

DELAWARE GEOLOGICAL SURVEY
Robert R. Jordan, State Geologist

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**BASIC DATA FOR THE
GEOLOGIC MAP OF THE SEAFORD AREA, DELAWARE**

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INTRODUCTION

The Seaford area geologic mapping project (Andres and Ramsey, 1995) was conducted by Delaware Geological Survey (DGS) staff and focused on the Seaford East (SEE) and Delaware portion of the Seaford West (SEW) quadrangles (Fig. 1). Data evaluated in support of mapping from these quadrangles and surrounding areas are documented in this report.

The largest incorporated towns in the map area are Seaford and Bridgeville. The major hydrographic features are the Nanticoke River and a portion of the Marshyhope Creek. Land surface elevations range from near sea level along the tidal portion of the Nanticoke River to just above 50 ft along the drainage divide between the Nanticoke and Marshyhope basins and in the northeastern portion of the SEE quadrangle.

Support for this project was provided by the Survey's regular appropriation, the U. S. Geological Survey StateMap program, which was authorized by the National Geologic Mapping Act of 1991, and by the Ground-Water Recharge Mapping program, funded by the Delaware Department of Natural Resources and Environmental Control.

In addition to the authors, DGS staff members Richard N. Benson, Roland E. Bounds, Robert R. Jordan, Thomas E. Pickett, C. Thomas Smith, Nenad Spojaric, and John Talley provided technical assistance to the study. A number of students assisted this project. Jennifer E. Athey, Bruce W. Brough, Dawn A. Denham, C. Scott Howard, James A. Maio, Narender Pendkar, and Joel P. Zickler deserve recognition for their contributions. We thank T. S. Smith and Sons, City of Seaford, The Nature Conservancy, Inc., Delagra, Inc., Earth Movers, Inc., Palmer Corey and Sons, Inc., and Kaye Construction, Inc., for allowing access to their properties. We thank the Delaware Department of Transportation, Materials Section for providing test boring data.

METHODS

Data Systems

Data collected and used during this study were managed by the standard DGS data identifying systems. Each data collection site located within Delaware is given its own unique identifier defined by a geodetic grid based system that is described by Talley and Windish (1984) and Ramsey (1994). The State is divided into 5-minute quadrangles of latitude and longitude that are lettered north to south with capital letters, and from west to east in lower case letters. Each 5-minute quadrangle is subdivided into 25 1-minute blocks that are numbered from north to south in units of 10 and from west to east in units from 11 to 55. The grid is shown in figs. 2 through 7. Site identifiers are shown on figs. 3 through 7. Each sample is also given a unique number identifier that is cross-referenced to the collection site identifier. Samples collected for this project are retained in the DGS Core and Sample Library and are available for use. Data management, cartography, and publication production were done using personal computer-based software.

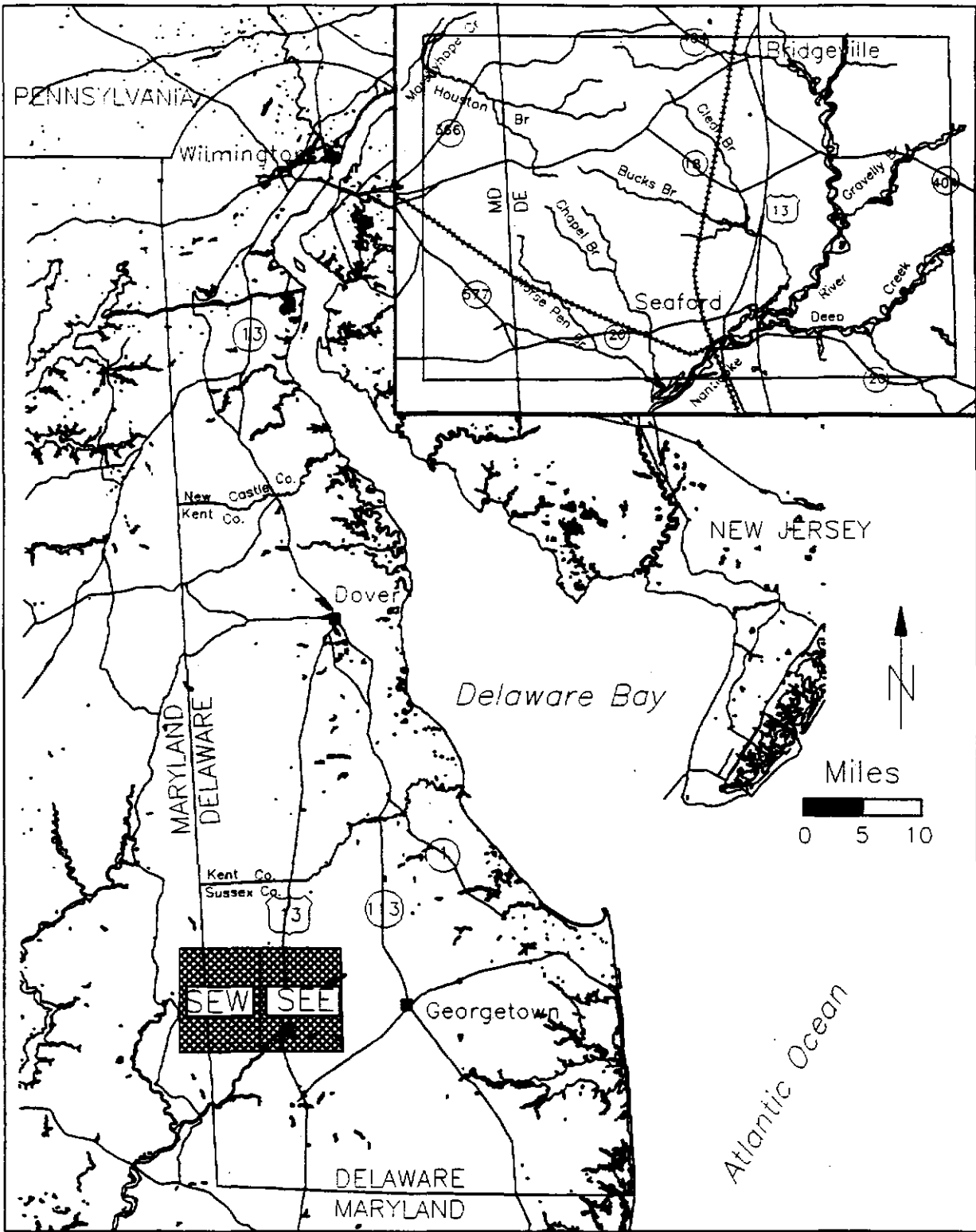


Figure 1. Location Map. The Seaford East and Seaford West quadrangles are shown by the cross-hatch pattern.

Field studies

There are insufficient natural exposures of rocks in the Seaford area for the purposes of geologic mapping. Data and samples were collected by DGS staff from exposures in borrow pits and drainage ditches and from bore holes installed by the Survey's truck-mounted drill rig, as well as by hand auger and dutch auger. Descriptive logs were made in the field for all data collected during the current study. Samples from selected holes were described in more detail in the laboratory. Additional descriptive logs were obtained from logs submitted by water well drilling contractors. Table 1 lists the data collection sites used in the mapping study. Fig. 2 shows the locations of data collection sites in the Seaford area. Geophysical logs were run by the Surveys' logging unit in many test borings and water wells (see fig. 3). The logs are available at the Survey office. Data and samples were also collected from adjacent Dorchester County, Maryland, where Owens and Denny (1986) had completed a geologic map.

Some subsurface data and samples were collected by DGS and U. S. Geological Survey staff over the past 40 years during miscellaneous and specific field investigations. The samples, data, and results of laboratory tests on these samples were evaluated during the current project. This includes data from Jordan (1964), Groot et al. (1990), and Rasmussen et al. (1960).

Data points were located in the field to within 1-second accuracy on 1993 edition 1:24,000 scale U. S. Geological Survey topographic maps. Where necessary, some data point locations were obtained by a differential global positioning system. Elevations of most data points were determined from the topographic maps.

Laboratory Studies

Many of the laboratory methods used by the DGS are standard to geologic investigations. Unless mentioned otherwise, the methods in Kramer (1987) were used. A summary of sample processing operations is shown in Table 2.

Lithologic characteristics were determined for selected samples. These data were collected for general characterization and to assist stratigraphic interpretations. Pebble lithologies (size between 4 and 64 mm) were determined for 40 samples. The pebble count data are shown in Table 3 and sample locations are shown in Fig. 4. Detailed descriptions of the sand fractions of 183 samples were made using a binocular microscope. Grain size analyses were done on 77 samples. The descriptions and grain size data are available at the Survey offices.

Mineralogy of the clay-size fraction was determined for 65 samples with a Philips PW 1729/PW1840 X-ray generator-diffractometer using copper K-alpha radiation. Semi-quantitative determination of clay-size minerals was done using a combination of methods from Carroll (1970), Brown and Brindley (1980), and Moore and Reynolds (1989). In addition, the illite crystallinity index was computed from the ratio of peak height/peak width. The data are reported in Table 4 and sample locations are shown in Fig. 5. Readers are advised to understand the accuracy limitations imposed by the analytical technique (Carroll, 1970).

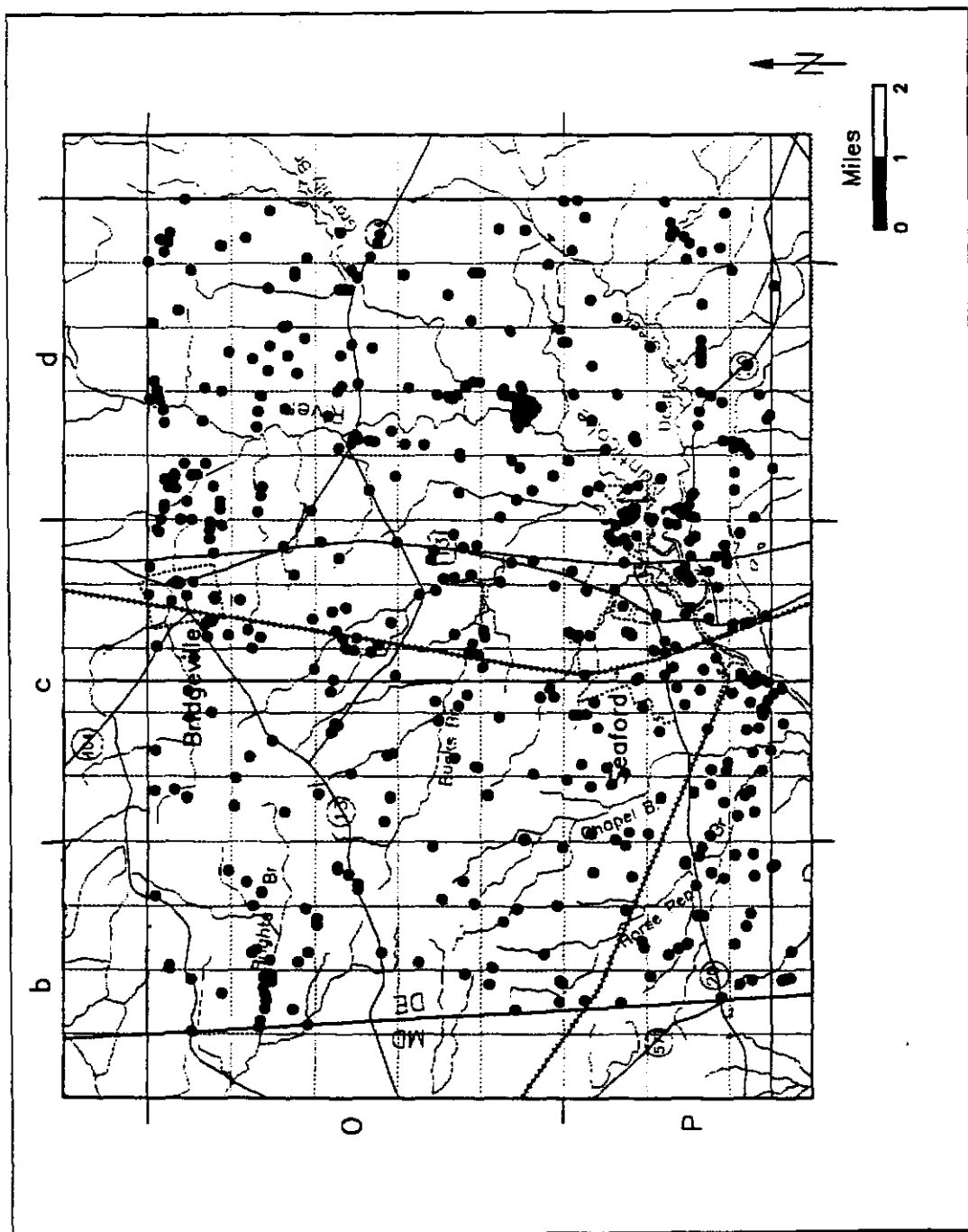


Figure 2. Map showing locations of data points in vicinity of Seaford East and Seaford West quadrangles. The grid overprint shows the DGS well and outcrop identifier system, which is explained in the text.

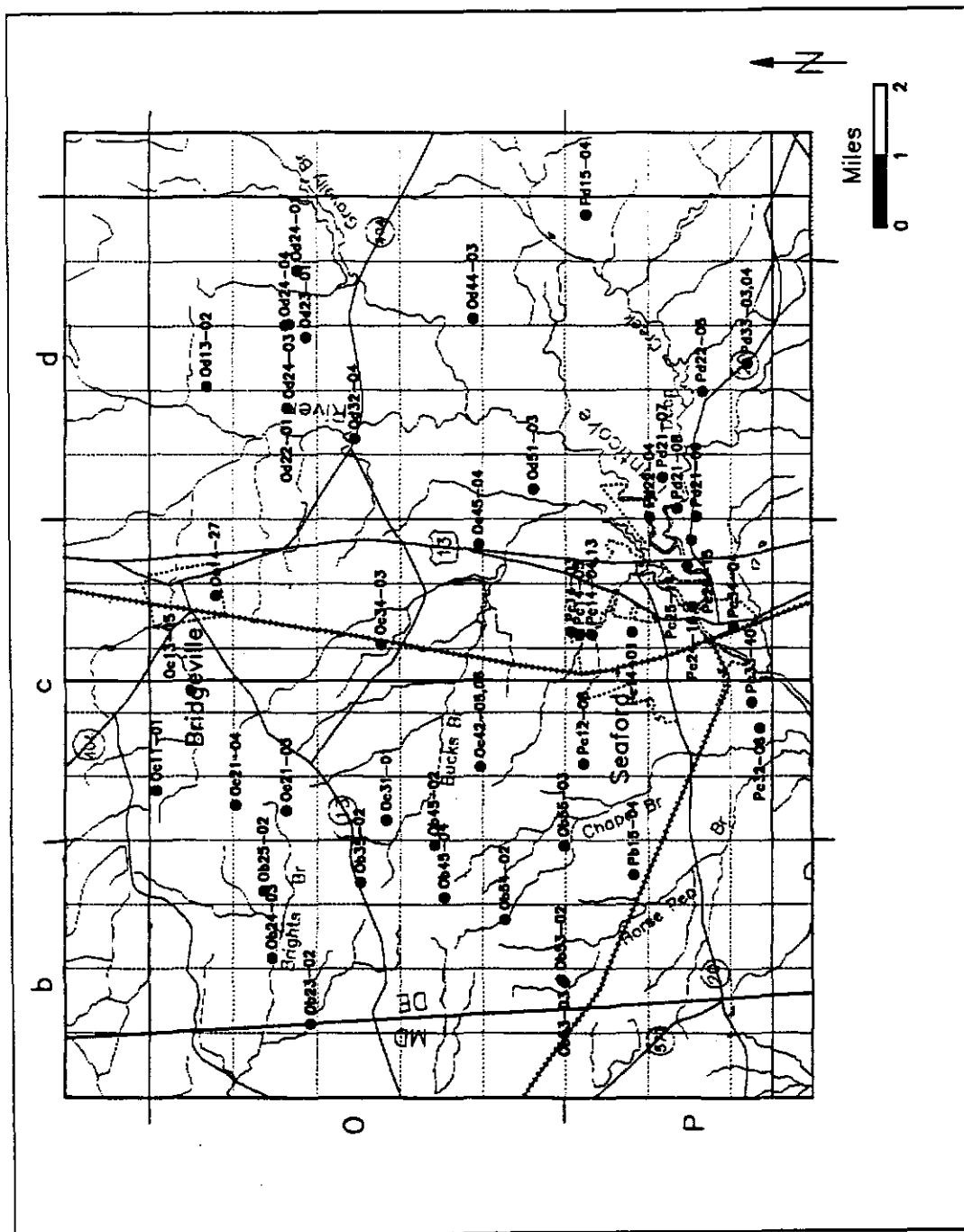


Figure 3. Map showing locations of wells with geophysical logs.

Light mineral point counts were done for 23 samples. The sand fraction in the size range from 0.0625 to 0.5 mm was mounted in epoxy and thin-sectioned. The mineralogy was determined with a petrographic microscope equipped with universal stage and electronic point count recorder. The count data are shown in Table 5. Fig. 6 shows the sample locations. In addition, notes on mineralogy with respect to size were made. The results of mineralogic analysis of two grain-mount samples from Jordan (1964) are also shown in Table 5.

Carbon-14 age-dates were measured by Beta Analytic (Miami, Florida) in 1994 for three samples from Od52-g2, i, and 18. Pollen was extracted by the DGS laboratory from 74 samples collected in and around the SEE and SEW quadrangles and identified by J. J. Groot. The samples collected in the Seaford area that were processed for pollen are shown in Fig. 7.

REFERENCES CITED

- Andres, A. S., and Ramsey, K. W., 1995, Geologic map of the Seaford area, Delaware: Delaware Geological Survey Geologic Map No. 9, 1:24,000.
- Brown, G., and Brindley, G. W., 1980, Crystal structure of clay minerals and their X-ray identification: London, Mineralogical Society Monograph No. 5, 495 p.
- Carroll, D. 1970, Clay minerals: a guide to their X-ray identification: Boulder, Colorado, Geological Society of America Special Paper 126, 80 p.
- Groot, J. J., Ramsey, K. W., and Wehmiller, J. F., 1990, Ages of the Bethany, Beaverdam, and Omar formations of southern Delaware: Delaware Geological Survey Report of Investigations No. 47, 19 p.
- Jordan, R. R., 1964, Columbia (Pleistocene) sediments of Delaware: Delaware Geological Survey Bulletin No. 12, 69 p.
- Kramer, M. G., ed., 1987, Delaware Geological Survey laboratory procedures manual: Delaware Geological Survey Special Publication No. 15, 106 p.
- Moore, D. M., and Reynolds, R. C., 1989, X-ray diffraction and the identification and analysis of clay minerals: New York, Oxford University Press, 332 p.
- Owens, J. P., and Denny, C. S., 1986, Geologic map of Dorchester County, Maryland: Maryland Geological Survey County Map, 1 sheet, 1:62,500.
- Ramsey, K. W., 1994, Instructions for preparation of outcrop or exposure schedules: Delaware Geological Survey Supplement to DGS Special Publication No. 11, 13 p.
- Rasmussen, W. C., Wilkens, R. A., Beall, R. M., and others, 1960, Water resources of Sussex County, Delaware: Delaware Geological Survey Bulletin 8, 103 p.
- Talley, J. H., and Windish, D. C., 1984, Instructions for preparation of DGS data base schedules: Delaware Geological Survey Special Publication No. 11, 119 p.

Table 1. List of well, boring, outcrop, and hand auger data points. SEW = Seaford West, SEE = Seaford East, Geophy = geophysical, G = natural gamma radiation, S = single point electric. Latitude and longitude given in degrees, minutes, and seconds. A list of drillers appears at the end of this table.

DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Ob13-02	384428	754257		7001	13	SEW	
Ob13-03	384407	754221	64422	14	60	SEW	
Ob14-03	384444	754155	69515	608	240	SEW	
Ob14-04	384444	754158	69516	608	240	SEW	
Ob15-01	384402	754027	66823	14	100	SEW	
Ob15-02	384454	754050		68	25	SEW	
Ob23-02	384305	754251		68	75	SEW	G
Ob23-03	384337	754206		68	25	SEW	
Ob23-04	384336	754222		68	25	SEW	
Ob23-05	384335	754228		68	20	SEW	
Ob23-06	384336	754236		68	20	SEW	
Ob23-07	384339	754247		68	20	SEW	
Ob24-01	384307	754102	85982	14	60	SEW	
Ob24-02	384345	754143	85981	14	63	SEW	
Ob24-03	384332	754150	90220	68	60	SEW	G
Ob24-04	384305	754143	71564	14	80	SEW	
Ob24-05	384312	754152		68	25	SEW	
Ob25-02	384338	754047	69300	608	260	SEW	G
Ob25-03	384338	754046	69337	608	205	SEW	
Ob25-04	384344	754059		14	70	SEW	
Ob34-01	384259	754117	64608	1	76	SEW	
Ob35-01	384229	754044		7001	23	SEW	
Ob35-02	384229	754039	48341	68	120	SEW	G
Ob35-03	384244	754025	50625	1	90	SEW	
Ob35-04	384244	754023	50713	1	90	SEW	
Ob35-05	384236	754030	86022	608	55	SEW	
Ob43-01	384112	754203	39990	14	90	SEW	
Ob43-02	384112	754203	39990	14	90	SEW	
Ob44-03	384145	754152		68	25	SEW	
Ob45-02	384135	754004	64043	14	380	SEW	G,S
Ob45-03	384113	754036	38188	14	75	SEW	
Ob45-04	384128	754053	37269	14	105	SEW	G
Ob53-01	384003	754229		7001	17	SEW	
Ob53-02	384003	754210		14	90	SEW	
Ob53-03	384001	754212		14	440	SEW	S
Ob53-04	384054	754213	36956	14	103	SEW	
Ob53-05	384052	754157	36949	14	83	SEW	
Ob53-07	384035	754237		68	25	SEW	
Ob54-02	384044	754114		68	59	SEW	G

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Ob54-03	384034	754102		68	25	SEW	
Ob55-03	384001	754005		68	59	SEW	G
Ob55-04	384005	754059		68	25	SEW	
Oc11-01	384455	753913		68	69	SEW	G
Oc12-02	384454	753835		68	25	SEW	
Oc13-02	384414	753759	64424	1	60	SEW	
Oc13-03	384427	753708	71974	14	100	SEE	
Oc13-04	384427	753708	72390	14	81	SEE	
Oc13-05	384431	753739		68	25	SEW	
Oc14-07	384432	753610		1	111	SEE	
Oc14-14	384459	753609	37612	40	110	SEE	
Oc14-15	384412	753613	68629	14	98	SEE	
Oc14-17	384302	753632	73579	473	20	SEE	
Oc14-18	384402	753647	73452	473	20	SEE	
Oc14-19	384417	753648	73451	473	20	SEE	
Oc14-20	384413	753632	71037	473	26	SEE	
Oc14-21	384414	753634	71036	473	32	SEE	
Oc14-22	384417	753634	73449	473	25	SEE	
Oc14-23	384419	753638	73450	473	27	SEE	
Oc14-24	384443	753615		14	55	SEE	
Oc14-25	384453	753657	30274	14	60	SEE	
Oc14-27	384413	753611	100858	608	418	SEE	G
Oc15-01	384458	753543	52796	14	105	SEE	
Oc15-02	384458	753543	52797	14	105	SEE	
Oc15-03	384438	753557	64339	437	24	SEE	
Oc15-04	384439	753557	64340	437	24	SEE	
Oc15-05	384438	753559	64341	437	24	SEE	
Oc15-06	384439	753557	64342	437	24	SEE	
Oc15-07	384439	753558	64494	437	30	SEE	
Oc15-08	384440	753558	64495	437	30	SEE	
Oc15-09	384427	753557	64496	437	30	SEE	
Oc15-10	384437	753559	65294	437	25	SEE	
Oc15-13	384453	753508		68	25	SEE	
Oc21-03	384322	753932	73085	68	70	SEW	G
Oc21-04	384358	753927		68	69	SEW	G
Oc21-05	384357	753901	30312	14	78	SEW	
Oc22-01	384331	753826	68052	608	77	SEW	
Oc22-02	384347	753841		68	25	SEW	
Oc24-02	384354	753614	40257	14	101	SEE	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Oc24-03	384348	753642	73578	473	20	SEE	
Oc24-04	384339	753649	73579	473	20	SEE	
Oc24-05	384345	753659	73580	473	20	SEE	
Oc25-03	384323	753524		7001	19	SEE	
Oc25-04	384315	753551	37797	14	96	SEE	
Oc31-01	384210	753941	80647	608	390	SEW	G
Oc31-02	384206	753919		68	25	SEW	
Oc31-03	384258	753916		68	25	SEW	
Oc32-02	384208	753840		14	64	SEW	
Oc32-03	384234	753857		68	25	SEW	
Oc33-01	384202	753725	40426	1	100	SEE	
Oc33-02	384220	753703	51165	101	20	SEE	
Oc33-03	384232	753701	51167	101	20	SEE	
Oc33-04	384247	753729		68	25	SEE	
Oc34-03	384214	753656	47021	14	420	SEE	G
Oc34-04	384248	753625	38361	14	100	SEE	
Oc34-05	384214	753656	48021	40	409	SEE	
Oc34-06	384205	753635	52677	1	90	SEE	
Oc34-07	384205	753635	52892	1	94	SEE	
Oc34-08	384238	753659	51166	101	20	SEE	
Oc34-09	384230	753650	40473	14	20	SEE	
Oc34-10	384240	753650	40473	14	21	SEE	
Oc35-01	384201	753520		68	54	SEE	
Oc35-02	384256	753520		68	84	SEE	
Oc35-03	384243	753535	40197	14	93	SEE	
Oc42-05	384102	753851	69509	608	256	SEW	G
Oc42-06	384102	753851	71159	608	285	SEW	G
Oc42-07	384119	753842	76646	101	110	SEW	
Oc42-08	384104	753850	39453	14	80	SEW	
Oc43-01	384102	753705		7001	17	SEE	
Oc43-02	384249	753740	33834	14	78	SEW	
Oc43-03	384249	753740	33834	14	100	SEW	
Oc43-05	384119	753646	53719	19	83	SEE	
Oc43-06	384110	753743	32167	14	60	SEW	
Oc43-07	384116	753753	59648	14	65	SEW	
Oc43-08	384133	753749	70158	608	285	SEW	
Oc44-01	384238	753621	39283	14	79	SEE	
Oc44-02	384106	753655	63371	14	97	SEE	
Oc44-03	384145	753609		1	69	SEE	

Table 1. List of well, boring, outcrop, and hand auger data points. SEW = Seaford West, SEE = Seaford East, Geophy = geophysical, G = natural gamma radiation, S = single point electric. Latitude and longitude given in degrees, minutes, and seconds. A list of drillers appears at the end of this table.

DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Oc45-01	384119	753553	31892	14	61	SEE	
Oc45-02	384120	753513	81551	608	368	SEE	
Oc45-03	384136	753536	85019	14	121	SEE	
Oc45-04	384103	753523		68	59	SEE	G
Oc45-05	384134	753528		14	93	SEE	
Oc45-06	384113	753525	30296	14	80	SEE	
Oc45-07	384107	753550		14	53	SEE	
Oc51-01	384028	753957	70258	608	300	SEW	
Oc51-02	384029	753958	65420	608	79	SEW	
Oc51-03	384055	753917	85862	101	340	SEW	
Oc52-03	384047	753804	33820	14	120	SEW	
Oc52-04	384022	753857	36137	14	120	SEW	
Oc53-02	384007	753745	47925	1	72	SEW	
Oc53-03	384017	753745	66113	14	80	SEW	
Oc53-04	384059	753717	47205	14	103	SEE	
Oc53-05	384010	753737	31639	14	60	SEW	
Oc54-01	384057	753648	50403	1	99	SEE	
Oc54-02	384007	753601	46578	22	100	SEE	
Oc54-03	384058	753642		14	70	SEE	
Oc55-01	384038	753539		68	54	SEE	
Oc55-02	384022	753537	75975	14	61	SEE	
Oc55-03	384046	753557		1	61	SEE	
Od11-01	384429	753418	51645	68	30	SEE	
Od11-03	384444	753421	51641	68	20	SEE	
Od11-04	384443	753421	51647	68	60	SEE	
Od11-05	384441	753421	51642	68	20	SEE	
Od11-06	384441	753419	51644	68	20	SEE	
Od11-07	384441	753417	51645	68	20	SEE	
Od11-08	384448	753449		68	25	SEE	
Od11-09	384448	753445		68	25	SEE	
Od11-10	384432	753442		68	25	SEE	
Od12-02	384449	753317	51426	68	50	SEE	
Od12-03	384451	753308	51425	68	20	SEE	
Od12-04	384421	753327	71592	14	80	SEE	
Od12-05	384448	753329		68	25	SEE	
Od12-06	384452	753304		68	25	SEE	
Od13-02	384419	753256		68	59	SEE	G
Od13-03	384453	753258		68	25	SEE	
Od13-04	384455	753250		68	23	SEE	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Od14-03	384456	753155	47761	14	105	SEE	
Od14-04	384438	753143	65385	608	70	SEE	
Od14-05	384429	753106		68	25	SEE	
Od15-02	384445	753040	47796	14	90	SEE	
Od15-03	384448	753049	47797	14	90	SEE	
Od15-04	384451	753038	47778	14	95	SEE	
Od15-05	384459	753058	47779	14	100	SEE	
Od15-06	384433	753000	77937	14	63	SEE	
Od15-07	384408	753043		14	60	SEE	
Od15-08	384407	753043		14	60	SEE	
Od21-02	384341	753452		1	69	SEE	
Od21-03	384339	753437		14	65	SEE	
Od21-04	384338	753429	31157	14	60	SEE	
Od21-05	384434	753407		68	25	SEE	
Od22-01	384322	753316		7	250	SEE	G
Od22-02	384342	753333		68	25	SEE	
Od23-01	384308	753210		5006	2600	SEE	S
Od23-05	384334	753240	51431	68	50	SEE	
Od23-06	384333	753217	51428	68	20	SEE	
Od23-07	384345	753229	37268	14	103	SEE	
Od23-08	384313	753243	53123	14	111	SEE	
Od23-09	384320	753226	33586	14	105	SEE	
Od24-01	384315	753108		5006	2674	SEE	G
Od24-03	384320	753158		68	165	SEE	G
Od24-04	384323	753159		68	195	SEE	G
Od24-05	384322	753159	49485	14	123	SEE	
Od24-06	384334	753123	82021	608	100	SEE	
Od24-07	384315	753112		68	25	SEE	
Od25-01	384350	753036	40229	14	85	SEE	
Od25-02	384333	753011		68	25	SEE	
Od25-03	384306	753055	49011	7	100	SEE	
Od31-01	384202	753419	82062	14	130	SEE	
Od31-02	384221	753432		68	25	SEE	
Od32-01	384231	753341		68	114	SEE	
Od32-02	384221	753346		68	69	SEE	
Od32-03	384205	753337		68	114	SEE	
Od32-04	384233	753345		68	85	SEE	G
Od32-05	384251	753323	67472	7	70	SEE	
Od32-06	384243	753353		14	80	SEE	

Table 1. List of well, boring, outcrop, and hand auger data points. SEW = Seaford West, SEE = Seaford East, Geophy = geophysical, G = natural gamma radiation, S = single point electric. Latitude and longitude given in degrees, minutes, and seconds. A list of drillers appears at the end of this table.

DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Od33-02	384242	753226	39741	14	93	SEE	
Od33-03	384229	753253	51427	68	50	SEE	
Od33-04	384234	753216	51432	68	20	SEE	
Od33-05	384219	753219	49380	1	105	SEE	
Od33-06	384219	753219	49298	1	125	SEE	
Od33-07	384219	753219	49335	1	105	SEE	
Od33-08	384241	753255	71446	608	75	SEE	
Od34-02	384234	753106	65511	608	90	SEE	
Od34-03	384236	753124	83084	14	100	SEE	
Od34-04	384239	753124	84352	1	80	SEE	
Od34-05	384230	753113	81945	14	60	SEE	
Od34-06	384243	753124	30040	14	100	SEE	
Od35-06	384213	753033	51204	14	70	SEE	
Od35-07	384242	753031	31206	14	70	SEE	
Od41-01	384116	753434	81558	14	83	SEE	
Od41-02	384115	753401		68	25	SEE	
Od42-01	384141	753350		68	89	SEE	
Od42-02	384115	753358		68	99	SEE	
Od42-03	384124	753305	64254	14	55	SEE	
Od42-04	384121	753307	57458	14	55	SEE	
Od42-05	384155	753349	83641	1	67	SEE	
Od42-06	384132	753303	70043	14	95	SEE	
Od42-07	384117	753303		68	25	SEE	
Od43-02	384101	753251		68	20	SEE	
Od43-03	384106	753251		68	20	SEE	
Od44-02	384156	753110	90221	68	19	SEE	
Od44-03	384107	753153		68	59	SEE	G
Od51-03	384023	753432		68	59	SEE	G
Od51-04	384038	753404		68	25	SEE	
Od52-01	384045	753303		14	70	SEE	
Od53-02	384003	753202	46289	14	100	SEE	
Od53-03	384001	753214	65782	14	75	SEE	
Od53-04	384039	753203		68	25	SEE	
Od55-02	384000	753002	55815	14	123	SEE	
Od55-03	384047	753028	53198	22	89	SEE	
Od55-04	384028	753029		68	25	SEE	
Pb13-01	383945	754228		40	303	SEW	
Pb13-07	383919	754230		14	95	SEW	
Pb14-03	383902	754138	64414	1	115	SEW	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Pb14-04	383904	754132	64413	1	100	SEW	
Pb14-05	383904	754132	64415	1	115	SEW	
Pb14-06	383916	754103	64906	14	101	SEW	
Pb14-07	383916	754003	64907	14	100	SEW	
Pb15-04	383911	754032		68	79	SEW	G
Pb15-05	383939	754028		68	25	SEW	
Pb23-02	383858	754205	60303	14	110	SEW	
Pb23-03	383858	754205	60304	14	110	SEW	
Pb23-04	383806	754225	32214	1	87	SEW	
Pb24-03	383823	754108	63800	1	80	SEW	
Pb24-04	383830	754134	66998	608	83	SEW	
Pb24-05	383831	754135	66999	608	90	SEW	
Pb24-06	383837	754139	63797	1	73	SEW	
Pb24-07	383844	754145		1	74	SEW	
Pb24-08	383819	754108		1	70	SEW	
Pb25-02	383822	754013	73986	608	56	SEW	
Pb25-03	383820	754005	68066	1	71	SEW	
Pb25-04	383820	754005	68067	1	68	SEW	
Pb25-05	383832	754020	72341	14	319	SEW	
Pb25-06	383824	754040	32598	14	81	SEW	
Pb25-07	383804	754033		68	25	SEW	
Pb33-02	383722	754209	37681	14	61	SEW	
Pb33-03	383719	754208	37681	14	59	SEW	
Pb33-04	383716	754207	37681	14	61	SEW	
Pb33-05	383744	754209	39381	14	121	SEW	
Pb33-06	383753	754213	39581	14	100	SEW	
Pb34-02	383715	754142	39989	14	120	SEW	
Pb34-03	383756	754135		68	25	SEW	
Pb34-04	383745	754106		68	25	SEW	
Pb35-02	383727	754021		14	91	SEW	
Pb35-03	383756	754012		14	77	SEW	
Pb35-04	383742	754031	67973	101	120	SEW	
Pb35-05	383743	754011	31711	14	60	SEW	
Pb43-01	383622	754217		7001	20	SEW	
Pc11-02	383913	753951	47093	68	20	SEW	
Pc11-03	383923	753958	47094	68	20	SEW	
Pc11-04	383926	753907	82135	101	120	SEW	
Pc11-05	383941	753909	85892	101	120	SEW	
Pc11-06	383958	753903		68	25	SEW	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Pc12-01	383936	753814	47097	68	18	SEW	
Pc12-02	383916	753856	47096	68	18	SEW	
Pc12-03	383929	753851	47095	68	17	SEW	
Pc12-04	383944	753801	70696	14	130	SEW	
Pc12-05	383950	753802	80072	14	80	SEW	
Pc12-06	383953	753802	72640	14	83	SEW	
Pc12-07	383940	753952	33880	14	115	SEW	
Pc12-08	383947	753848		68	63	SEW	G
Pc13-01	383945	753724		1	41	SEE	
Pc13-03	383906	753727	10323	14	104	SEW	
Pc13-03	383906	753727	10323	14	104	SEE	
Pc13-07	383938	753750		14	70	SEW	
Pc13-08	383908	753729	56265	14	125	SEW	
Pc13-09	383903	753755	31201	14	60	SEW	
Pc14-01	383912	753645	49542	14	130	SEE	G
Pc14-03	383956	753644	90219	68	130	SEE	G
Pc14-04	383941	753647	90222	68	75	SEE	G
Pc14-05	383950	753647	90223	68	75	SEE	G
Pc14-06	383956	753644	90225	68	60	SEE	
Pc14-07	383911	753647	90226	68	55	SEE	
Pc14-08	383950	753649	90224	68	60	SEE	
Pc14-09	383918	753620		14	105	SEE	
Pc14-10	383944	753605	46577	22	120	SEE	
Pc14-11	383915	753644	50330	14	130	SEE	
Pc14-12	383924	753605	30239	14	50	SEE	
Pc14-13	383941	753647	93404	31	140	SEE	G,S
Pc15-02	383916	753501	47099	68	18	SEE	
Pc15-03	383954	753547	85131	608	95	SEE	
Pc15-04	383928	753513		1	71	SEE	
Pc15-05	383908	753514		1	96	SEE	
Pc15-06	383914	753523		14	109	SEE	
Pc15-07	383924	753520	31058	14	60	SEE	
Pc15-08	383917	753539	31952	14	110	SEE	
Pc15-09	383917	753517	32556	14	81	SEE	
Pc15-13	383923	753505		52	65	SEE	
Pc21-02	383826	753914		7001	26	SEW	
Pc21-03	383859	753952	71532	14	110	SEW	
Pc21-04	383859	753952	72248	14	97	SEW	
Pc21-05	383850	753919	39037	14	101	SEW	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Pc22-05	383813	753854	33442	57	113	SEW	
Pc22-06	383816	753815	74465	608	115	SEW	
Pc22-07	383851	753817	77806	101	103	SEW	
Pc22-08	383832	753752	85326	608	390	SEW	
Pc23-01	383810	753708		19	130	SEE	
Pc23-02	383819	753719		40	113	SEE	
Pc23-03	383841	753717		40	103	SEE	
Pc23-10	383821	753738		31	116	SEW	
Pc23-11	383847	753724		31	120	SEE	
Pc23-12	383838	753736		14	115	SEW	
Pc23-15	383847	753703		14	80	SEE	
Pc23-16	383855	753701		14	84	SEE	
Pc24-08	383839	753658	10388	7000	90	SEE	
Pc24-11	383815	753631		5000	82	SEE	
Pc24-16	383828	753621		31	140	SEE	S
Pc24-18	383832	753627		14	100	SEE	
Pc24-19	383853	753627		14	110	SEE	
Pc24-20	383847	753652		14	110	SEE	
Pc24-21	383809	753602	46843	101	100	SEE	
Pc25-01	383815	753547		1	45	SEE	
Pc25-02	383810	753533		7001	22	SEE	
Pc25-03	383828	753533		14	80	SEE	
Pc25-04	383834	753548		68	25	SEE	
Pc25-04	383834	753548		68	25	SEE	
Pc25-05	383803	753532		14	95	SEE	
Pc25-07	383839	753504		14	85	SEE	
Pc25-08	383825	753515		1	103	SEE	
Pc25-09	383837	753548		1	103	SEE	
Pc25-10	383835	753551		1	107	SEE	
Pc25-11	383829	753557		1	91	SEE	
Pc25-12	383830	753551		1	80	SEE	
Pc25-14	383832	753543	51445	14	320	SEE	G
Pc25-15	383829	753519	70976	608	373	SEE	G
Pc25-16	383804	753523	42299	7	375	SEE	
Pc25-17	383828	753555	71616	14	78	SEE	
Pc25-18	383802	753539	86003	14	80	SEE	
Pc31-01	383749	753917		14	96	SEW	
Pc31-02	383742	753932		14	58	SEW	
Pc32-01	383736	753802		5002	95	SEW	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Pc32-05	383748	753816		31	115	SEW	
Pc32-06	383739	753814		31	115	SEW	G
Pc32-13	383802	753855	33064	14	121	SEW	
Pc32-14	383730	753835	30162	14	80	SEW	
Pc32-15	383743	753837	73944	1	53	SEW	
Pc32-16	383736	753854		68	25	SEW	
Pc32-17	383721	753810		14	22	SEW	
Pc33-01	383744	753733		7000	902	SEW	
Pc33-08	383740	753728		7000	90	SEE	
Pc33-12	383752	753725		5002	90	SEE	
Pc33-13	383741	753731		5002	110	SEE	
Pc33-14	383758	753741		5002	125	SEE	
Pc33-15	383736	753729		5002	90	SEE	
Pc33-16	383732	753731		5002	94	SEE	
Pc33-17	383728	753742		5002	95	SEE	
Pc33-19	383741	753725		5002	90	SEE	
Pc33-20	383752	753723		5002	102	SEE	
Pc33-35	383745	753731		5002	100	SEE	
Pc33-36	383748	753729		5002	95	SEE	
Pc33-38	383732	753748		5002	91	SEE	
Pc33-39	383722	753737		5002	95	SEE	
Pc33-40	383745	753750	35108	14	94	SEE	S
Pc33-54	383735	753756		14	26	SEW	
Pc33-55	383736	753757		14	26	SEW	
Pc33-56	383737	753757		14	30	SEW	
Pc34-01	383734	753629		68	84	SEE	
Pc34-01	383734	753629		68	84	SEE	
Pc34-04	383758	753640		14	120	SEE	S
Pc34-05	383758	753640		14	120	SEE	
Pc34-06	383758	753638	40025	14	110	SEE	
Pc34-07	383758	753636	40024	14	110	SEE	
Pc34-08	383746	753635		14	77	SEE	
Pc34-09	383749	753636		14	70	SEE	
Pc41-03	383753	753512		68	30	SEE	
Pd11-01	383908	753449		41	71	SEE	
Pd11-03	383909	753455		1	89	SEE	
Pd11-04	383910	753449	47101	68	22	SEE	
Pd11-05	383912	753459		14	80	SEE	
Pd11-06	383918	753454		14	80	SEE	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Pd11-07	383935	753428	60016	1	103	SEE	
Pd11-08	383943	753433		1	111	SEE	
Pd11-09	383907	753428	71387	608	90	SEE	
Pd11-10	383915	753452	32130	57	80	SEE	
Pd11-11	383914	753431	71502	608	91	SEE	
Pd11-12	383956	753405	32353	14	70	SEE	
Pd12-02	383922	753303	67565	14	120	SEE	
Pd12-03	383953	753303		1	60	SEE	
Pd12-04	383940	753327		68	25	SEE	
Pd13-04	383958	753214	50779	14	110	SEE	
Pd14-01	383941	753134		68	25	SEE	
Pd15-03	383954	753048		68	20	SEE	
Pd15-04	383945	753017	90653	608	140	SEE	G
Pd21-01	383835	753454		1	92	SEE	
Pd21-03	383826	753435		14	80	SEE	
Pd21-04	383836	753449		1	392	SEE	
Pd21-05	383829	753446		1	128	SEE	
Pd21-06	383828	753438	47086	68	20	SEE	
Pd21-07	383850	753421	78413	435	400	SEE	G
Pd21-08	383839	753450	81668	608	380	SEE	G
Pd21-09	383825	753457	83534	608	420	SEE	G
Pd21-10	383829	753456		14	70	SEE	
Pd22-02	383806	753310		14	65	SEE	
Pd22-03	383823	753332	69003	608	45	SEE	
Pd22-04	383859	753458	87640	608	162	SEE	G
Pd22-05	383821	753301		68	35	SEE	G
Pd22-06	383814	753304		14	70	SEE	
Pd22-07	383805	753346		68	25	SEE	
Pd23-01	383821	753233		68	25	SEE	
Pd23-02	383821	753228		68	25	SEE	
Pd23-03	383821	753220		68	25	SEE	
Pd24-03	383820	753138	57328	1	46	SEE	
Pd25-03	383831	753056	37222	14	107	SEE	
Pd25-04	383840	753030	35666	14	65	SEE	
Pd25-05	383804	753013	68804	101	120	SEE	
Pd25-06	383807	753045		68	25	SEE	
Pd25-07	383847	753002		68	25	SEE	
Pd25-08	383829	753041		68	25	SEE	
Pd25-09	383833	753035		68	25	SEE	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Pd25-10	383843	753022		68	20	SEE	
Pd31-03	383757	753416	37459	14	113	SEE	
Pd31-04	383742	753457	66774	14	280	SEE	
Pd31-05	383757	753432	31561	14	90	SEE	
Pd32-01	383739	753303	81033	14	120	SEE	
Pd32-02	383733	753326	82204	14	19	SEE	
Pd32-03	383731	753322	82205	14	20	SEE	
Pd32-07	383754	753351		68	25	SEE	
Pd32-08	383749	753353		68	25	SEE	
Pd32-09	383758	753347		68	25	SEE	
Pd33-03	383748	753236	52084	68	80	SEE	G
Pd33-04	383748	753235	52085	68	125	SEE	G
Pd33-05	383747	753235	52086	68	75	SEE	
Pd34-02	383759	753106		68	25	SEE	
Pd35-03	383728	753121	50115	1	80	SEE	
Ob13-a	384429	754208		ha	11	SEW	
Ob23-a	384316	754237		ha	10	SEW	
Ob23-b	384340	754253		ha	11	SEW	
Ob23-c	384335	754203		ha	6	SEW	
Ob23-d	384316	754237		ha	11	SEW	
Ob23-e	384331	754210		ha	4	SEW	
Ob23-f	384331	754204		ha	10	SEW	
Ob23-g	384337	754216		ha	9	SEW	
Ob24-a	384342	754140		ha	6	SEW	
Ob25-a	384349	754037		ha	11	SEW	
Ob34-a	384259	754111		ha	7	SEW	
Ob34-b	384212	754143		ha	11	SEW	
Ob45-a	384105	754057		ha	9	SEW	
Ob54-a	384014	754144		ha	10	SEW	
Oc11-a	384441	753912		ha	9	SEW	
Oc11-b	384432	753919		ha	11	SEW	
Oc12-a	384430	753804		ha	6	SEW	
Oc15-a	384413	753530		ha	10	SEE	
Oc15-b	384452	753510		ha	9	SEE	
Oc15-c	384415	753501		ha	11	SEE	
Oc15-d	384416	753517		ha	4	SEE	
Oc15-e	384416	753509		ha	6	SEE	
Oc15-f	384407	753504		ha	6	SEE	
Oc23-a	384301	753719		ha	11	SEE	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Oc32-a1	384246	753812		ha	5	SEW	
Oc32-a2	384249	753819		ha	4	SEW	
Oc32-a3	384248	753817		ha	6	SEW	
Oc32-a4	384247	753816		ha	4	SEW	
Oc32-a5	384245	753813		ha	5	SEW	
Oc32-a6	384244	753811		ha	3	SEW	
Oc32-a7	384246	753810		ha	3	SEW	
Oc32-b	384204	753838		ha	6	SEW	
Oc34-a	384245	753643		ha	6	SEE	
Oc42-a	384131	753807		ha	4	SEW	
Oc43-a	384106	753704		ha	6	SEE	
Oc43-b	384108	753704		ha	3	SEE	
Oc43-c	384109	753703		ha	6	SEE	
Oc44-a	384133	753605		ha	10	SEE	
Oc45-a	384127	753554		ha	9	SEE	
Od11-a	384448	753422		ha	8	SEE	
Od11-b	384450	753459		ha	8	SEE	
Od11-c	384436	753459		ha	11	SEE	
Od11-d	384428	753459		ha	10	SEE	
Od11-e	384408	753449		ha	6	SEE	
Od11-f	384408	753442		ha	6	SEE	
Od11-g	384440	753430		ha	6	SEE	
Od11-h	384425	753417		ha	7	SEE	
Od11-i	384413	753428		ha	14	SEE	
Od11-j	384419	753407		ha	11	SEE	
Od11-k	384445	753429		ha	7	SEE	
Od12-a	384458	753307		ha	10	SEE	
Od13-a	384402	753223		ha	9	SEE	
Od13-b	384407	753259		ha	6	SEE	
Od15-a	384444	753031		ha	11	SEE	
Od21-a	384303	753451		ha	10	SEE	
Od22-a	384341	753319		ha	10	SEE	
Od22-b	384339	753304		ha	10	SEE	
Od32-a	384234	753349		ha	5	SEE	
Od32-b	384230	753342		ha	5	SEE	
Od32-c	384229	753345		ha	6	SEE	
Od32-d	384217	753347		ha	6	SEE	
Od33-a	384244	753300		ha	15	SEE	
Od35-a	384215	753041		ha	10	SEE	

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DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Od35-b	384220	753054		ha	9	SEE	
Od43-a4	384152	753256		ha	12	SEE	
Od43-b1	384111	753254		ha	5	SEE	
Od43-b2	384111	753256		ha	6	SEE	
Od44-b	384106	753108		ha	10	SEE	
Od44-c	384124	753129		ha	10	SEE	
Od51-a	384046	753457		ha	9	SEE	
Od51-b	384034	753441		ha	10	SEE	
Od51-c	384008	753419		ha	10	SEE	
Od51-d	384032	753411		ha	10	SEE	
Od52-a	384025	753312		ha	5	SEE	
Od52-b	384027	753312		ha	6	SEE	
Od52-c	384029	753312		ha	6	SEE	
Od52-d	384032	753311		ha	6	SEE	
Od52-e	384034	753312		ha	6	SEE	
Od52-f	384034	753315		ha	8	SEE	
Od52-g1	384033	753318		ha	7	SEE	
Od52-g10	384027	753308		ha	3	SEE	
Od52-g11	384033	753333		ha	6	SEE	
Od52-g2	384032	753318		ha	1	SEE	
Od52-g4	384032	753318		ha	1	SEE	
Od52-g5	384035	753320		ha	3	SEE	
Od52-h	384031	753322		ha	7	SEE	
Od52-i	384029	753324		ha	10	SEE	
Od52-k	384030	753325		ha	4	SEE	
Od52-l1	384023	753311		ha	4	SEE	
Od52-l10	384027	753308		ha	7	SEE	
Od52-l2	384024	753309		ha	5	SEE	
Od52-l3	384025	753311		ha	3	SEE	
Od52-l4	384025	753310		ha	2	SEE	
Od52-l5	384026	753313		ha	2	SEE	
Od52-l6	384025	753313		ha	3	SEE	
Od52-l7	384027	753310		ha	2	SEE	
Od52-l8	384027	753309		ha	13	SEE	
Od52-l9	384027	753308		ha	6	SEE	
Od52-m	384034	753317		ha	8	SEE	
Od52-n	384032	753321		ha	8	SEE	
Od52-o	384032	753321		ha	7	SEE	
Od52-p1	384034	753327		ha	2	SEE	

Table 1. List of well, boring, outcrop, and hand auger data points. SEW = Seaford West, SEE = Seaford East, Geophy = geophysical, G = natural gamma radiation, S = single point electric. Latitude and longitude given in degrees, minutes, and seconds. A list of drillers appears at the end of this table.

DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Od52-p2	384034	753327		ha	2	SEE	
Od52-q1	384035	753325		ha	1	SEE	
Od52-q2	384035	753325		ha	1	SEE	
Od52-r1	384020	753315		ha	3	SEE	
Od52-r10	384027	753324		ha	5	SEE	
Od52-r11	384027	753325		ha	4	SEE	
Od52-r12	384028	753326		ha	5	SEE	
Od52-r13	384028	753327		ha	6	SEE	
Od52-r14	384028	753328		ha	2	SEE	
Od52-r2	384021	753316		ha	7	SEE	
Od52-r3	384021	753316		ha	4	SEE	
Od52-r4	384022	753317		ha	2	SEE	
Od52-r5	384023	753319		ha	2	SEE	
Od52-r6	384023	753320		ha	4	SEE	
Od52-r7	384024	753320		ha	5	SEE	
Od52-r8	384026	753321		ha	6	SEE	
Od52-r9	384026	753323		ha	2	SEE	
Od52-s1	384032	753310		ha	6	SEE	
Od52-s2	384033	753309		ha	5	SEE	
Od52-s3	384034	753308		ha	3	SEE	
Od52-s4	384034	753308		ha	1	SEE	
Od52-s5	384036	753306		ha	3	SEE	
Od52-s6	384036	753306		ha	5	SEE	
Od52-s7	384037	753305		ha	4	SEE	
Od52-s8	384037	753305		ha	6	SEE	
Od52-t1	384028	753307		ha	5	SEE	
Od52-t2	384030	753307		ha	5	SEE	
Od52-t3	384030	753307		ha	2	SEE	
Od54-a	384011	753101		ha	6	SEE	
Od55-a	383950	753001		ha	6	SEE	
Pb25-a	383832	754018		ha	9	SEW	
Pb25-c	383813	754028		ha	3	SEW	
Pb34-a	383748	754118		ha	11	SEW	
Pb35-a	383729	754023		ha	11	SEW	
Pc21-a	383814	753954		ha	11	SEW	
Pc21-b	383804	753923		ha	11	SEW	
Pc21-c	383814	753907		ha	11	SEW	
Pc24-a	383845	753502		ha	6	SEE	
Pc25-a	383857	753501		ha	9	SEE	

Table 1. List of well, boring, outcrop, and hand auger data points. SEW = Seaford West, SEE = Seaford East, Geophy = geophysical, G = natural gamma radiation, S = single point electric. Latitude and longitude given in degrees, minutes, and seconds. A list of drillers appears at the end of this table.

DGSID	Latitude	Longitude	Permit No.	Driller No.	Total Depth (ft)	Quad	Geophy Log
Pc31-a	383754	753936		ha	7	SEW	
Pc31-b	383745	753913		ha	11	SEW	
Pd12-a	383930	753354		ha	14	SEE	
Pd12-b	383908	753347		ha	6	SEE	
Pd12-c	383909	753345		ha	8	SEE	
Pd12-d	383910	753344		ha	5	SEE	
Pd12-e	383909	753342		ha	5	SEE	
Pd13-a	383940	753236		ha	8	SEE	
Pd14-a	383922	753151		ha	10	SEE	
Pd21-a	383856	753458		ha	6	SEE	
Pd22-a	383850	753314		ha	10	SEE	
Pd23-a	383858	753218		ha	10	SEE	
Pd23-b	383822	753319		ha	16	SEE	
Pd23-b	383822	753319		ha	16	SEE	
Pd23-c	383821	753212		ha	11	SEE	
Pd23-d	383821	753224		ha	3	SEE	
Pd25-a	383820	753049		ha	11	SEE	
Pd25-b	383842	753032		ha	4	SEE	
Pd25-c	383843	753035		ha	2	SEE	
Pd31-a	383729	753412		ha	8	SEE	
Pd32-a	383752	753349		ha	15	SEE	
Pd32-b	383757	753353		ha	5	SEE	
Pd32-c	383746	753359		ha	7	SEE	
Od43-a1	384152	753256		oc	13	SEE	
Od43-a2	384152	753256		oc	20	SEE	
Od43-a3	384152	753256		oc	10	SEE	
Od43-a4	384152	753256		oc	11	SEE	
Od44-a	384101	753108		oc	4	SEE	
Od53-a1	384044	753259		oc	11	SEE	
Od53-a2	384043	753258		oc	19	SEE	
Od53-u1	384044	753301		oc	8	SEE	
Od53-u2	384043	753302		oc	9	SEE	
Od53-u3	384042	753304		oc	11	SEE	
Od53-b2	384031	753255		oc	19	SEE	
Od53-b3	384030	753258		oc	19	SEE	
Pb25-b	383813	754028		oc	8	SEW	
Pc22-a	383801	753847		oc	12	SEW	
Pd32-a	383752	753349		oc	15	SEE	

Table 1 (continued). List of drillers and numbers

Driller no.	Explanation
ha	hand auger, Delaware Geological Survey
oc	borrow pit, drainage ditch exposure, Delaware Geological Survey observation
1	White Drilling Corp.
7	Burns Well Drilling, Inc.
14	Delmarva Drilling, Inc.
19	Sydnor Hydrodynamics, Inc.
22	Larson Drilling Co., Inc.
31	A. C. Schulties, Inc.
40	Shannahan Artesian Well Co., Inc.
52	Walton Corp.
57	E. Kauffman
68	Delaware Geological Survey
101	Lifetime Drilling, Inc.
435	Jesco, Inc.
437	Handex, Inc.
473	Earth Data, Inc.
608	American Water Well Systems, Inc.
5000	B & D Well Service
5002	Ennis Brothers
5006	Sun Oil Co.
7000	Layne-New York Co., Inc.
7001	U. S. Geological Survey

Table 2. Sample processing record. Lat = latitude, Lon = longitude, Alt = land surface altitude, PL = pollen identification, LT = detailed lithologic description, CM = clay mineral identification, LM = light mineral identification, GS = grain size analysis, PB = pebble count. Latitude and longitude given in degrees, minutes, and seconds. Altitude and depth given in feet.

DGSID	Sample No.	Lat	Lon	Alt	Start Depth	Stop Depth	PL	LT	CM	LM	GS	PB
Ob23-02	83895	384305	754251	41	1.5	2.5		y				
Ob23-02	83896	384305	754251	41	5	8		y		y	y	
Ob23-02	83897	384305	754251	41	8	11		y				
Ob23-02	83898	384305	754251	41	11	14.5		y		y	y	
Ob23-02	83899	384305	754251	41	14.5	20		y	y			
Ob23-02	83900	384305	754251	41	20	28		y		y	y	
Ob23-02	83901	384305	754251	41	28	35	y					
Ob23-02	83902	384305	754251	41	30	42						y
Ob23-02	83904	384305	754251	41	45	50	y	y	y			
Ob23-02	83905	384305	754251	41	50	58		y				
Ob23-02	83906	384305	754251	41	68	80		y		y	y	
Ob23-02	83907	384305	754251	41	80							y
Ob23-04	84833	384336	754222	40	6	7	y					
Ob23-04	84834	384336	754222	40	8.5	10	y					
Ob23-04	84837	384336	754222	40	13.5	25						y
Ob23-07	84846	384336	754222	38	6.2	6.5	y					
Ob23-07	84847	384339	754247	38	6.8	7.2	y					
Ob24-03	83888	384332	754150	40	12	58						y
Ob24-05	84068	384312	754152	45	0	5		y				
Ob24-05	84069	384312	754152	45	1	4		y				
Ob24-05	84070	384312	754152	45	7	15		y				
Ob24-05	84071	384312	754152	45	16	20		y				
Ob24-05	84072	384312	754152	45	20	25		y				
Ob24-a	42203	384342	754140	45	2.7	2.9	y					
Ob34-b	41920	384212	754143	50	6.5	7			y			
Ob45-02	82396	384135	754004	45	5	10		y				
Ob45-02	82397	384135	754004	45	30	35		y				
Ob45-02	82398	384135	754004	45	40	45		y				
Ob45-02	82399	384135	754004	45	55	60		y				
Ob45-02	82400	384135	754004	45	65	70		y				
Ob45-02	82401	384135	754004	45	95	100		y				
Ob45-02	82402	384135	754004	45	105	110		y				
Ob45-02	82403	384135	754004	45	125	130		y	y			
Ob45-02	82404	384135	754004	45	135	140		y				
Ob45-02	82405	384135	754004	45	155	160		y				
Ob45-02	82406	384135	754004	45	185	190		y	y			
Ob45-02	82407	384135	754004	45	195	200		y				
Ob45-02	82408	384135	754004	45	205	210		y	y			
Ob45-02	82409	384135	754004	45	225	230		y				
Ob45-02	82410	384135	754004	45	245	250		y				
Ob45-02	82411	384135	754004	45	285	290		y				
Ob45-02	82412	384135	754004	45	315	320		y				
Ob45-02	82413	384135	754004	45	355	360		y				
Ob45-02	82414	384135	754004	45	360	370		y				
Ob53-03	32937	304001	754212	43	10	15			y			

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DGSID	Sample No.	Lat	Lon	Alt	Start Depth	Stop Depth	PL	LT	CM	LM	GS	PB
Ob53-03	32964	304001	754212	43	150	155			y			
Ob53-03	32984	304001	754212	43	250	255			y			
Ob53-03	33008	304001	754212	43	370	375			y			
Ob54-02	84015	384144	754114	45	1	4		y	y			
Ob54-02	84017	384144	754014	45	5	10		y	y			
Ob54-02	84018	384144	754014	45	0	20						y
Ob54-02	84020	384144	754014	45	17	19		y	y			
Ob54-02	84025	384144	754014	45	40	60						y
Ob54-03	84128	384034	754102	46	2	4.5		y				
Ob54-03	84129	384034	754102	46	5.5	7		y				
Ob54-03	84130	384034	754102	46	7	10		y				
Ob54-03	84131	384034	754102	46	10	14		y				
Ob55-03	83997	384001	754005	37	4	8		y		y	y	
Ob55-03	83998	384001	754005	37	8	14		y		y	y	
Ob55-03	84001	384001	754005	37	22	28		y		y	y	
Ob55-03	84002	384001	754005	37	30	37		y		y	y	
Ob55-03	84003	384001	754005	37	37	40	y	y	y			
Ob55-03	84005	384001	754005	37	52	59		y		y	y	
Ob55-04	84140	384005	754059	50	3.5	6		y	y			
Ob55-04	84142	384005	754059	50	11	13.5		y	y			
Ob55-04	84143	384005	754059	50	19	20		y	y			
Oc11-01	84027	384455	753913	53	2.5	4.5		y				
Oc11-01	84028	384455	753913	53	10	15		y				
Oc11-01	84029	384455	753913	53	4	6		y				
Oc11-01	84030	384455	753913	53	7	10		y				
Oc11-01	84039	384455	753913	53	58	70		y	y			
Oc11-01	84040	384455	753913	53	40	50						y
Oc11-01	84041	384455	753913	53	58	70						y
Oc13-05	84055	384431	753739	40	0	5		y	y			
Oc13-05	84057	384431	753739	40	20	24		y				
Oc13-05	84058	384431	753739	40	5	15		y				
Oc15-b	42182	384452	753510	38	8	8.5	y					
Oc21-04	84043	384358	753927	52	5	10		y				
Oc21-04	84044	384358	753927	52	10	15		y				
Oc21-04	84045	384358	753927	52	15	19.5		y				
Oc21-04	84054	384358	753927	52	64	69		y	y			
Oc31-03	84081	384258	753916	51	0	4		y	y			
Oc35-01	85293	384201	753520	40	1	2		y				
Oc35-01	85294	384201	753520	40	2	3		y				
Oc35-01	85295	384201	753520	40	3	4		y				
Oc35-01	85296	384201	753520	40	4	5		y				
Oc35-01	85297	384201	753520	40	6	7		y				
Oc35-01	85298	384201	753520	40	7	9		y				
Oc35-01	85299	384201	753520	40	9	10		y				
Oc35-01	85300	384201	753520	40	10	14		y				

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DGSID	Sample No.	Lat	Lon	Alt	Start Depth	Stop Depth	PL	LT	CM	LM	GS	PB
Oc35-01	85301	384201	753520	40	14	24		y				
Oc35-01	85302	384201	753520	40	24	29		y				
Oc35-01	85304	384201	753520	40	39	43		y				
Oc55-01	85309	384038	753539	30	0	2		y				
Oc55-01	85310	384038	753539	30	2	3		y				
Oc55-01	85311	384038	753539	30	3	4		y				
Oc55-01	85312	384038	753539	30	4	5		y				
Oc55-01	85313	384038	753539	30	5	7		y				
Oc55-01	85314	384038	753539	30	7	8		y				
Oc55-01	85315	384038	753539	30	8	13		y				
Oc55-01	85316	384038	753539	30	13	18		y				
Oc55-01	85317	384038	753539	30	18	23		y				
Oc55-01	85318	384038	753539	30	23	28		y				
Oc55-01	85319	384038	753539	30	28	33		y				
Od11-b	42177	384450	753459	30	4.3	4.7	y					
Od11-d	42190	384428	753459	37	7	7.5						y
Od13-02	83911	384419	753256	41	7	11		y	y			
Od13-02	83913	384419	753256	41	17	-						y
Od13-02	83920	384419	753256	41	60	-						y
Od14-05	84200	384429	753106	41	1	5		y	y			
Od22-02	84217	384342	753333	25	5	25						y
Od24-03	82751	384320	753158	40	130	140			y			
Od24-03	82753	384320	753158	40	150	160			y			
Od24-04	82755	384319	753120	40	150	160		y	y			
Od24-04	82756	384322	753120	40	160	170		y	y			
Od24-04	82757	384322	753120	40	170	180	y		y			
Od24-04	82758	384322	753120	40	180	190		y	y			
Od31-02	84232	384221	753432	38	2	5		y	y			
Od31-02	84234	384221	753432	38	7	10		y	y			
Od31-02	84235	384221	753432	38	11	19		y	y			
Od32-01	84671	384231	753341	30	0	2		y				
Od32-01	84672	384231	753341	30	2	2.5		y				
Od32-01	84673	384231	753341	30	2.5	6		y				
Od32-01	84674	384231	753341	30	6	9		y			y	
Od32-01	84675	384231	753341	30	9	14		y			y	
Od32-01	84676	384231	753341	30	14	19					y	
Od32-01	84677	384231	753341	30	19	24					y	
Od32-01	84678	384231	753341	30	24	29					y	
Od32-01	84679	384231	753341	30	29	34					y	
Od32-01	84680	384231	753341	30	34	39					y	
Od32-01	84681	384231	753341	30	39	44					y	
Od32-01	84682	384231	753341	30	44	49					y	
Od32-01	84683	384231	753341	30	49	54					y	
Od32-01	84684	384231	753341	30	54	59					y	
Od32-01	84685	384231	753341	30	59	64					y	

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DGSID	Sample No.	Lat	Lon	Alt	Start Depth	Stop Depth	PL	LT	CM	LM	GS	PB
Od32-01	84686	384231	753341	30	64	69					y	
Od32-01	84687	384231	753341	30	69	74					y	
Od32-01	84688	384231	753341	30	74	79					y	
Od32-01	84689	384231	753341	30	79	84					y	
Od32-02	84695	384221	753346	30	0	0.5		y				
Od32-02	84696	384221	753346	30	0.5	3		y				
Od32-02	84697	384221	753346	30	3	9		y				
Od32-02	84698	384221	753346	30	9	14		y				
Od32-02	84699	384221	753346	30	14	19		y				
Od32-03	84706	384205	753337	24	0	1		y			y	
Od32-03	84707	384205	753337	24	1	2		y			y	
Od32-03	84708	384205	753337	24	2	4		y			y	
Od32-03	84709	384205	753337	24	4	6.5		y			y	
Od32-03	84710	384205	753337	24	6.5	7.5		y			y	
Od32-03	84711	384205	753337	24	7.5	9.5		y			y	
Od32-03	84712	384205	753337	24	9.5	12.5		y			y	
Od32-03	84713	384205	753337	24	12.5	14		y			y	
Od32-03	84714	384205	753337	24	14	16		y			y	
Od32-03	84715	384205	753337	24	16	19		y			y	
Od32-03	84716	384205	753337	24	19	24		y			y	
Od32-03	84717	384205	753337	24	24	29		y			y	
Od32-03	84718	384205	753337	24	29	34		y			y	
Od32-03	84719	384205	753337	24	34	39		y			y	
Od32-03	84720	384205	753337	24	39	49		y			y	
Od32-03	84721	384205	753337	24	49	59		y			y	
Od32-03	84722	384205	753337	24	59	69		y			y	
Od32-03	84723	384205	753337	24	69	79		y			y	
Od32-03	84724	384205	753337	24	79	94		y			y	
Od32-03	84725	384205	753337	24	94	104		y			y	
Od32-03	84759	384205	753337	24	104	114					y	
Od32-04	83186	384230	753344	30	4	5	y					
Od32-04	83187	384230	753344	30	24	25	y					
Od32-c	42199	384229	753345	32	5.6	6	y					
Od33-a	41463	384244	753300	30	6	6				y	y	
Od41-02	84762	384115	753401	29	22	22.5	y					
Od41-02	84763	384115	753401	29	22.5	23	y					
Od41-02	84764	384115	753401	29	23	23.5	y					
Od41-02	84765	384115	753401	29	23.5	24	y					
Od42-01	84726	384141	753350	29	0	1		y				
Od42-01	84727	384141	753350	29	1	6		y				
Od42-01	84728	384141	753350	29	6	9		y				
Od42-01	84729	384141	753350	29	9	10		y				
Od42-01	84730	384141	753350	29	10	14		y				
Od42-01	84731	384141	753350	29	14	19		y				
Od42-01	84732	384141	753350	29	19	24		y				

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DGSID	Sample No.	Lat	Lon	Alt	Start Depth	Stop Depth	PL	LT	CM	LM	GS	PB
Od42-01	84733	384141	753350	29	24	27		y				
Od42-01	84737	384141	753350	29	39	49						y
Od42-02	84741	384115	753358	30	0	1.5		y				
Od42-02	84742	384115	753358	30	1.5	2.5		y				
Od42-02	84743	384115	753358	30	2.5	4		y				
Od42-02	84744	384115	753358	30	4	4.5		y				
Od42-02	84745	384115	753358	30	4.5	6		y				
Od42-02	84746	384115	753358	30	6	9		y				
Od42-02	84747	384115	753358	30	9	14		y				
Od42-02	84748	384115	753358	30	14	19		y				
Od42-02	84749	384115	753358	30	19	24		y				
Od42-02	84750	384115	753358	30	24	29		y				
Od43-a2	41477	384152	753256	48	10	16				y	y	
Od43-a2	41494	384152	753256	48	0	10				y	y	
Od43-a3	41495	384152	753256	30	6	9.5	y					
Od44-03	83968	384107	753153	32	15	20		y	y			
Od44-a	40362	384101	753108	32	1.5	4		y			y	
Od44-c	41729	384124	753129	32	4	4.5	y					
Od51-03	83975	384023	753432	25	5	10		y	y		y	
Od51-03	83976	384023	753432	25	10	15		y		y	y	
Od51-03	83977	384023	753432	25	15	19		y		y	y	
Od51-03	83979	384023	753432	25	28	43		y		y	y	
Od51-03	83980	384023	753432	25	46	56		y		y	y	
Od51-04	84768	384038	753404	27	16	17	y					
Od51-04	84769	384038	753404	27	18	19	y					
Od51-04	84770	384038	753404	27	20	21	y					
Od51-04	84771	384038	753404	27	23	24	y					
Od52-h	42118	384033	753318	5	2	3.5						y
Od52-h	42119	384033	753318	5	3	4.5						y
Od52-h	42120	384033	753318	5	2	5						y
Od52-n	42278	384031	753320	8	4	4.2						y
Od52-u2	41459	384043	753302	25	2	5					y	
Od52-u2	41460	384043	753302	25	4	10					y	
Od52-u3	41452	384043	753258	31	2	11						y
Od52-u3	41453	384042	753304	23	1	5.5					y	
Od52-u3	41455	384042	753304	23	4.5	8				y	y	
Od53-04	84165	384039	753003	30	7	11		y	y			
Od53-04	84166	384039	753003	30	11	16		y	y			
Od53-a2	41448	384043	753258	31	5.1	5.1					y	
Od53-a2	41449	384043	753258	31	9.9	12.9					y	
Od53-a2	41450	384043	753258	31	13.2	15.2					y	
Od53-a2	41451	384043	753258	31	18	20					y	
Od53-a2	41463	384043	753258	31	5	6						y
Od53-b1	40361	384031	753255	25	1	10		y			y	
Oe11-01	83196	384416	752925	39	69	69	y					

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DGSID	Sample No.	Lat	Lon	Alt	Start Depth	Stop Depth	PL	LT	CM	LM	GS	PB
Oxford, MD	58169	383813	760906	<10	2	4						y
Pb15-04	83928	383911	754032	40	0.5	1.5		y				
Pb15-04	83929	383911	754032	40	2.5	4		y				
Pb15-04	83930	383911	754032	40	6	8		y				
Pb15-04	83931	383911	754032	40	8	10		y				
Pb15-04	83932	383911	754032	40	10	12		y				
Pb15-04	83933	383911	754032	40	14	16		y				
Pb15-04	83934	383911	754032	40	16	20		y				
Pb25-b	40377	383813	754028	35	1.5	7		y			y	
Pb25-c	42156	383813	754028	35	7.5	7.5					y	
Pb25-c	42157	383813	754028	35	3.2	3.2					y	
Pb34-03	84122	383756	754135	38	2	4.5		y	y			
Pb34-03	84123	383756	754135	38	4.5	7.5		y	y			
Pb34-03	84124	383756	754135	38	7.5	11.5		y				
Pb34-03	84125	383756	754135	38	11.7	16		y				
Pb34-03	84126	383756	754135	38	20	23		y				
Pb34-03	84127	383756	754135	38	23	25		y				
Pb34-04	84096	383745	754106	36	1	5	y	y	y			
Pb34-04	84098	383745	754106	36	8	10	y					
Pb34-04	84099	383745	754106	36	10	15	y	y	y			
Pb34-04	84100	383745	754106	36	15	-						y
Pb34-04	84101	383745	754106	36	15	16	y	y				
Pb34-04	84104	383745	754106	36	25	-	y					
Pb44-01	84670	383659	754117	29	21	24.5						y
Pb45-04	84660	383615	754038	32	6	9	y					
Pb45-04	84661	383615	754038	35	9	11	y					
Pb45-04	84662	383615	754038	32	14	16	y					
Pb45-04	84663	383615	754038	35	19	21	y					
Pb53-02	84650	383505	754212	26	13	15	y					
Pb53-02	84653	383505	754212	26	6	24						y
Pb55-02	84646	383535	754002	9	19	24						y
Pb55-03	84655	383544	754100	32	6	7	y					
Pb55-03	84658	383544	754100	32	16	17	y					
Pb55-03	84659	383543	754059	32	23.5	24.5	y					
Pc11-06	84106	383958	753903	41	4	7		y	y			
Pc11-06	84109	383958	753903	41	12	19		y	y			
Pc11-06	84111	383958	753903	41	19	25		y	y			
Pc12-08	84014	383947	753848	35	23	43						y
Pc14-03	83827	383956	753644	34	4	5		y		y	y	
Pc14-03	83831	383956	753644	34	12	15		y		y	y	
Pc14-03	83833	383956	753644	34	50	60		y		y	y	
Pc14-03	83834	383956	753644	34	70	75		y		y	y	
Pc14-03	83836	383956	753644	34	120	125	y					
Pc14-04	83944	383949	753647	21	14	20		y	y			
Pc14-04	83947	383949	753647	21	58	61	y	y	y			

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DGSID	Sample No.	Lat	Lon	Alt	Start Depth	Stop Depth	PL	LT	CM	LM	GS	PB
Pc14-04	83950	383949	753647	21	7	60						y
Pc14-04	83951	383949	753647	21	60	75						y
Pc21-c	42096	383814	753907	27	1	2.5						y
Pc21-c	42098	383814	753907	27	10	10.5						y
Pc22-a	40379	383801	753847	22	1.5	11		y			y	
Pc25-04	22792	383860	753550	25.6	7.2	9.7	y					
Pc25-04	22793	383860	753550	25.6	9.5	12	y					
Pc25-04	32812	383834	753548	25.7	8.5	12.5		y	y			
Pc25-04	32818	383834	753548	25.7	22.9	24.5		y	y			
Pc41-01	22782	383620	754055	22.6	29.5	31	y					
Pc41-a	41866	383657	753938	26	8	9	y					
Pc41-a	41867	383658	753939	26	9	9.8	y					
Pc43-01	22826	383656	751212	25.2	35	-	y					
Pc43-01	22827	383656	751212	25.2	40	-	y					
Pc45-03	80639	383636	753516	39	5	10			y			
Pc45-03	80647	383636	753516	39	120	130			y			
Pc45-03	80648	383636	753516	39	180	200			y			
Pc45-03	80653	383636	753516	39	220	240			y			
Pc51-01	22711	383550	753920	6	9	10.5	y					
Pc51-01	22712	383550	753920	6	14	15.5	y					
Pc51-01	22713	383550	753920	6	19	20.5	y					
Pc54-05	84628	383554	753607	31	10	25						y
Pd11-a	42164	383946	753409	7	5	5					y	
Pd11-a	42165	383946	753409	7	9.9	9.9					y	
Pd11-a	42166	383946	753409	7	15.8	15.8					y	
Pd12-04	84197	383940	753327	29	11.5	16		y	y			
Pd21-07	83163	383250	753423	30	0	20	y		y			
Pd21-07	83164	383250	753423	30	20	40			y			
Pd21-07	83165	383250	753423	30	40	60	y		y			
Pd21-07	83166	383250	753423	30	60	80	y		y			
Pd21-07	83168	383250	753423	30	100	120	y		y			
Pd21-07	83169	383250	753423	30	120	140	y		y			
Pd21-07	83170	383250	753423	30	140	160	y		y			
Pd21-07	83171	383250	753423	30	160	180	y		y			
Pd21-07	83172	383250	753423	30	180	200			y			
Pd21-07	83176	383250	753423	30	260	280	y		y			
Pd21-a	42263	383856	753458	9	2	2.6						y
Pd21-a	42264	383856	753458	9	5.3	5.7						y
Pd22-05	83820	383821	753301	27	18	35						y
Pd25-06	84185	383807	753045	35	16.5	19		y	y			
Pd32-07	84781	383754	753351	26	14	19						y
Pd32-a	40381	383752	753349	28	1	15		y		y	y	
Pd34-02	84114	383759	753106	32	9	13		y	y			
Pf42-02	84472	383643	752342	47	12	15	y					
Pf42-02	84473	383643	752342	47	21	24	y					

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DGSID	Sample No.	Lat	Lon	Alt	Start Depth	Stop Depth	PL	LT	CM	LM	GS	PB
Qb14-04	84426	383412	754135	11	10	11.5	y					
Qb15-01	84439	383432	754006	5	10	22						y
Qb15-01	84440	383432	754006	5	23	25	y					
Qb23-01	84431	383353	754202	6	3	5	y					
Qb23-01	84434	383353	754202	6	11	12	y					
Qb23-01	84436	383353	754202	6	17	18	y					
Qb34-b	40139	383239	754136	12	8.3	9.6	y		y			
Qb45-01	84633	383156	754012	30	11	12.5	y					
Qb45-01	84636	383156	754038	30	16	20						y
Qc22-07	84418	383336	753829	25	17	18	y					
Qc22-07	84420	383336	753829	25	22	25	y					
Qc23-01	22774	383345	753705	20	8	10	y					
Qc31-a	42076	383218	753907	29	9.4	9.7						y
Qc31-a	42077	383218	753907	29	9.7	10.5						y
Qc45-05	84613	383122	753519	45	14	15	y					
Qd33-04	84356	383230	753218	33	19	21	y					
Qd34-01	84380	383238	753213	31	12	13	y					
Qe42-05	84329	383117	752823	40	16	18	y					
Qf12-02	84494	383451	752305	47	17	20						y
Trappe, MD	58166	383900	760253	50	8	14						y

Table 3. Results of pebble counts in map area. S = sedimentary rock, UNKN = unknown, QT = quartz, QTZ = quartzite, meta frag = metamorphic rock fragment, depths in feet.

DGSID	Sample No.	S	CHERT	UNKN	QT	QTZ	Other	Note	Start Depth	Stop Depth
Ob23-02	83902	3	3	0	8	10			30	42
Ob23-02	83907	2	5	0	8	4			60	80
Ob23-04	84837	0	20	1	62	3	1	ironstone	13	20
Ob24-03	83888	2	15	0	12	9			12	58
Ob54-02	84018	7	13	1	23	8			0	20
Ob54-02	84025	6	18	0	42	4			40	60
Oc11-01	84040	8	10	0	37	13			40	50
Oc11-01	84041	5	8	4	41	39			58	70
Od11-d	42190	2	138	0	70	24			7	7.5
Od13-02	83913	17	46	2	95	35			17	19
Od13-02	83920	6	20	6	41	43			51	60
Od22-02	84217	13	26	0	35	11			5	25
Od42-01	84737	5	20	0	28	35			39	49
Od52-h	42118	0	16	1	34	17			2	4.5
Od52-h	42119	2	11	0	30	19			3	4.5
Od52-h	42120	0	55	0	103	11			2	5
Od52-n	42278	2	54	0	56	33			4	4.2
Od52-u	41452	7	29	0	33	5	3	meta frag	2	11
Od53-a2	41463	4	27	0	48	3	2	meta frag	5	6
Oxford, MD	58169	6	97	0	76	24			2	3
Pb34-04	84100	3	12	0	47	49			15	15
Pb44-01	84670	0	13	0	49	15	1	meta frag	21	24
Pb53-02	84653	0	32	0	75	16			6	24
Pb55-02	84646	0	6	0	26	18			19	24
Pc12-08	84014	10	20	5	58	32			23	43
Pc14-04	83950	5	9	0	29	10			40	60
Pc14-04	83951	12	19	0	32	22	1	concretion	60	75
Pc21-c	42096	0	15	1	48	1	2	meta frag	1	2.5
Pc21-c	42098	0	14	0	69	4	1	meta frag	10	10.5
Pc54-05	84628	0	15	2	50	39			10	25
Pd21-a	42263	0	34	0	40	29			2.5	5
Pd21-a	42264	5	48	0	60	73			5.3	5.7
Pd22-05	83820	13	16	0	44	40			18	35
Pd32-07	84781	10	32	0	18	25			14	19
Qb15-01	84439	0	25	1	40	16			10	22
Qf12-02	84494	0	68	3	89	10			17	20
Qb45-01	84636	0	10	0	62	11			16	20
Qc31-a	42076	0	10	0	40	20			9.4	9.7
Qc31-a	42077	0	9	1	34	11	3	meta frag	9.7	10.5
Trappe, MD	58166	29	31	0	104	25			8	14

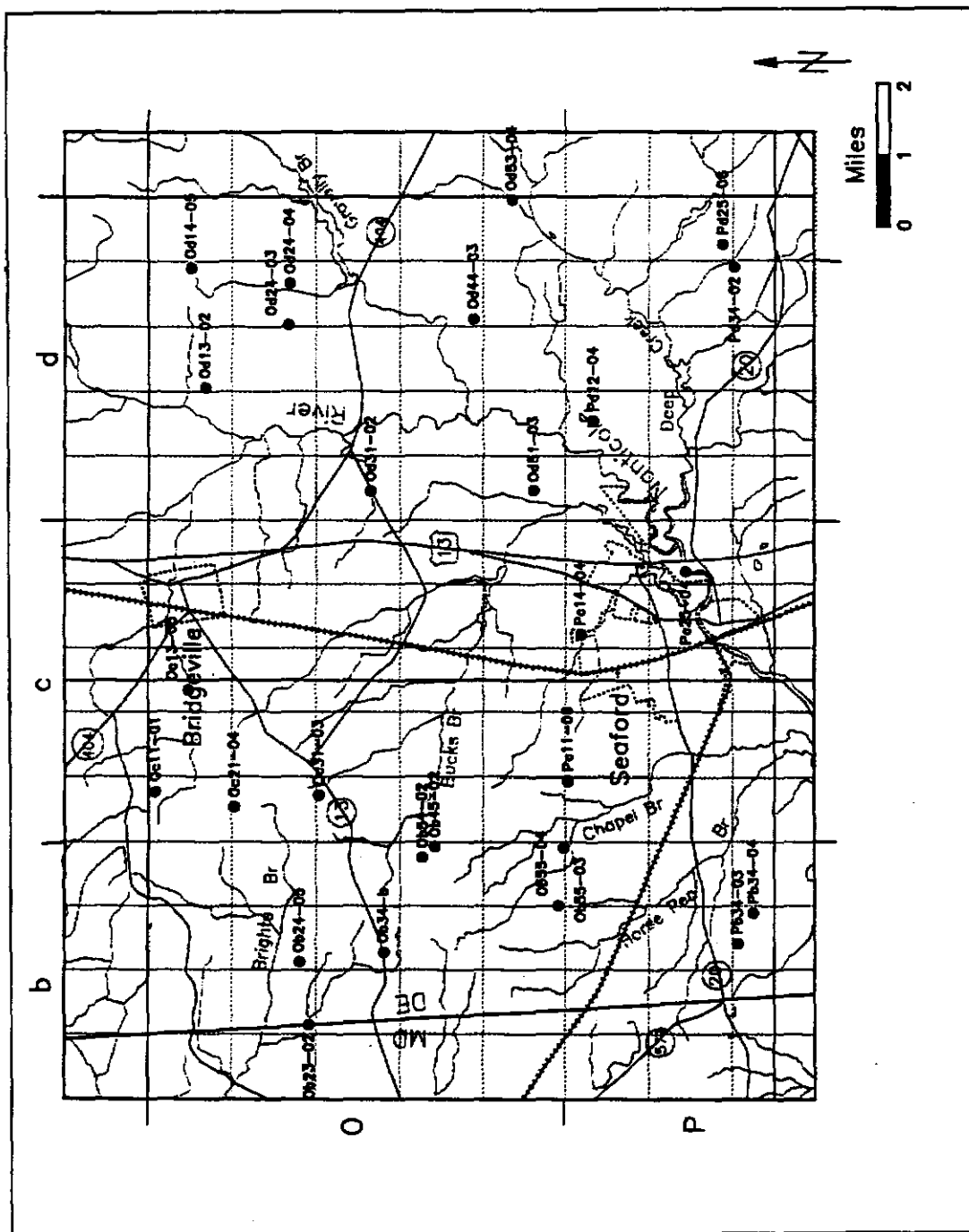


Figure 5. Map showing locations of samples analysed for mineralogy of clay size fraction.

Table 4. Results of semi-quantitative clay mineral analyses, given as percentage to nearest whole number. Readers are advised of the accuracy limitations due to the analytical procedures. Vermic = vermiculite, C.I. = crystallinity index, depths in feet.

DGSID	Sample No.	Smectite	Illite	Kaolinite	Chlorite	Vermic	Illite C.I.	Start Depth	Stop Depth
Ob23-02	83899	Poor crystallinity, no identification possible	32	21	13	0	8	15	20
Ob23-02	83904	34	32	78	0	0	0	45	50
Ob34-b	41920	21	1	38	17	0	0	7	7
Ob45-02	82403	8	38	12	6	0	16	125	130
Ob45-02	82406	66	17	39	28	0	7	185	190
Ob45-02	82408	17	30	67	21	0	3	205	210
Ob53-03	32937	3	1	22	6	0	1	10	15
Ob53-03	32964	4	54	10	0	0	38	150	155
Ob53-03	32984	67	17	23	0	0	9	250	255
Ob53-03	33008	66	11	97	0	0	7	370	375
Ob54-02	84015	3	0	100	0	0	0	1	4
Ob54-02	84017	0	0	100	0	0	0	5	10
Ob54-02	84020	0	0	32	12	0	0	17	19
Ob55-03	84003	12	45	56	39	0	13	37	40
Ob55-04	84140	0	5	100	0	0	1	4	6
Ob55-04	84142	0	0	96	0	0	0	11	14
Ob55-04	84143	0	0	24	28	0	0	19	20
Oc11-01	84039	6	42	84	0	16	19	58	70
Oc13-05	84055	0	0	36	21	0	0	0	5
Oc21-04	84054	4	39	85	0	0	17	64	69
Oc31-03	84081	15	0	100	0	0	0	0	4
Od13-02	83911	0	0	94	1	0	0	7	11
Od14-05	84200	3	2	58	17	0	1	1	5
Od24-03	82751	11	14	30	9	0	3	130	140
Od24-03	82753	34	27	29	17	0	14	150	160
Od24-04	82755	12	43	18	9	0	16	150	160
Od24-04	82756	44	30	13	5	0	9	160	170
Od24-04	82757	65	18	28	0	0	6	170	180
Od24-04	82758	45	27	81	32	16	3	180	190
Od31-02	84232	2	1	62	0	0	0	2	5
Od31-02	84234	4	2	91	0	0	2	7	10
Od31-02	84235	0	9	82	18	0	0	11	19
Od44-03	83968	0	0	0	0	0	0	15	20

Table 4. Results of semi-quantitative clay mineral analyses, given as percentage to nearest whole number. Readers are advised of the accuracy limitations due to the analytical procedures. Vermic = vermiculite, C.I. = crystallinity index, depths in feet.

DGSID	Sample No.	Smectite	Illite	Kaolinite	Chlorite	Vermic	Illite C.I.	Start Depth	Stop Depth
Od51-03	83975	0	13	51	31	5	1	5	10
Od53-04	84165	0	6	52	0	42	1	7	11
Od53-04	84166	2	1	90	0	7	2	11	16
Pb34-03	84122	0	0	100	0	0	0	2	5
Pb34-03	84123	0	9	91	0	0	0	5	8
Pb34-04	84096	4	1	95	0	0	2	1	5
Pb34-04	84099	9	0	91	0	0	0	10	15
Pc11-06	84106	Poor crystallinity, no identification possible							
Pc11-06	84109	0	8	92	0	0	1	4	7
Pc11-06	84111	Poor crystallinity, no identification possible							
Pc14-04	83944	18	18	64	0	0	3	14	20
Pc14-04	83947	8	42	40	10	0	9	58	61
Pc25-04	32812	37	7	37	18	0	3	9	13
Pc25-04	32818	11	23	67	0	0	12	23	25
Pc45-03	80639	0	13	87	0	0	0	5	10
Pc45-03	80647	10	28	43	19	0	8	120	130
Pc45-03	80648	47	24	20	9	0	10	180	200
Pc45-03	80653	37	26	31	6	0	11	220	240
Pd12-04	84197	0	3	97	0	0	1	12	16
Pd21-07	83163	81	8	9	3	0	12	0	20
Pd21-07	83164	0	27	56	18	0	9	20	40
Pd21-07	83165	17	27	41	15	0	21	40	60
Pd21-07	83166	6	36	35	23	0	22	60	80
Pd21-07	83168	34	28	31	7	0	8	100	120
Pd21-07	83169	61	20	14	5	0	9	120	140
Pd21-07	83170	71	19	7	3	0	10	140	160
Pd21-07	83171	69	17	9	5	0	8	160	180
Pd21-07	83172	50	28	15	7	0	12	180	200
Pd21-07	83176	71	14	11	4	0	15	260	280
Pd25-06	84185	7	17	43	33	0	4	17	19
Pd34-02	84114	0	0	100	0	0	0	9	13
Qb34-b	40139	53	9	38	0	0	6	8	10

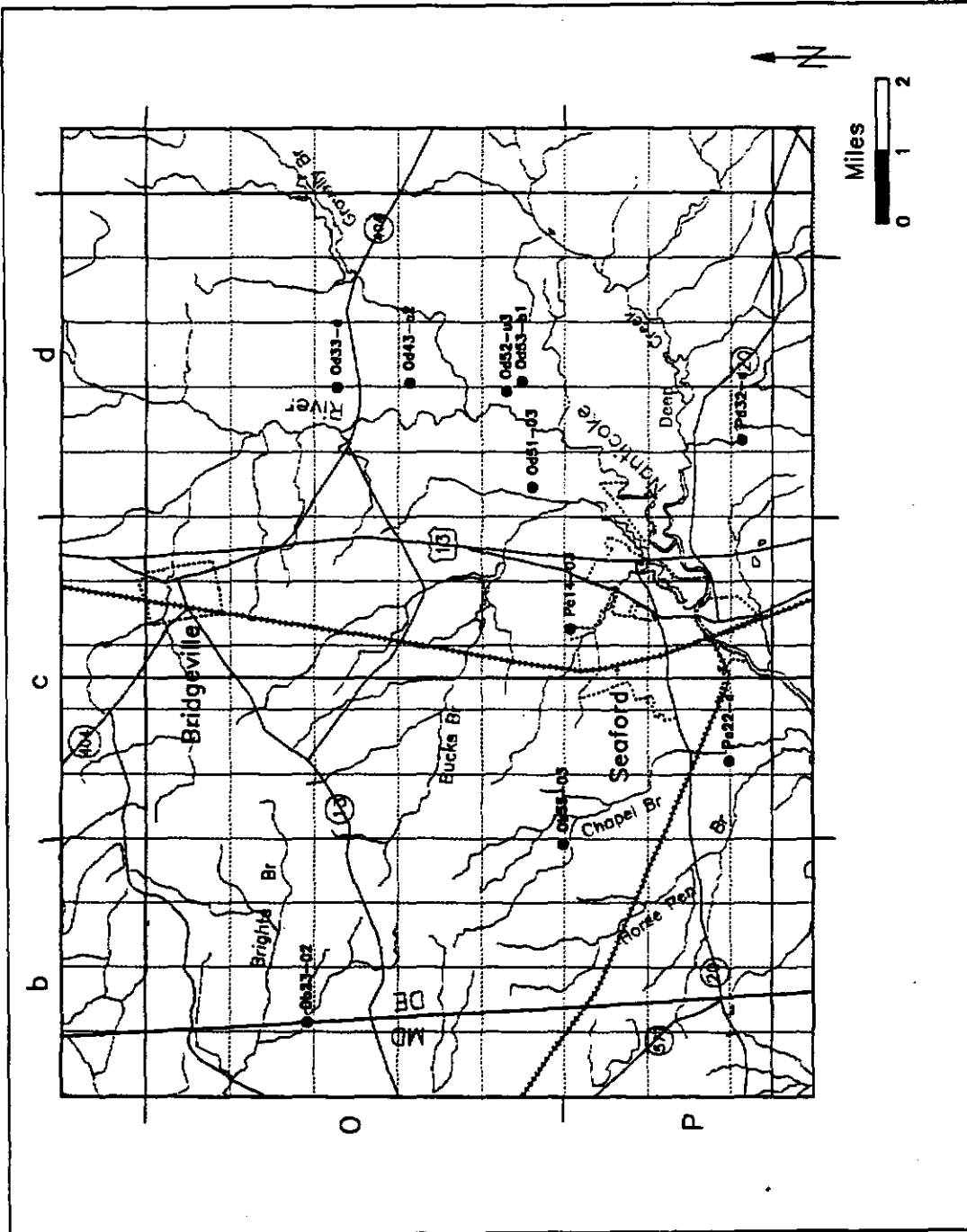


Figure 6. Map showing locations of samples analysed for light mineral content of sand fraction.

Table 5. Results of light mineral point counts of sand fraction. Q = quartz, M = monocrystalline, NU = non-undulatory extinction, U = undulatory, P = polycrystalline, L = undifferentiated lithic fragments, FK = potassium feldspar, FP = plagioclase feldspar, QTZ = quartzite, OTH = other. Depths in feet. Samples 40379, 40381 from Jordan (1964).

DGSID	Sample No.	QMNU	QMU	QPNU	QPU	L	FK	FP	QTZ	OTH	Depth Range
Ob23-02	83896	113	37	2	11	5	21	9	0	1	5'-8'
Ob23-02	83898	100	39	5	17	7	28	2	1	0	11'-14.5'
Ob23-02	83900	101	36	4	26	1	15	16	0	1	20'-28'
Ob23-02	83906	97	50	7	24	1	15	6	0	0	68'-80'
Ob55-03	83997	99	1	39	7	10	43	0	0	0	4'-8'
Ob55-03	83998	104	37	1	10	3	33	8	0	2	8'-14'
Ob55-03	84001	128	2	23	10	7	18	12	0	0	22'-28'
Ob55-03	84002	97	50	4	13	10	21	4	0	1	30'-37'
Ob55-03	84005	87	58	0	22	6	19	5	0	0	52'-59'
Od33-a	41463	108	25	3	8	31	16	0	1	8	6'
Od43-a2	41477	93	84	2	9	2	5	1	1	3	10'-16'
Od43-a2	41494	144	48	1	2	4	1	0	0	0	0'-10'
Od51-03	83976	121	46	3	12	1	5	12	0	0	10'-15'
Od51-03	83977	130	46	4	6	0	8	6	0	0	15'-19'
Od51-03	83979	99	47	4	10	7	31	0	0	0	28'-43'
Od51-03	83980	79	81	2	19	5	14	0	0	0	46'-56'
Od52-u3	41455	99	47	5	4	35	10	0	0	0	4.5'-8'
Pc14-03	83827	111	47	2	10	3	23	4	0	0	4'-5'
Pc14-03	83831	127	19	0	6	0	32	11	1	3	12'-15'
Pc14-03	83833	110	45	3	30	1	9	0	0	2	50'-60'
Pc14-03	83834	110	44	7	33	3	1	2	0	0	70'-75'
Pc22-a	40379 see note			79				21		1	1.5'-11'
Pc32-a	40381 see note			87				12			1'-15'

NOTE: Only total quartz and total feldspar were determined for these samples.

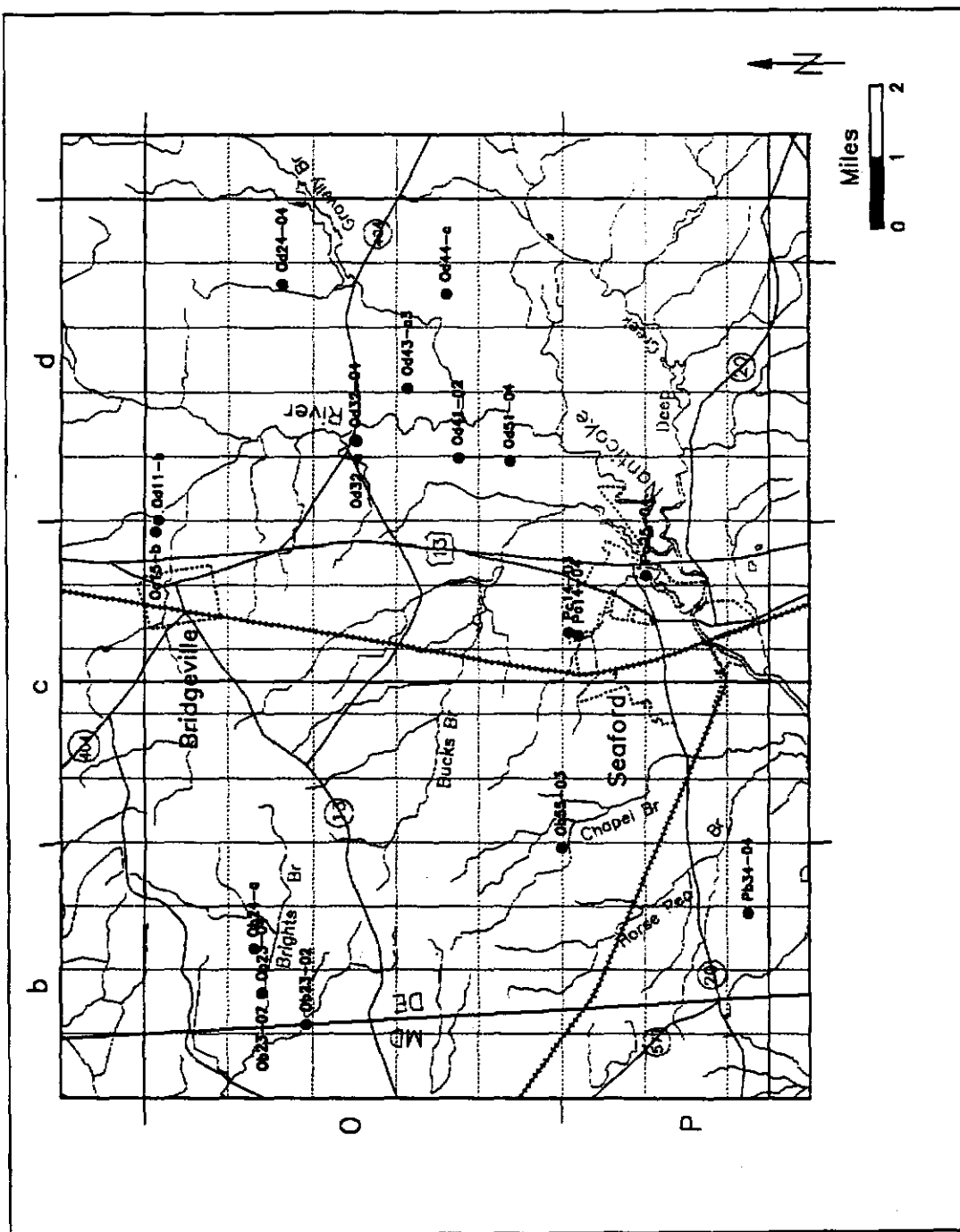


Figure 7. Map showing locations of samples analyzed for pollen content.