



Petroleum Technology Department

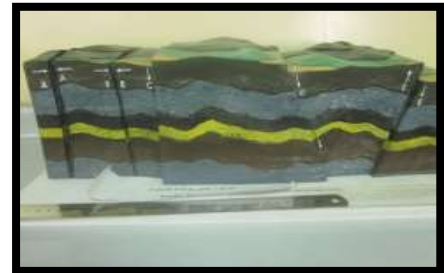
Geology Lab.

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Introduction

Laboratory specializes the geological oil in practice demanding on study structure ground and laboratory employees the examinations for defined kinds of the rocks and the metals about road her the detection about elite physical and chemical and visual which be distinguished her about studios road the samples manual by the mere eye under microscope geologist . Practice demanding on reading and drawing of the maps geological and the maps topographic for defined purpose of surface and the inside land and the studios refuges the oil snake charmer on the gatherings and drawing of cutters ground different and account quantitative. the students on writing the geological reports for damnable which her examination for purpose of specification name and kind of all example is laboratory wages of the examination laboratory since beginning the section year 2010 and is complete in laboratory furniture from the excellent nature the requested specifications reconciled 1 the laboratories and corrodes me on Devices and required necessary and illustrative for the subjects the method in such a manner that corrodes me on different examples from the metals and the rocks in different her fiery kinds and sedimentary and changeable and electro-microscope polarizer for study the metals and the rocks.

The goals

- 1-The purpose is blessing tested he practice students of the scurvy and the production on the present rocks in the laboratory and which was complete fetched her from the oil sites during scurvy well and the special rocks sedimentary for universe her from the rocks which corrodes me on the oil in north of and sides of Iraq aces gains the student information about the layers knowledge choice of liquids of the scurvy gains stubborn his practice in towers of the scurvy and as your lowness this rocks on oil witnesses and the despotic leaning meet through on her in knowledge presence of the oil stubborn arrival to the sieve rocking during operation scurvy well oil.
- 2- Practice of the students on knowledge of kind is complete the produced rocks for the oil and the gas and the ground acquaintance on layers the land in the peel.
- 3- Learns in her the students on kinds the rocks and analysis slaaydies core rocky and as your lowness specializes in the studios forms the ground installation and influential analysis the strength on her and the counters maps
- 4-The despotic student the work in the fields and study of the elite learns physical and chemical and visual for the example

The letter

Our letter imitates in interpretation of engineers instructional occurring on level the distinguished technological level reverses the interview and who qualifies them for the direct incomes in domains of profession engineering of the oil or to completing of studios their high and considers the integral laboratories consider from which corrodes me the different devices geological laboratory with the aim of numbers of the cadres scientific qualified for the work in sphere of action geometric and the mining and the oil in puberty of superior the even performance in domain the scientific education and the research and the spells blades' to happens what the achievement was complete him worldwide in domains the engineering and the mining and the geological oil.

The deliberation

The view is laboratory the geological oil vital laboratories adopts academic programs and in inductive distinguished, the instructional distinctiveness and the researches on the level realizes and that in presentation services of academic and activities in inductance in occupational high through the section and members the beautiful teaching and the student.

Measures of the work

- 1-scientific prospect: He is the person prospect on the specialized part theoretical for the substance within the lectures for the method.
- 2- The practical prospect: He is the person prospect on the laboratory part theoretical for substance where theoretical throwing the part for the subject straightens in.
- 3-Prospect the laboratory: He is the person on prospect the laboratory and formation tested in care his and he prospect on registers prospect and the devices and the preparers and is prospect I on preparation of the attempts and is also- prospect on the practical part for tested so explanation of the attempt and reception of the reports straightens in blessing demanding and their division to groups.

**** Laboratory devices and the required**

1-HAMMER -

COMPANY: ESTWING, USA

Description:

Head, Handle forget, one-piece, strongest constriction known fine tool steel.



Safety:

Nail hammers are made to drive and with draw common nail only. Any other use is hazardous. Always wears safety goggles by standers shall also wear safety goggles

2-Hardness pick set

Hardness pick set for mineral identification:

*8point durable metals/alloys of mohs hardness2thru 9

*Streak plate, test streak color.

*Hardness plate-3.5 and 5.5.

*Magnet- detect

*Grindstone, keep point sharp

*Compact wood case.

*Instruction hardness table.



3- INTRODUCTORY MINERAL&ROCK(thin section)

COMPANY: WARDS NATURAL SCIENCE, USA

Practice of the student on this slayd and studious her under the microscope weak formation for the metals and the rocks for studious her elite physical and chemical and studious her crystalline regime.



4-Sample of the layers ground

Practice for knowledge is complete the ground layers and on knowledge kind of the produced rocks for the oil and the gas and the acquaintance on layer the land in the peel and learns in her the students on kinds the rocks and analysis slaayd and core rocky and as your lowness specializes in the studios forms the ground installation and influential analysis the strength on her and the maps counters.



5-Sample of the metals and the rocks

are complete practice of the students on knowledge of kinds the rocks and her study of elite physical chemical and visual and defined kind of the rocks produced for the oil and the gas and her analysis under the microscope after did her slaayd core rocky



6- Sample of the crystals

Is complete through offer of this examples the defined regimes the crystal yet the formed for the metals and studios her characteristics under the microscope through work slaayd and her electronic examination under the microscope.



7- Sample of the folds

Uses these present examples for study of the folds and her kinds in the lithosphere and her circumstances of forming and study of the strength and the



circumstances and the causing strength and the influential



8- Sample of fault

Ground examples for the splitters weak plastic phrase about magnified clarifies the ground layers which happened in her splitters and circumstances of forming and the strength effect on him

9- Compass





Company BRUNTON, USA:

A **compass** is a navigational instrument that shows directions in a frame of reference that is stationary relative to the surface of the Earth. The frame of reference defines the four cardinal directions (or points) – north, south, east, and west. Intermediate directions are also defined. Usually, a diagram called a compass rose, which shows the directions (with their names usually abbreviated to initials), is marked on the compass. When the compass is in use, the rose is aligned with the real directions in the frame of reference, so, for example, the "N" mark on the rose really points to the north. Frequently, in addition to the rose or sometimes instead of it, angle markings in degrees are shown on the compass. North corresponds to zero degrees, and the angles increase clockwise, so east is 90 degrees, south is 180, and west is 270. These numbers allow the compass to show azimuths or bearings, which are commonly stated in this notation.

10-THERMOMETER, MAXIMUM, MINIMUM DUL SCALE BY DURACE

CAT#NO: 3900

Measurement rang (-30 to 60c (-20 to 140f)

Accuracy $\pm 1^{\circ}\text{C}$

Product size 200mm (w)*230mm (H)

Operation: Locate the thermometer so that is out of direction sunlight when in position use the re-set operation.

Safety:

Do not force either the blue or red needles too hard against the black needles as it may cause damage to the mechanism.

11-EATHERING MASTER BAROMETERBY SWIFF, FRANCE

Barometer, a device for measuring atmospheric pressure (the pressure resulting from the weight of the air above a given point). Because a change in atmospheric pressure is a sign of changing weather, this instrument is one of the chief tools of the.



12- PEDOMETER

COMPANY: BY WARDS NATURAL SCIENCE, TAIWAN

High for instrument the feeling which additional field appears as assistant the tough forces results him the device himself and the measured field merges with and occurrence of case performs to deformity in the field resulting and valuable knowledge the field measured pursuant to analysis occurs the final deformity and appearance of the result digital on board raved evidence of the device.

13- ALTIMETER 203

Description

Measures altitude, up to 15,000 ft., and barometric pressure. Perfect for use as a navigation aid, or to guide along contour lines. It also features a weather trend indicator (shows if weather is improving or worsening). Includes rugged ABS case and lanyard Made in Japan. polymer hard side carrying



14- SUNNTO OPTICAL READING CLINOMETER

COMPANY: BY SUUNTO GROUP, FINLAND



The Suntan clinometers is used to measure a point's degrees from horizontal and a surface's slope in percent or slope angle.

15- FULL-SIZE SLING PSYCHROMETER-

COMPANY: WARDS NATURAL SCIENCE, USA

Use to measuring humidity and reading below the freezing point.



16- CLASSROOM UV DISPLAY LAMP (4WAT)

UVGL-15 P/N 95-0.017-09

COMPANY: WARDS NATURAL SCIENCE, USA

View Both Long wave and Shortwave UV at the Same Time

Separate shortwave and long wave tubes put out more total energy than single-tube units of equal wattage. The bulbs and wiring are enclosed in tough steel housing.

115 VAC, 60 Hz with a 9' cord. Size: 6 3/8"L x 4 1/2"W x 2 1/4"H. Shortwave filter size: 1" x 3 1/4"; long wave filter size: 1

1/2" x 4 1/2"; weight: 2 1/2 lbs



17-DUAL-TUBE(UV) DISPLAY LAMP

COMPANY: WARDS NATURAL SCIENCE, USA

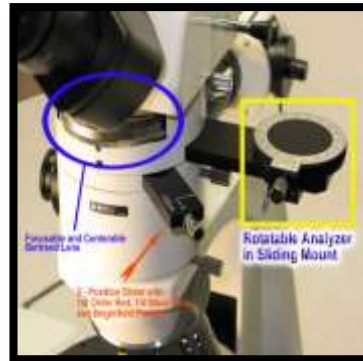
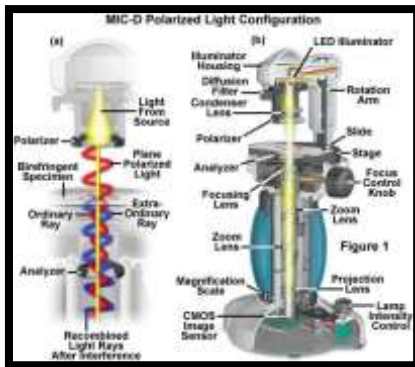
Powerful Lamp Illuminates Larger Areas

Combine higher wattage with the largest filter opening we've found in a 6 W lamp, full 13-square-inches, and you'll get greater versatility in an ultraviolet lamp. Two separate bulbs offer shortwave (254 nm) or long wave (365 nm) emissions. The handle design with a



thumb switch also makes it more comfortable to carry and operate. 115 VAC, with a 9' cord; 60 Hz. Size: 14 1/2"L x 3 1/4"W x 2 1/2"H; weight: 4 lbs

18- Polarizing microscopes



MADE IN JAPAN: BY MEIJI TECHNO CO.LTD

PROD.DATE: 2009

DATE OF CALIBRATION: 2009

MODEL: MT9430 NO:

Serial No: 05493

Occupy provides unique opportunities for analyzing the molecular order in heterogeneous systems, such as living cells and tissues, without using exogenous dyes or labels. This article briefly discusses the theory of polarized light microscopy and elaborates on its practice using a traditional polarized light microscope and more specialized polarization microscopes such as the LC-Pascoe, Oversight, or A brio. The microscope components specific to analyzing the polarization of light, such as polarizer and compensator, are introduced, and quantitative techniques for measuring the birefringence of the specimen point by point using a traditional polarizing microscope are discussed. The new LC-Pascoe greatly improves the analytic power of the technique, providing quantitative birefringence data simultaneously for every image point, thereby revealing molecular order with unprecedented sensitivity and at the highest resolution of the light microscope. Practical aspects discussed include the choice of optics, sample preparation, and combining polarized light with differential interference contrast and fluorescence microscopy. A glossary of polarization optical terms is also included to facilitate the discussion of observations made with a polarized light microscope.

DESCRIPTION AND USES:

These microscopes are used in research, industry and training in many scientific fields such as:

- 1- Environmental research-analysis of materials, dust and
- 2- Medicine and Biology – determining composition of calculi, sediments and bio-crystallites.
- 3- Forensics-Identification trace elements and materials such as explosives.
- 4- Materials analysis-metal, ceramics, building
- 5- Geology-minerals, petrography.

Chemistry-Quality control of in-process or end products compounds,
pharmaceuticals.

(MATERIAL SAFETY DATA SHEET) MSDS

- 1- Computeraided designed frame and optic.
- 2- powerful 6V30W transmitted Koehler illuminator
- 3- Smooth operating reverses facing quadruple nosepiece.
- 4- Factory set focus stop along with spring loaded objectives prevent specimen damage or slide breakage.
- 5- Low positioned ergonomic coaxial coarse and fine focus controls.
- 6- Automatic voltage sensing power supplies

19- RANGE FINDER, BUSHNELL YARD



Use to measuring and follower of the goal and method did him mastery of rays straightens on laser on grilling what when the rays in the goal collide test and part from her the device accustoms to and in practical accurate arithmetician for computer present inside him getting help quickly the laser 300 thousand how much/second and the timed period the divider between the shots and the reversal appears the distance or the dividing extension about the goal.

Enhancing our technology, improving your performance – our crowning achievements. And the benchmark we've set for ourselves since we invented the first laser rangefinder for hunters 19 years ago. Led by Performance Law #8, which demands our laser rangefinders be the most precise in the business, our dominating reign continues in 2014.

Introducing G-ForceDX. Upgraded from our original workhorse, now with an innovative 2nd Generation E.S.P (Extreme. Speed. Precision.) Turbo processor, and housed in a sleek, slim, durable unit. This year Bushnell® and Team Primo's join forces with The Truth with Clear shot Laser Rangefinder featuring Clear shot Technology, so you will never doubt a shot again. Still the world's most popular, most precise name in laser rangefinders. Long live the king.

20- GPS EARTHMATE PN-60 DELORME, USA



- 3 Axis electronic compass and barometric altimeter
- Power management system with ambient light sensor for optimal battery life
- Exchange GPS Files to SD cards(including waypoints, tracks and gouaches)
- Unrivaled Map and Imagery Choices
- 3.5 GB of user-available memory

Features

- Intuitive icon-based user interface for easy on-device navigation
- Elevation profile cutaway views that pinpoint the user's position
- GPX file exchange (waypoints, routes, tracks, and gouaches) to SD card for ease and flexibility in archiving collected GPS data
- Latest DeLorme power management system with ambient light sensor for optimal battery life
- 3.5 GB of user-available Flash memory
-

21- NOREASTER DIGITAL WIND SPEED

BY MAXIMUM WEATHER: INSTRUMENT, USA



Measurement pull of the wind for regime uses for the solar energy

- Roof mounted digital wind speed indicator.
- Digital display from 4 to 200 mph, housed in polished, solid wood block. (4-3/4 x 3-5/8 x 1-1/4 inches).
- Powered by included A/C power adapter, or user-supplied 9 volt battery.
- Display unit can be wall mounted or placed on a desktop.
- Complete with 60 ft. cable and attachment hardware. (User-supplied mast required.)

22- MULTI PARAMETER BY HANNA, USA



Display up to 12 parameters

- Track measurement locations with GPS
- Waterproof protection for meter (IP67) and probe (IP68)
- Fast Tracker™—Tag I.D. System simplifies test logging
- Graphic LCD with backlight
- Built-in barometer for DO compensation
- Quick calibration feature
- Measurement check eliminates erroneous readings
- Auto recognition of pH and pH/ORP probe
- Logger function records the data of all connected sensors
- Log on demand and automatic logging (up to 60,000 samples)
- Logged data can be displayed as graphs
- USB for PC connectivity
- Auto range of EC and TDS readings
- Good Laboratory Practice feature with last 5 calibrations recorded
- Field replaceable sensors
- Meter accepts both alkaline and rechargeable batteries
- Rugged probe with stainless steel tip has a diameter under 2" for wells and pipes

23-(2-TWO-SPEED HORIZONTAL LAPIDRY UNIT MODEL#350

Production date 2012

BY COVINGTON-ENGINEERING USA

The horizontal lap is designed for abrading large flat work pieces of stone or glass.

DESCRIPTION

This ruggedly built horizontal lap is made with heavy steel chassis and has galvanized grit catch pan and 16 diameter steel l plate. The removable catch pan permits easy wash and clean-up. The unit has steel 1 shaft and heavy duty ball bearings which are neoprene sealed and greased for life.



(MATERIAL SAFETY DATA SHEET) MSDS ;

1-DO NOT allow more than one person to operate a machine, unless you have a switch for each person, that is wired so that any one of the switches will stop the machine in an emergency.

2-DO NOT work on wet floors where electricity is present.

3-DO NOT plug into electricity until the motor switch is off and the proper voltage is supplied.

4-DO NOT leave motors running when not in use.

5-DO NOT wear jewelry or rings around electricity.

6-Wear safety goggles to protect your eyes from flying particles.