Geologic And Geotechnical Evaluation Of An Open Landfill

This book is one out six IAEG XIII Congress and AEG 61st Annual Meeting proceeding volumes, and deals with topics related to the geotechnical and environmental site characterization. The theme of the IAEG/AEG Meeting, held in San Francisco from September 17-21, 2018, is Engineering Geology for a Sustainable World. The meeting proceedings analyze the dynamic role of engineering geology in our changing world. The meeting topics and subject areas of the six volumes are: Slope Stability: Case Histories, Landslide Mapping, Emerging Technologies; Geotechnical and Environmental Site Characterization; Mining, Aggregates, Karst; Dams, Tunnels, Groundwater Resources, Climate Change; Geologic Hazards: Earthquakes, Land Subsidence, Coastal Hazards, and Emergency Response; and Advances in Engineering Geology: Education, Soil and Rock Properties, Modeling.

The Tunnel Engineering Handbook, Second Edition provides, in a single convenient volume, comprehensive coverage of the state of the art in the design, construction, and rehabilitation of tunnels. It brings together essential information on all the principal classifications of tunnels, including soft ground, hard rock, immersed tube and cut-and-cover, with comparisons of their relative advantages and suitability. The broad coverage found in the Tunnel Engineering Handbook enables engineers to address such critical questions as how tunnels are planned and laid out, how the design of tunnels depends on site and ground conditions, and which types of tunnels and construction methods are best suited to different conditions. Written by the leading engineers in the fields, this second edition features major revisions from the first, including: * Complete updating of all chapters from the first edition * Seven completely new chapters covering tunnel stabilization and lining, difficult ground, deep shafts, water conveyance tunnels, small diameter tunnels, fire life safety, tunnel rehabilitation and tunnel construction contracting *New coverage of the modern philosophy and techniques of tunnel design and tunnel construction contracting The comprehensive coverage of the Tunnel Engineering Handbook makes it an essential resource for all practicing engineers engaged in the design of tunnels and underground construction. In addition, the book contains a wealth of information that government administrators and planners and transportation officials will use in the planning and management of tunnels.

February issue includes Appendix entitled Directory of United States Government periodicals and subscription publications; September issue includes List of depository libraries; June and December issues include semiannual index

Geologic hazards pose the greatest threat to human safety for any geotechnical undertaking, but it is ultimately the engineer's ability to recognize and cope with these hazards that will determine the safety of life and property. Armed with Geologic Hazards: A Field Guide for Geotechnical Engineers you will be able to properly recognize, understand various geologic hazards, and provide safe and economical construction. Eminent expert Roy E. Hunt thoroughly examines the potential for slope failures, earthquakes, ground subsidence, collapse, and expansion. Using a clear conceptual approach, he explains what measures are available to minimize or eliminate the risks associated with each of these geologic hazards. The book sets forth the basis for recognizing, understanding, and treating geologic hazards, using general concepts rather than rigorous mathematical analyses. The author covers the prediction of slope failures through recognition of geologic and other factors that govern failure, the treatment of slopes that are potentially unstable and pose a danger to some existing development, the design and construction of stable cut slopes and sidehill fills, and the stabilization of failed slopes. He provides the foundation for determining the potential for surface movements and for preventing or controlling their effects. A section on earthquakes

summarizes and links all of the aspects of earthquakes including their causes, characteristics, and surface effects. It provides a thorough grounding in how to recognize hazard potential and minimize the consequences. There is no field within geotechnical engineering in which the state of the art is changing so rapidly. Providing the latest information, this resource is a useful tool for designing new projects and redesigning old ones.

This evaluation was undertaken for the purpose of confirming the geologic suitability of the Rifle Range site for construction and operation of a water treatment plant by the East Bay Municipal Utility District.

This book provides a practical strategy for obtaining a more complete and accurate geologic site characterization. The strategy and methods to characterize complex geologic settings are readily available. The strategy utilizes readily available technology, basic science and good, old-fashioned common sense resulting in a solid understanding of geologic and even karst or pseudokarst conditions. We provide an introduction to many off-the-shelf methods available for site characterization as well as examples of their application throughout the book. The purpose of a geologic site characterization is to understand the 3-dimensional geologic framework, along with the engineering and hydrologic properties of a site including any man-made impacts. A well-done site characterization is the cornerstone of all geotechnical, groundwater and environmental projects. The geologic conditions, particularly karst conditions, can significantly impact a site including its structural stability, groundwater pathways and potential for rapid transport or traps for contaminants. Once we have adequately characterized the geologic conditions can we carry our remediation, design and construction, model flow, and make risk assessments that are accurate and reliable.

This open file report consists of two chapters of the report "Insurance study of sinkholes" completed by the Florida State University Center for Insurance Research.

Geologic and Geotechnical Assessment for the Evaluation of Sinkhole Claims

This book is one out of 8 IAEG XII Congress volumes, and deals with the theme of applied geology, which is a critical theme for the global economy. In the international, multidisciplinary approach to major engineering projects (either to macro- or mega-scale), the application of geological investigation techniques is fundamental for properly selecting the location sites, planning the construction and maintaining the infrastructures. The contributions in this book include not only engineering constructions but also case studies related to large projects on geo-resources exploration and extraction (minerals, petroleum and groundwater), energy production (hydropower, geothermal, nuclear and others), transportation (railway and highway) and waste disposal as well as the environmental management of these and other activities. The Engineering Geology for Society and Territory volumes of the IAEG XII Congress held in Torino from September 15-19, 2014, analyze the dynamic role of engineering geology in our changing world and build on the four main themes of the congress: Environment, processes, issues, and approaches. The congress topics and subject areas of the 8 IAEG XII Congress volumes are: 1. Climate Change and Engineering Geology 2. Landslide Processes 3. River Basins, Reservoir Sedimentation and Water Resources 4. Marine and Coastal Processes 5. Urban Geology, Sustainable Planning and Landscape Exploitation 6. Applied Geology for Major Engineering Projects 7. Education, Professional Ethics and Public Recognition of Engineering Geology 8. Preservation of Cultural Heritage.

The ongoing population growth is resulting in rapid urbanization, new infrastructure development and increasing demand for the Earth's natural resources (e.g., water, oil/gas, minerals). This, together with the current climate change and increasing impact of natural hazards, imply that the engineering geology profession is called upon to respond to new challenges. It is recognized that these challenges are particularly relevant in the developing and newly industrialized regions. The idea beyond this volume is to highlight the role of engineering geology and geological engineering in fostering sustainable use of the Earth's resources, smart urbanization and infrastructure protection from geohazards. We selected 19 contributions from across the globe (16 countries, five continents), which cover a wide spectrum of applied interdisciplinary and multidisciplinary research, from geology to engineering. By illustrating a series of practical case studies, the volume offers a rather unique opportunity to share the experiences of engineering geologists and geological engineers who tackle complex problems working in different environmental and social settings. The specific topics addressed by the authors of chapters included in the volume are the following: pre-design site investigations; physical and mechanical properties of engineering soils; novel, affordable sensing technologies for long-term geotechnical monitoring of engineering structures; slope stability assessments and monitoring in active open-cast mines; control of environmental impacts and hazards posed by abandoned coal mines; assessment of and protection from geohazards (landslides, ground fracturing, coastal erosion); applications of geophysical surveying to investigate active faults and ground instability; numerical modeling of seabed deformations related to active faulting; deep geological repositories and waste disposal; aquifer assessment based on the integrated hydrogeological and geophysical investigation; use of remote sensing and GIS tools for the detection of environmental hazards and mapping of surface geology. This volume is part of the proceedings of the 1st GeoMEast International Congress and Exhibition on Sustainable Civil Infrastructures, Egypt 2017.

Geotechnical Aspects of Underground Construction in Soft Ground comprises a collection of 112 papers, four general reports on the symposium themes, the Fujita Lecture, three Special Lectures and the Bright Spark Lecture presented at the Tenth International Symposium on Geotechnical Aspects of Underground Construction in Soft Ground, held in Cambridge, United Kingdom, 27-29 June 2022. The symposium is the latest in a series which began in New Delhi in 1994, and was followed by symposia in London (1996), Tokyo (1999), Toulouse (2002), Amsterdam (2005), Shanghai (2008), Rome (2011), Seoul (2014) and Sao Paulo (2017). This was organised by the Geotechnical Research Group at the University of Cambridge, under the auspices of the Technical Committee TC204 of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE). Geotechnical Aspects of Underground Construction in Soft Ground includes contributions from more than 25 countries on research, design and construction of underground works in soft ground. The contributions cover: Field case studies Sensing technologies and monitoring for underground construction in soft ground Physical and numerical modelling of tunnels and deep excavations in soft ground Seismic response of underground infrastructure in soft ground Design and application of ground improvement for underground construction Ground movements, interaction with existing structures and mitigation measures The general reports give an overview of the papers submitted to the symposium, covered in four technical sessions. The proceedings include the written version of the five invited lectures covering topics ranging from developments in geotechnical aspects of underground construction, tunnelling and groundwater interaction (short and long-term effects), the influence of earth pressure balance shield tunnelling on pre-convergence and segmental liner loading (field observations, modelling and implications on design). Similar to previous editions, Geotechnical Aspects of Underground Construction in Soft Ground represents a valuable source of reference on the current practice of analysis, design, and construction of tunnels and deep excavations in soft ground. The book is particularly aimed at academics and

professionals interested in geotechnical and underground engineering.

The purpose of these guidelines for investigating geologic hazards and preparing engineering-geology reports, is to provide recommendations for appropriate, minimum investigative techniques, standards, and report content to ensure adequate geologic site characterization and geologic-hazard investigations to protect public safety and facilitate risk reduction. Such investigations provide important information on site geologic conditions that may affect or be affected by development, as well as the type and severity of geologic hazards at a site, and recommend solutions to mitigate the effects and the cost of the hazards, both at the time of construction and over the life of the development. The accompanying suggested approach to geologic-hazard ordinances and school-site investigation guidelines are intended as an aid for land-use planning and regulation by local Utah jurisdictions and school districts, respectively. Geologic hazards that are not accounted for in project planning and design often result in additional unforeseen construction and/or future maintenance costs, and possible injury or death.

This report describes the review and evaluation of the geological, geotechnical and geophysical data supporting the design basis analysis for the Rocky Flats Environmental Test Site (RFETS) Building 371. The primary purpose of the geologic and geotechnical reviews and assessments described herein are to assess the adequacy of the crustal and near surface rock and soil model used in the seismic analysis of Building 371. This review was requested by the RFETS Seismic Evaluation Program. The purpose was to determine the adequacy of data to support the design basis for Building 371, with respect to seismic loading. The objectives required to meet this goal were to: (1) review techniques used to gather data (2) review analysis and interpretations of the data; and (3) make recommendations to gather additional data if required. Where there were questions or inadequacies in data or interpretation, recommendations were made for new data that will support the design basis analysis and operation of Building 371. In addition, recommendations are provided for a geologic and geophysical assessment for a new facility at the Rocky Flats Site.

"The geologic model of the Canadian Beaufort Sea continental shelf first proposed by the Geological Survey of Canada has been laterally developed by dividing the shelf into nine physiographic regions, based on a combination of seafloor bathymetry, sediment types and the paleotopography of the most recent unconformity surface. From west to east these regions are: THE NATSEK PLAIN - a mostly unexplored area north of Herschel Island whose shallow stratigraphy appears to be mostly composed of stiff clays. THE MACKENZIE TROUGH - a large bathymetric and paleobathymetric depression extending from Mackenzie Bay to the shelf edge, believed to be infilled with a thick sequence of recent sediments. THE KRINGALIK PLATEAU - an area of fine-grained, laminated, partially or marginally ice-bonded strata containing at least two shallow unconformities. THE IKIT TROUGH - a stratigraphically complex relic lowland in which the shallow strata appear to be generally fine-grained and laminated. THE AKPAK PLATEAU - an adjacent sandy upland area which may have been the northward extension of Richards Island. THE KUGMALLIT CHANNEL - a linear bathymetric depression which formerly served as an important watercourse across the exposed continental shelf. THE TINGMIARK PLAIN - a broad feature composed principally of relic sand ridges, and associated narrow channels mantled by a thin blanket of recent silty clays. THE NIGLIK CHANNELS - a pair of narrow bathymetric depressions which may also have served as fluvial channels prior to the last sea-level rise. THE KAGLULIK PLAIN - a stratigraphically complex area on the eastern shelf where the most recent unconformity is believed to occur close to the seabed. Good correlation is apparent between the above physiographic regions and the occurrence of specific acoustic permafrost typed noted in previous studies. In addition, each physiographic region appears to be associated with a set of uniquely characteristic geological and geotechnical properties, and hence

the divisions form an important basis for evaluating and predicting the engineering properties of the surficial sediments on the shelf. In particular, these divisions can be used to appraise the potential for the development of granular resources in each area, provide a preliminary assessment of foundation conditions at well-sites where no geotechnical or geological information is yet available, and identify suitable criteria for establishing pipeline burial depths to reduce the opportunity for damage due to ice scour. The report concludes that each physiographic region represents an area of the shelf which has been subjected to a unique set of geological and geothermal processes, and recommends that additional detailed studies of each region be undertaken to provide an enhanced understanding of the surficial geological conditions on the continental shelf--Leaves [i]-ii.

The field of geoengineering is at a crossroads where the path to high-tech solutions meets the path to expanding applications of geotechnology. In this report, the term "geoengineering" includes all types of engineering that deal with Earth materials, such as geotechnical engineering, geological engineering, hydrological engineering, and Earth-related parts of petroleum engineering and mining engineering. The rapid expansion of nanotechnology, biotechnology, and information technology begs the question of how these new approaches might come to play in developing better solutions for geotechnological problems. This report presents a vision for the future of geotechnology aimed at National Science Foundation (NSF) program managers, the geological and geotechnical engineering community as a whole, and other interested parties, including Congress, federal and state agencies, industry, academia, and other stakeholders in geoengineering research. Some of the ideas may be close to reality whereas others may turn out to be elusive, but they all present possibilities to strive for and potential goals for the future. Geoengineers are poised to expand their roles and lead in finding solutions for modern Earth systems problems, such as global change, emissions-free energy supply, global water supply, and urban systems.

Geologic hazards are naturally occurring processes that present a risk to life and property. This report provides information for the Monroe City area, in Utah's central Sevier Valley, to reduce losses from geologic hazards. Surficial-geologic mapping provides the basis on which individual geologic hazards are identified and mapped. Alluvial-fan and basin-fill deposits cover most of the map area. Other deposits consist of colluvium, artificial fill, spring travertine, and volcanic bedrock. The geologic hazards maps show where hazards may exist. The maps should be used to inform citizens and developers of potential risks and for local government officials to make prudent land-use planning decisions. The maps are general, and site-specific studies are needed to demonstrate site suitability prior to development. Typical risk-reduction methods for these geologic hazards generally include avoidance or engineering design to reduce the risk to an acceptable level.

Abstract: The importance of unconsolidated deposits is reflected in the extensive use of these materials in Franklin County, Ohio. This study organizes geologic and geotechnical data in a geographic information system (GIS) to better understand the nature of the unconsolidated materials in this area. These data are then utilized to update the bedrock topography maps, evaluate the relationship between the geotechnical data and the diamictons, and to refine the interpretation of the surficial geology of the study area. It was found that discrepancies are common between the surface elevation of geologic borings and the current surface elevation, represented by a digital elevation model (DEM) constructed in this study. It was also shown that there are considerable differences in the surface representation between the DEMs constructed here and DEMs obtained from the USGS. Elevation differences between the DEMs and the surface elevations of geologic borings were confirmed by performing GPS surveys at several boring locations. This study concludes that the USGS DEMs do not always accurately represent the current surface in this area, primarily because of land surface modifications by humans. Accurate DEMs are important to surficial mapping, as these efforts often rely on this surface representation for the correct vertical placement

of subsurface data. The utilization of DEMs for other purposes is also explored here, showing that the outcome of a particular application can be affected by the DEM utilized. The updated bedrock topography maps are used to compare the bedrock drainage patterns, slopes, and aspect to some of the unconsolidated sediments. An evaluation of the geotechnical data is made to assess whether geotechnical properties of the diamictons show consistent variations with depth, and to determine if differences exist between diamictons found on carbonate and clastic bedrock. Standard penetration test values, Atterberg limits, and texture are found to differ somewhat for the diamictons above the different bedrock types, possibly attributed to different source materials for the tills. The diamicton properties in this area suggest they should be re-interpreted as deformation till. Geotechnical data from certain borings also imply that lacustrine deposits are present in several locations in northern Franklin County.

This book is one out of six IAEG XIII Congress and AEG 61st Annual Meeting proceeding volumes, and deals with topics related to the advances made in engineering geology with emphasis on education, soil and rock properties, and modeling. The theme of the IAEG/AEG Meeting, held in San Francisco from September 17-21, 2018, is Engineering Geology for a Sustainable World. The meeting proceedings analyze the dynamic role of engineering geology in our changing world. The meeting topics and subject areas of the six volumes are: Slope Stability: Case Histories, Landslide Mapping, Emerging Technologies; Geotechnical and Environmental Site Characterization; Mining, Aggregates, Karst; Dams, Tunnels, Groundwater Resources, Climate Change; Geologic Hazards: Earthquakes, Land Subsidence, Coastal Hazards, and Emergency Response; and Advances in Engineering Geology: Education, Soil and Rock Properties, Modeling.