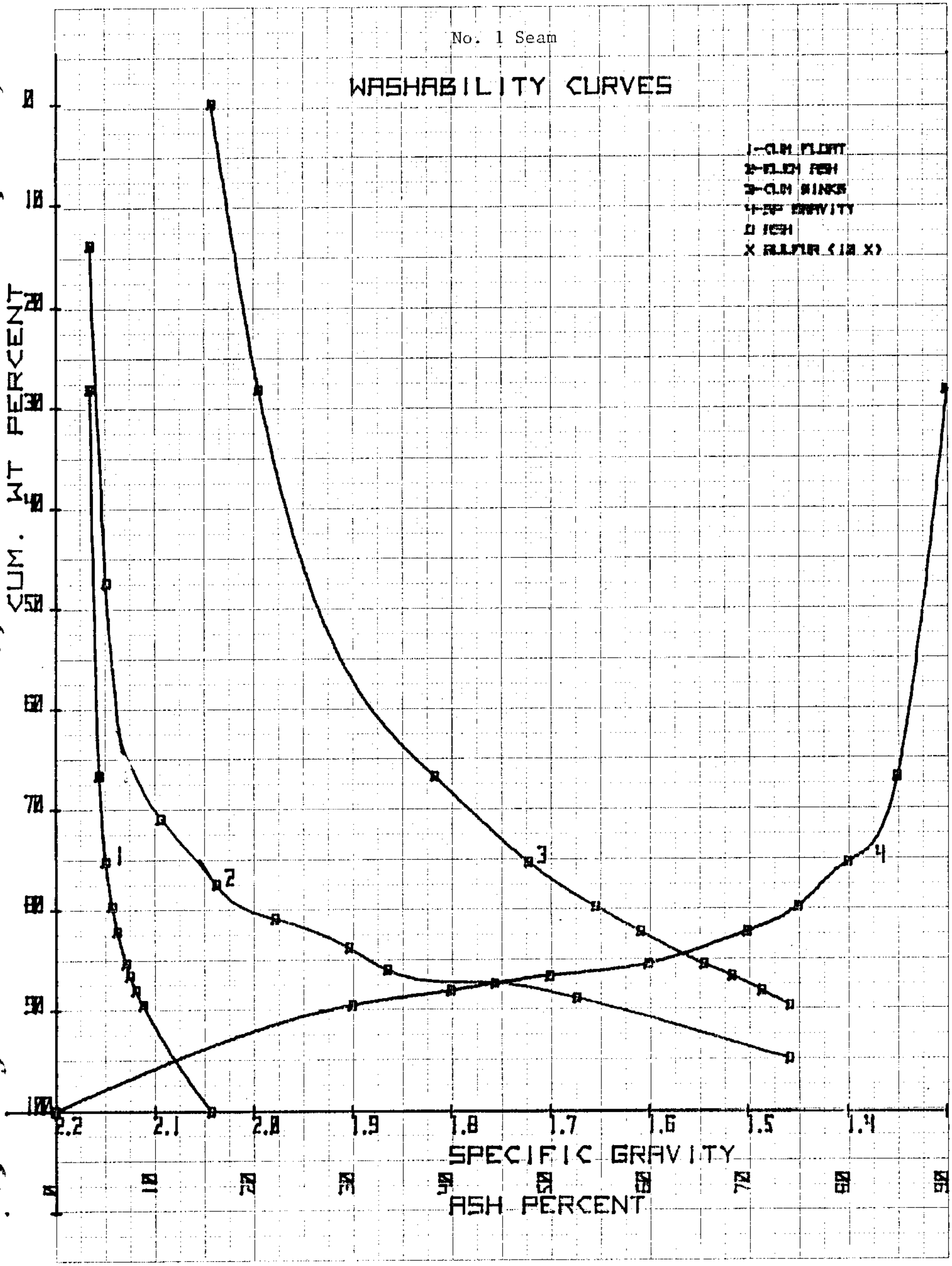

No. 1 Seam
WASHABILITY CURVES
CUM. WT PERCENT
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
SPECIFIC GRAVITY
ASH PERCENT
1
2
3
4

(CORE HOLE 1) - LAB NO. 1065 - +¼"



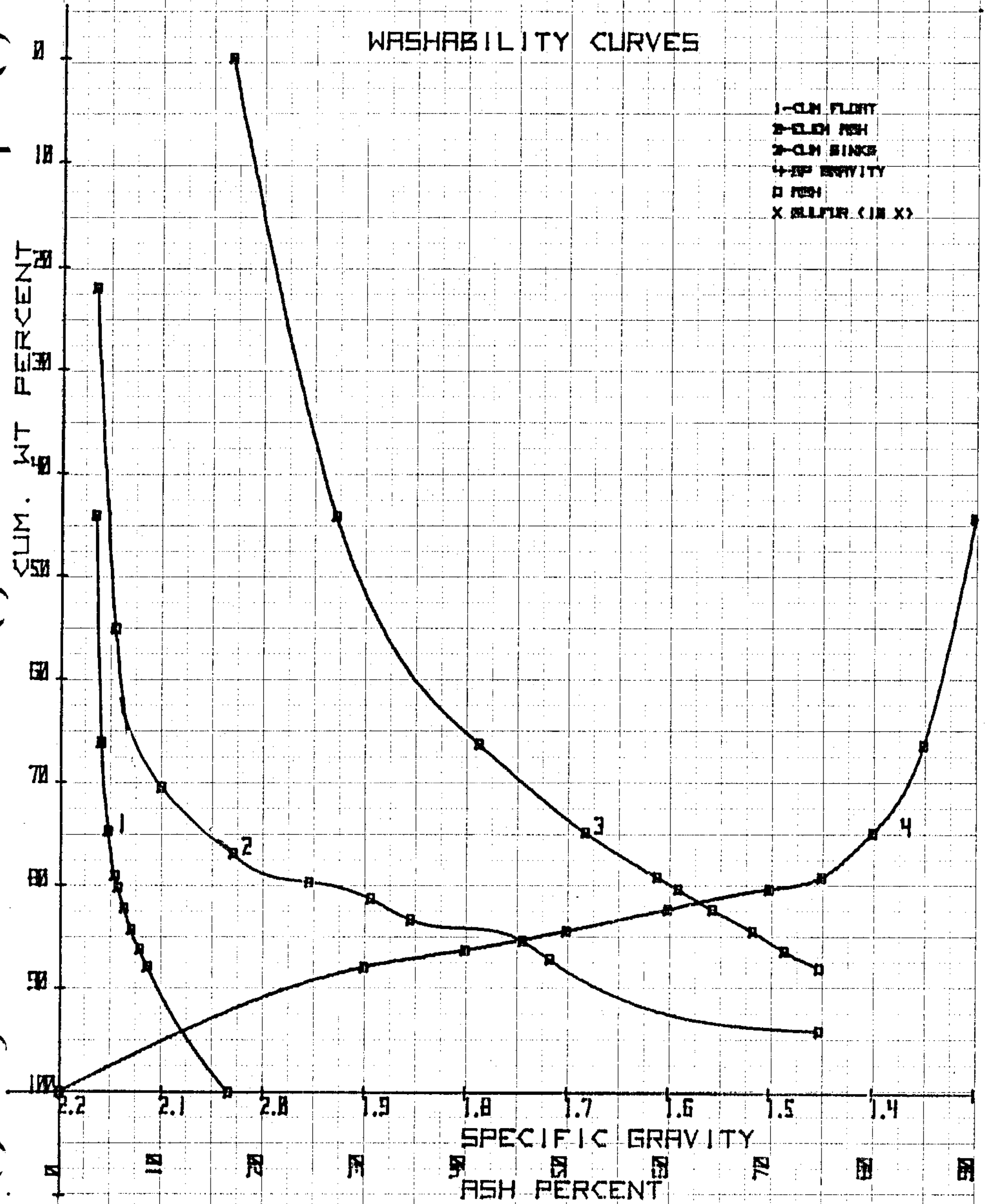
461510

(CORE HOLE 1) - LAB NO. 1065 - ¼" x 8 Mesh



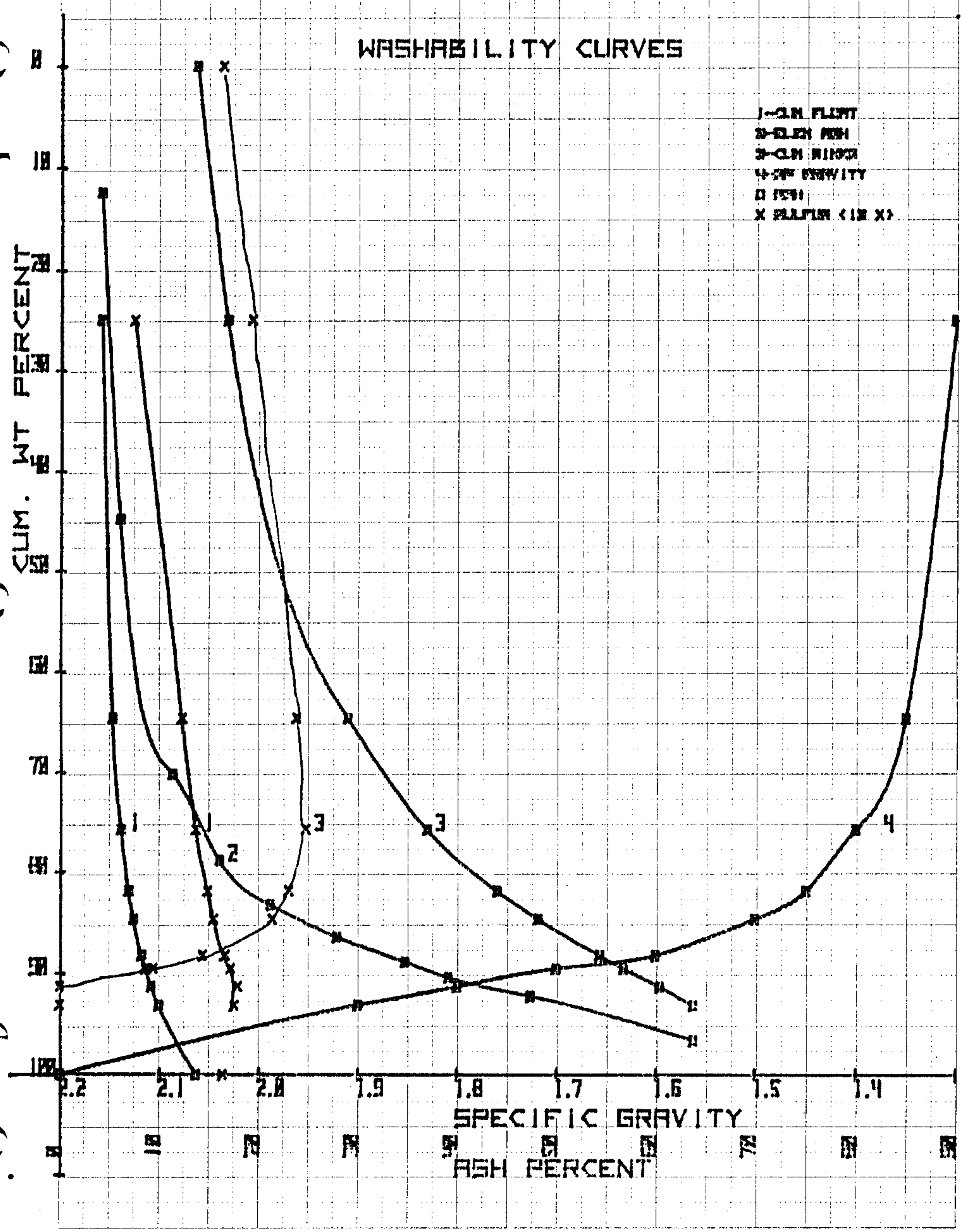
(CORE HOLE D)-LAB NO. 1065 - 8 x 28 Mesh

No. 1 Seam

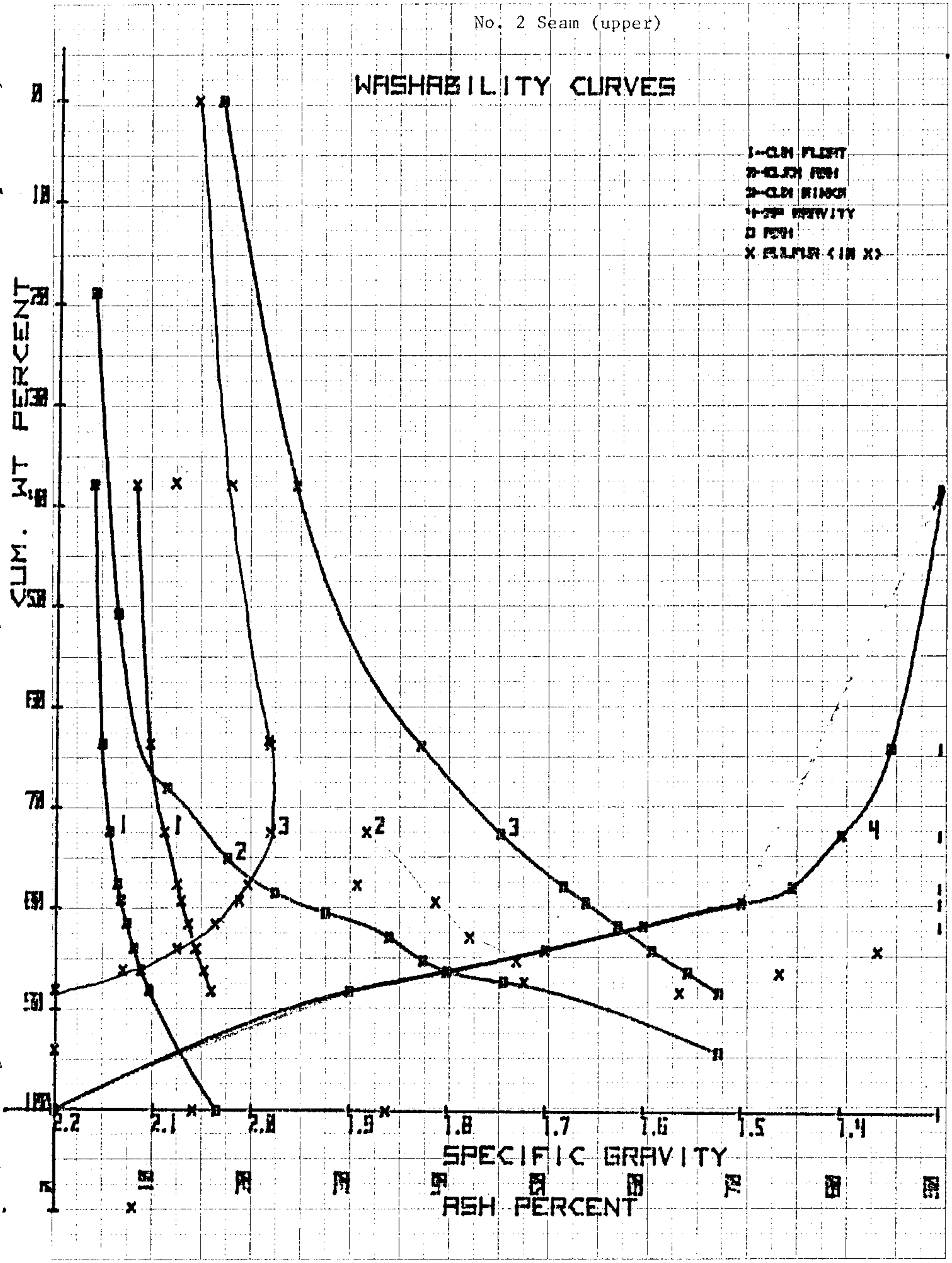


(CORE HOLE 1)-LAB NO. 1066 - ¼" x 8 Mesh

No. 2 Seam (upper)

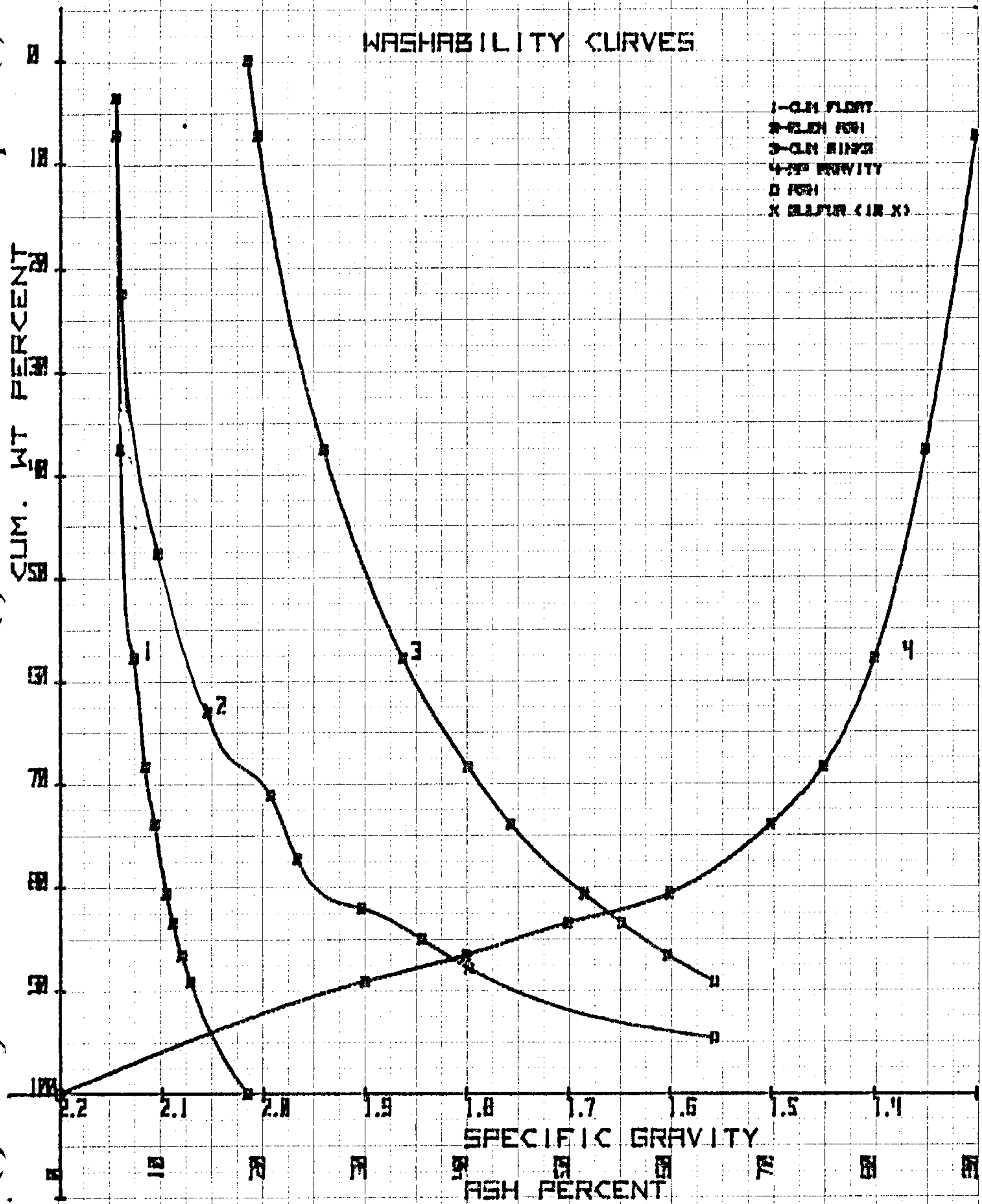


(CORE HOLE 1) - LAB NO. 1066 - 8 x 28 Mesh

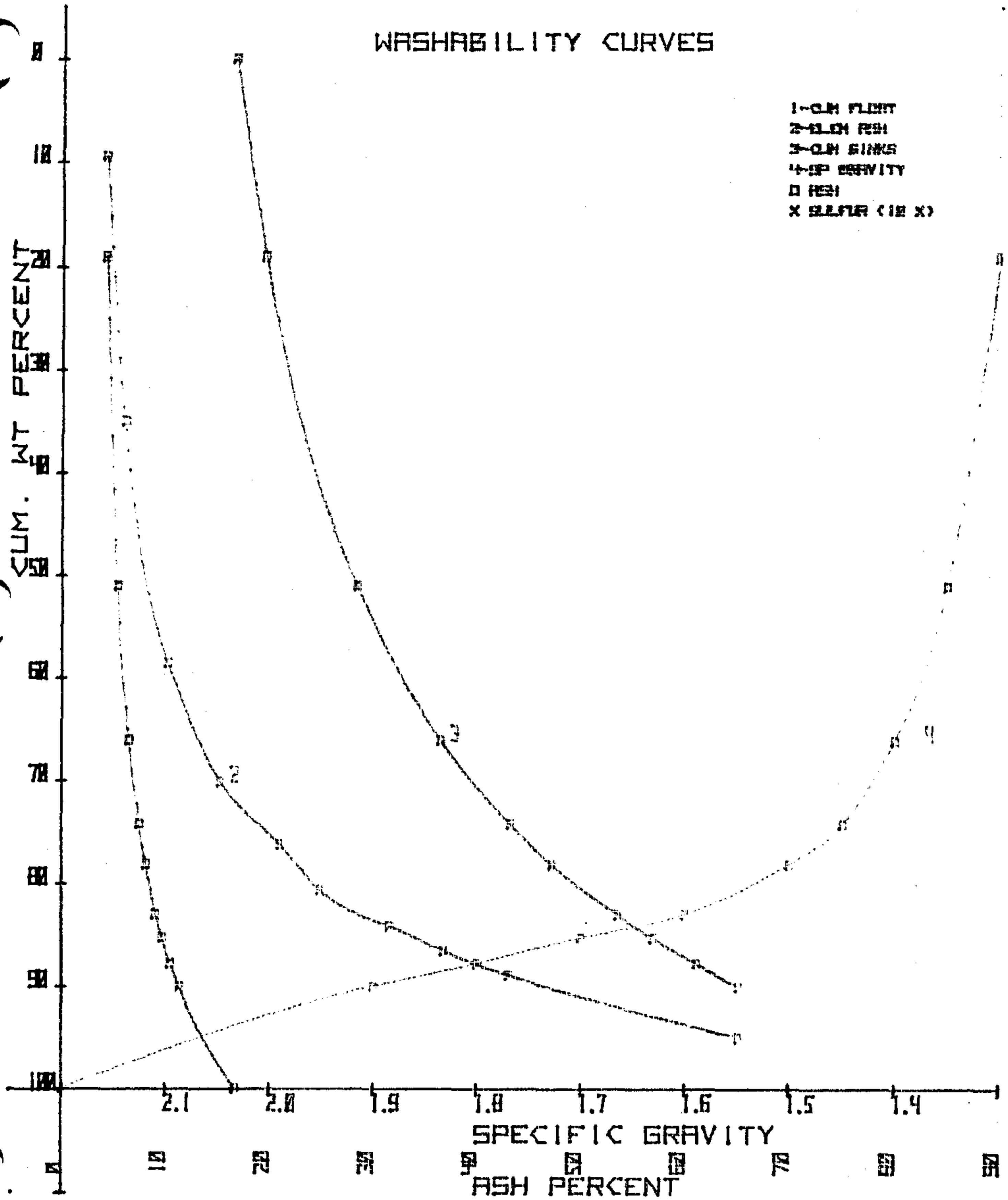


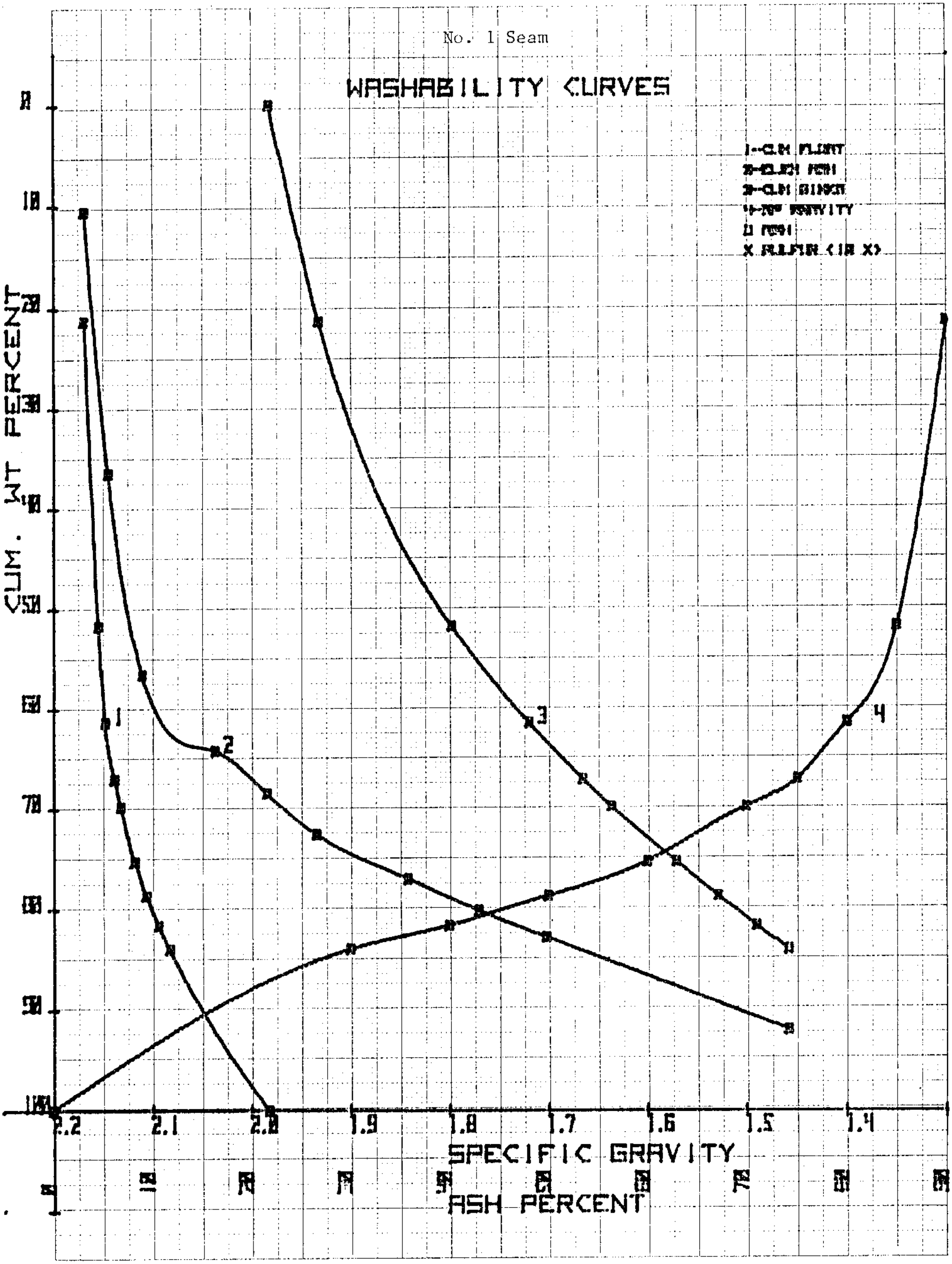
(CORE HOLE 1) - LAB NO. 1067 - ¼" x 28 Mesh

No. 2 Seam (lower)

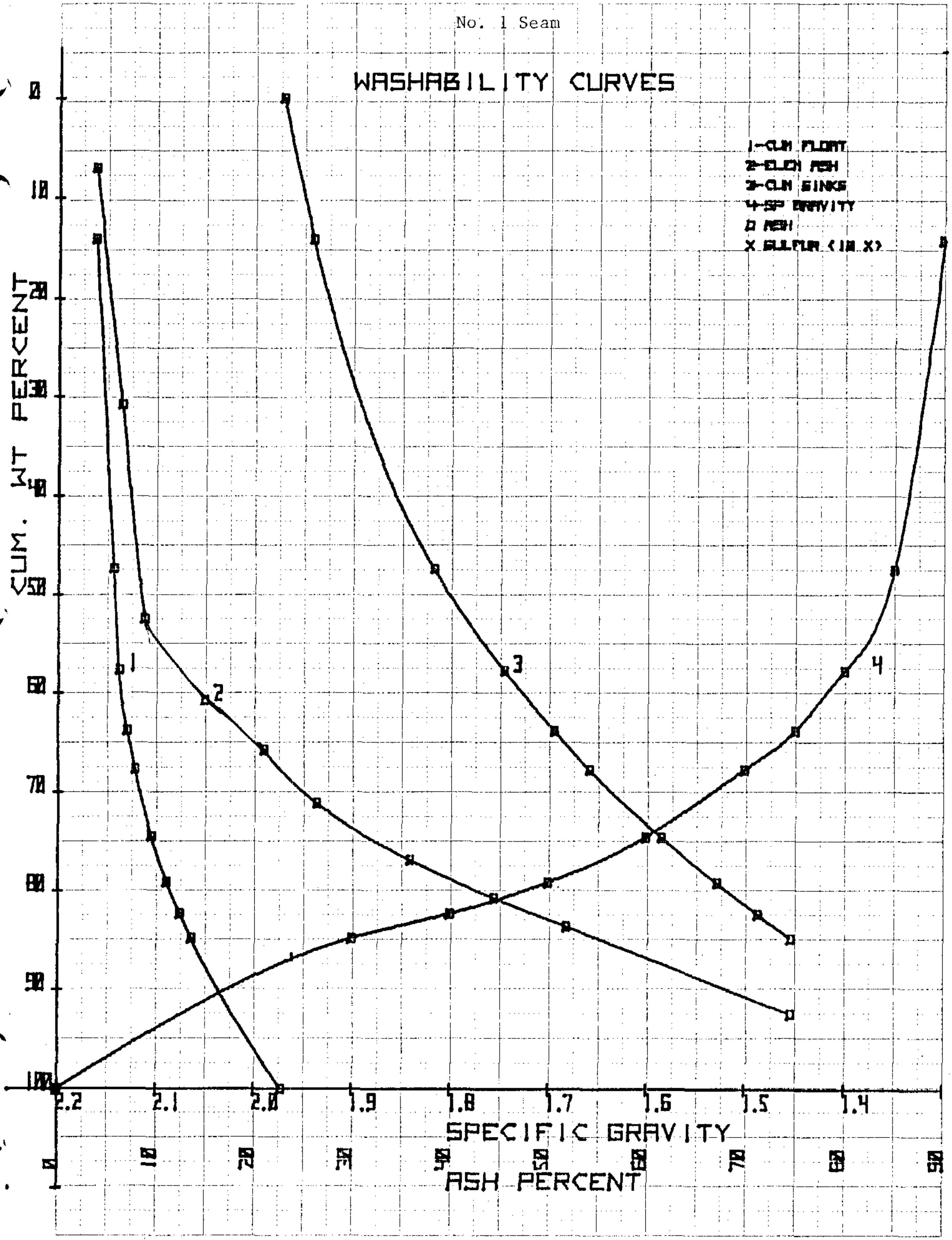


461510


WASHABILITY CURVES
1-CUM FLOAT
2-ELEM ASH
3-CUM SINKS
4-SP GRAVITY
□ ASH
X SULFUR (10 X)
CUM. WT PERCENT
0
10
20
30
40
50
60
70
80
90
100
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
SPECIFIC GRAVITY
ASH PERCENT


No. 1 Seam
WASHABILITY CURVES
CUM. WT PERCENT
1
2
3
4
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
SPECIFIC GRAVITY
ASH PERCENT

(CORE HOLE 2)- LAB NO. 1069 - +¼"

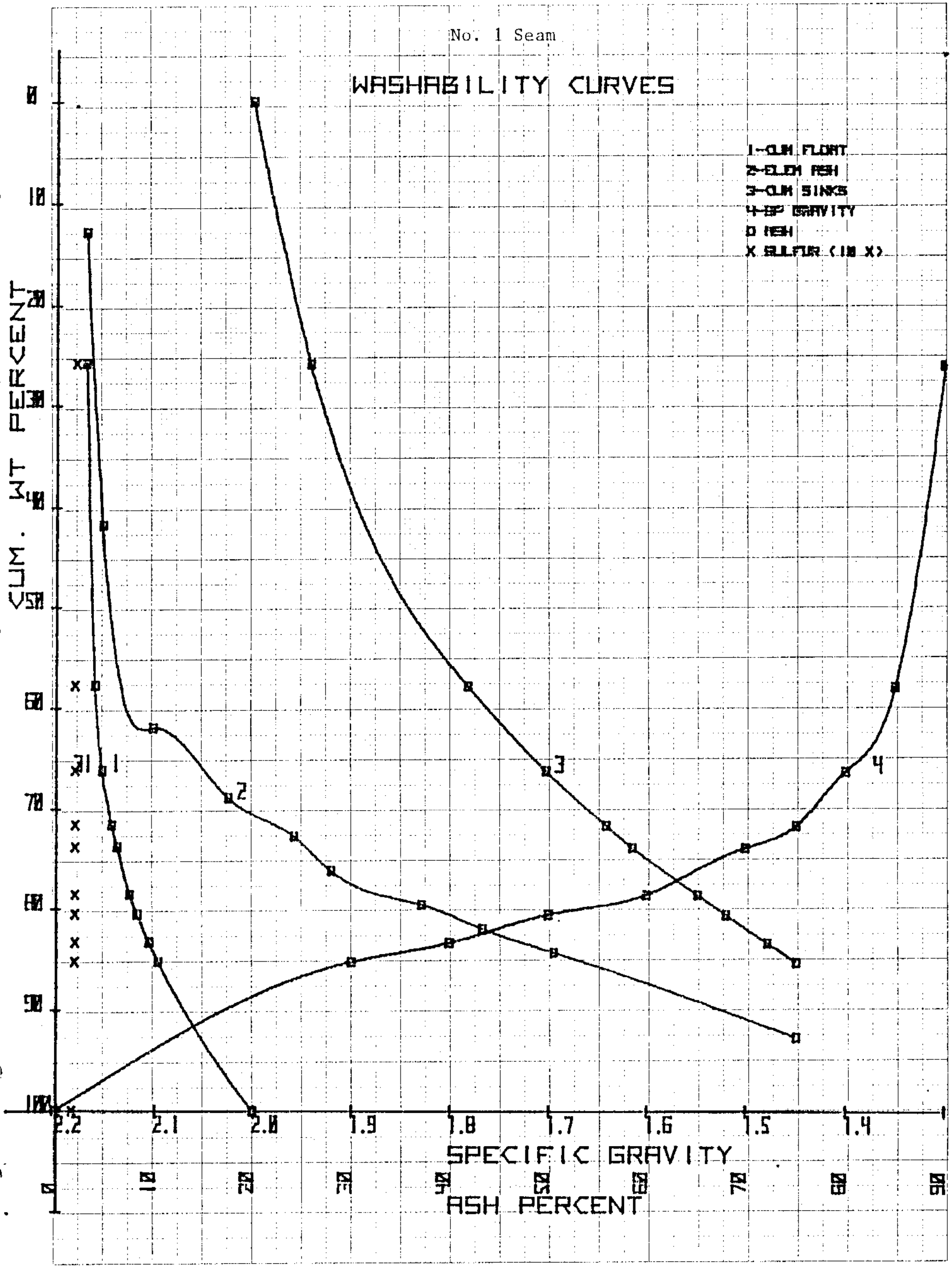


461510

10 X 10 TO THE CENTIMETER
KEUFFEL & ESSER CO. MADE IN USA

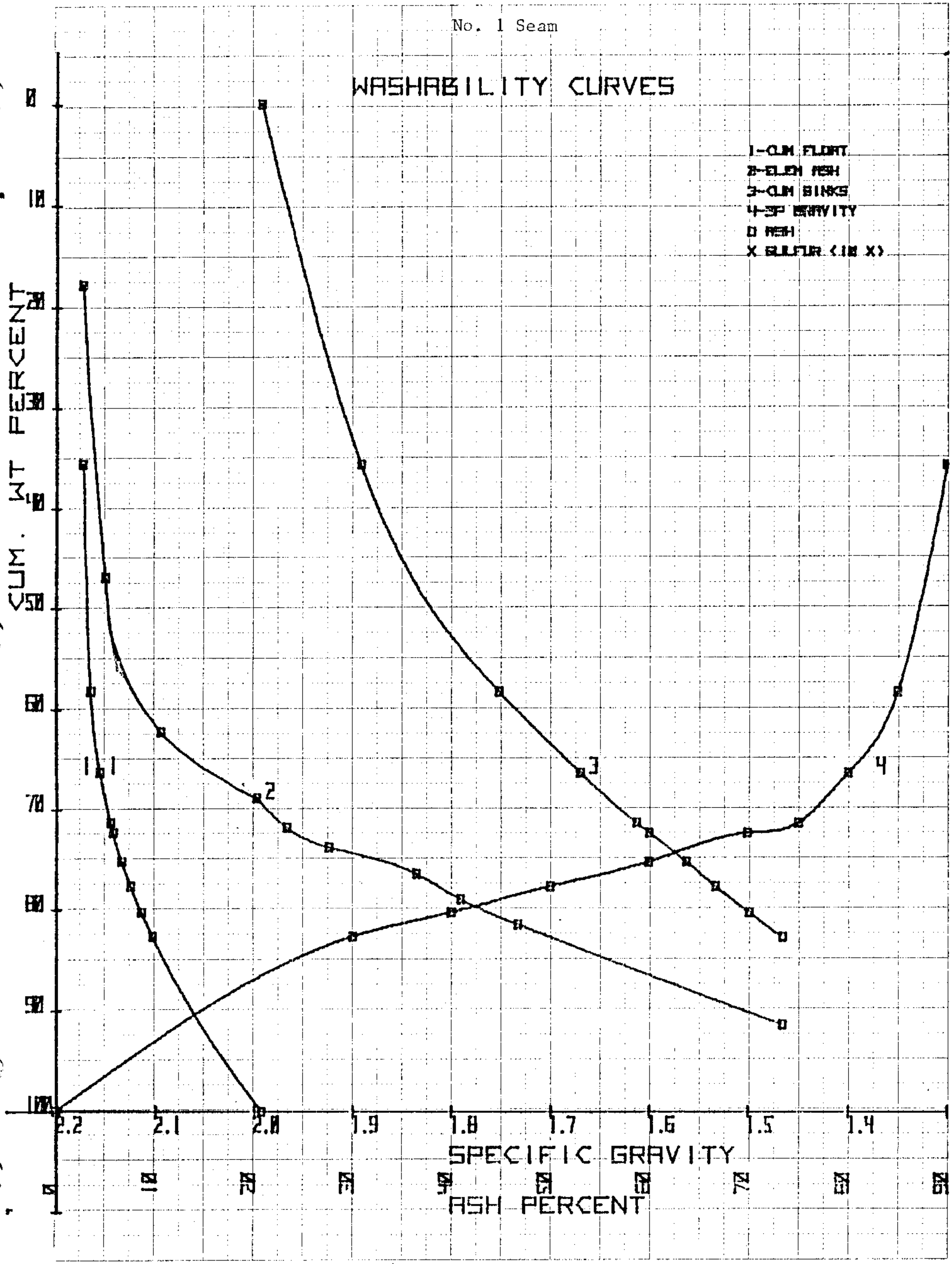
(CORE HOLE 2)- LAB NO. 1069 - ¼" x 8 Mesh

No. 1 Seam

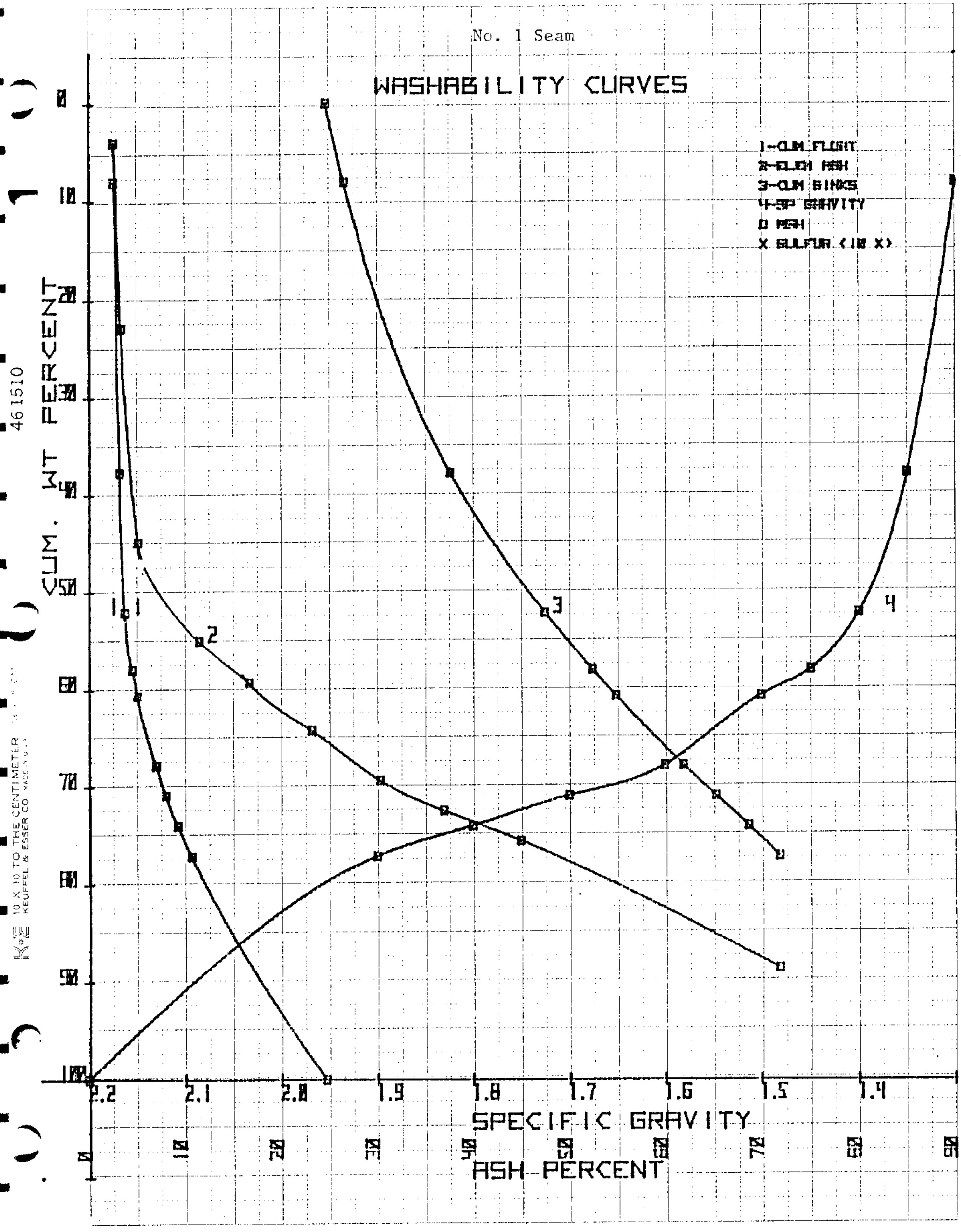


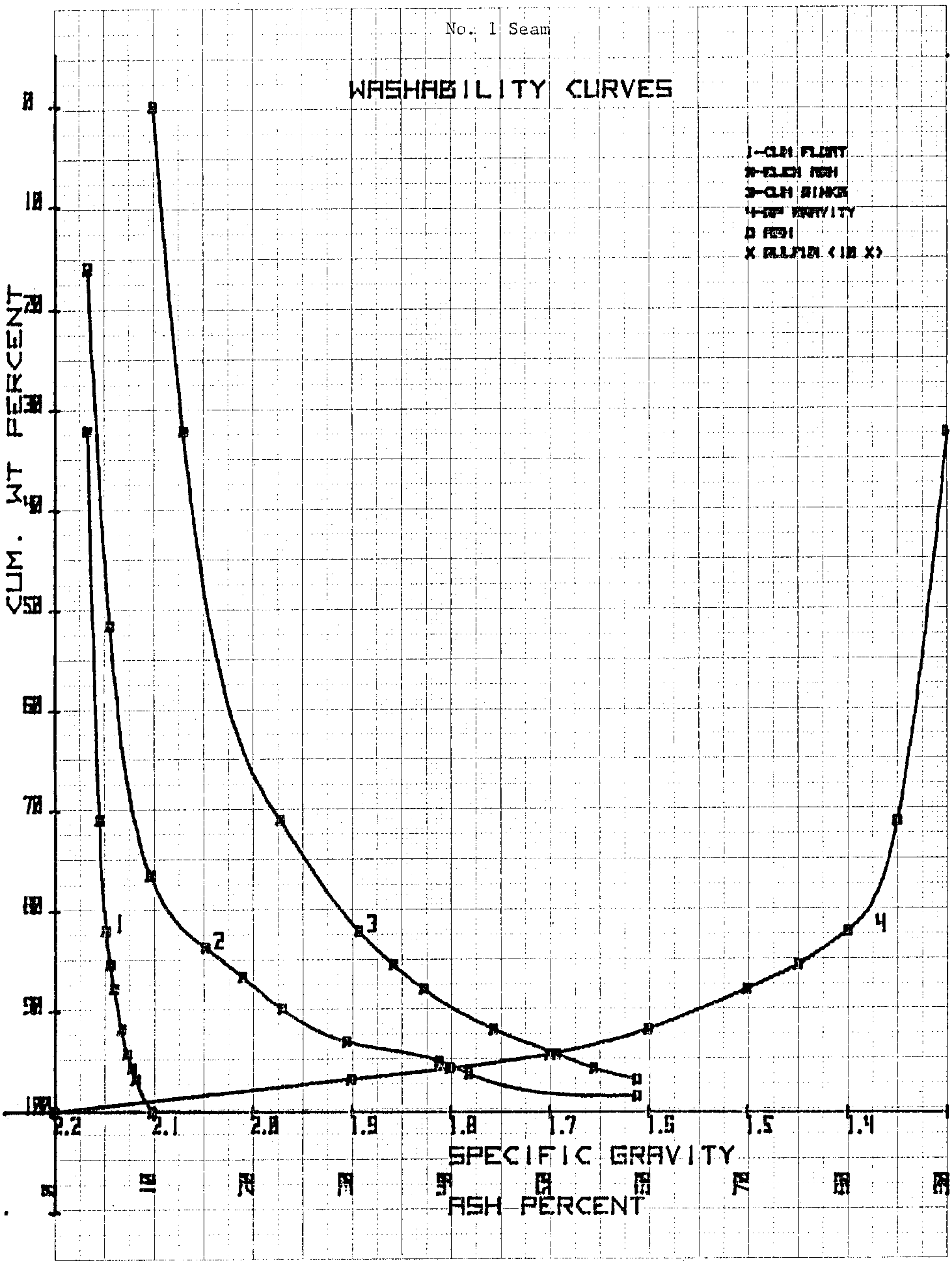
(CORE HOLE 2)-LAB NO. 1069 - 8 x 28 Mesh

No. 1 Seam

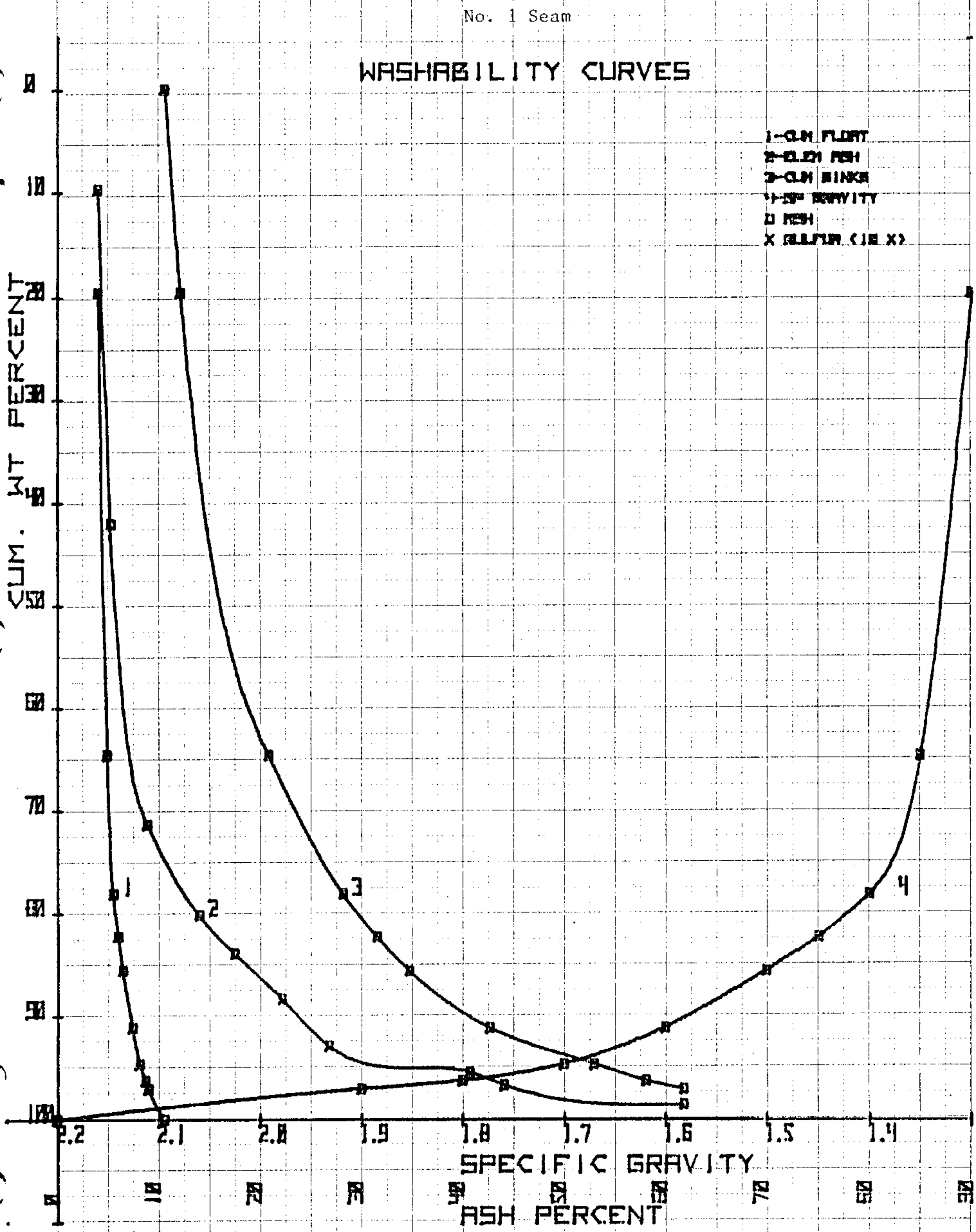


(CORE HOLE 2)-LAB NO. 1069 - 28 x 100 Mesh



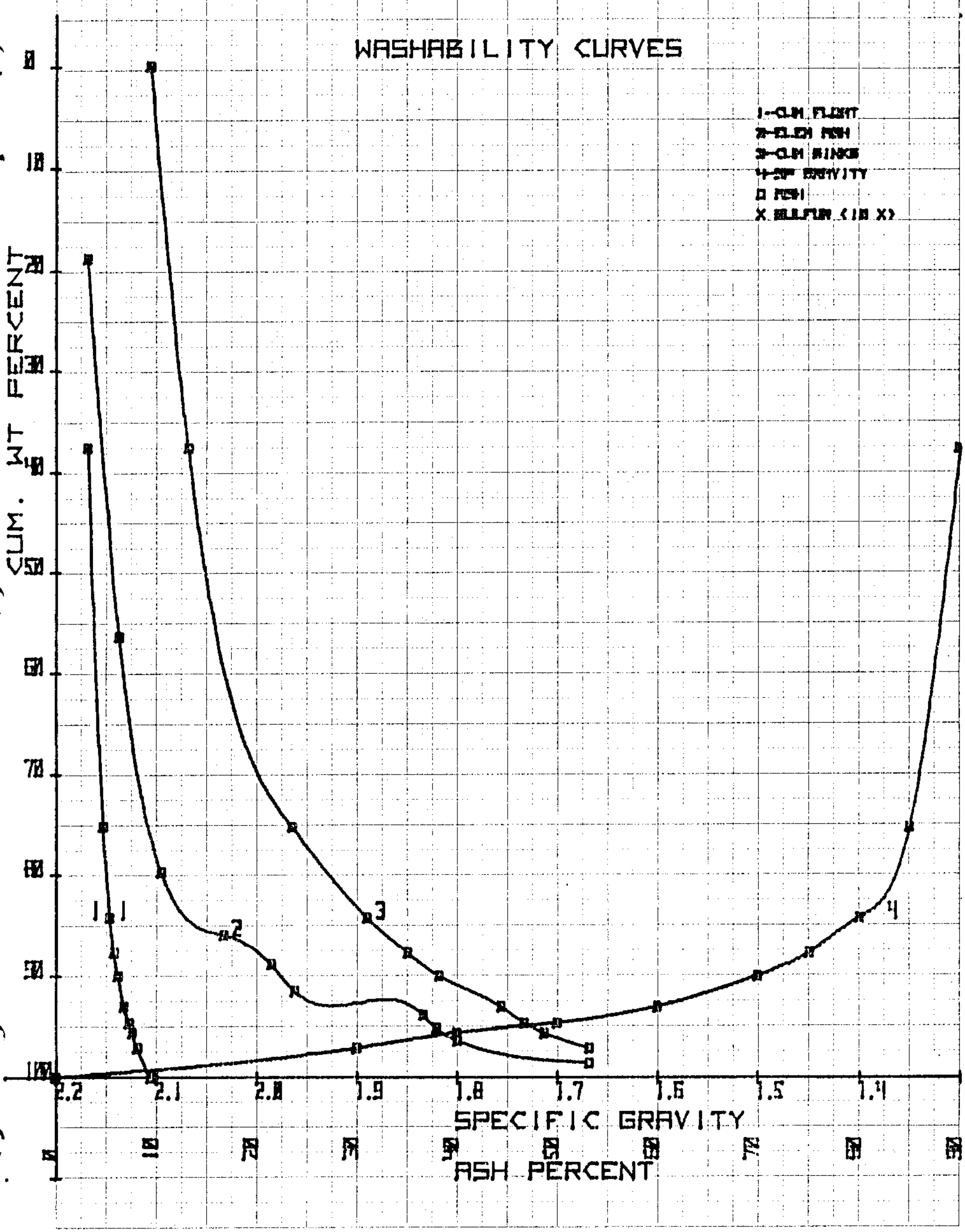

No. 1 Seam
WASHABILITY CURVES
CUM. WT PERCENT
SPECIFIC GRAVITY
ASH PERCENT
1
2
3
4
2.2
2.1
2.0
1.9
1.8
1.7
1.5
1.4

(CORE HOLE 5)-LAB NO. 1071 - 4½"

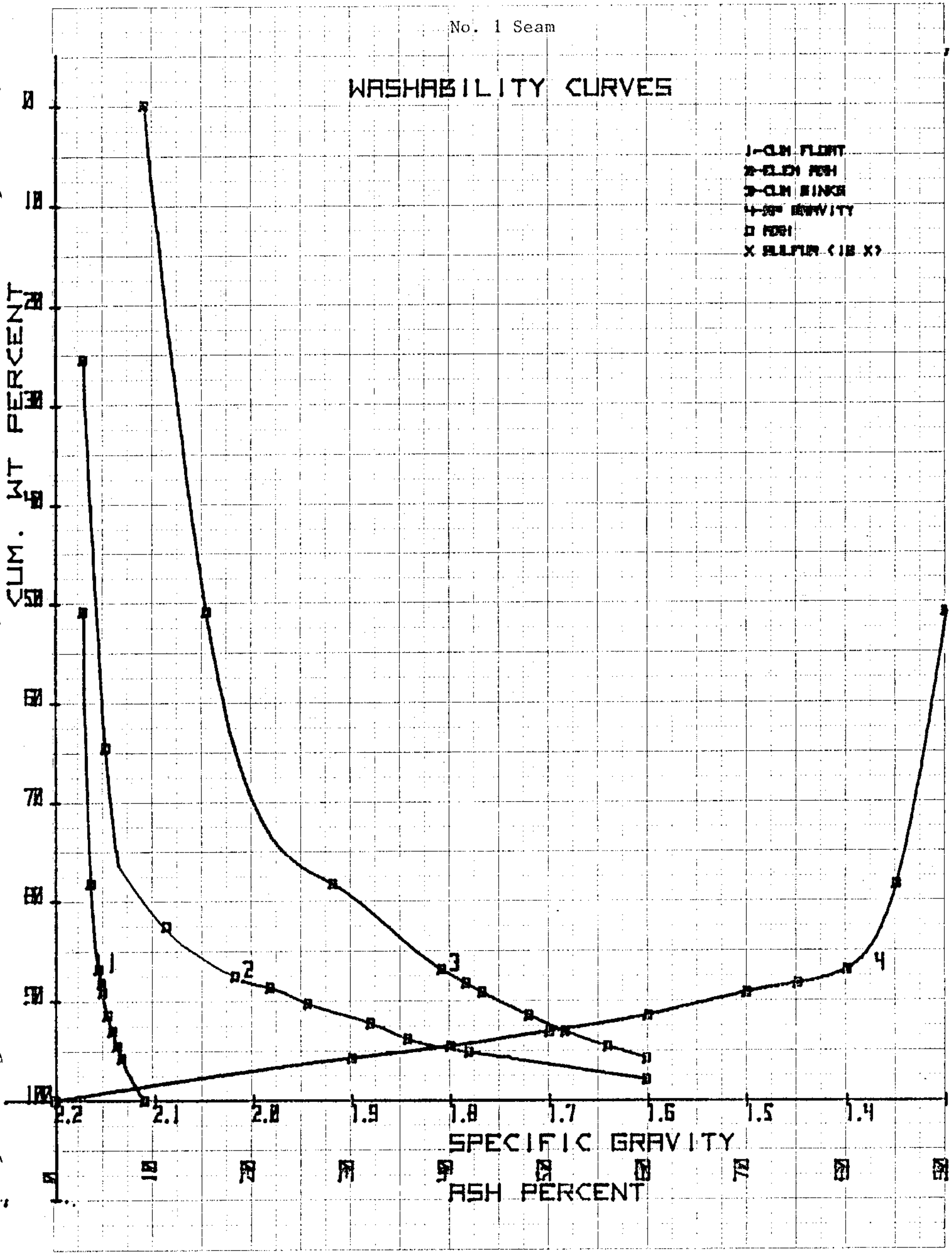


(... HOLE 3)-LAB NO. 1071 - [illegible] x 8 Mesh

No. 1 Seam

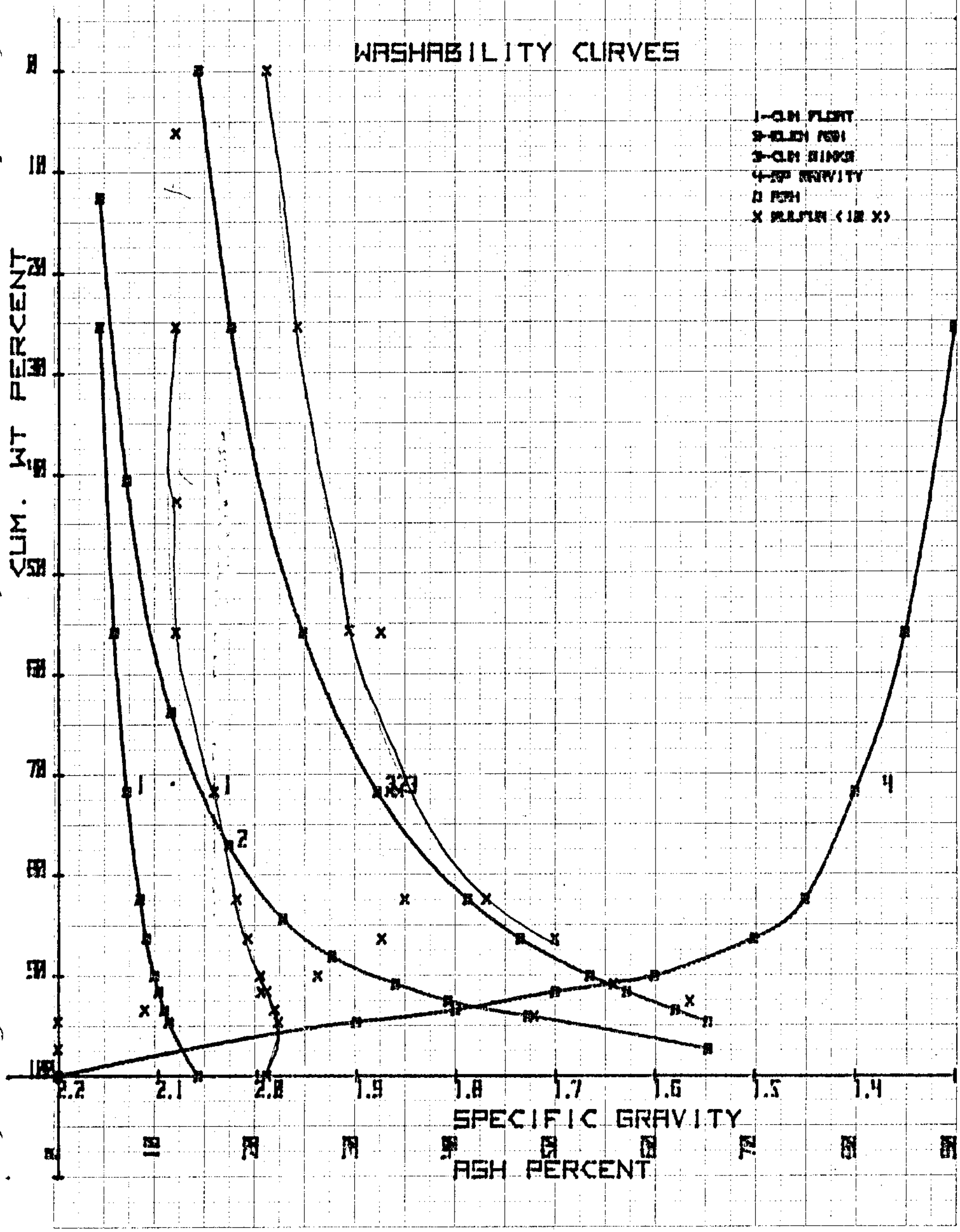


(CORE HOLE [illegible] NO. 10/1 [illegible] x 28 Mesh

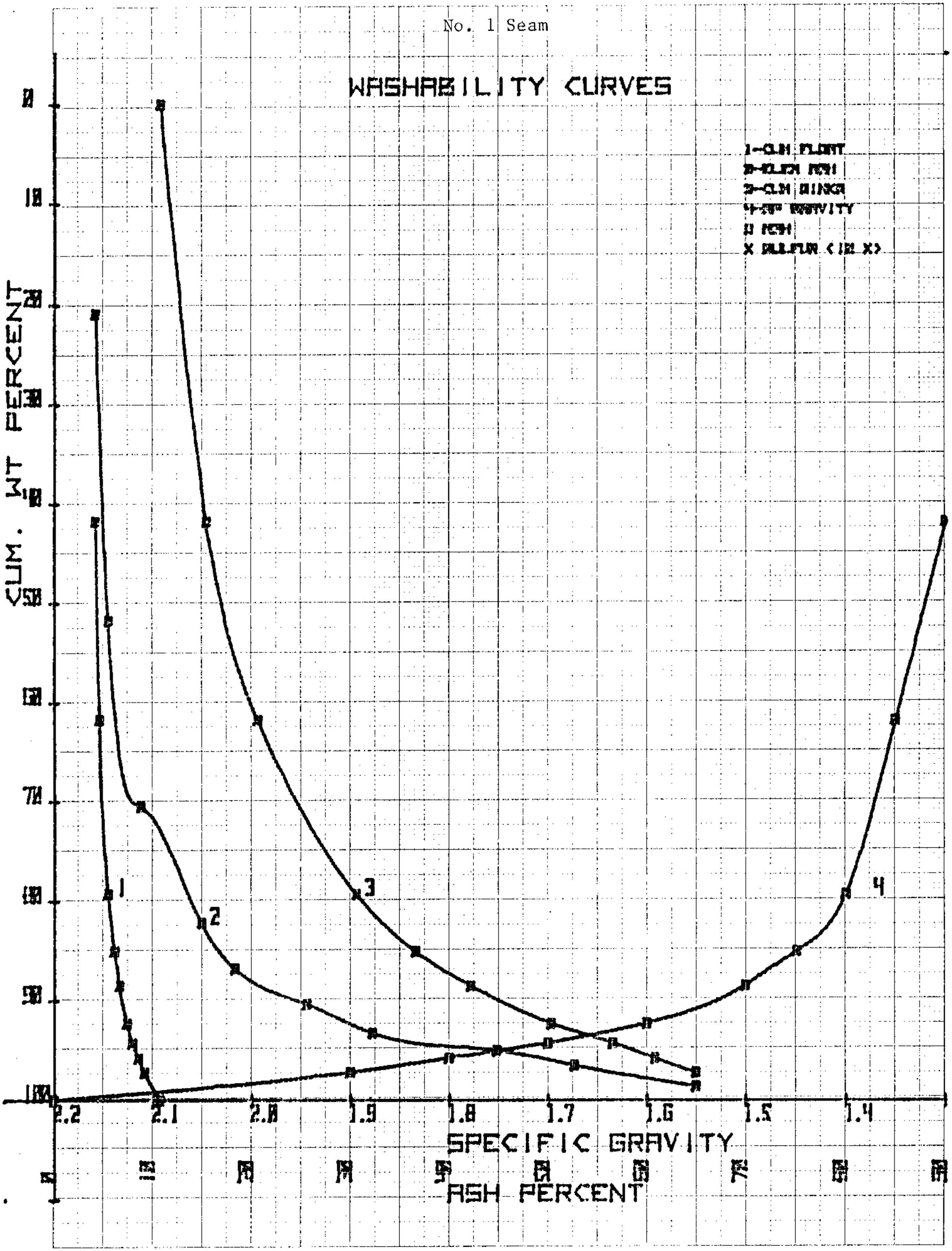


(CORE HOLE 3) - LAB NO. 1070 - ¼" x 28 Mesh

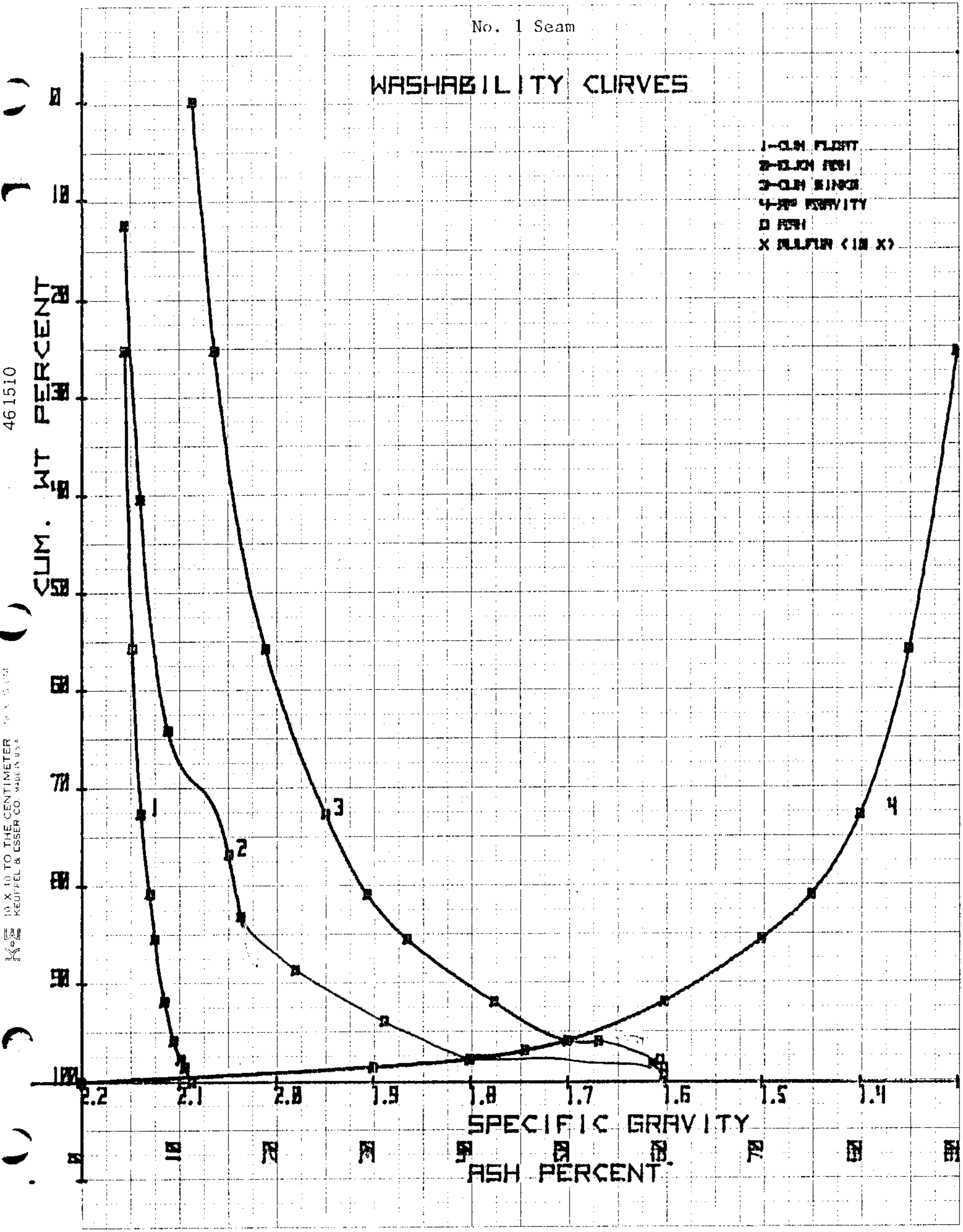
No. 1 Rider



(CORE HOLE 4) - LAB NO. 1074 - Combined Fractions

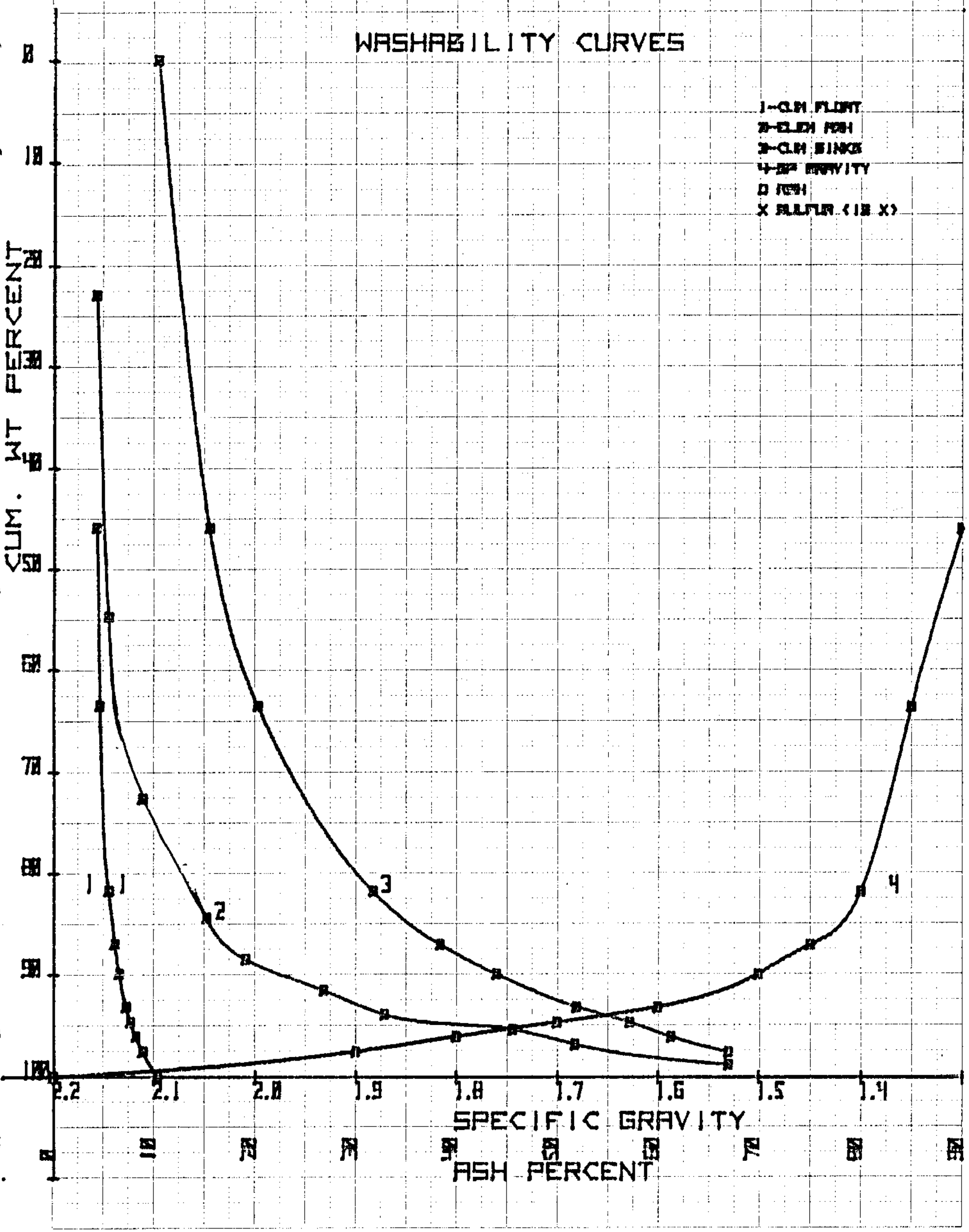


(CORE HOLE 4) - LAB NO. 1074 - +½"



(CORE HOLE 4) - LAB NO. 1074 - ½" x 28 Mesh

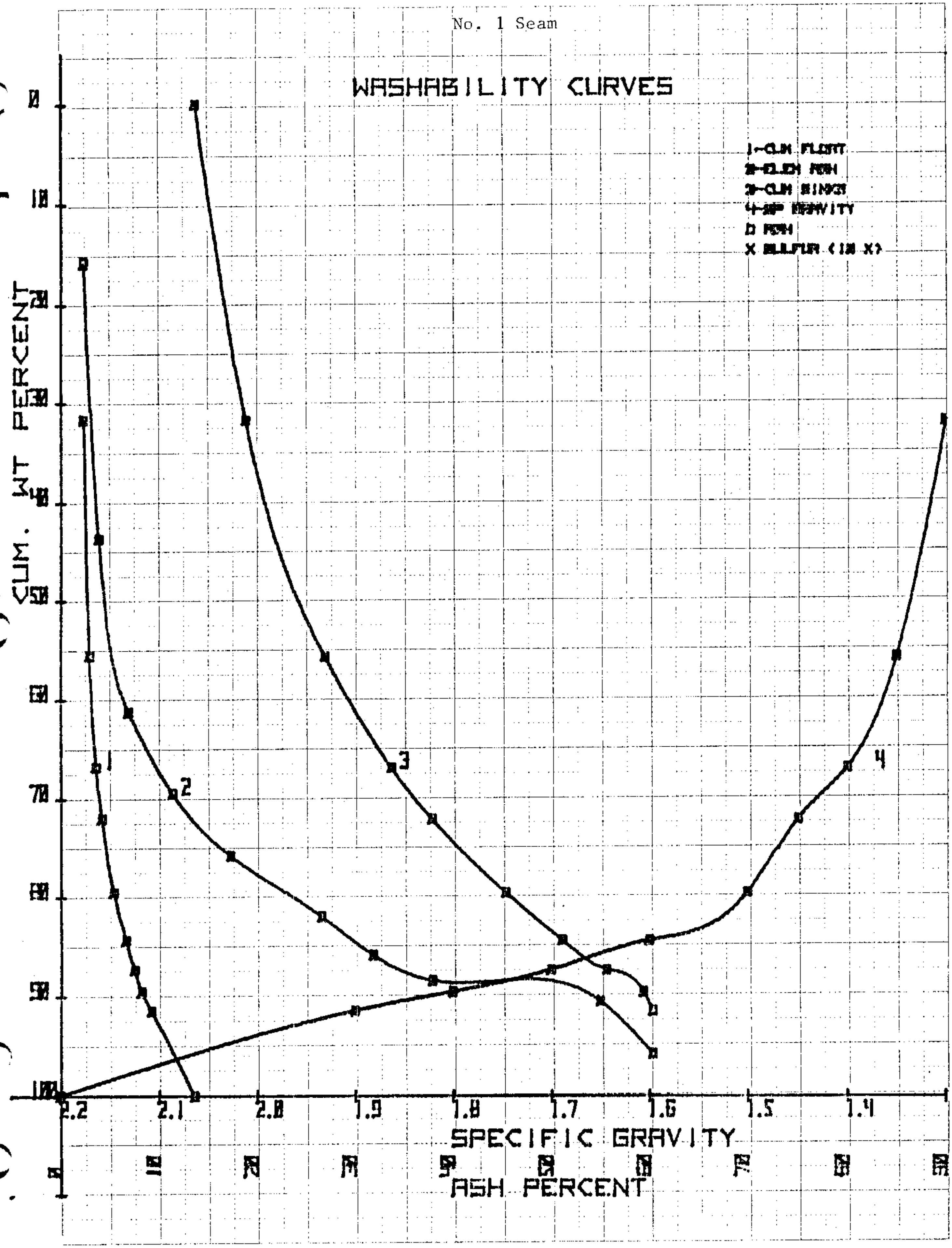
No. 1 Seam



461510

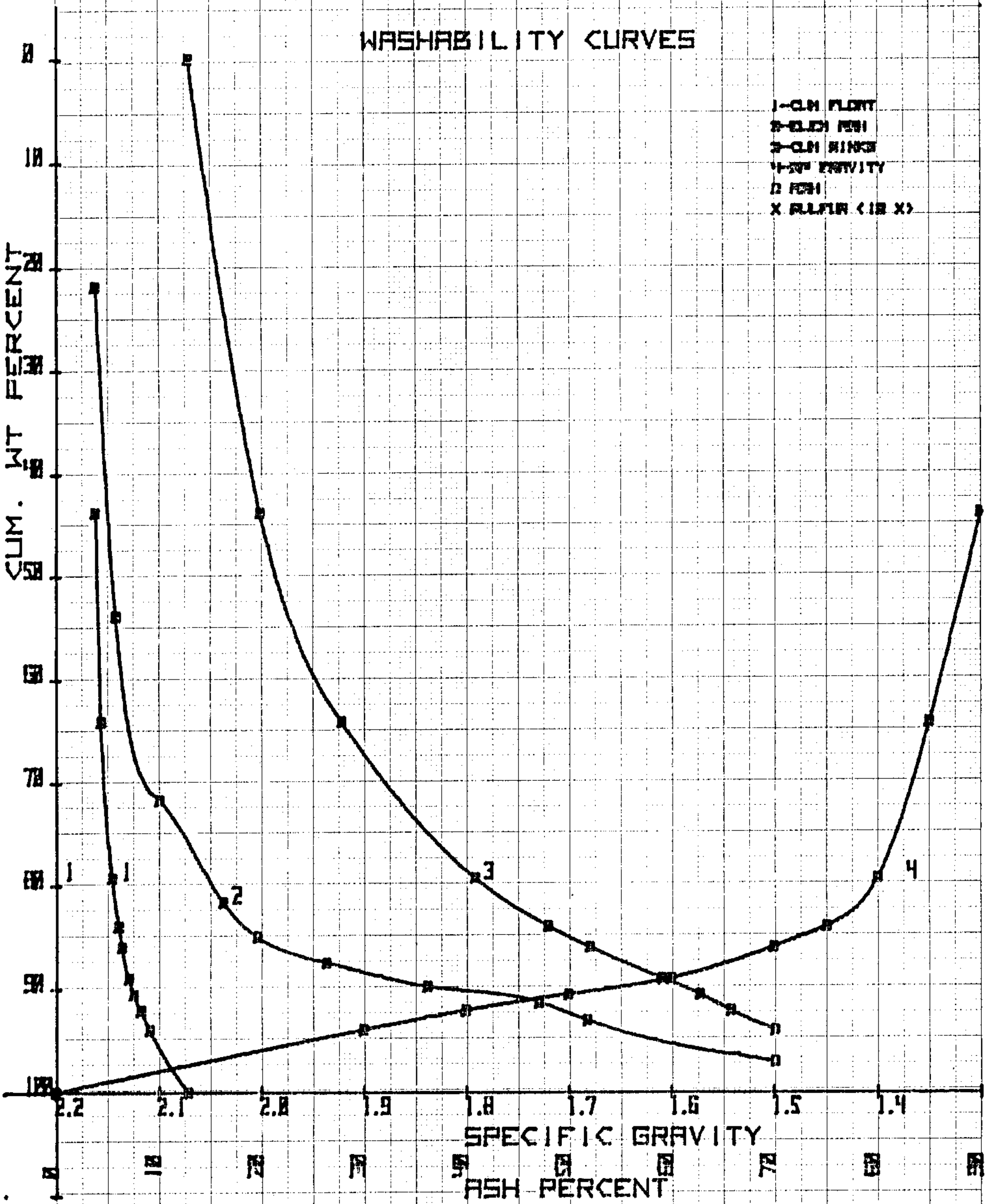
10 X 10 TO THE CENTIMETER
KEUFFEL & ESSER CO.

(CORE HOLE 4) - LAB NO. 1074 - 28 x 100 Mesh



(CORE HOLE 5)- LAB NO. 1072 - Combined Fractions

No. 1 Seam

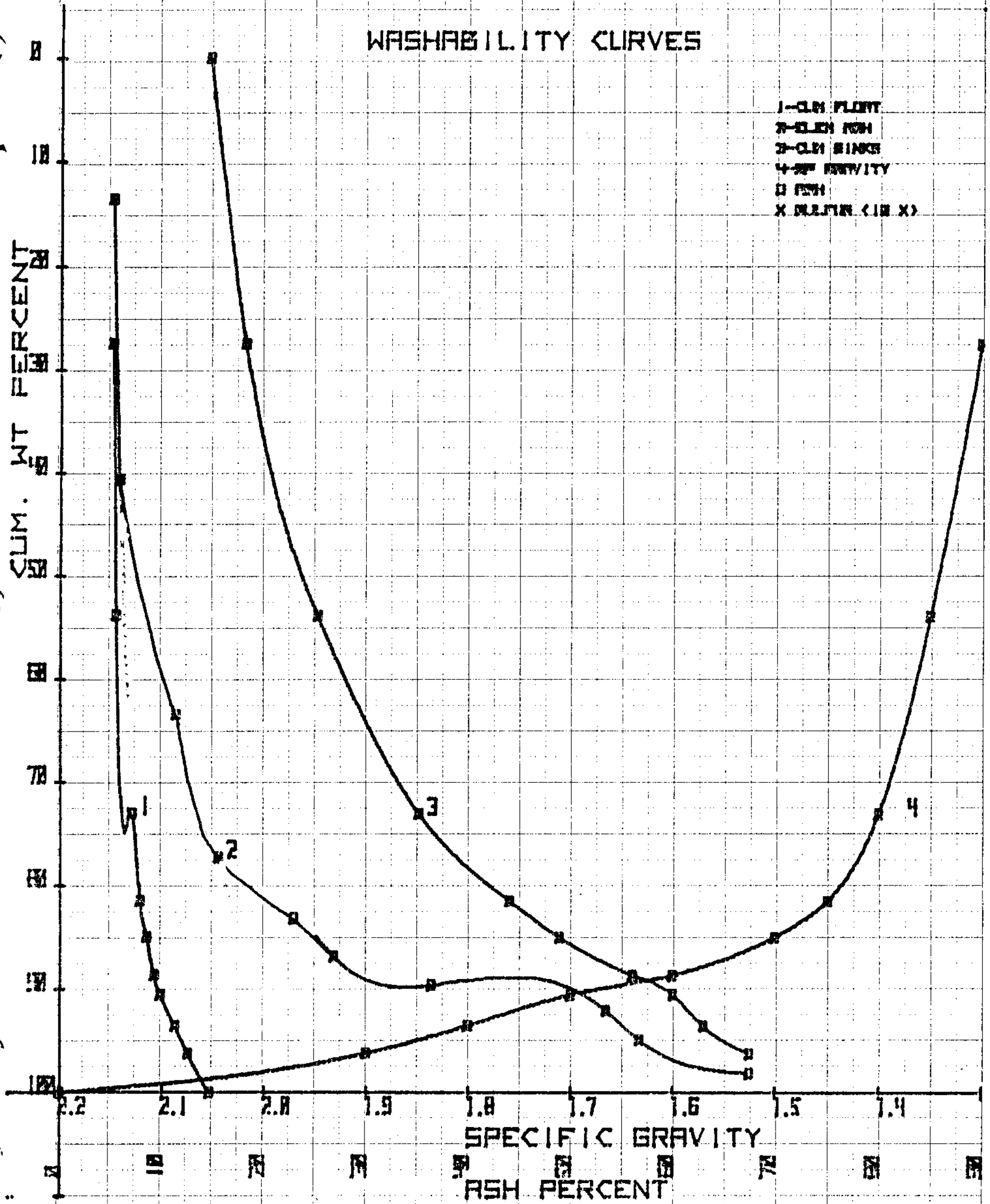


461510

K+E 10 X 10 TO THE CENTIMETER 18 X 25 CM. KEUFFEL & ESSER CO. MADE IN U.S.A.

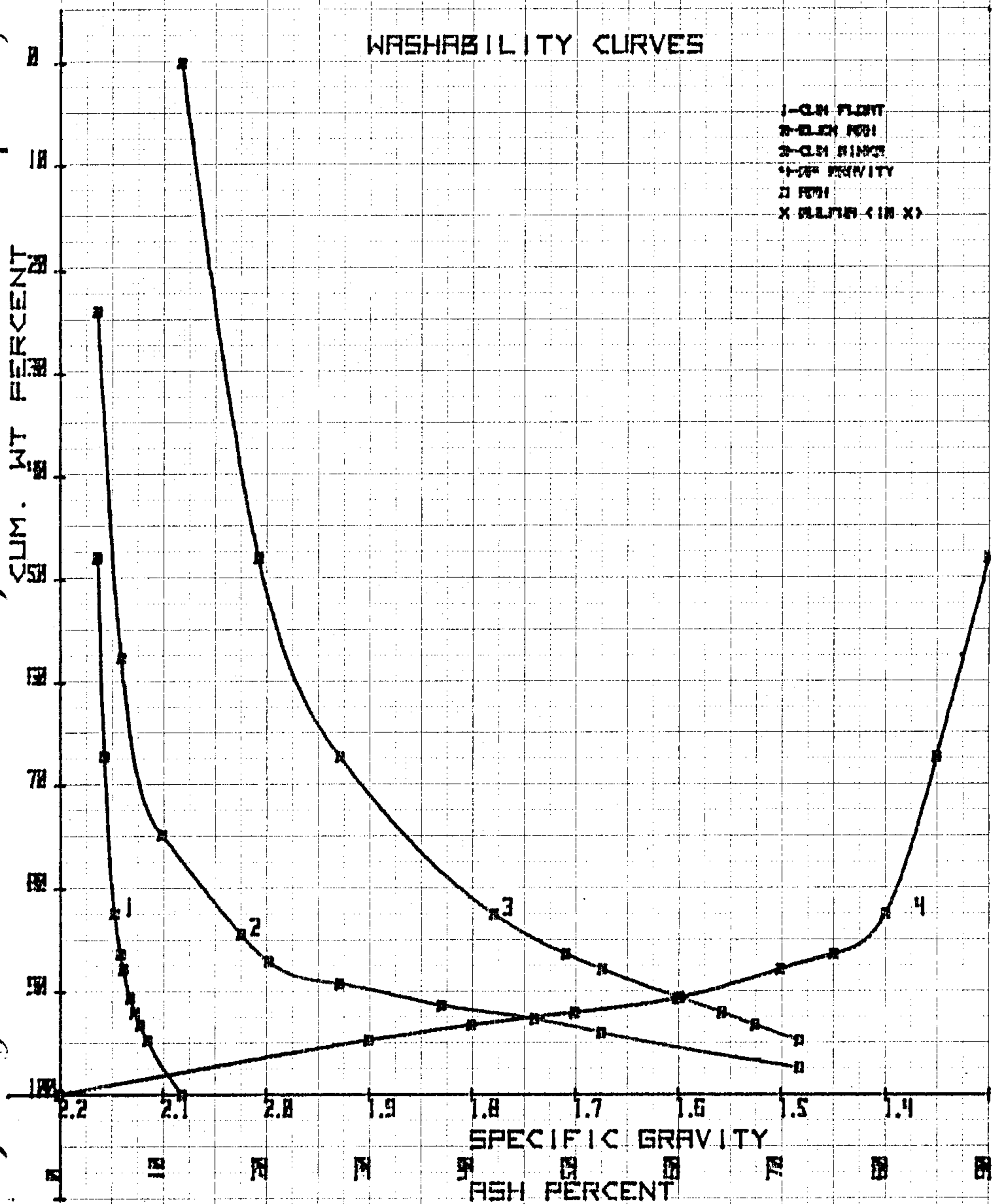
(CORE HOLE 5)-LAB NO. 1072 - +½"

No. 1 Seam

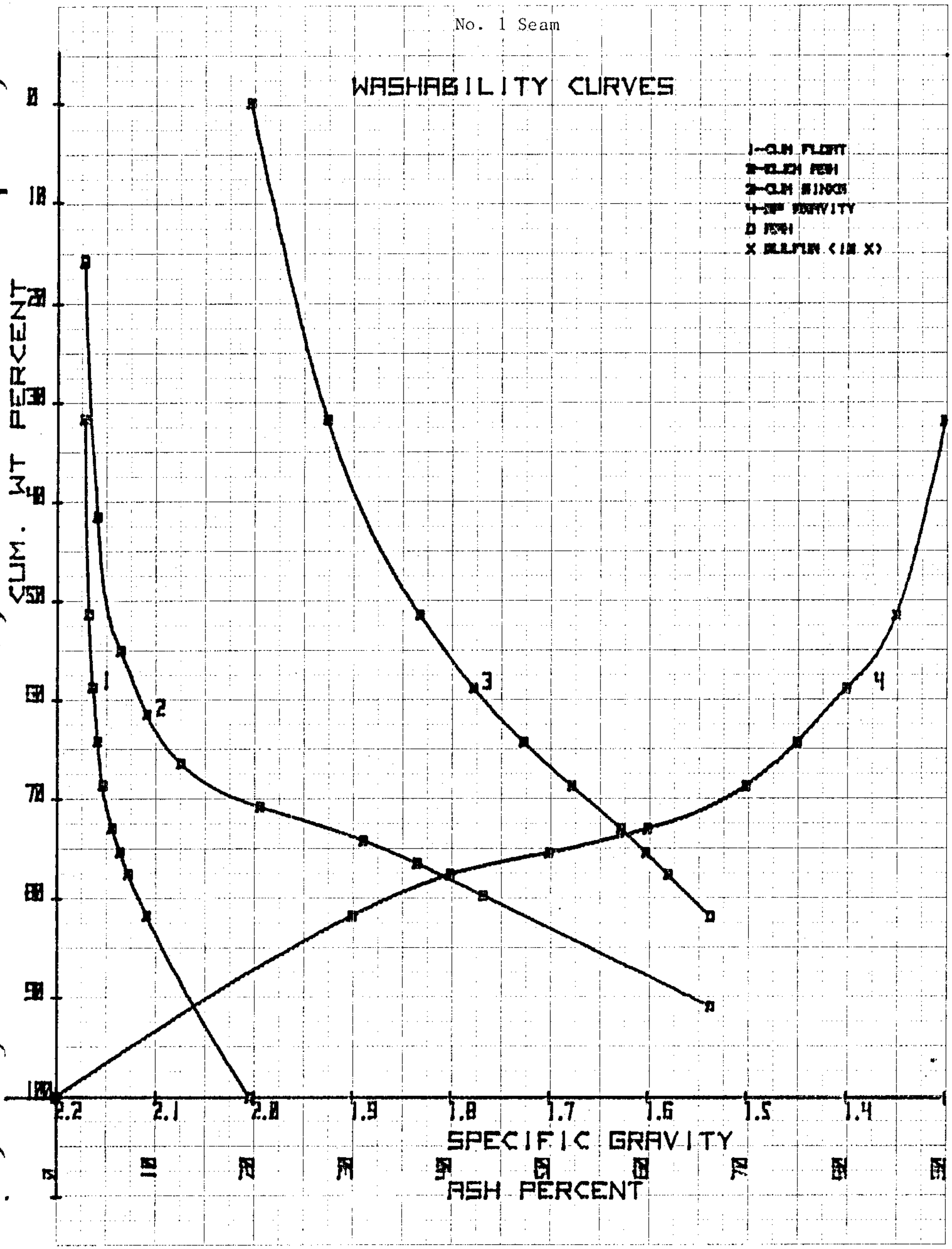


(COR. HOLE 5)- LAB NO. 1072 - ½" x 28 Mesh

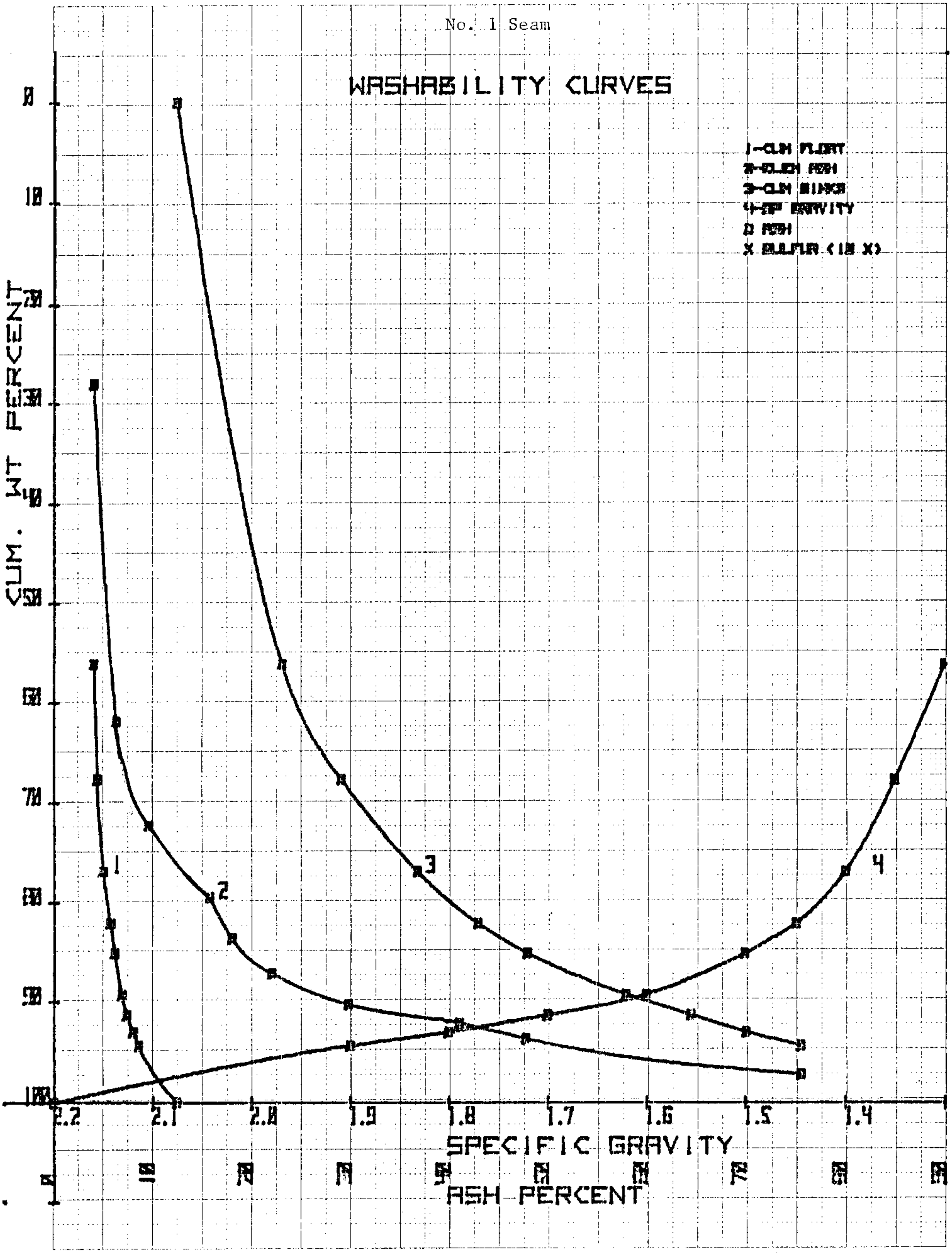
No. 1 Seam



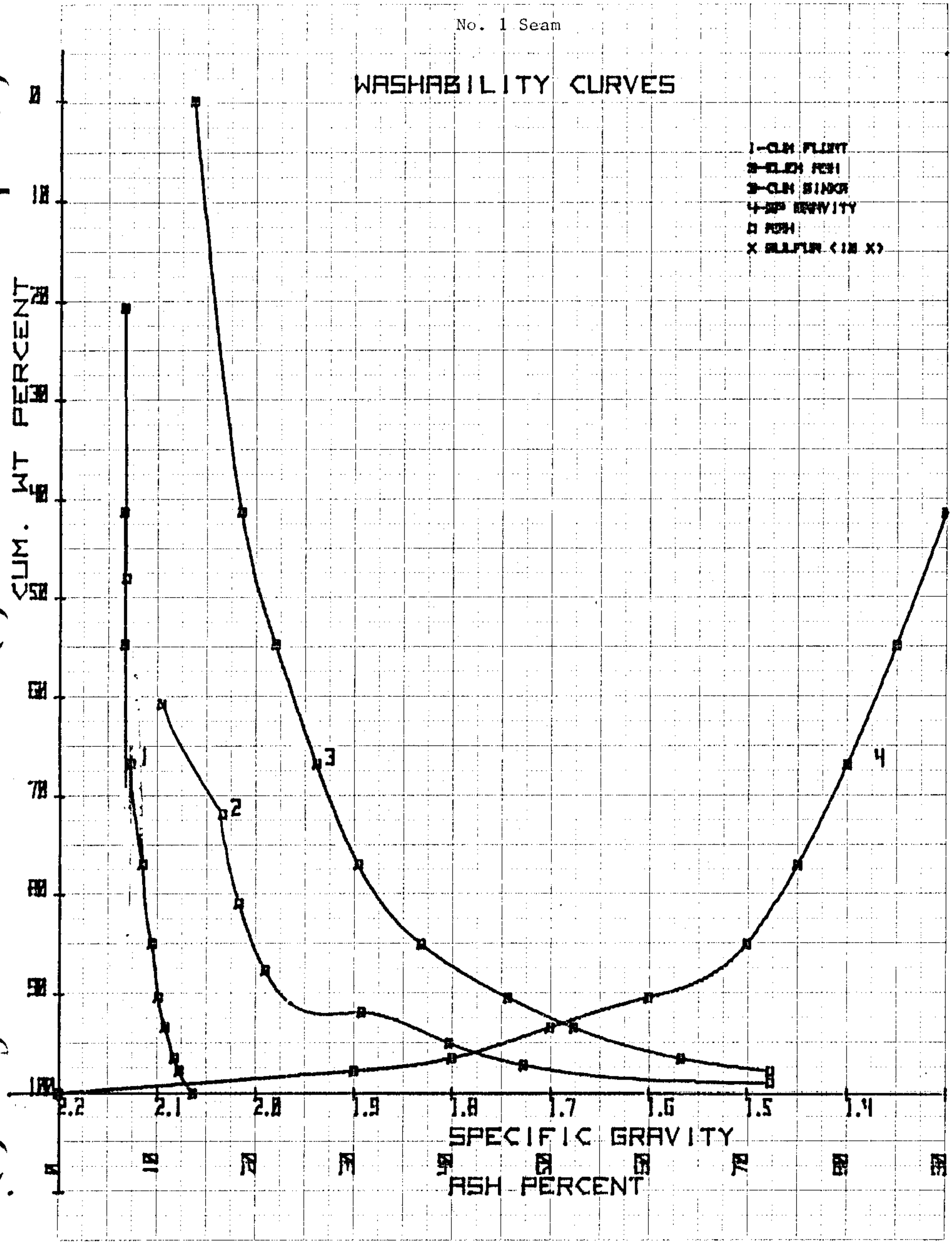
CORE HOLE ... NO. 1072 - 28 x 100 ...



(CORE HOLE 6)- LAB NO. 1073 - Combined Fractions



(CORE HOLE 6) - LAB NO. 1073 - 1½"

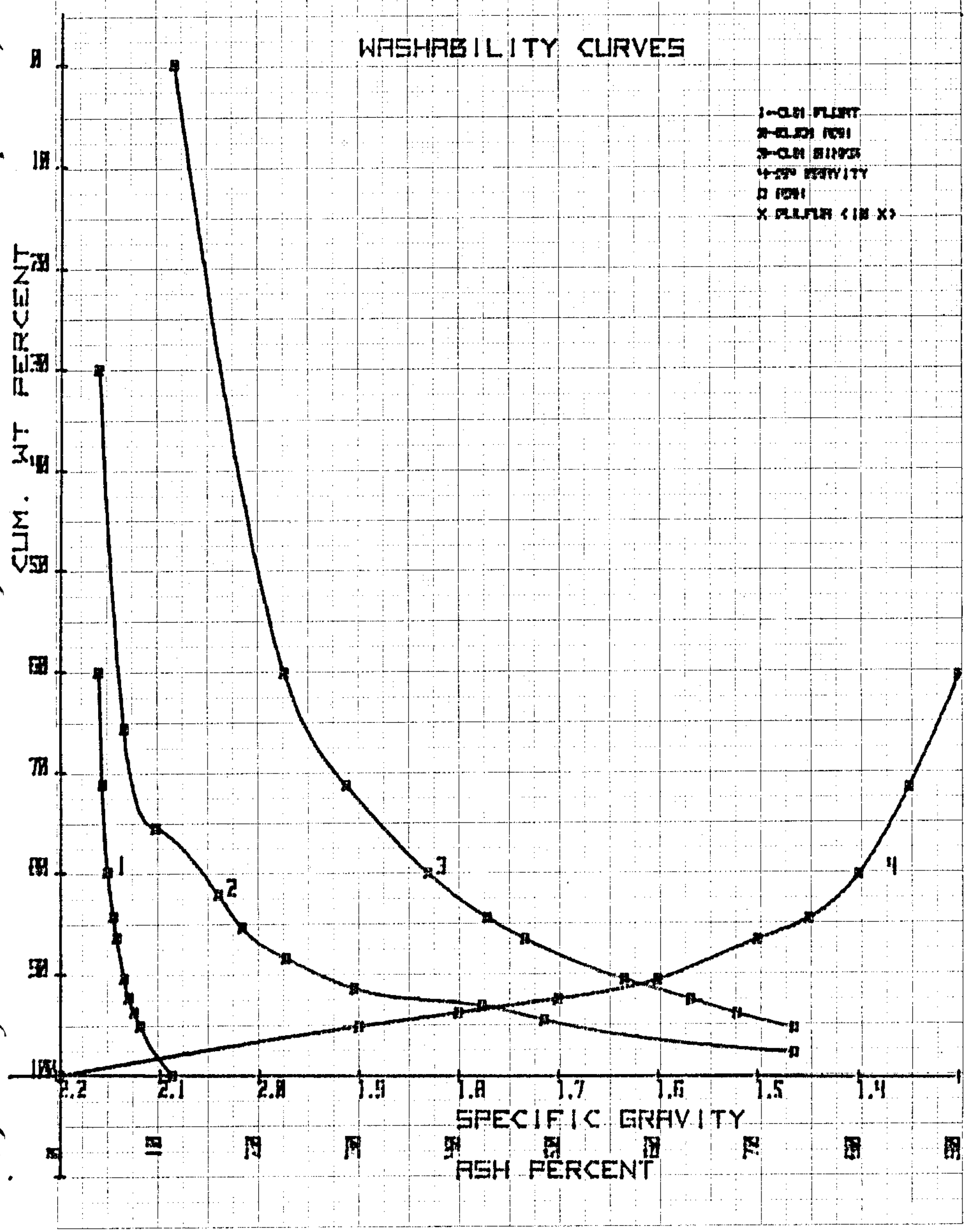


461510

10 X 10 TO THE CENTIMETER KEUFFEL & ESSER CO.

(CORE HOLE 6) - LAB NO. 1073 - ½" x 28 Mesh

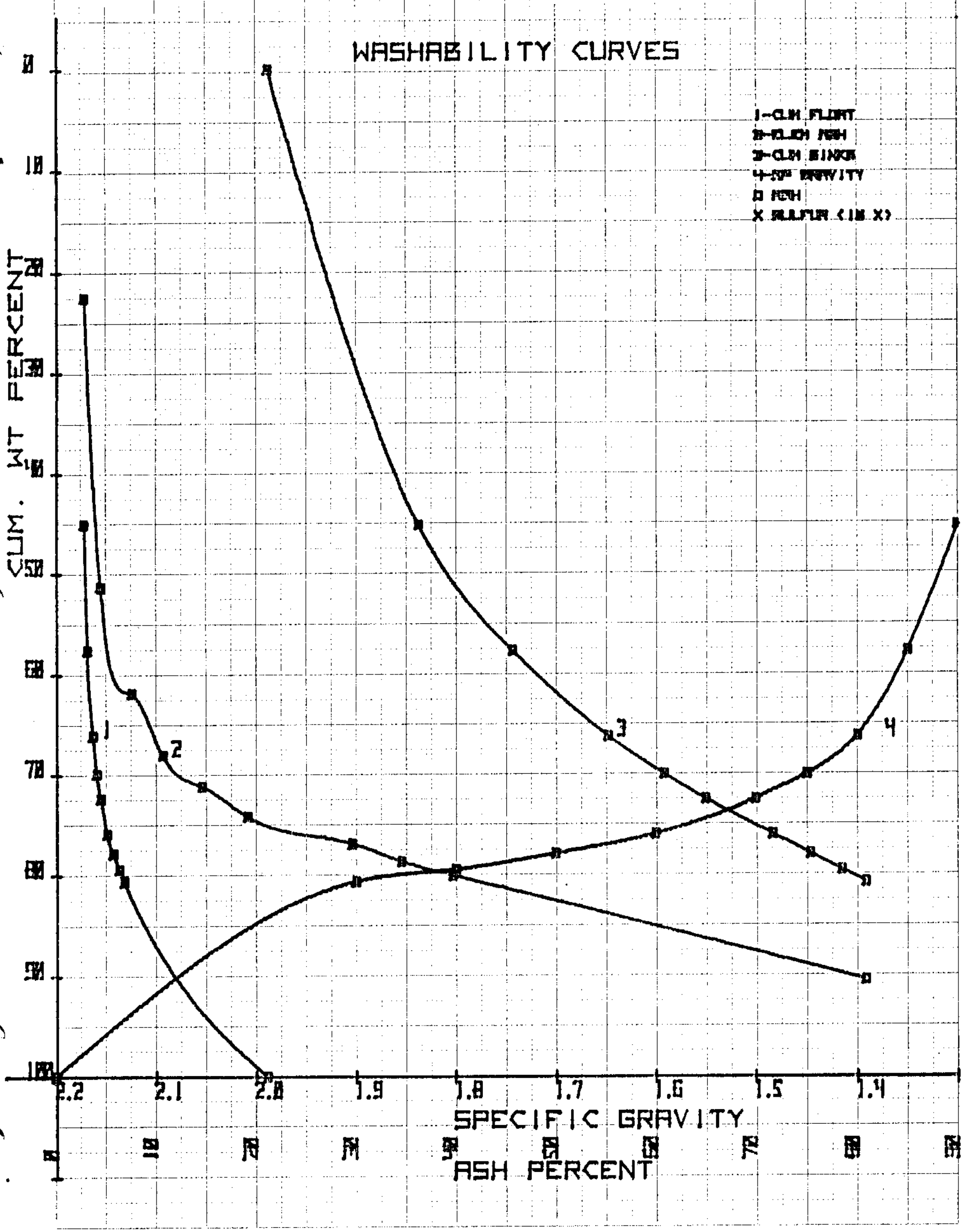
No. 1 Seam



461510

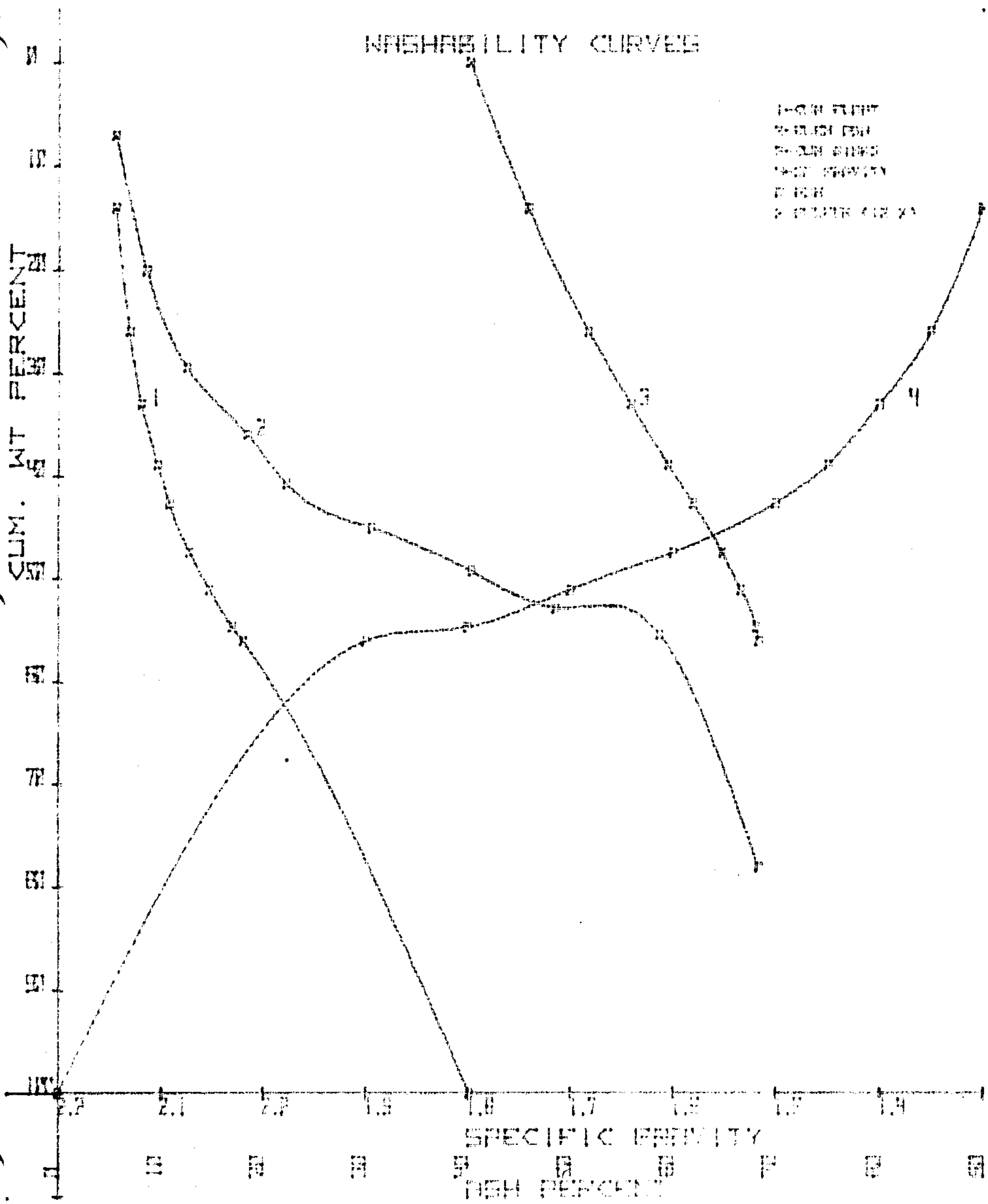
(CORE HOLE 6)-LAB NO. 1073 - 28 x 100 Mesh

No. 1 Seam

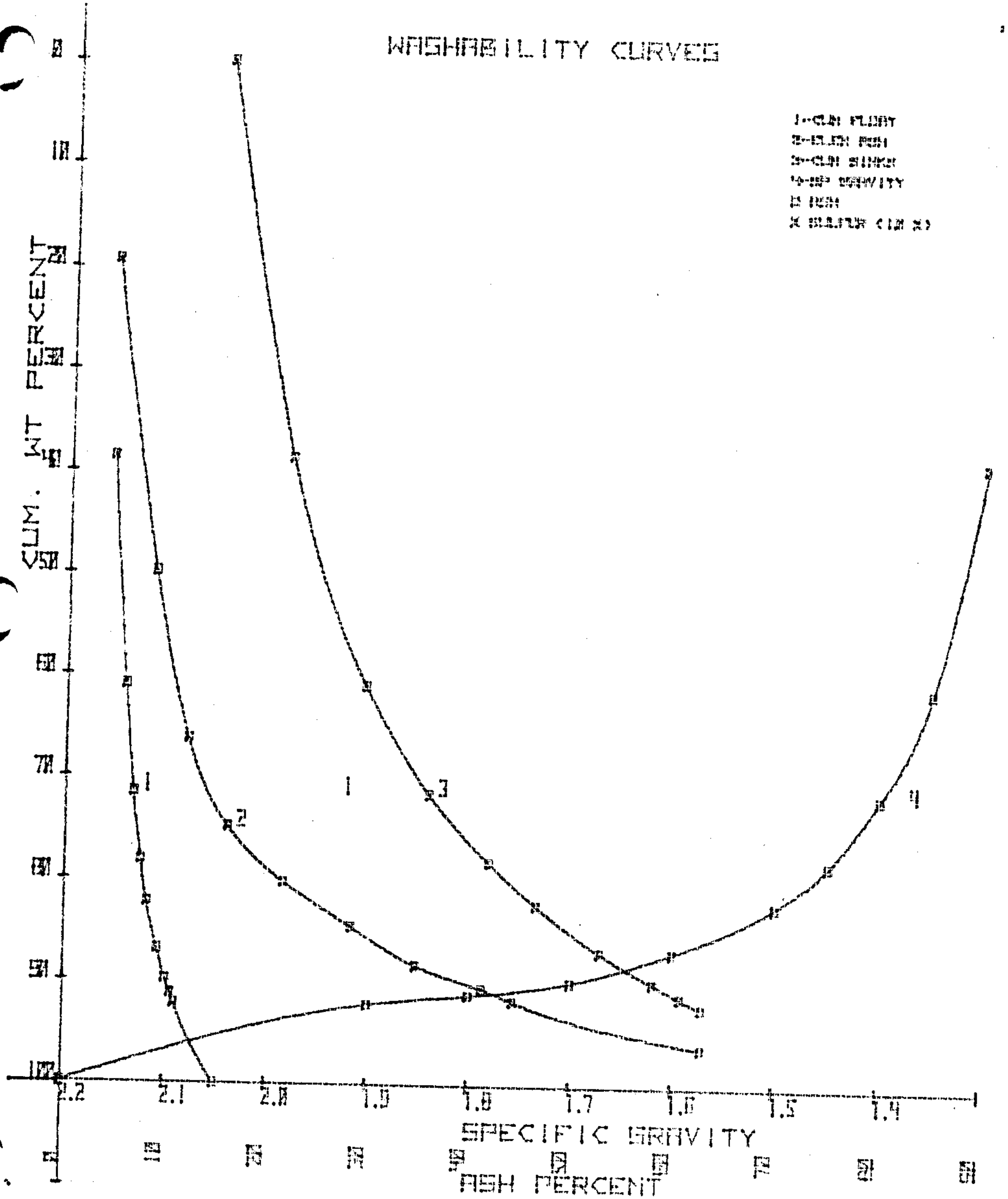


461510

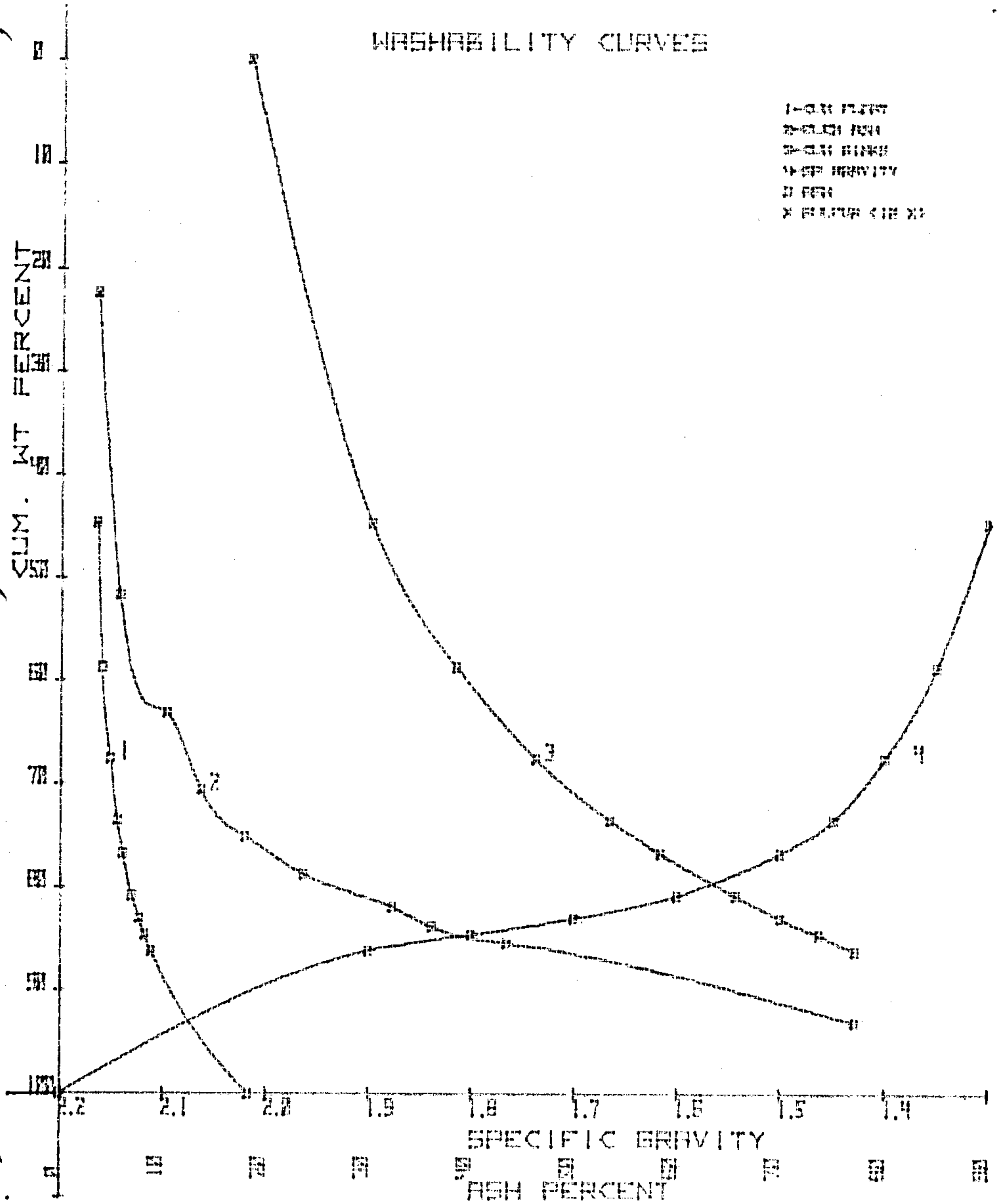
No. 3 Seam



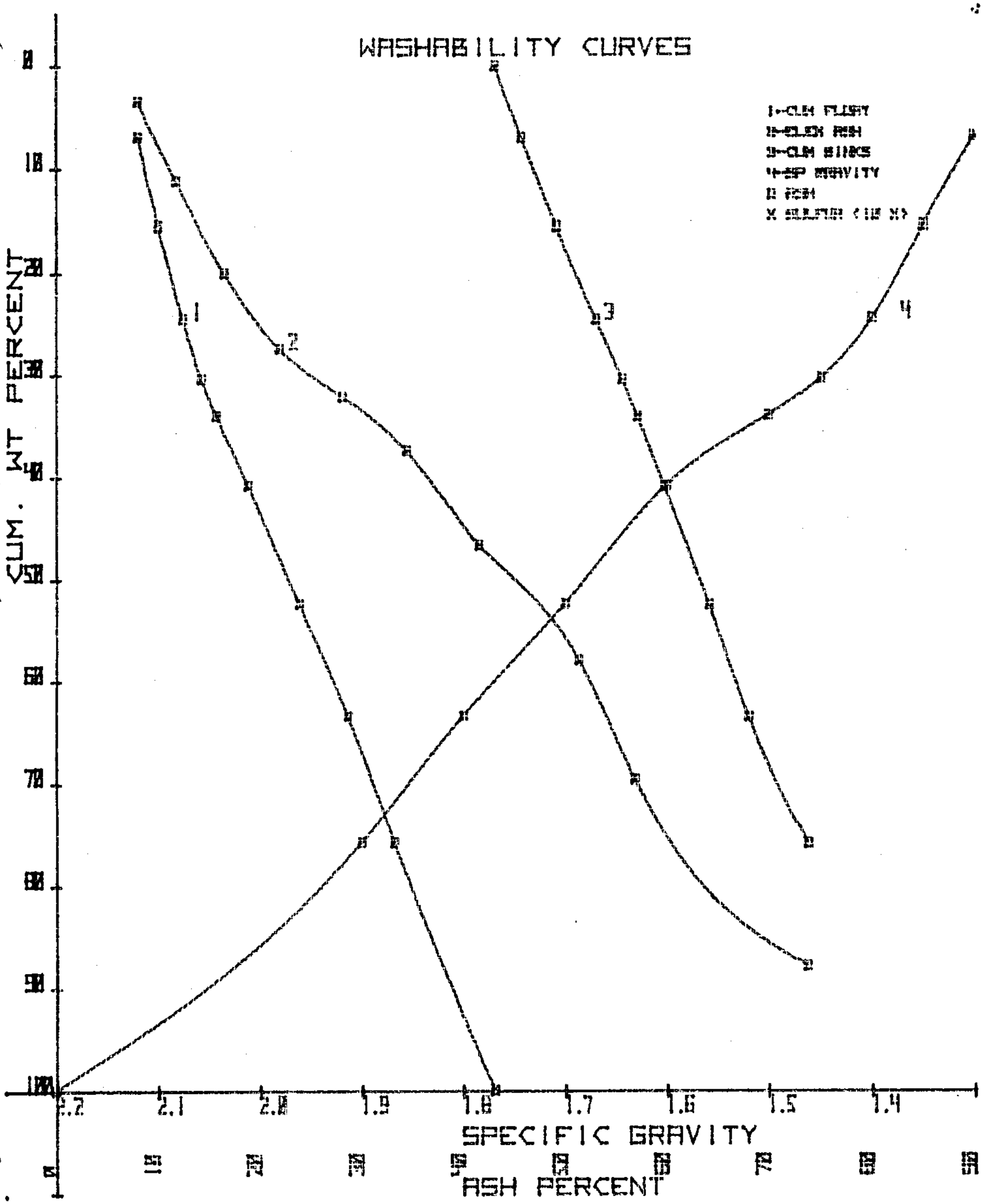
No. 3 Seam


WASHABILITY CURVES
1-CUM FLOAT
3-CUM SINK
CUM. WT PERCENT
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
SPECIFIC GRAVITY
ASH PERCENT

No. 3 Seam

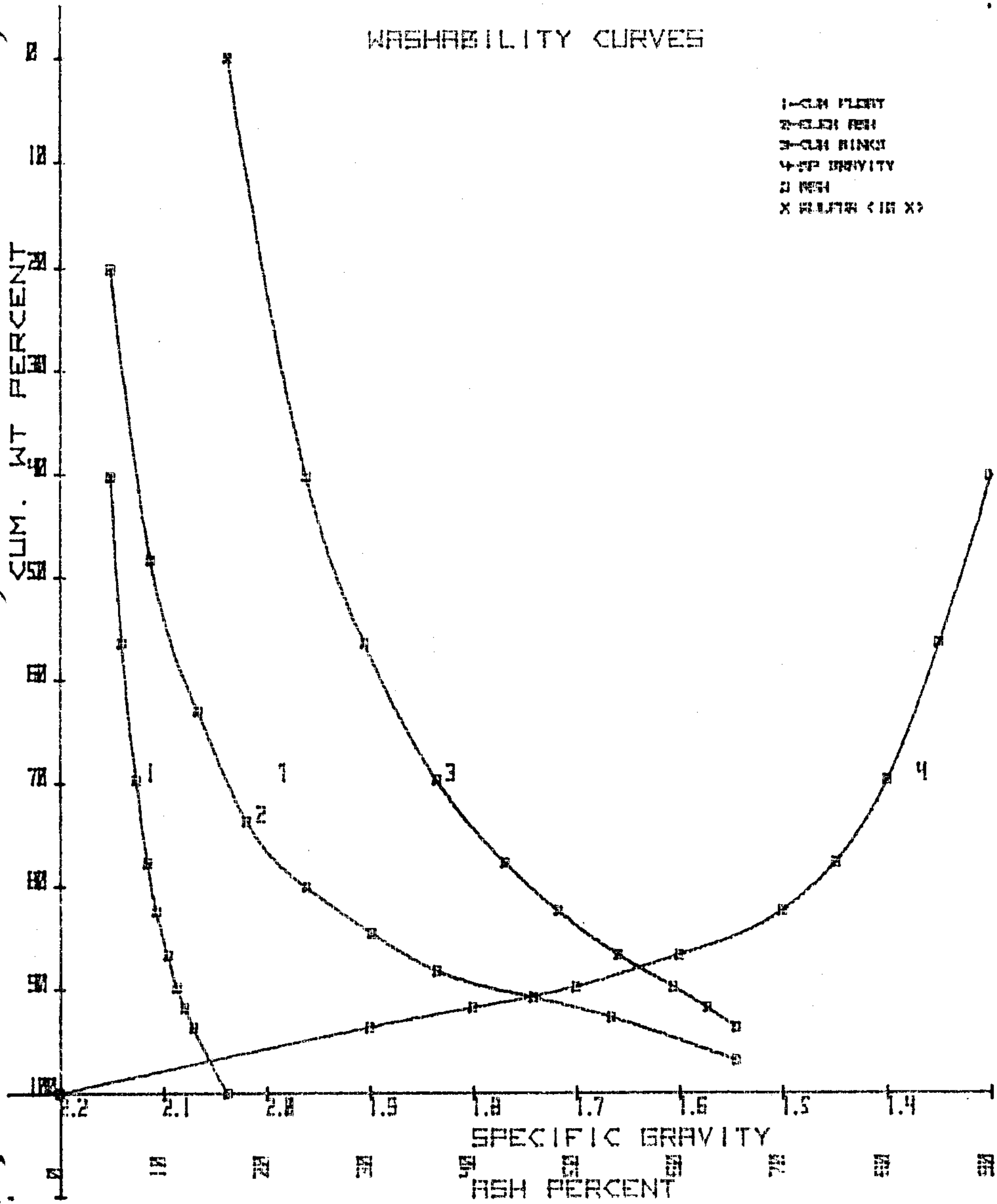

WASHABILITY CURVES
CUM. WT PERCENT
SPECIFIC GRAVITY
ASH PERCENT

No. 1 Seam



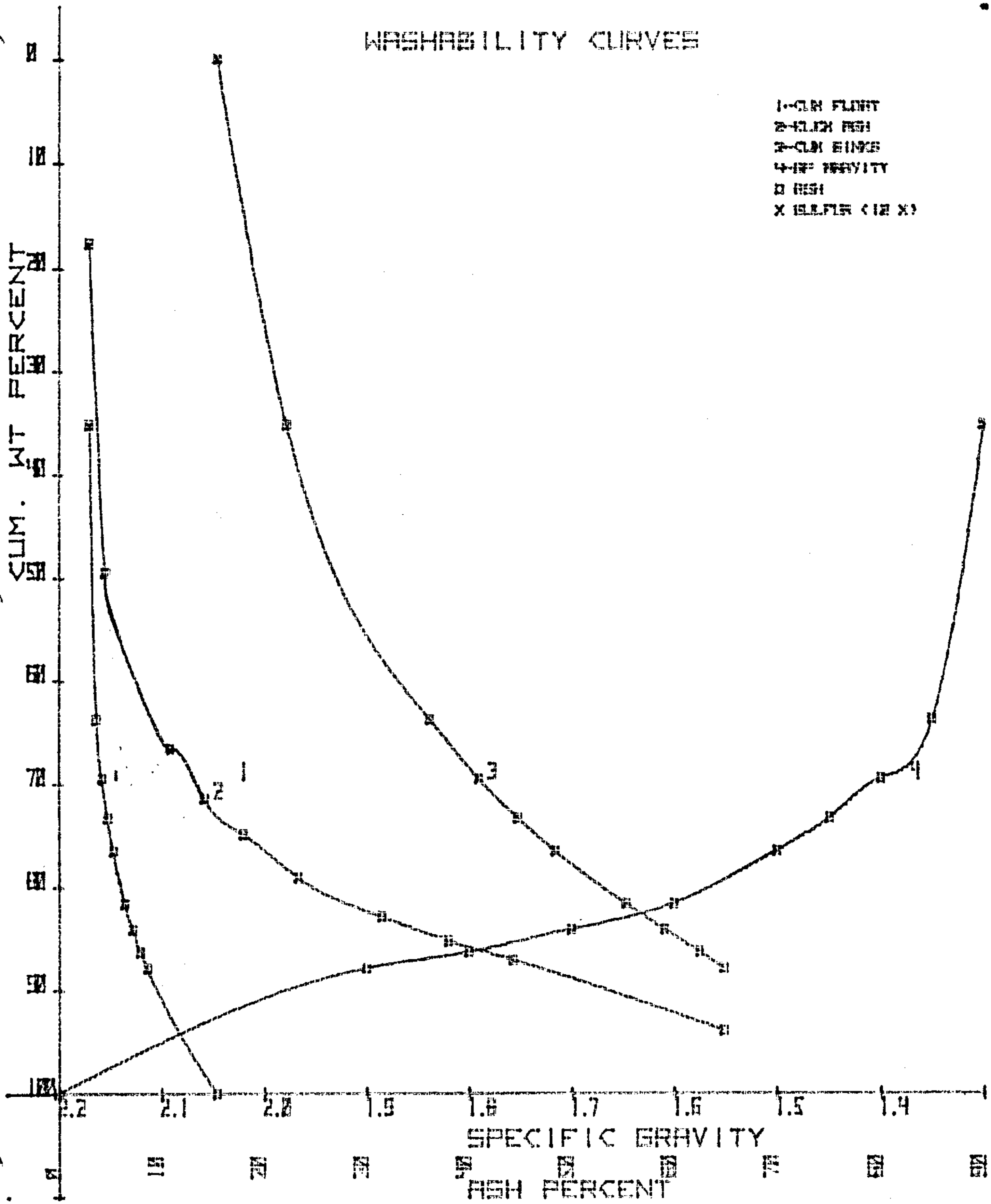
WASHABILITY CURVES
CUM. WT PERCENT
0
10
20
30
40
50
60
70
80
90
100
1
2
3
4
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
SPECIFIC GRAVITY
ASH PERCENT

No. 1 Seam


WASHABILITY CURVES
CUM. WT PERCENT
0
10
20
30
40
50
60
70
80
90
100
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
SPECIFIC GRAVITY
ASH PERCENT
1
2
3
4

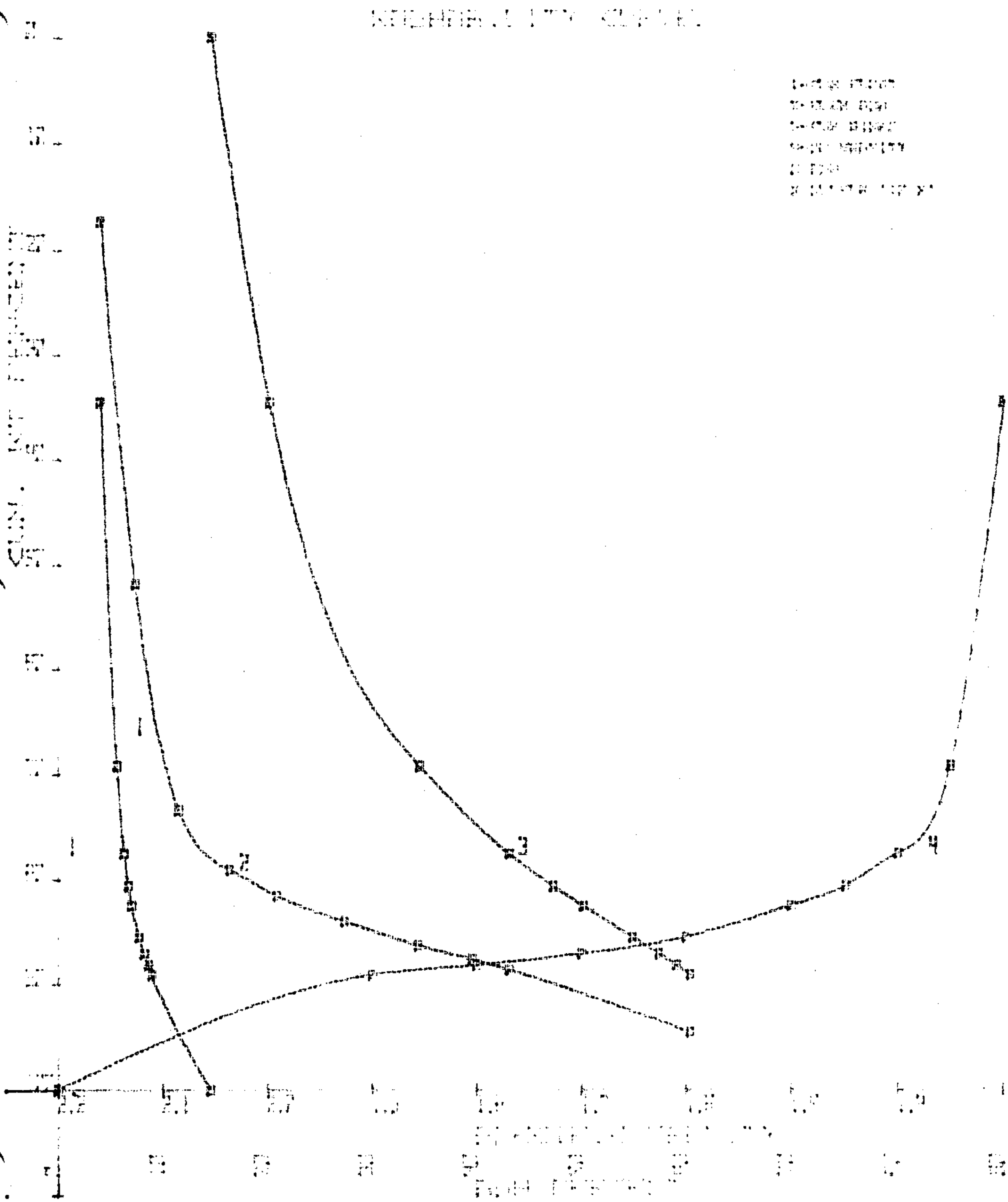
(Core Hole 9) Lab No. 1075 - 28 x 100 Mesh

No. 1 Seam



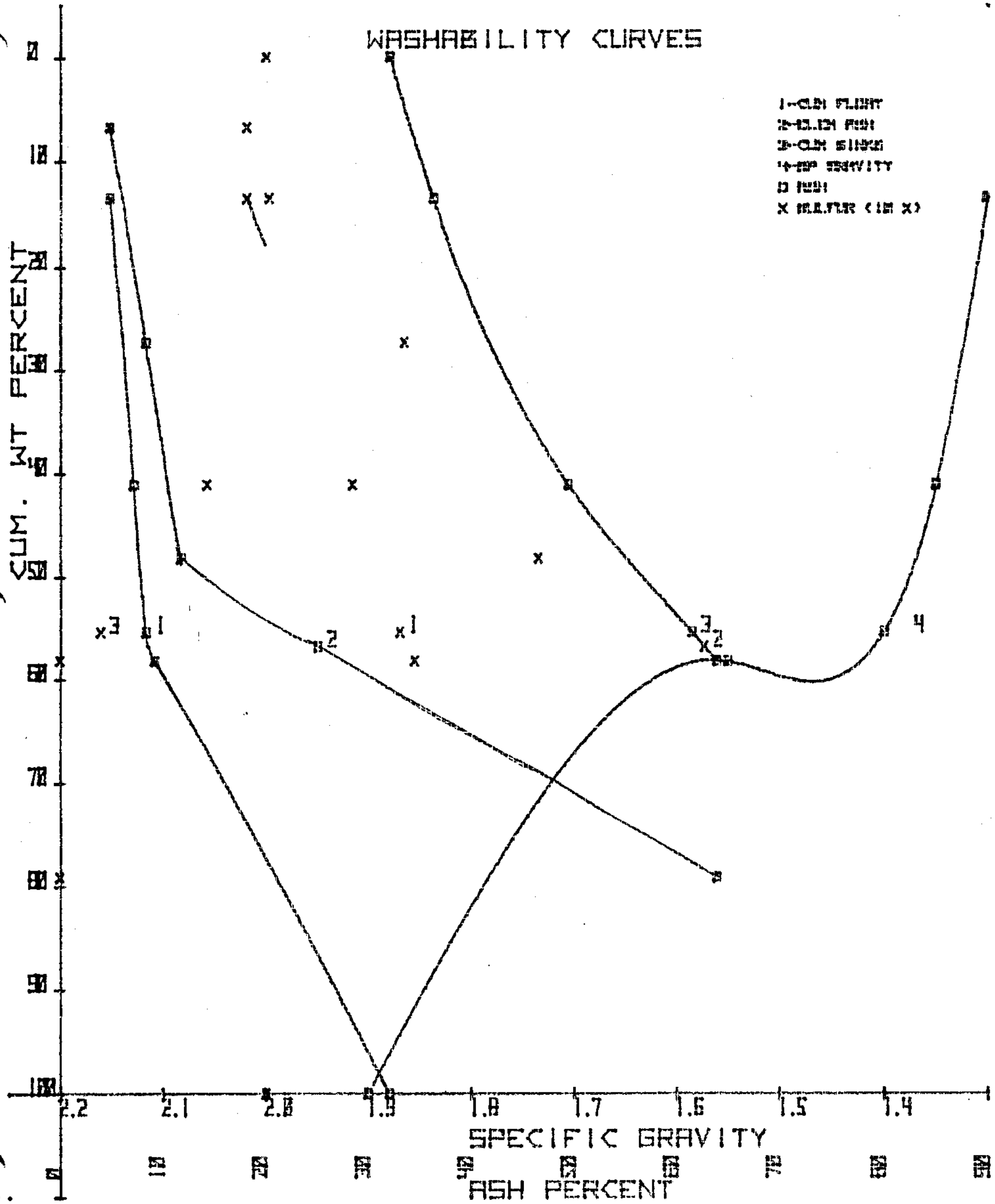
Fractions

No. 2 Seam

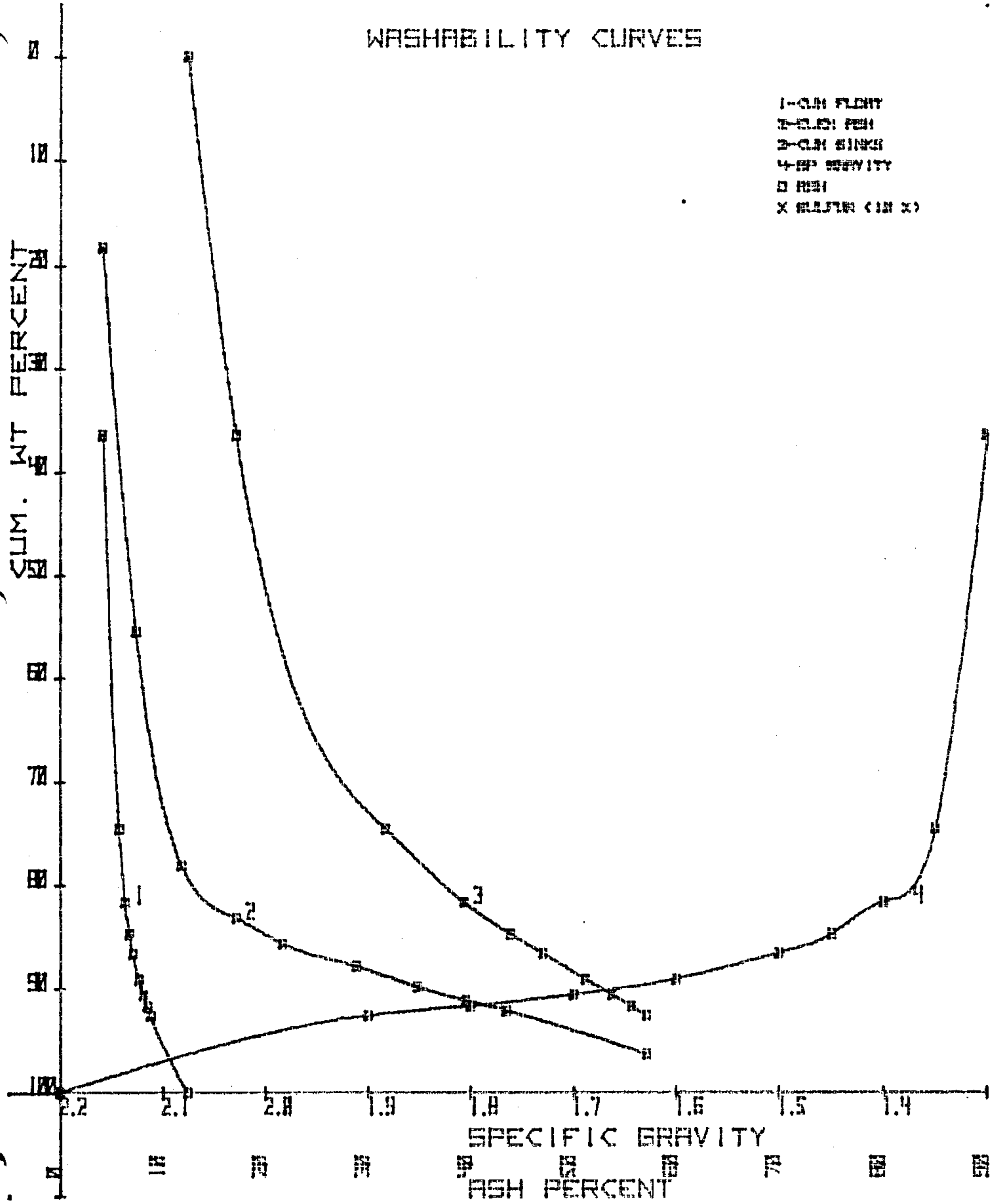


(Core Hole 10) Lab No. 1080 - 4½"

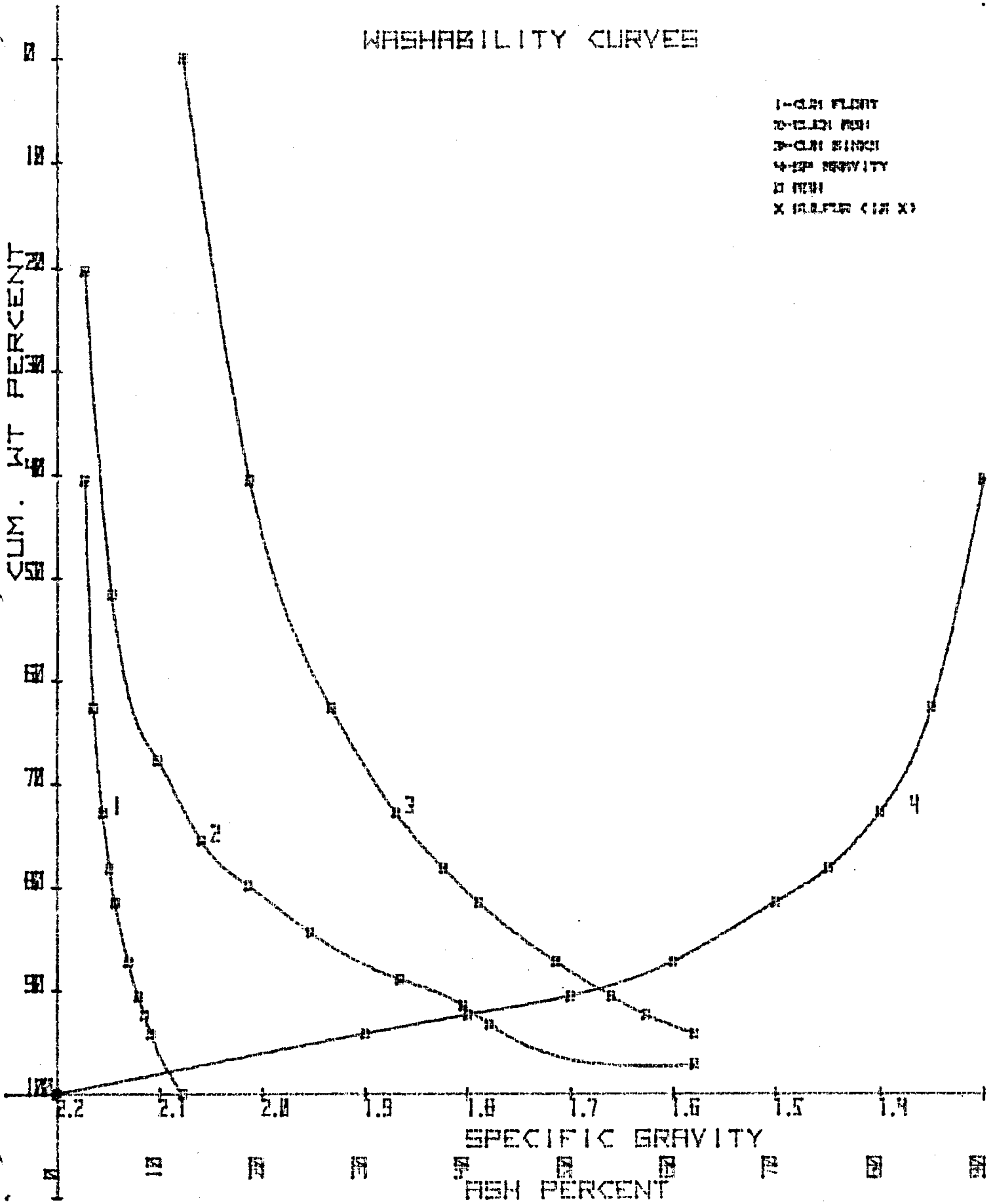
No. 2 Seam



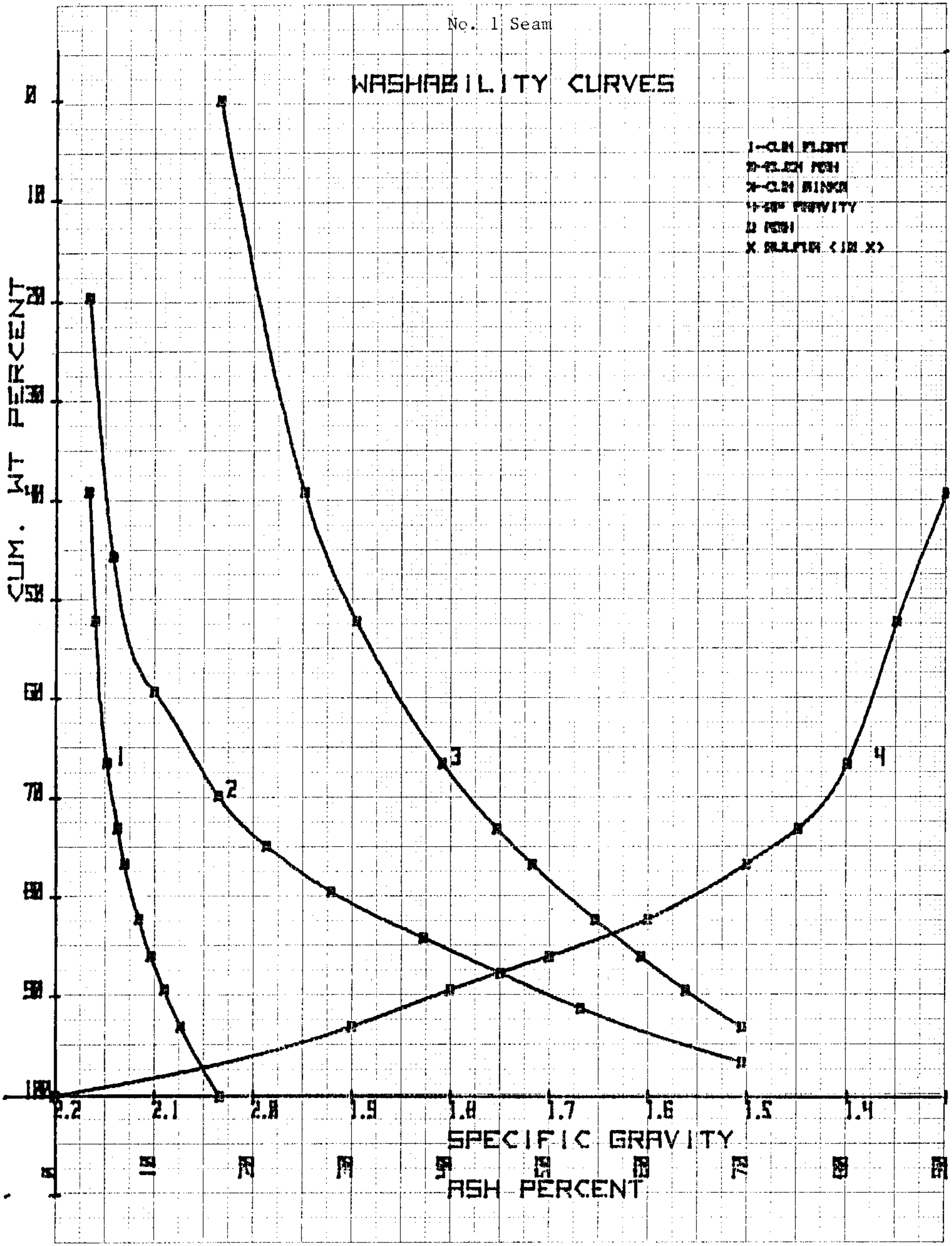
No. 2 Seam

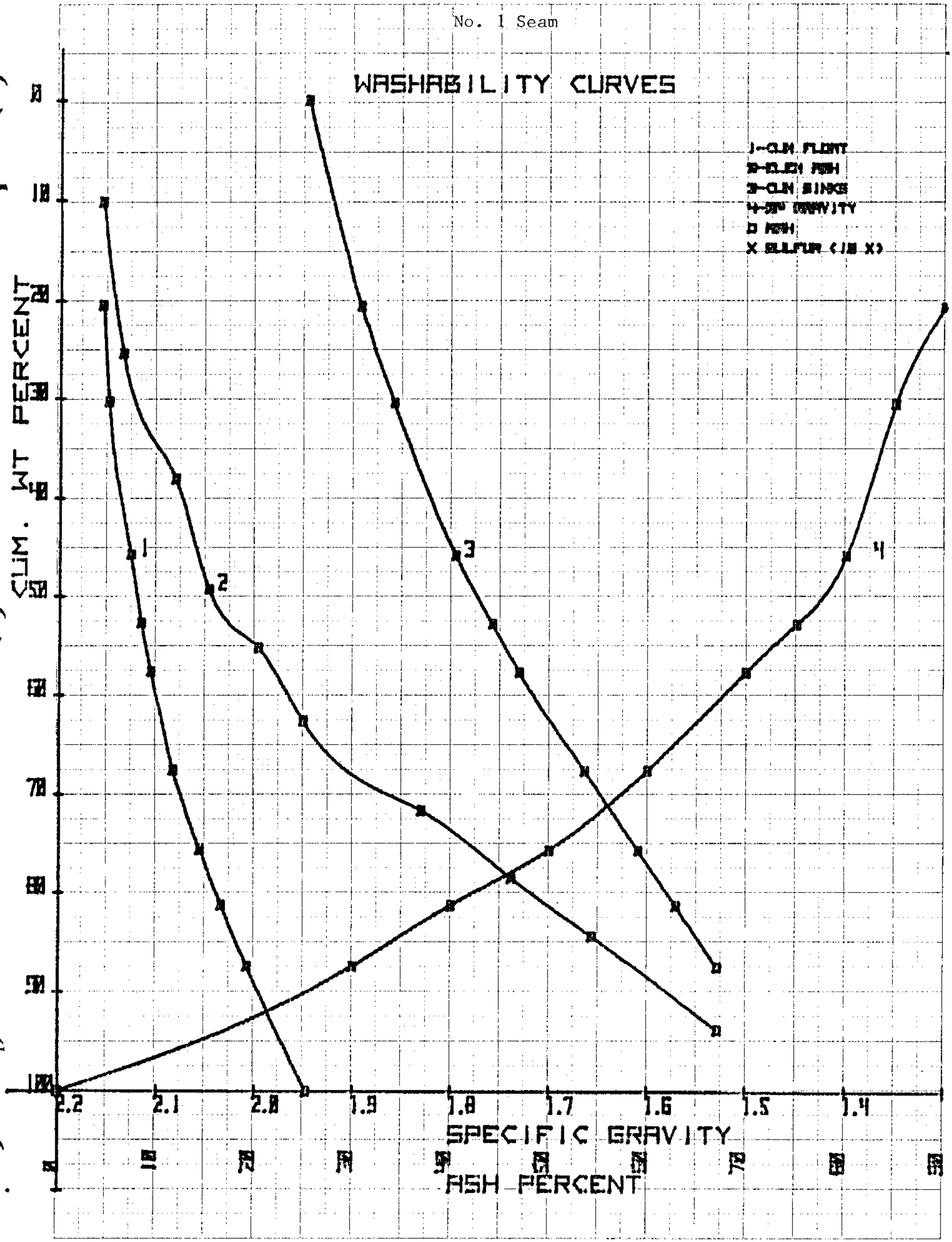

WASHABILITY CURVES
1-CUM FLOAT
3-CUM SINKS
CUM. WT PERCENT
0
10
20
30
40
50
60
70
80
90
100
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
SPECIFIC GRAVITY
0
10
20
30
40
50
60
70
80
90
ASH PERCENT
1
2
3
4

No. 2 Seam

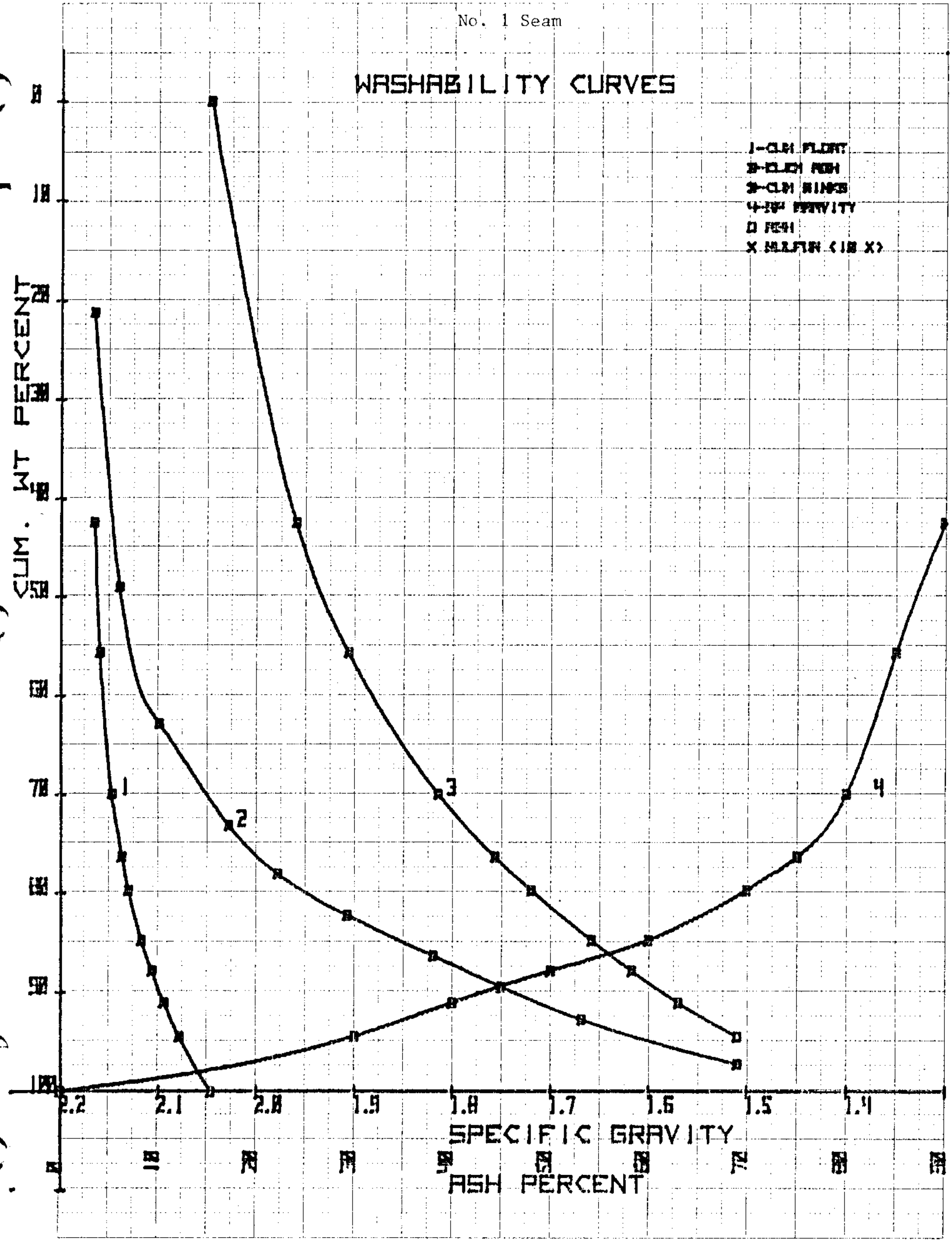

WASHABILITY CURVES
CUM. WT PERCENT
0
10
20
30
40
50
60
70
80
90
100
1
2
3
4
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
SPECIFIC GRAVITY
ASH PERCENT

(CORE HOLE 11 - LAB NO. 1078 - Combined Fractions




No. 1 Seam
WASHABILITY CURVES
3-CUM SINKS
□
X SULFUR (10 X)
CUM. WT PERCENT
0
10
20
30
40
50
60
70
80
90
100
1
2
3
4
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
SPECIFIC GRAVITY
0
10
20
30
40
50
60
70
80
90
ASH PERCENT

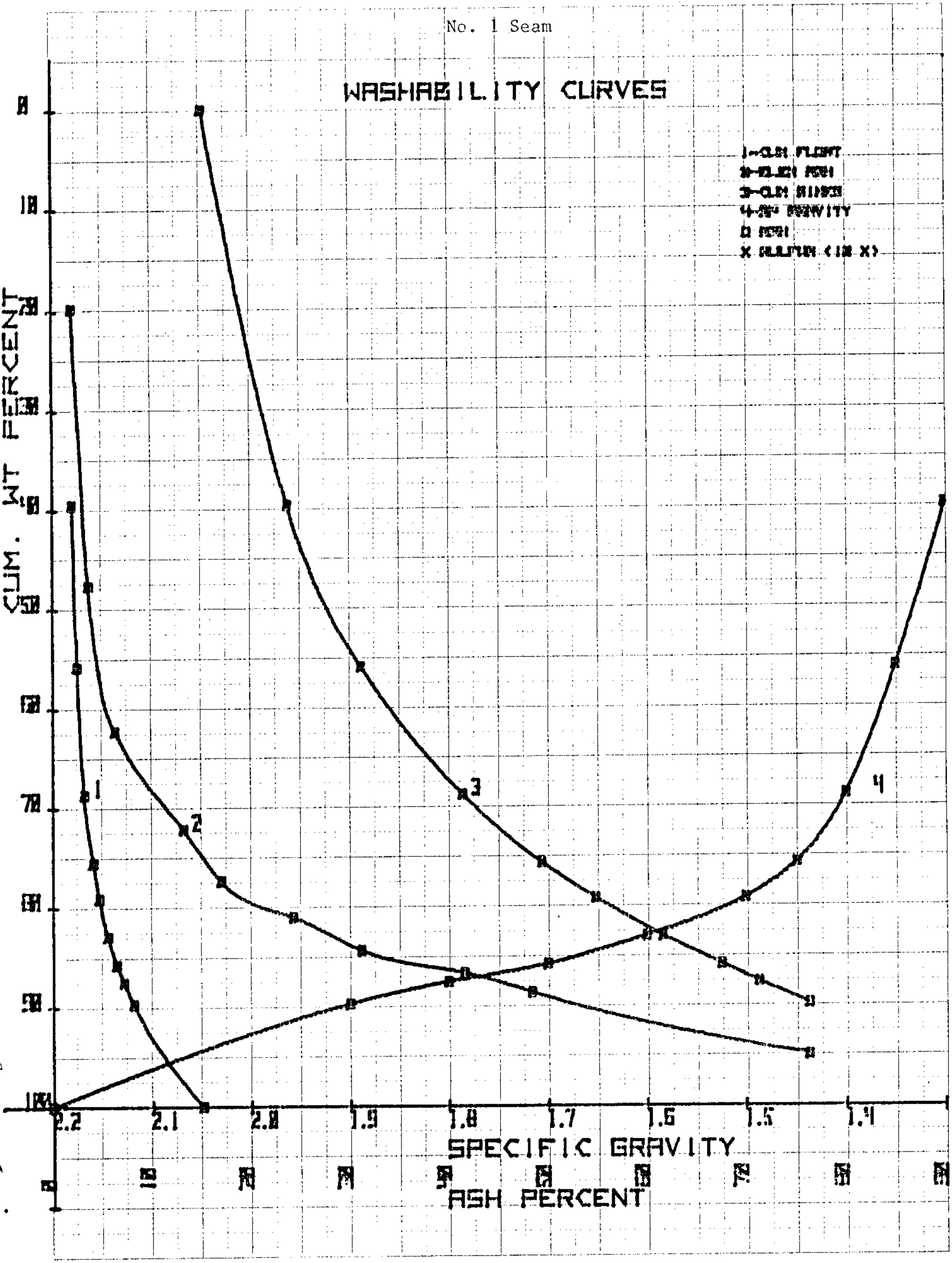
(CORE HOLE ID - LAB NO. - 1078 - ½" x 28 Mesh



461510

10 X 10 TO THE CENTIMETER KEUFFEL & ESSER CO MADE IN U.S.A.

CORE HOLE 11 LAB NO. 1078 - 28 x 100 Mesh



CX- Quinsam 77 (4) B.

APPENDIX III

QUINSAM PHASE I

Coal Quality Analytical Data

i Proximate Analysis
ii Washability Test Results
iii Washability Curves

CX- Quinsam 77 (4) B

PROXIMATE ANALYSIS

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1065

HOLE NO.: No. 1 Seam DATE SAMPLED: October 17, 1976

LOCATION: Line 150+00 1500 RT DATE RECIEVED: November 15, 1976

INTERVAL: 192.4 - 197.4 DATE REPORTED: December 15, 1976

TYPE: ______ CORE: X CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	3.03	16.22	34.41	46.34	0.27	11,289	1½

SIZE	Wt.(grams)	Wt.%	ASH %	
+2"	0	0.0	0.0	
2"x1"	141	2.0	7.54	
1"x3/4"	460	6.7	23.39	
3/4"x1/2"	768	11.1	13.40	
1/2"x1/4"	1858	26.9	13.23	
1/4"x8 MESH	1771	25.6	13.80	
8x28 MESH	1197	17.3	14.89	
28x100 MESH	516	7.5	21.76	
100x0 MESH	203	2.9	34.48	
	6914	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1066

HOLE NO.: 1 (Seam No. 2) DATE SAMPLED: Oct. 17/76

LOCATION: 150 + 00 1500 RT DATE RECIEVED: Dec. 1/76

INTERVAL: 131.6 - 134.8 DATE REPORTED: Dec. 15/76

TYPE: ____ CORE: x CHANNEL: ____ CHIP: ____

ANALYST: ____

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.65	14.78	38.49	44.08	2.52	11,874	1½

	SIZE	Wt.(grams)	Wt.%	ASH %	
+ 2	+2"	0	0.0	-	
+ 1	2"x1"	12	0.3	7.77	
- 3/4	1"x3/4"	98	2.2	9.44	
+ 1/2	3/4"x1/2"	386	8.7	12.13	
- 1/4	1/2"x1/4"	1225	28.0	11.99	
+ 8	1/4"x8 MESH	1333	30.0	13.28	
- 28	8 x 28 MESH	949	21.5	15.20	
- 100	28 x 100 MESH	314	7.0	21.43	
- 100	100 x 0 MESH	100	2.3	35.47	
		4471	100.0		

COMMENTS: ____

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1067

HOLE NO.: No. 1 (Seam No. 2) DATE SAMPLED: Oct. 17/76

LOCATION: 150 + 00 1500RT DATE RECIEVED: Dec. 1/76

INTERVAL: 139.1 - 140.2 DATE REPORTED: Dec. 15/76

TYPE: ______ CORE: x CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.40	18.97	37.88	40.75	4.4	11.270	1 ½

SIZE	Wt.(grams)	Wt. %	ASH %	
+2"	0	0.0	-	
2"x1"	0	0.0	-	
1"x3/4"	22	1.1	15.91	
3/4"x1/2"	213	10.9	21.60	
1/2"x1/4"	544	27.8	17.50	
1/4"x8 MESH	603	30.8	19.84	
8 x28MESH	369	18.8	18.58	
28x100 MESH	142	7.2	28.36	
100x0MESH	66	3.4	40.30	
	1959	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: OUINSAM LAB NO.: 1069

HOLE NO.: 2 No. 1 Seam DATE SAMPLED: October 19, 1976

LOCATION: Line 150+00 500 RT DATE RECIEVED: November 15, 1976

INTERVAL: 174.0 - 186.0 DATE REPORTED: December 15, 1976

TYPE: CORE: X CHANNEL: CHIP:

ANALYST:

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.59	23.37	32.52	41.52	0.19	10,369	1½

SIZE	Wt.(grams)	Wt.%	ASH %	
+2"	0	0.0	0.0	
2"x1"	186	0.9	16.6	
1"x3/4"	883	4.3	23.84	
3/4"x1/2"	2165	10.5	25.79	
1/2"x1/4"	5647	27.4	24.42	
1/4"x8 MESH	5423	26.3	20.03	
8 x 28 MESH	4057	19.7	20.83	
28 x 100 MESH	1539	7.4	27.05	
100 x 0 MESH	729	3.5	41.79	
	20629	100.0		

COMMENTS:

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1070

HOLE NO.: No. 3 (Rider No.1 Seam) DATE SAMPLED: Oct. 22/76

LOCATION: 110+00 1000 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 108.7 - 110.4 DATE REPORTED: Dec. 15/76

TYPE: ____ CORE: X CHANNEL: ____ CHIP: ____

ANALYST: ____

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.45	14.58	38.33	44.64	2.54	11,999	1 ½

SIZE	Wt.(grams)	Wt. %	ASH %	
+2"	0	0.0	-	
2"x1"	23	0.8	45.32	
1"x3/4"	85	3.0	25.92	
3/4"x1/2"	259	9.2	17.51	
1/2"x1/4"	837	29.8	13.51	
1/4"x8 MESH	784	27.9	13.47	
8 x 28 MESH	545	19.4	12.42	
28 x 100 MESH	203	7.2	17.34	
100 x 0 MESH	77	2.7	29.53	
	2813	100		

COMMENTS: ____

LEXCO TESTING LTD. screen size analysis

COAL FIELD: QUINSAM LAB NO.: 1071

HOLE NO.: 3 No. 1 Seam DATE SAMPLED: October 22, 1976

LOCATION: Line 110+00 100 RT DATE RECIEVED: November 15, 1976

INTERVAL: 113.1 - 123.3 DATE REPORTED: December 15, 1976

TYPE: ______ CORE: X CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE%	ASH%	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.82	9.88	37.30	50.00	0.20	12,626	1½

SIZE	Wt.(grams)	Wt.%	ASH%	
+2"	0	0.0	0.0	
2"x1"	309	1.8	43.88	
1"x3/4"	577	3.4	14.51	
3/4"x1/2"	1674	10.0	12.22	
1/2"x1/4"	4488	26.8	8.76	
1/4"x8 MESH	4682	28.0	7.13	
8 x 28 MESH	3380	20.2	6.98	
28 x 100 MESH	1169	7.0	11.49	
100 x 0 MESH	465	2.8	25.34	
	16744	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1085

HOLE NO.: No. 4 (No. 1 Rider) DATE SAMPLED: Nov. 4/76

LOCATION: 120 + 00 500 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 165.0 - 167.1 DATE REPORTED: Dec. 15/76

TYPE: ______ CORE: x CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.54	11.54	38.87	47.05	3.47	12,232	1

SIZE	Wt.(grams)	Wt.%	ASH %	
+2"	0	0.0	——	
2"x1"	0	0.0	——	
1"x3/4"	69	3.7	31.82	
3/4"x1/2"	179	9.6		
1/2"x1/4"	531	28.5	10.49	
1/4"x8 MESH	502	26.9	10.17	
8x28 MESH	374	20.1	10.01	
28x100 MESH	150	8.1	13.15	
100x0 MESH	58	3.1	25.55	
	1863	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: QUINSAM LAB NO.: 1074

HOLE NO.: 4 No. 1 Seam DATE SAMPLED: November 4, 1976

LOCATION: Line 120+00 500 LT DATE RECIEVED: December 1, 1976

INTERVAL: 173.6 - 185.4 DATE REPORTED: December 15, 1976

TYPE: ____ CORE: X CHANNEL: ____ CHIP: ____

ANALYST: ____

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.58	10.11	37.67	49.64	0.30	12,402	1½

SIZE	Wt.(grams)	Wt.%	ASH %	
+2"	125	0.8	---	
2"x1"	169	1.0	---	
1"x3/4"	564	3.4	---	
3/4"x1/2"	1580	9.5	12.09	
1/2"x1/4"	4447	26.8	7.87	
1/4"x8 MESH	4690	28.2	8.50	
8 x 28 MESH	3478	20.9	9.40	
28 x 100 MESH	1158	7.0	12.55	
100 x 0 MESH	408	2.4	24.60	
	16619	100.0		

COMMENTS: ____

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam
LAB NO.: 1083
HOLE NO.: No. 5 (No. 1 Rider)
DATE SAMPLED: Nov. 7/76
LOCATION: 100 + 00 1000 LT
DATE RECIEVED: Dec. 1/76
INTERVAL: 183.6 - 184.6
DATE REPORTED: Dec. 15/76
TYPE: ____ CORE: x CHANNEL: ____ CHIP: ____
ANALYST: ____

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.10	25.09	34.76	38.05	0.41	10,199	1

SIZE	Wt.(grams)	Wt.%	ASH%	
+2"	0	0.0	——	
2"x1"	0	0.0	——	
1"x3/4"	24	4.9	40.87	
3/4"x1/2"	51	10.5	23.93	
1/2"x1/4"	21	4.3	34.28	
1/4"x8 MESH	203	41.8	25.51	
8x28MESH	114	23.4	19.20	
28x100 MESH	46	9.5	20.36	
100x0MESH	27	5.6	32.73	
	486	100.0		

COMMENTS: ____

LEXCO TESTING LTD. screen size analysis

COAL FIELD: OUINSAM LAB NO.: 1072

HOLE NO.: 5 No. 1 Seam DATE SAMPLED: November 7, 1976

LOCATION: Line 100+70 1000 RT DATE RECIEVED: December 1, 1976

INTERVAL: 187.3 - 198.0 DATE REPORTED: December 15, 1976

TYPE: ____ CORE: X CHANNEL: ____ CHIP: ____

ANALYST: ____

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.73	11.54	36.40	49.33	0.27	12,105	1½

SIZE	Wt.(grams)	Wt. %	ASH %	
+2"	0	0.0	----	
2"x1"	212	1.6	----	
1"x3/4"	468	3.5	----	
3/4"x1/2"	1129	8.5	10.07	
1/2"x1/4"	3529	26.7	13.29	
1/4"x8 MESH	3766	28.5	10.45	
8 x 28 MESH	2607	19.8	12.26	
28 x 100 MESH	978	7.4	18.90	
100 x 0 MESH	526	4.0	34.85	
	13215	100.0		

COMMENTS: ____

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1082

HOLE NO.: No. 6 (No. 1 Rider) DATE SAMPLED: Nov. 10/76

LOCATION: 85 + 00 1000 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 254.0 - 255.6 DATE REPORTED: Dec. 15/76

TYPE: CORE: x CHANNEL: CHIP:

ANALYST:

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.09	20.32	38.21	39.38	2.92	10,903	2

SIZE	Wt.(grams)	Wt. %	ASH %	
+2"	0	0.0	———	
2"x1"	20	1.4		
1"x3/4"	64	4.6	19.62	
3/4"x1/2"	140	10.1	34.86	
1/2"x1/4"	318	22.8	26.87	
1/4"x8 MESH	364	26.1	18.07	
8x28 MESH	308	22.1	14.40	
28x100 MESH	121	8.7	21.69	
100x0 MESH	58	4.2	38.28	
	1393	100.0		

COMMENTS:

LEXCO TESTING LTD. screen size analysis

COAL FIELD: QUINSAM LAB NO.: 1073

HOLE NO.: 6 No. 1 Seam DATE SAMPLED: November 10, 1976

LOCATION: Line 85+00 1000 LT DATE RECIEVED: December 1, 1976

INTERVAL: 255.0 - 264.0 DATE REPORTED: December 15, 1976

TYPE: ____ CORE: X CHANNEL: ____ CHIP: ____

ANALYST: ____

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.66	13.23	36.25	47.86	0.34	11,923	1½

SIZE	Wt.(grams)	Wt.%	ASH%	
+2"	0	0.0	0.0	
2"x1"	97	0.8	---	
1"x3/4"	383	3.1	---	
3/4"x1/2"	1248	10.2	10.10	
1/2"x1/4"	3484	28.4	14.19	
1/4"x8 MESH	3320	27.1	9.65	
8x28 MESH	2191	17.9	12.16	
28x100 MESH	948	7.7	19.67	
100x0 MESH	586	4.8	52.16	
	12257	100.0		

COMMENTS: ____

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1089

HOLE NO.: No. 6 (No. 1 Seam) DATE SAMPLED: Nov. 10/76

LOCATION: 85 + 00 1000 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 264.5 - 265.4 DATE REPORTED: Dec. 15/76

TYPE: ____ CORE: x CHANNEL: ____ CHIP: ____

ANALYST: ____

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F. S. I.
	2.43	25.39	31.91	40.27	1.76	9,826	1½

SIZE	Wt.(grams)	Wt. %	ASH %	
+2"	0	0.0		
2"x1"	22	2.7		
1"x3/4"	21	2.6		
3/4"x1/2"	90	11.0		
1/2"x1/4"	206	25.3		
1/4"x8 MESH	227	27.8		
8 x 28 MESH	155	19.0		
28 x 100 MESH	58	7.1		
100 x 0 MESH	37	4.5		
	816	100.0		

COMMENTS: ____

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1081

HOLE NO.: No. 8 (No. 3 Seam) DATE SAMPLED: Nov. 17/76

LOCATION: 60 + 00 1000 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 38.6 - 39.7 DATE REPORTED: Dec. 15/76

TYPE: ____ CORE: x CHANNEL: ____ CHIP: ____

ANALYST: ____

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	1.76	17.48	38.02	42.74	4.73	11,209	1½

SIZE	Wt.(grams)	Wt.%	ASH %	
+2"	0	0.0	——	
2"x1"	0	0.0	——	
1"x3/4"	23	1.2		
3/4"x1/2"	107	5.8		
1/2"x1/4"	415	22.6	17.47	
1/4"x8 MESH	577	31.4	13.63	
8 x 28 MESH	438	23.9	13.82	
28 x 100 MESH	194	10.6	20.99	
100 x 0 MESH	82	4.5	30.54	
	1836	100.0		

COMMENTS: ____

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1086

HOLE NO.: No. 8 (No. 3 Seam) DATE SAMPLED: Nov. 17/76

LOCATION: 60 + 00 1000 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 47.9 - 50.0 DATE REPORTED: Dec. 15/76

TYPE: ______ CORE: x CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.09	18.73	37.14	42.04	1.91	11,260	2½

SIZE	Wt.(grams)	Wt.%	ASH %	
+2"	0	0.0	———	
2"x1"	130	7.7		
1"x3/4"	51	3.0		
3/4"x1/2"	67	4.0		
1/2"x1/4"	394	23.3	11.26	
1/4"x8 MESH	472	28.0	12.97	
8 x 28 MESH	362	21.4	12.05	
28 x 100 MESH	151	8.9	16.96	
100 x 0 MESH	62	3.7	30.52	
	1689	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1084

HOLE NO.: No. 8 (No. 3 Seam) DATE SAMPLED: Nov. 17/76

LOCATION: 60 + 00 + 1000 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 52.0 - 53.2 DATE REPORTED: Dec. 15/76

TYPE: ______ CORE: x CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.45	34.82	31.19	31.54	6.49	9,051	1½

SIZE	Wt.(grams)	Wt.%	ASH%	
+2"	0	0.0	____	
2"x1"	0	0.0	____	
1"x3/4"	58	6.4		
3/4"x1/2"	107	11.8		
1/2"x1/4"	227	25.0	32.07	
1/4"x8 MESH	228	25.1	28.09	
8x28 MESH	174	19.2	25.67	
28x100 MESH	74	8.1	27.52	
100x0 MESH	40	4.4	30.16	
	908	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1076

HOLE NO.: No. 8 (No. 3 Seam) DATE SAMPLED: Nov. 17/76

LOCATION: 60 + 00 1000 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 53.8 - 56.3 DATE REPORTED: Dec. 15/76

TYPE: ____ CORE: x CHANNEL: ____ CHIP: ____

ANALYST: ____

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.04	15.47	37.59	44.90	3.04	11,915	2

SIZE	Wt.(grams)	Wt. %	ASH %	
+2"	0	0.0	———	
2"x1"	164	4.6	21.55	
1"x3/4"	195	5.5	18.82	
3/4"x1/2"	325	9.1	12.77	
1/2"x1/4"	816	22.9	11.83	
1/4"x8 MESH	917	25.8	11.59	
8 x 28 MESH	774	21.7	11.15	
28 x 100 MESH	271	7.6	18.85	
100 x 0 MESH	100	2.8	27.43	
	3562	100.0		

COMMENTS: ____

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1090

HOLE NO.: No. 8 (No. 2 Seam) DATE SAMPLED: Nov. 17/76

LOCATION: 60 + 00 1000 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 164.4 - 165.5 DATE REPORTED: Dec. 15/76

TYPE: ______ CORE: x CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	3.14	17.97	35.79	43.10	4.14	10,670	1½

SIZE	Wt.(grams)	Wt.%	ASH %	
+2"	0	0.0	——	
2"x1"	0	0.0	——	
1"x3/4"	9	1.4	——	
3/4"x1/2"	49	7.8	23.19	
1/2"x1/4"	152	24.1	20.40	
1/4"x8 MESH	193	30.5	12.52	
8 x 28 MESH	141	22.3	13.37	
28 x 100 MESH	51	8.1	20.94	
100 x 0 MESH	37	5.8	31.90	
	632	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1075

HOLE NO.: No. 9 (No. 1 Seam) DATE SAMPLED: Nov. 18/76

LOCATION: 50 + 00 1500 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 115.8 - 121.1 DATE REPORTED: Dec. 15/76

TYPE: ______ CORE: x CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.4	14.47	38.05	45.08	1.79	11,989	2

SIZE	Wt.(grams)	Wt. %	ASH %	
+2"	0	0.0		
2"x1"	95	1.2	31.47	
1"x3/4"	172	2.2	13.85	
3/4"x1/2"	681	8.8	12.50	
1/2"x1/4"	2100	27.2	14.05	
1/4"x8 MESH	2261	29.3	12.16	
8 x 28 MESH	1565	20.2	12.64	
28 x 100 MESH	609	7.9	17.00	
100 x 0 MESH	250	3.2	29.08	
	7733	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1077

HOLE NO.: No. 9 (No. 1 Seam) DATE SAMPLED: Nov. 18/76

LOCATION: 50 + 00 1500 LT DATE RECIEVED: Dec. 1/76

INTERVAL: 122.0 - 125.7 DATE REPORTED: Dec. 15/76

TYPE: ______ CORE: x CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE%	ASH%	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	1.9	29.58	31.15	37.37	0.93	9,480	1½

SIZE	Wt.(grams)	Wt.%	ASH%	
+2"	0	0.0	------	
2"x1"	160	5.1	39.31	
1"x3/4"	244	7.7	55.30	
3/4"x1/2"	425	13.5	40.91	
1/2"x1/4"	753	23.9	31.38	
1/4"x8 MESH	709	22.5	26.36	
8x28 MESH	533	16.9	20.61	
28x100 MESH	229	7.2	21.36	
100x0 MESH	102	3.2	29.50	
	3155	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1080

HOLE NO.: No. 10 (No. 2 Seam) DATE SAMPLED: Nov. 18, 1976

LOCATION: 40 + 00 1500 LT DATE RECIEVED: Dec. 1, 1976

INTERVAL: 149.2 - 152.8 DATE REPORTED: Dec. 15, 1976

TYPE: ______ CORE: X CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE%	ASH%	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.14	14.02	36.87	46.97	4.91	12,246	2½

SIZE	Wt.(grams)	Wt.%	ASH%	
+2"	0	0		
2"x1"	39	1.4		
1"x3/4"	35	1.3		
3/4"x1/2"	202	7.2		
1/2"x1/4"	471	16.8	20.28	
1/4"x8 MESH	753	26.9	11.07	
8x28 MESH	694	24.8	9.97	
28x100 MESH	365	13.1	13.56	
100x0 MESH	238	8.5	20.12	
	2,797	100.00		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: OUINSAM LAB NO.: 1078

HOLE NO.: 11 No. 1 Seam DATE SAMPLED: November 19, 1976

LOCATION: Line 170+00 1000 RT DATE RECIEVED: December 1, 1976

INTERVAL: 146.0 - 148.5 DATE REPORTED: December 15, 1976

TYPE: ______ CORE: X CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.9	9.03	36.18	51.89	0.21	12,579	1½

SIZE	Wt.(grams)	Wt.%	ASH%	
+2"	0	0.0	---	
2"x1"	0	0.0	---	
1"x3/4"	43	2.4	---	
3/4"x1/2"	112	6.2	13.17	
1/2"x1/4"	394	21.6	14.36	
1/4"x8 MESH	592	32.5	7.53	
8x28 MESH	452	24.8	7.12	
28x100 MESH	168	9.2	10.70	
100x0 MESH	61	3.3	26.01	
	1822	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: QUINSAM LAB NO.: 1079

HOLE NO.: 11 No. 1 Seam DATE SAMPLED: November 19, 1976

LOCATION: Line 170+00 1100 RT DATE RECIEVED: December 1, 1976

INTERVAL: 149.9 - 158.0 DATE REPORTED: December 15, 1976

TYPE: ______ CORE: X CHANNEL: ______ CHIP: ______

ANALYST: ______

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	2.79	18.36	34.12	44.73	0.30	11,199	1½

SIZE	Wt.(grams)	Wt.%	ASH %	
+2"	0	0.0	---	
2"x1"	86	1.0	---	
1"x3/4"	439	4.9	---	
3/4"x1/2"	1074	12.1	29.75	
1/2"x1/4"	2209	24.8	19.25	
1/4"x8 MESH	2179	24.5	15.13	
8 x 28 MESH	2006	22.5	12.88	
28 x 100 MESH	676	7.6	16.53	
100 x 0 MESH	233	2.6	25.68	
	8902	100.0		

COMMENTS: ______

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam LAB NO.: 1087

HOLE NO.: Iron River No. 1 DATE SAMPLED: -

LOCATION: DATE RECIEVED: Dec. 1/76

INTERVAL: DATE REPORTED: Dec. 15/76

TYPE: CORE: CHANNEL: x CHIP:

ANALYST:

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	3.97	16.37	37.53	42.13	2.03	10,600	0

SIZE	Wt.(grams)	Wt.%	ASH %	
+2"	0	0.0	______	
2"x1"	0	0.0	______	
1"x3/4"	6	0.4	______	
3/4"x1/2"	47	3.4	31.80	
1/2"x1/4"	258	18.3	12.44	
1/4"x8 MESH	508	36.1	11.24	
8 x28MESH	375	26.6	13.59	
28x100 MESH	147	10.4	18.55	
100x0MESH	68	4.8	28.03	
	1409	100.0		

COMMENTS:

LEXCO TESTING LTD. screen size analysis

COAL FIELD: Quinsam
LAB NO.: 1088
HOLE NO.: Iron River No. 3
DATE SAMPLED: -
LOCATION:
DATE RECIEVED: Dec. 1/76
INTERVAL:
DATE REPORTED: Dec. 15/76
TYPE: CORE: CHANNEL: x CHIP:
ANALYST:

RAW COAL	MOISTURE %	ASH %	VOLATILE MATTER	FIXED CARBON	TOTAL SULPHUR	CALORIFIC VALUE	F.S.I.
	7.78	10.96	43.50	37.76	0.54	9,292	0

SIZE	Wt.(grams)	Wt.%	ASH%	
+2"	0	0.0		
2"x1"	0	0.0		
1"x3/4"	0	0.0		
3/4"x1/2"	0	0.0		
1/2"x1/4"	11	2.5		
1/4"x8 MESH	187	43.0		
8x28 MESH	141	32.4		
28x100 MESH	55	12.7		
100x0 MESH	41	9.4		
	435	100.0		

COMMENTS: