

**Attachment 9**  
**Mine Plan of Operation**

***Mohave County Wind Facility  
Mining Plan of Operations***

***BP Wind Energy***

***United States Department of the Interior  
Bureau of Land Management  
Kingman Field Office***

***February 2013***

# *Mining Plan of Operations*

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## ***1.0 Scope and Location***

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### ***1.1 Proponent***

BP Wind Energy North America Inc. (BP Wind Energy) is developing the proposed Mohave County Wind Project to the east of the existing gravel pit discussed in this plan and as identified in Figure 1. This plan will outline the anticipated mining operations and processing involved at the proposed gravel pit. The contact person for BP Wind Energy is:

BP Wind Energy  
Development Engineering – Mr. Eric Heppen  
700 Louisiana Street, 33<sup>rd</sup> Floor  
Houston, Texas 77002  
713-354-2157

### ***1.2 Location of the Planned Work***

The location of the existing mining area is located in northwest Mohave County, Arizona just off mile marker 22 of US 93 as identified in Figure 1. The area proposed for these activities is land owned by the United States, administered by the Bureau of Land Management (BLM) and will be permitted through the BLM to BP Wind Energy. BP Wind Energy will hire a balance of plant contractor (BOP) who will operate the gravel mine and related infrastructure for construction of the proposed wind project. The subject area is in the Detrital Wash, an intermittent stream, located in Section 23, T28N, R21W, Mohave, County, Arizona. The exact location (Figure 1) and dimensions of the subject area are displayed on the attached maps. The leased area is approximately 320 acres (Figure 2). Much of the southern portion of Section 23 has been previously mined. It is anticipated the gravel mine will be expanded to the north in Section 23, with possible area and size adjustments made dependent upon the aggregate and concrete mixes required to meet construction specifications of the wind project. No area or size adjustments outside the current leased area are currently anticipated based on the preliminary Geotech survey work done previously as a part of the project development process.

### ***1.3 Schedule***

Construction activity in the processing area will be on-going during the construction period. The mining project is scheduled to be used for a period of approximately 40 weeks starting two weeks after the start of construction of the wind project, with approximately 180,000 to 210,000 cubic yards used for the entire period. The start date for construction has not been finalized at this time. It is anticipated that the mining activities will continue until the wind power project is completed and in commercial operation. Prior to any mining operations BP Wind Energy will obtain a permit from the Mohave County Flood Control district and will submit any of the necessary documentation required for that permit.

## ***2.0 Operations***

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### ***2.1 Mining Activities***

Mining activities are proposed to be continuous and completed approximately 40 weeks after the start of construction of the wind project. During the mining period, approximately 180,000 to 210,000 cubic yards of raw materials will be extracted. The project consists of mining sand and gravel from the banks and channel of the Detrital Wash. The depth of the excavation will be limited to approximately 8 feet with 60-foot long tapers (a generally described area of land that gradually thins towards one end, i.e. a conical profile) left in place at both the upstream and downstream ends of the excavated area. Remaining side slopes will be contoured to a neat appearance and left at a 3:1 or flatter slope. The channel of the wash will be mined with scrapers, backhoes, and/or loaders with the material being transported to the processing area, above the ordinary high-water line of the Detrital Wash. The facilities in this area will not require foundations. The sorted finished product will be loaded directly into haul trucks and transported to the project site. Any oversized material (i.e. large boulders) removed by the screens will either be fed into the aggregate production operation or hauled to a location and used for fill for on-going reclamation as described in section 3.4. Estimated reserves of the mining pit are estimated to be 15-20 years.

It is anticipated that a Storm Water Pollution Prevention Plan (SWPPP) will be required for the mining activities as well as the general grading and construction of the wind farm site. SWPPP(s) for the entire site (including the quarry) will be approved prior to the Notice to Proceed and monitored and revised as necessary throughout the life of the project construction activities.

### ***2.2 Aggregate Processing Activities***

Activities will vary with the progress of the work and consist primarily of stockpiling and screening. It is anticipated that a minor amount of crushing will be performed, but the in-situ aggregate is generally the size desired for the finished products (see the laboratory gradation in Appendix B). Processing activities are presently planned to utilize the existing processing area which occupies approximately 50 acres. See section 2.4 for a description of the processing activities.

### ***2.3 Power Source***

Electrical power to support the office building, screening equipment, concrete batch mixing plant, and related mining infrastructure will be provided by either extending power from an existing power line or by diesel generator. The closest power line is along the Highway 93 corridor, approximately two miles from the mining area. Refer to the POD Sections 2.8.4 and 2.10 for details on the electric distribution line.

If access to an existing power line cannot be reasonably obtained, a diesel powered generator will be used. It is anticipated the diesel power generator will have up to a 750 kilowatt capacity. Fuel for this type of generator is number 2 diesel fuel and is taken from a 500 gallon tank. The tank will have proper containment as described in Section 2.9.

## **2.4 Equipment**

The actual equipment used onsite will be determined by the BOP contractor. However, the proposed mining methods likely will include screening and conveying equipment that will be parked in the processing area near the project. Mined sand and gravel will be loaded into a feed silo by a front-end loader. This material will be conveyed to screens that separate the products into sand or larger rock (usually less than 3 inch in diameter). Minor crushing will be completed during the course of mining activities. Oversized material (4 inches and larger) will be stockpiled onsite. Rock larger than this is conveyed to a crusher where it is reduced to product sizes. These materials could then be stockpiled or be introduced into a Portland Cement Concrete Batching plant for cement manufacture or used for roadway or over-excavation backfill materials (see Appendix A: Portland Concrete Mixing Plant Operational Statement).

The BOP contractor will maintain all construction equipment in accordance with all federal, state, and Plan of Development (POD), Attachment 3 – Health, Safety, Security & Environmental Management Plan (HSSE) requirements. The following list is intended to illustrate typical equipment for mining, screening, conveying and concrete batching operations:

|                                    |  |
|------------------------------------|--|
| 3,000 Gal. Water Truck Power Spray | (2) Screening Plant                    |
| 10,000 Gal. Fuel Tank & Pump       | Frame Conveyor (Butler type, or equal) |
| Electric Panel & Trailer           | Portable Welder & Torches (Miller      |
| or Lincoln typical) Air Compressor | (2) Radial Stacker Conveyor            |
| Eagle Sand Screw                   | (4) Lattice Frame Conveyors            |
| Feeder Conveyor                    | Linkbelt Dragline                      |
| (2) Generators                     | Backhoe / Loader                       |
| (2) Loaders                        |  |
| Scraper                            |  |
| Concrete Portable Batch Plant      | Generator                              |
| 12 YD RIM Concrete Plant           | Feeder                                 |
| 300 Barrel Cement Silo             | 1320 Screen Plant                      |
| (ElJay, type or eq) Radial Stacker | Aggregate Bins                         |
| (4) Conveyors                      | 500 Gal. Fuel Tank                     |
| Portable Office                    | (10) Concrete delivery trucks          |

## 2.5 *Production Water*

There are three water production (pumping) wells currently on the mine site. Reported sustained pumping water rates for these wells are approximately 1,000 gallons per minute (gpm), 400 gpm, and 200 gpm. It is anticipated that the demand for the mining and concrete productions can be satisfied by these existing wells. The project will notify the BLM and provide alternatives if the wells are not sufficient or can't meet water demand requirements after final engineering and pump testing. The project will use water daily for the following usages:

1. Control fugitive dust on site access roads and throughout the working area.
2. Water trucks will transport water offsite for use as the primary means of dust control on access roads within the proposed wind project boundaries.
3. Water will be used as batching water for concrete production in the portable batch plant for hydrating aggregate, cooling of concrete, workability of concrete, and batching with the concrete. The primary portable batch plant would be located within the main laydown/staging area. The water would be piped from the wells to the primary portable batch plant utilizing surface laid poly pipe. A secondary portable batch plant would also be established in the northern half of the wind farm site. Water would then be transported via water trucks to be used with the secondary batch plant.
4. Water will be used to wash sand if required for the onsite concrete plant. Currently, there is one clay-lined pond constructed on the mining premises. This will be reactivated and used for the purpose of storage and recycling of wash water, as well as to contain the fine particles washed from the sand. The re-activation process would typically include removal of any remaining dump material, which will expose the previously constructed clay base liner. The access ramp will be re-graded and re-contoured to meet drainage specifications and the pad base will be re-compacted with a smooth drum vibratory roller. The clay base liner will then be tested to ensure that the liner meets low permeability specifications. The pond was previously constructed away from the floodplain of Detrital Wash and consists of an earthen impoundment of approximately 100,000 gallon capacity. The surrounding berms are at minimum of 1.5 feet high.

Two clay-lined transfer ponds approximately 5 feet deep and 60 feet by 60 feet wide will be constructed (estimated size), at the Materials Source processing site (mining premises). The volume of the ponds will be determined by the required capacity. The newly constructed ponds will have a maximum capacity of approximately 100,000 gallon holding capacity. The ponds would be used for storage and recycling of wash water, and used to contain the fine particles washed from the sand. Also, during peak usage, water may be stored in the ponds. When the Materials Source (mining premises) is no longer in use, the ponds would be reclaimed to prior existing conditions to the extent possible.

Production water will be pumped from the wells currently at the mine location. A valve meter will be installed on each well to maintain overall usage during the course of mining activities.

The maximum “worst case scenario” estimated water usage for dust control and cement production is 100,000 gallons per day, 5 days a week, for 39 weeks. The anticipated water usage for cement production is anticipated to be 25,000 gallons per day, 5 days a week, for approximately 25 weeks, dependent upon the period of wind turbine foundation construction and related concrete needs. The remainder of the water usage is anticipated to be 15,000 gallons per day for truck washing and hydrating aggregate. The estimated total gross water use required for the duration of the project is 27,300,000 gallons.

## ***2.6 Overburden***

The project mining operation will produce some amount of overburden or waste sands and fines which have been screened from the quarried material. The overburden will be stored on site in stockpiles. This stockpiled overburden will be spread over the site for reclamation wherever possible in accordance with the Integrated Reclamation and Noxious Weed Management Plan (Reclamation Plan). The stockpile of the overburden material will be sprayed periodically with sufficient water in accordance with the POD Dust and Emissions Control Plan to minimize the amount of particles becoming airborne.

## ***2.7 Fugitive Dust***

The stockpiled overburden materials will be segregated into piles by type and size of material. Due to the site’s remote location and the coarse nature of the stored material it is not anticipated that fugitive dust from this site will adversely affect adjacent property or people. However, the stockpiles and any other fugitive dust sources-haul road, working area and drop points will be water sprayed as much as necessary to minimize dust in accordance with the project Dust and Emissions Control Plan. The entire project site as well as the areas near the overburden stockpiles will be monitored for air quality as required by the Arizona Department of Environmental Quality Air Quality Division. Refer to the POD Dust and Emissions Control Plan for all the air quality mitigation applicable to mining related activities.

## ***2.8 Slope Treatment***

Pit slopes will be constructed at an inclination no steeper than 3:1 (about an 18 degree angle of repose) with maximum height of about 20 feet. Slopes constructed at this inclination are generally considered stable and the potential for land sliding is not considered significant. Slopes less than 20 feet do not require design by a registered professional engineer.

## ***2.9 Fuel Storage***

Mining operations will require onsite diesel fuel storage. There will be additional storage requirements for associated lubricant oils, hydraulic oil, coolant, and grease. The fuel steel tank(s) will have an estimated storage capacity of approximately 8,000 to 10,000 gallons. All portable fuel and related other liquids storage tanks will be provided with proper containment in accordance with the project Spill Prevention Control and Countermeasure Plan (SPCC) assembled for the project. The containment requirements will meet the more stringent of local and/or state requirements. The containment typically consists of a flexible a 12 mil flexible polyethylene lining placed within the bermed area, (berms having a minimum height of 24 inches). The lining will be held in place with a layer of sand and large rocks.

The capacity of each containment structure will be a minimum of 150% of the capacity of the tank being protected. Good housekeeping rules will be followed to keep chemicals and waste materials from entering the wash. These rules include: providing a sediment pond for wash water from aggregate washing and other operations; proper disposal of oil and greasy substances to preclude them from mixing with the any surface water; lined storage pits for chemical storage.

## ***2.10 Equipment Parking and Servicing***

All equipment will be cleaned prior to entrance on to the project site in accordance with the project “Integrated Reclamation and Noxious Weed Management” plan. The project equipment will be serviced in a designated area in the existing processing area. Servicing will consist of routine maintenance of vehicles; major repairs will not be performed on site. Care will be taken to see that no oil, grease or used filters can contaminate the soil. Proper containers will be provided to store these items such as poly sheeting, drip pans, and secondary containment pans. Used wiping rags will also be containerized. A sand liner has been placed in the existing servicing and parking areas. If oil or grease is spilled or leaked from equipment, the contaminated sand will be removed and hauled to Silver State Disposal in Clark County, Nevada, or similarly approved facility, which is an approved hazardous material dump. Used oil will be pumped into a truck and hauled to a recycling facility in Las Vegas, Nevada or similarly approved facility on an as needed basis.

## ***2.11 Emergency Plan for Spills***

A SPCC assembled for the overall project will include the mining activities. In the event of a spill or other accidental discharge, the on-site Emergency Coordinator will direct an immediate cleanup and notify the proper authorities. A copy of this plan and emergency phone numbers will remain on site and placed in a readily accessible area and will be included as an Attachment to the POD.

## ***2.12 Portable Scale***

A portable scale or weigh belt will be onsite for the duration of mining activities. All materials leaving the pit will be weighed and documented as to the amount and its intended use on the project site. Information will be reported to BLM as required. Empty trucks will be weighed and recorded prior to proceeding to aggregate loading areas within the mining area. All loads of aggregate material will be weighed and recorded prior to leaving the mining site, or as used in for concrete mixing operations. Depending on the first equipment selected, weigh-belts may be used to determine the quantity of materials used in concrete production, in lieu of the portable scale. All scales will be properly calibrated prior to use and at the frequency required by the Arizona Department of Transportation for highway construction.

## ***3.0 Reclamation Plan***

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### ***3.1 Shaping, Contours – Drainage***

Because of the relatively flat nature of the site and existing graded work areas, significant grading of the mining area or processing area will not be required. Reclamation will include minor leveling or re-contouring of these areas to return them to as near their pre-project condition as feasible. It is concluded that post-project drainage patterns and volumes will remain essentially the same and pose no threat to adjacent property from increased runoff, sedimentation, stream bed stability or steam flow. Reclamation will be in accordance with the Reclamation Plan and will be on-going throughout each phase of mining and processing.

### ***3.2 Runoff***

The processing area is not within the limits of any wash or stream. Precipitation falling in the pit will be contained where the water will either percolate, evaporate, or mechanically removed without creating additional runoff. The design and development of the processing area will not create significant drainage flow changes.

### ***3.3 Cleanup***

The area will be kept clean and neat in appearance in accordance with the Project HSSE Plan, Section 19 and HSSE Plan Attachment BB – Waste Handling Plan. The collection of trash and waste generated by site employees will be contained in the proper receptacle and maintained regularly by contract services. Upon completion of the project, the processing equipment will be dismantled and hauled by truck from the site. This will be accomplished within sixty days of the cessation of all mining and processing activities. Stockpiled material not used in the project will either remain in the mining area or shall be removed from the site via trucks.

### ***3.4 Final Reclamation***

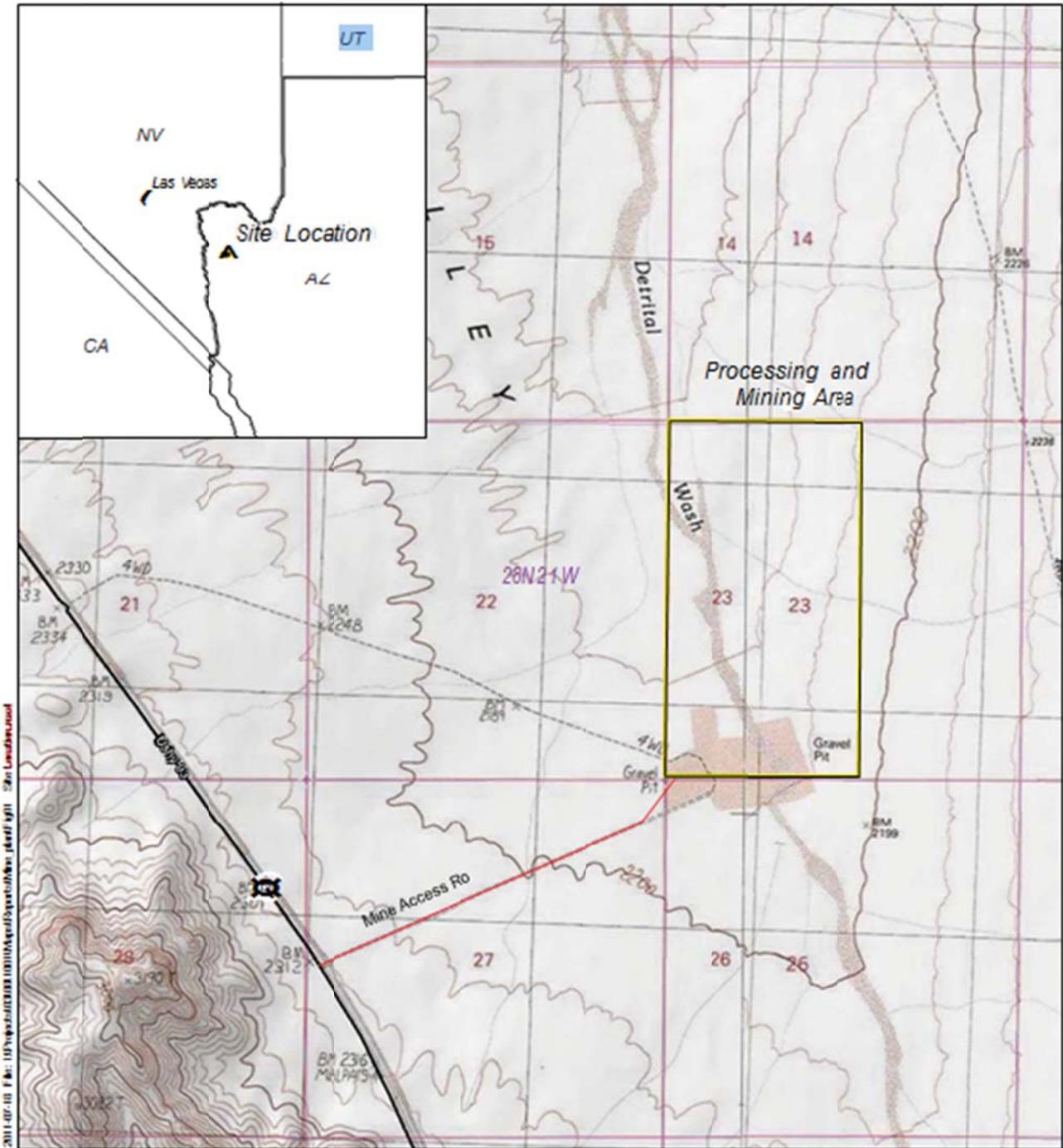
Final Reclamation will proceed in accordance with the Reclamation Plan and will commence with the completion of project mining and processing activities at the site and will consist of the following measures in accordance with the Reclamation Plan:

1. The complete project will be scheduled in Phases. Each Phase will consist of an area that is mined. The processing area will remain fixed. As one Phase is completed, reclamation will begin in that location: sloping, contouring and plating of the area with the overburden. Areas mined during previous pit operations, not associated with the project will not be revisited. Any project associated mining in areas already reclaimed will be reclaimed again after cessation of the project oriented activities.

2. All equipment and structures mobilized to the site by BP Wind Energy or the BOP contractor will be removed from the site. The processing and parking areas will be leveled or contoured to closely approximate pre-project grades. The access approach at U.S. Highway 93 will be left in place to facilitate operation and maintenance of the Wind Project. The access approach will be as per the approved Arizona Department of Transportation encroachment permit and highway alterations.
3. Overburden will be removed from the storage pile and re-contoured to match the natural grade and drainage patterns.
4. The re-contoured surface will remain rough and seed mixture as prescribed by the Kingman Field Office will be applied. The surface will only be seeded if requested by the Kingman Field Office. The seed mixture will be as indicated in the Reclamation Plan. We will contact the Kingman Field Offices before applying this seed mixture and we will be required to provide this office with the tags from the seed bags.

At completion of mining, the pit will have slopes which are constructed at 3:1, including all points of use, and will be leveled after all equipment, structures, and the concrete batch plant have been removed from the site. No structures or equipment brought on-site by BP Wind Energy or the BOP contractor will be left on site after closure of this facility.

## *Figures*



Source: USGS Topo Map, National Geographic Society

- Mine Access Road
- Approximate Mine Lease Boundaries

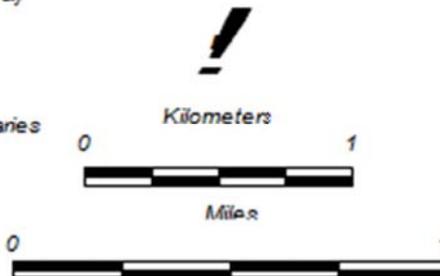
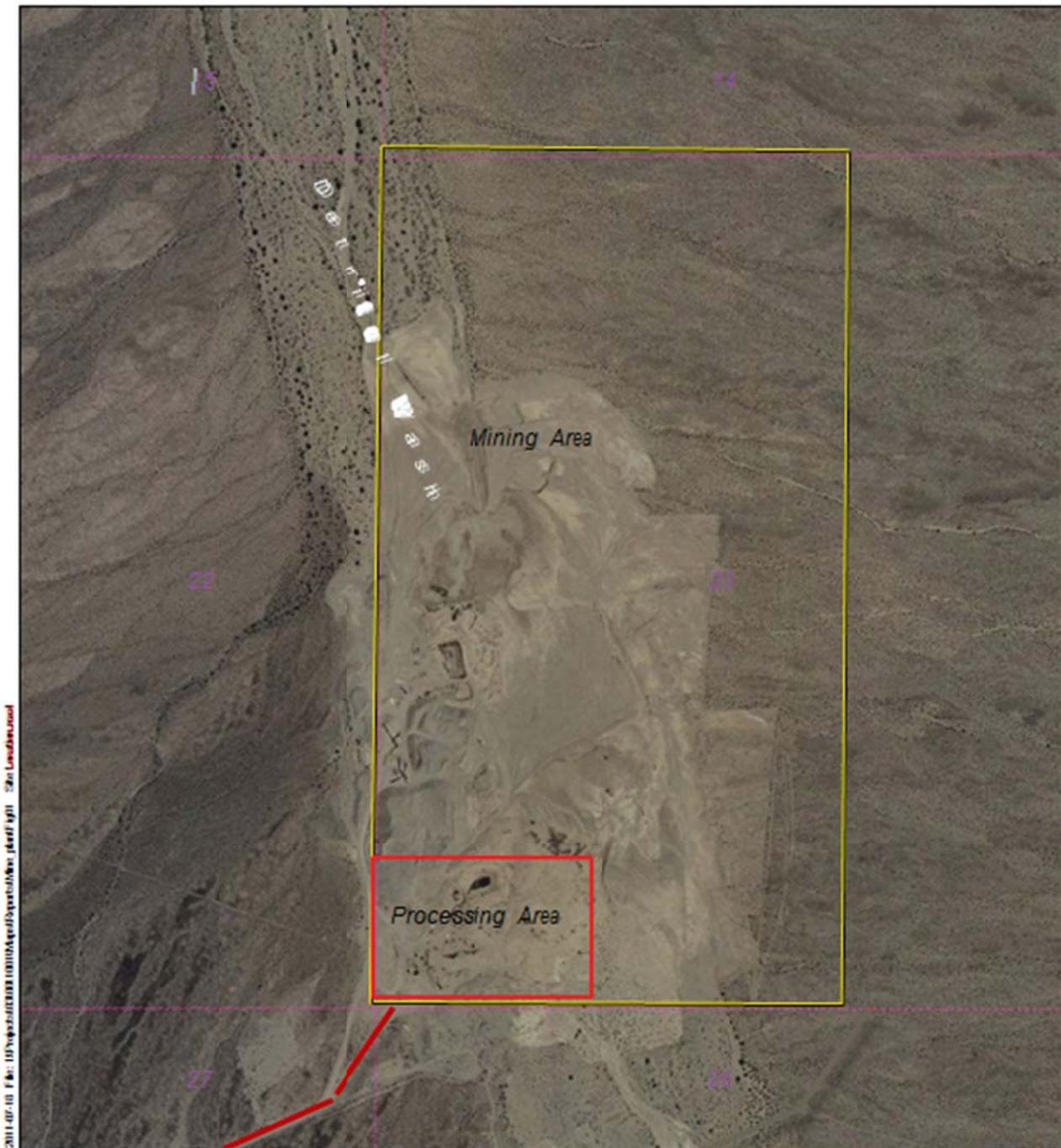


Figure 1

SITE LOCATION OF  
BLM GRAVEL MINE  
Mohave County Wind Project  
BP Alternative Energy  
Mohave County, Arizona



Source: ESRI, I-cubed, GeoEye, 2007

-  Mine Access Road
-  Approximate Mine Lease Boundaries
-  PLSS Boundary (Sections)

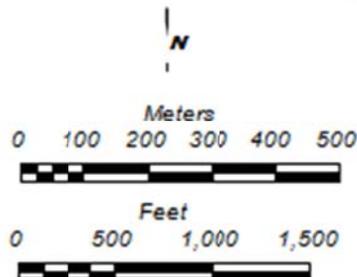


Figure 2  
 SITE LAYOUT OF  
 BLM GRAVEL MINE  
 Mohave County Wind Project  
 BP Alternative Energy  
 Mohave County, Arizona

## *Appendices*

## *Appendix A*

### *Portland Concrete Mixing Plant Operational Statement*

It is anticipated that the Portland Cement Concrete Mixing plant will operate for 10 hours a day, Monday through Friday. It is expected that the weather conditions will dictate short periods of intense activity on an intermittent basis and potentially overnight pours due to high ambient air temperatures.

Processed aggregates (sand, gravel, rock) will be transported to the concrete mixing plant for use in the manufacturing of Portland Cement Concrete. The manufacturing plant feed hoppers will be filled by a rubber tired front end loader, utilizing previously processed and screened aggregates. The Portland cement/concrete product is manufactured by the mixing plant utilizing previously prepared and moistened aggregates which are proportioned by weight with the correct amount of dry powdered Portland cement. Additional water is then added in the mixer and the materials mixed for a specified time. The product is then fed by gravity into the mixing trucks which haul the concrete to the adjoining wind project jobsite. Products delivered to or hauled from this facility will be transported by truck.

Process Weights            (Typical Operating Production Rates, tons per hour) TPH

|           |     |
|-----------|-----|
| Cement    | 26  |
| Water     | 12  |
| Aggregate | 105 |

Electrical power to support the mixing plant will be provided by extension from an existing power line or generated by a diesel powered generator of up to 750 kilowatt capacity. Fuel for this generator is “Number 2” Diesel fuel. This fuel will be stored in a portable storage tank with a 10,000 gallon capacity. The portable fuel storage tank will be filled periodically by an off-site vendor. The cement silo will be filled periodically by an off-site vendor.

The storage and use of petroleum products have some potential to create a fire hazard. The storage and use of these materials are controlled by existing regulations, codes and laws which are considered adequate to mitigate potential fire impacts. The Portland Cement Concrete product will be transported from the site in trucks for use in construction of the wind project. During peak operations, it is projected that the delivery of the product alone will result in about 40 truck trips (max) on a daily basis.

The BOP contractor will comply with the project Dust Abatement Plan and requirements of the ADEQ Air Pollution Control Division. Water trucks of 3,000 gallon capacity will be used. Water will be sprayed on disturbed areas to control the generation of dust, as needed. See the Dust Abatement plan for additional information.

***Appendix B***  
***Laboratory Gradation Testing***

