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İşin Adı : Mersin-Adana-Osmaniye-Gaziantep Yüksek Standartlı Demiryolu Hattı
The Name of : İnşaatı ile Elektromekanik Sistemlerinin Temini
the Job : Construction of Mersin-Adana-Osmaniye-Gaziantep Hight Standard Railway
Line With Supply Of Electromechanical Systems

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1. PURPOSE

The purpose of this plan is to define the rules that should be applied according to local regulations and project requirements in order to avoid occupational accidents and environmental destruction that may occur during the supply of aggregates required for the project. At the same time, the duties and responsibilities of the personnel who will work in the project are determined with this plan.

2. SCOPE

It covers the quarries under the management and management of REC, which will provide aggregate supply to the project site.

3. REFERENCES

- * Turkish Environmental legislation
- * Environmental Law
- Forestry Law
- Pasture Law
- Pasture Regulation
- Regulation on The Reintroduction of Land Deteriorated by Mining Activities to Nature
- International Financial Institution (IFC) General Guidelines on Environment, Health and Safety
- IFC Environmental, Health and Safety Guidelines – Toll Roads
- World Sustainable Development Business Council (WBCSD), December 2011. Quarry Reclamation Guidelines

4. DUTIES AND RESPONSIBILITIES

4.1. Project Manager

It is responsible for ensuring that the plan is prepared and implemented in accordance with local and project requirements and providing the necessary resources for the implementation of the plan.

4.2. HSE Manager is responsible for the following

The preparation/having prepared of the plan in accordance with local regulations and creditor requirements,



- Revised plan depending on changing circumstances,
- Organizing the routine testing of air and noise pollution tests to be carried out in the quarry,
- Determination of wastewater management practices to be discharged from the quarry and guidance on discharge permits,
- By conducting routine inspections of the quarries/issuing them to the OHS-Ç team, it is responsible for reporting to management in cases where the plan is not complied with and immediately stopping the work in case of risky due diligence.

4.5 Headquarter E&S Manager

Responsible for managing infrastructure and superstructure projects regarding environmental and social governance issues and member of the Executive E&S Committee on behalf of the REC.

4.6 Subcontractors and Employees

Responsible for complying with the rules conveyed by the REC HSE Unit and training its employees on the subject.

4.7 PIU (Project Implementation Unit)

PIU Physics Engineer who is responsible for supervising health and safety for the Project.

PIU Department Manager (Superstructure / Civil Engineer) will be responsible for overseeing the implementation of all health, safety and social measures, as specified within the disclosure package of the Project, and regular reporting to AYGM PIU.

PIU Environmental Engineer (Environmental Issues Coordination Staff) will be responsible for overseeing the implementation of all environmental and biodiversity measures, as specified within the disclosure package of the Project, and regular reporting to AYGM PIU.

PIU Department Manager (Environmental and Feasibility / Environmental Engineer) will be responsible for supervising the implementation of all environmental and biodiversity measures, as specified within the disclosure package of the Project, and regular reporting to AYGM PIU.

PIU Survey Engineer - Responsible for supervising the Contractors archaeologists. Including regular site inspections and regular reporting to AYGM PIU, and ensure the Regional Board is engaged and notified, as required.



4.8 Executive Environmental and Social Management Committee

- Executive E&S Committee Project Manager (Department Head / Branch Manager /Head of Department) will be ultimately responsible for overseeing the activities undertaken by the AYGM/TCDD specialists (listed below), overseeing the implementation of mitigation measures and management procedures specified within the disclosure package of the Project, and overseeing the preparation and implementation of a CESMP, which will be based on this ESMP.
- Executive E&S Committee Environmental, Health and Safety, and Social (EHSS) Manager (Specialist / Engineer) will be responsible for overseeing all matters that relate to environment, health, safety and social aspects of the Project. Also, s/he will be appointed to be responsible for supporting the implementation of the SEP, by conducting regular consultation with affected communities on any concern regarding the Project. CLOs will also have responsibility for disseminating the Project disclosure package as described in the SEP. They will also conduct regular inspections of records relating to grievances received and their resolution. S/He will report regularly to AYGM PIU.

Further technical staff may be required during the course of the Project, who will be assigned internally by the AYGM, either by means of permanent or temporary basis until the completion of relevant tasks under the Project whilst they undertake their current responsibilities

5. IMPLEMENTATION

REC will not open and operate new quarries since it will use the existing quarries for material supply. The existing quarries have been already operated by their current operators. Those quarry operations will be in compliance with national legislation. In other words, the existing (fully licensed) quarries will be used instead of opening new quarries and they will be assessed to ensure that the permits are valid and that operations are appropriate and in accordance with national and international standards.

5.1. Open Quarry Activities

Aggregate production in the form of open quarry management; the existing plants and structures in the area where the material is located should be started by removing them from

the area. In order to reach the main material of the stone following surface cleaning, production should be started after the removal of the soil on it. After removing the cover layer covering the mine and stone layer to be excavated, cleaning operations are carried out with the help of soil excavator, hydraulic breaker and dozer at the level where drilling will be carried out in the furnace.

Image 1. The view of the quarry.



- In the quarry field, ammonium nitrate – Fuel Oil (ANFO), gelatinite dynamite and millisecond delayed capsules are used as explosives. The purpose of the blasts is to loosen hard rock formations that cannot be excavated with digger and loader machines with explosive substances and make them easy to carry. The most economical drilling cost and the use of the most suitable explosive materials and ignition systems when performing this procedure; it ensures that the best and most economical result is obtained as quickly as after blasting and that the safety of the machines is ensured after the personnel working in the workplace during all these processes and that activities are maintained without harming the environment. Delayed system blasting method is used for limestone production in the quarry area; Its main purpose is to create a free surface for each hole, providing sequential blastings, preventing jamming and increasing blasting efficiency. Drilling-blasting should be done by drilling holes with the drill machine, filling the holes with explosive material by the experienced team under the supervision of the detonator with a certificate of competence, connecting delayed electric capsules to each hole and then tightening the holes by filling them. When the blasting takes place, a warning siren will be sounded in and around the quarry site and an announcement will be made for the residents to hear. Once the necessary security is provided for the blasting process, the construction site chief will radio the detonation confirmation. Once approved, the



detonator goes to the place at a safe distance where the ignition cable connecting the capsules of explosive filled holes is pulled, turning the magneto and giving it an electric current.

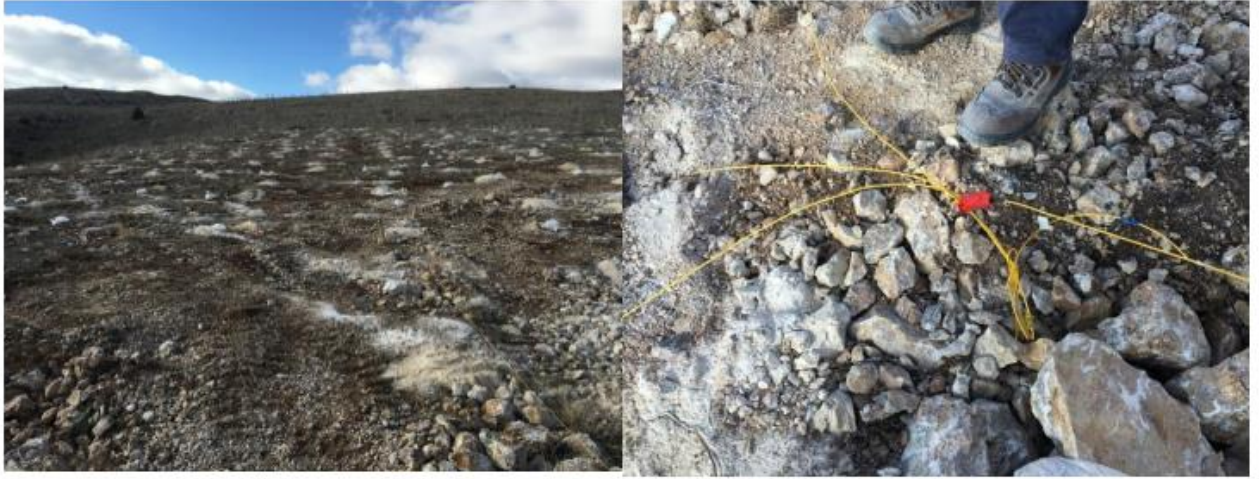
5.2. Precautions to Be Taken in Quarries

- Before starting the study, it will be ensured that the effects that may occur as a result of quarry activity are defined and changes are measured. Evaluation of basic conditions; air and water, flora and fauna, site safety, landscape integration, human activities and cultural heritage.
- The quarry management plan will be implemented during the construction phase and will continue during the completion of the extraction of materials from the quarries and the restoration of the quarries in such a way that they are compatible with nature. The specification and supervision of the measures related to quarry operations will be the responsibility of the Environmental Unit.
- When determining the breeding plan of each quarry, legal compliance will be a minimum requirement. The reform guidelines will not conflict with legal compliance in any way, will always complement and exceed legal compliance.
- There will be a complaint box in the security container at the entrance of the quarry and the complaints of the locals will be accepted from here and shared with the REC OHS-Ç Unit.
- Main construction activities in quarry areas; isolating the slope line in the land, stripping the upper soil material from the rocks at the bottom, transportation to the storage area by trucks, will be in the form. During these processes, various effects will occur. Environmental impacts of quarry operation; air pollution, noise, wastewater formation, accident risk and changes in land use.
- These effects are planned to be minimized by implementing the management plans prepared by REC.
- In the selection of quarries, it will be taken care to minimize the cultural heritage, flora, fauna and environmental impacts that can be found in the region.
- Noise measurements will be made monthly in the areas around the quarries and in the quarry. Noise measurement will be carried out immediately upon any complaints.
- Air pollution measurements will be made in 3-month periods from the selected points for the quarry and its surroundings.



- The quarry area will be surrounded by wire fences, preventing unauthorized civilian entry to the area and the entry of animals. Accident hazards that may occur thanks to the fences will be prevented.
- Quarry exit points (areas combined with the main roads) will be directed by placing flag-raising personnel in these areas.
- Washing stations will be located at the quarry exit points so that the mud that may occur on the vehicle wheels does not damage the asphalt road.
- At washing stations, an oil-retaining process will be added against oils that may leak from vehicles.
- The personal documents of all personnel who will enter the quarries will be found in human resources and will be ensured to receive the necessary basic - orientation trainings. Employees who do not have insurance and authorization will not be allowed to take part. Identity checks will be carried out through the staff at the entrance of the quarry.
- In order to prevent the dust from the quarry from harming the working personnel and the people in the area, watering will be carried out by searcher at routine intervals.
- The discharge of waste water from the quarry will be carried out with permission according to the local regulations and no waste water discharge will be made to the uncontrolled direct area.
- The reclamation plan will be developed before the opening of new sites; however, it will also be developed for the operation of quarries where no such plan exists. The reclamation plan will be brought in line with the mining plan. Based on the stated objectives and priorities, the development and monitoring of management plans for biodiversity will be considered as a basic part of the plan in addition to the quarry reclamation plan as a minimum, and in different cases.
- A monitoring plan and appropriate corrective measures (when necessary) will be included in the rehabilitation plan, thus documenting and measuring performance for targets.
- The project will be responsible for the rehabilitation of quarries in accordance with the points described in the above-mentioned legislation.
- An independent monitoring program will be implemented to evaluate the effectiveness of management strategies and mitigation measures. The recommended scope of monitoring activities, which can be revised during the Project process to the extent necessary, is as follows:
 - Operating licenses will be checked for the sites to be operated.

Image 2. View of blasting holes and ignition cables.



Large rocks and masses that break after blasting are reduced by hydraulic breakers attached to the end of the excavator to be brought to the appropriate size to enter the crushers in the concave plant. The rocks brought to the appropriate size are loaded onto dump trucks with the help of excavators and loaders and sent to the concave plant.

5.3. Precautions to Be Taken in Blasts

The sign inside the open quarry with the words "Turn off your mobile phone and radio in the blast zone and leave it in the box" is of great importance. The staff must comply with this rule and should not be positioned with their phone on near the blasting site.

- Explosive substances (dynamite, wick, capsule, ANFO) that enter and leave the warehouse through the explosives warehouse book should be specified in detail, these records should be noted and stored in the enterprise with the signature of the warehouse manager and the igniter guard.
- In addition, after the use of explosive material, the remaining explosive material residuals (such as an ANFO sack) must be destroyed in a certain area of the enterprise.



- The explosive substance must be filled by the detonator, tightened and magneto checked before electrical ignition after thoroughly cleaning the sewage hole and checking for any obstacles in it.
- Explosive substances discharged into the hole; the decoder-sensitive explosive (ANFO) is a capsule-sensitive explosive, non-electrical capsule with its equivalent of dynamite. When filling, meteorological (wind, rain, thunder) conditions should be observed, drilling blasting and filling operations should be done without ignoring this important issue.
- The roads in the area close to the blasting area should be closed and necessary occupational safety measures should be taken to prevent vehicles from approaching the blasting area. – For blasting, the safety distance should be waited and the necessary measures should be taken for the detonator to perform the blasting process through the magneto.
- Before the detonation, the administrative building and the personnel working in the field should be notified that the detonation will be made and then a warning sound should be sent to the administrative building by ordering the detonation through the flag. Considering the possibility that there may be no unexploded explosive substances left in the sewer hole, it is necessary not to enter the area ignited by electric capsule in at least 5 minutes period, and to inspect the blasting site after the necessary checks are made.
- The explosive warehouse in the enterprise must have a lightning rod system and conductive wires should be located around the warehouse. Entrances to the explosives depot should be made through two doors. Sheet metals should be located at the entrance to the warehouse, employees should be able to enter the warehouse area after emptying their static electricity by putting their hands in this area. The above mentioned measures should also be applied to the enterprises in the entire mining sector. It should be noted that human health is much more important than economic dimension and profit. In today's conditions, occupational safety measures should not be ignored and fulfilled by all mining sectors and other dangerous sectors.
- It is necessary to note that there are no people to prevent the risk of stone swinging at close distance of the drilling machine.
- The blasting site should be flagged. This area should be called a danger zone.
- Personnel with detonator certificates who measure hole distances and other working personnel will be positive as a safety measure if the operator of the drill machine stops the work machine engine and waits for the process to finish in order to avoid a dangerous situation.

- The use of the detonator's head protection equipment (Helmet) and foot protection equipment (Steel-nosed shoes) is a work safety measure.
- Igniter personnel should be careful not to place sensitive explosives (dynamite) and non-electric capsules in any capsules at the bottom of the hole while in the drilling phase. It is necessary to wait for the drilling process to be finished and not to create a situation where the danger may arise if these materials are placed ready before the drilling process is completed.

The use of dust masks by working personnel reduces the risk of exposure to dust during hole drilling. Personal protective equipment should be used as a precaution.

- The explosive warehouse in the enterprise must have a lightning rod system and conductive wires should be located around the warehouse. Entrances to the explosives depot should be made through two doors. Sheet metals should be located at the entrance to the warehouse, employees should be able to enter the warehouse area after emptying their static electricity by putting their hands in this area.

Image 3. Loading and transport to the stone crusher plant



5.4. Measures to be taken in Loading and Transport

- In addition to the employment trainings, operators and drivers who will work in the quarry will be given Traffic Safety training by rec HSE instructor.
- During the loading of materials into trucks, truck drivers will put the truck in a stop position to minimize air pollution.



- There will be clear and understandable slabs for the direction of drivers and operators within the quarry.
- With the truck damper on, the truck will not be moved in case of tipping over.
- The operator and drivers will check the equipment they use on a daily basis and immediately notify their supervisor of the defective equipment. The potential of damaged equipment to harm the environment will be transferred to the employees in the trainings.
- Refueling will only be carried out in the areas designated for the project.
- Operations such as oil change and repairs will not be carried out in the furnace unless necessary. If it is done, measures should be taken against leakage and debris.
- Operators are required to follow the rules of road superiority when using their vehicles and to use their vehicles by paying attention to warning signals.
- Warning signs on roadsides and vehicle toll roads should be carefully positioned and these warning signs should be checked at periodic time intervals
- Materials should not be left on the roads of the excavated area, pedestrians should not move on the roads through which the vehicles pass. Controls should be carried out on the use of their vehicles under the authority of the operators who use the loading and transport vehicles to have the license issued by the competent authorities.
- Operators are required to follow the rules of road superiority when using their vehicles and to use their vehicles by paying attention to warning signals.
- Working Machines will dock safely and securely with each other.
- No one other than the officer will be allowed in the Working Machines and Trucks.
- Machines and Trucks will not be allowed to be used by non-officers.
- The operator and the drivers will carry out the necessary checks (oil, air, tires, electrical equipment) before starting to work with their vehicles, check the brakes and then step on the starter and move.
- Operators and Drivers will keep their vehicles clean.
- The loaded truck is obliged to act in accordance with the necessary safety rules and instructions in order to unload the material into the crusher bunker,
- The crusher duly docks in his bunker, the crusher operator lights a red light if the feed does not want to empty, the truck does not unload.
- If the crusher operator wants to unload, he gets a green light and the truck unloads.
- The truck driver will know what the red-green light means and will follow them.
- The truck damper cannot move until it is fully seated (before it lands).
- The quarry manager must ensure that the loading and unloading site is adequately illuminated and working for night work.
- Trucks follow traffic rules when transporting supplies.
- Convenient crossings will be provided when encountering other vehicles on the service road.

- Necessary safety measures will be taken in snowy and icy weather(such as chaining of tires)

6. CRUSHING AND SCREENING PROCEDURES

Trucks unload rocks brought from the quarry site into the raw material bunker. Clay and other unwanted foreign substances between the rocks discharged into the crusher bunkers pass through the grids under the bunker and are separated as undersize and removed out of the system. The stones and rocks left on the screen pass through the grilles underneath, are transported to the bypass screen with conveyor belt and bypassed out of the system, while the stones above the screen are sent back to the stone crusher.

Image 4. Stone crushing plant



Image 5. Close view of conveyor belts



Image 6. Aggregate loading from product silos



6.1. Measures to be taken in crushing and screening activities

- Personal Protective Equipment (PPE) will be used in accordance with the rules specified in the Personal Protective Equipment Management Directive for all activities to be carried out.
- Periodic inspections required by the legislation will be carried out in the relevant engineering rooms or other accredited organizations and the control labels will be



affixed to the relevant equipment. For the periods specified in the Periodic Control Instruction on Work Equipment)

- The mouth of the working crushing jaw will not be approached!
- The stone crusher will never be operated without a warning alarm!
- It will not be settled under the operating conveyor belts!
- Maintenance work will not be carried out until the main electrical switch is switched off. Switch safety will be ensured during maintenance work!
- Maintenance work will not be carried out in the crane movement area and under the load!
- Trucks discharging material into the jaw and the material bunker will not be approached!
- Ladders, platforms will be used in production and maintenance works; safety belts will be used in work carried out outside and at high altitudes.
- The mouth of the working crushing jaw will not be approached.
- The stone crusher will never be activated without warning alarm and without checking the safety of the environment visually.
- One should not stay under and climb over the running conveyor belts.
- Maintenance work will not be carried out until the main electrical switch is switched off. Switch safety will be ensured during the maintenance work.
- Trucks discharging material into the jaw and the material bunker will not be approached!
- One should not stay between between bunker and truck.
- The safe docking of the trucks will be supervised by the relevant foreman.
- A ladder platform will be used in production and maintenance works, and safety belts will be used in work carried out outside and at high altitudes.
- No other route will be used outside the platform and ladders to reach the crusher located on the jaw.
- No one will intervene in the electrical failure except the person responsible.
- During the loading of loaders and trucks, there will be no tools, equipment and people in the loading area.
- The spread of dust should be prevented by using spray nozzles.

The truck driver-machine scoop operator knows what the lights at the crusher plant mean, When it is red, it will not be loaded – the green light means that it will empty the material.

1. Crusher operator, before the plant starts operating, shall check

Motor belts,
Screens,
Conveyor belts,

2. Crusher drums etc. and their housings.

After this check, respectively,
Screen-front conveyor belts,
Front screen,
Crusher-front conveyor belt,



3. The jaw crusher shall be observed from the control cabinet and operated respectively.
4. The crusher operator Observes that the material crushed in the crusher is crushed in the appropriate size,
5. It is dangerous and forbidden to approach the moving and rotating parts-there will be appropriate protective enclosures, in case of failure, they will be notified immediately.
6. The system is completely stopped for maintenance-control or in any case to interfere with my site, an emergency stop button is used to prevent the system from working and the entire electrical system is disabled.
7. The red light will be kept continuously and strictly on while the stones trapped in the jaw crusher are treated and cleaned, and an "ATTENTION MAINTENANCE" sign will be placed. The truck or bucket is prevented from docking.
8. During cleaning, a supervisor stands by.
9. The running crusher;
shall be approached by the employees at the appropriate security distance to avoid contact with chipping stones.
10. After operating the plant, the crusher operator, against chipping stones, shall keep the doors and windows closed and shall make sure that the windows of the dispatch and handling cabinet are intact.
11. Those who have nothing to do with the plant cannot be around the crusher plant, The manager of the facility removes them from there and takes the necessary measures to prevent them from approaching that part.
12. It is mandatory to use a safety belt in any high-rise work.
13. Those who will work on repair-maintenance-cleaning will do their job by taking the necessary safety measures by informing the plant manager.
Maintenance-repair-cleaning –etc. will not be carried out while the plant is running.
Everyone who works at the facility is obliged to use the necessary personal protective equipment related to their work.
14. Flammable-combustible-explosive etc. will not be approached or kept with cigarettes and ignition sources.
15. The warning siren will be activated and checked before the system is activated at the facility, and running will be provided after two minutes.
16. The plant will be illuminated during night work.
17. If there is damage to hose, electrical cable, belt etc., the system must be stopped for repair, the emergency stop button must be turned off, and the authority should be notified.
18. During operation, it is forbidden to walk under the belt,

QUARRY MANAGEMENT PLAN

Under the crusher,

Under the screen.

19. The workplace must be clean and well maintained-tidy.

20. It is forbidden to start work tired and sleepless.

21. If it is necessary to weld, cut etc. in the belts, they should be covered so that they do not damage! Warning signs such as "REPAIR IN PROCESS" ! "MALFUNCTIONED"! shall be placed! A fire extinguisher must be used in case an emergency!

7. MONITORING, ASSURANCE AND VERIFICATION

Key success indicators (KPIs) of this procedure will be monitored, verified and evaluated by the relevant parties in accordance with their responsibilities set forth in the E&S Governance document, within the scope of the MAOG-RECU-GB-GNL-IS-PRG-0007-0 HSE Monitoring, Assurance and Verification Procedure

8. MAOG SPEED TRAIN PROJECT GENERAL CONDITION OF QUARRIES

Quarries Requested under MAG

MERSİN/Tarsus/Dedeler	ocaklar kmz\O 3.kmz	LIMESTONE
ADANA/Ceyhan/Sirkeli	ocaklar kmz\O 12.kmz	LIMESTONE
ADANA/Ceyhan/Hamdilli	ocaklar kmz\O 13.kmz	LIMESTONE
ADANA/Ceyhan/Azizli	ocaklar kmz\O 16.kmz	LIMESTONE
OSMANİYE/Düziçi/Selverler	ocaklar kmz\O 19.kmz	BASALT
OSMANİYE/Düziçi/Yazlamazlı-1	ocaklar kmz\O 22.kmz	BORROWED BIT
OSMANİYE/Düziçi/Yazlamazlı-2	ocaklar kmz\O 21.kmz	BORROWED BIT
OSMANİYE/Düziçi/Yazlamazlı-3	ocaklar kmz\O 20.kmz	BORROWED BIT
OSMANİYE/Bahçe/Kalecik	ocaklar kmz\O 23.kmz	LIMESTONE
OSMANİYE/Bahçe/Burgaçlı	ocaklar kmz\O 24.kmz	LIMESTONE

Special Quarries Likely to be Operated Under MAG

MERSİN/Merkez	ocaklar kmz\O 2.kmz	LIMESTONE
MERSİN/Merkez	ocaklar kmz\O 1.kmz	LIMESTONE
ADANA/Pozanti	ocaklar kmz\O 11.kmz	BASALT

NİĞDE/Bor	ocaklar kmz\O_10.kmz	BASALT
MERSİN/Tarsus	ocaklar kmz\O_6.kmz	LIMESTONE
MERSİN/Tarsus	ocaklar kmz\O_9.kmz	LIMESTONE
MERSİN/Tarsus	ocaklar kmz\O_7.kmz	LIMESTONE
MERSİN/Tarsus	ocaklar kmz\O_8.kmz	LIMESTONE
MERSİN/Tarsus/Dedeler	ocaklar kmz\O_4.kmz	LIMESTONE
ADANA/Karaisalı	ocaklar kmz\ayc karaisalı T.O..kmz	LIMESTONE
ADANA/Ceyhan/Yumurtalık	ocaklar kmz\O_14.kmz	BASALT
ADANA/Ceyhan/Yumurtalık	ocaklar kmz\O_15.kmz	BASALT
ADANA/Ceyhan/Tatarlı	ocaklar kmz\O_18.kmz	BASALT
OSMANİYE/Düziçi/Karagedik	ocaklar kmz\O_26.kmz	BASALT

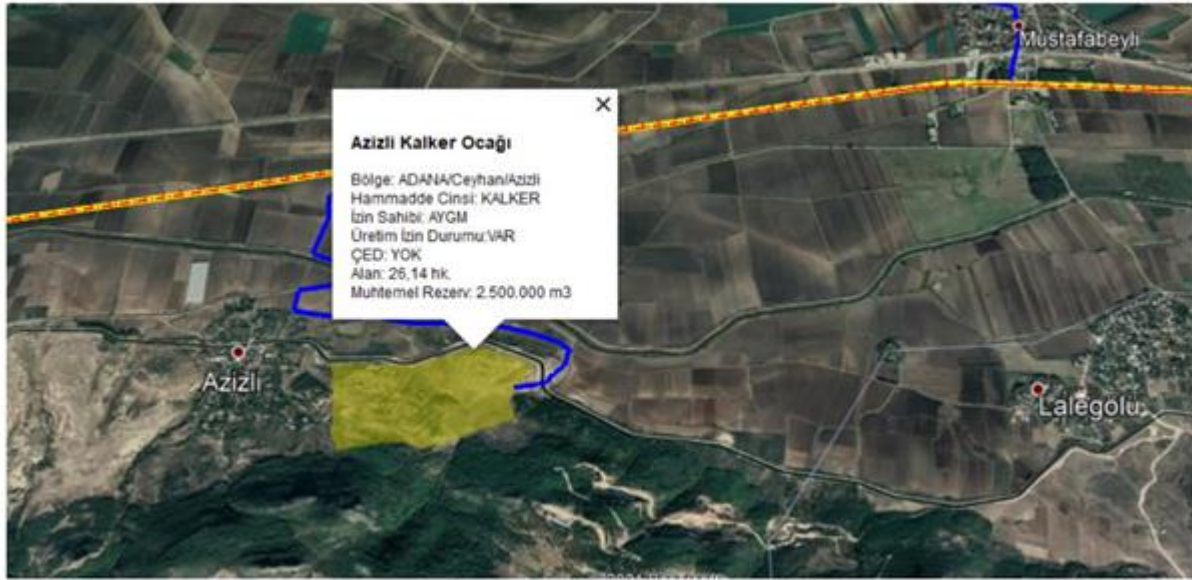


Figure 1. Azizli Limestone Quarry



Figure 2 . Dedeler Limestone Quarry

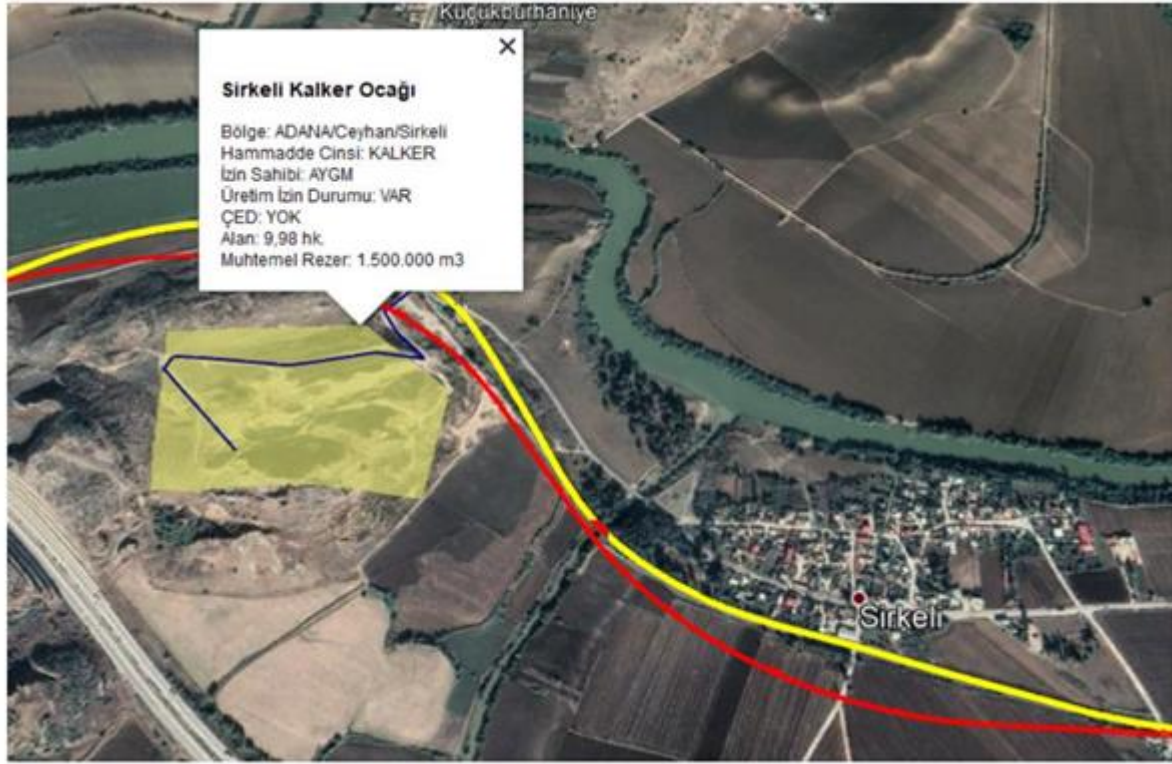


Figure-5: Sirkeli Limestone Quarry