

US EPA ARCHIVE DOCUMENT

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 2**

In the Matter of:

Moca Municipal Solid Waste Landfill  
Moca, Puerto Rico.

Municipality of Moca, Puerto Rico, and

Moca ECO-Park Corp.,

Respondents.

Proceeding Under Section 7003 of the Solid  
Waste Disposal Act, as amended.

ADMINISTRATIVE ORDER  
ON CONSENT

Docket No.:  
**RCRA-02-2014-7302**

I. JURISDICTION

1. This Administrative Order (the “Order”) is issued on consent to the Municipality of Moca, Puerto Rico (“Municipality” or “Moca”) and to Moca ECO-Park Corp. (“Operator” or “Moca ECO-Park”), collectively hereinafter referred to as the “Respondents.”
2. The Moca “Municipal Solid Waste Landfill” as that term is defined at 40 C.F.R. § 258.2 (“Landfill” or “MSWL”) is located off PR-110, kilometer 16.2, Centro Ward, in the Municipality of Moca in the Commonwealth of Puerto Rico.
3. The Respondent Moca is the owner and Respondent Moca ECO-Park, since February 2011, is the operator of the Landfill.
4. The Order is issued by the United States Environmental Protection Agency (“EPA”) pursuant to the authorities vested in the Administrator of EPA by Section 7003 of the Solid Waste Disposal Act, as amended by various laws including the Resource Conservation and Recovery Act and the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6901 et seq. (collectively hereinafter referred to as “RCRA” or “the Act”), which authority has been duly delegated to the Regional Administrator of EPA, Region 2.
5. Notice of this Order has been provided to the Commonwealth of Puerto Rico, pursuant to Section 7003 of RCRA, 42 U.S.C. § 6973.

6. Respondents agree to undertake the actions required by the terms and conditions of this Order, consents to and will not contest EPA's jurisdiction to issue or, if necessary, enforce this Order, and will not contest the terms of this Order.

## II. PARTIES BOUND

7. This Order shall apply to and be binding upon the Respondents and each and every agent of the Respondents. Respondents shall supply any person or entity that is working on or will work on any issue directly related to the Landfill under the direct or indirect control of the Respondents (including but not limited to any contractor or independent agent retained to perform work on issues related to the landfill) with a complete copy of the Order. Respondents shall nonetheless be responsible for ensuring that their contractors, subcontractors and agents comply with the requirements of this Order and perform work in accordance with this Order.

8. Unless otherwise specified by identification of the Respondent responsible for a particular activity or requirement, or unless the Order is modified in the future pursuant to Section XXI, Respondents are jointly and severally responsible for carrying out the requirements of this Order.

9. Any change in ownership, control or corporate status of Respondents Moca ECO-Park, including sale of assets, shall not alter its responsibilities under this Order, except as may be provided by Sections XXI and XXVI, herein.

10. The obligations of Respondent Moca under this Order shall be binding on any successor, whether such successor is created by merger, expansion or otherwise, pursuant to the laws of the Commonwealth of Puerto Rico.

## III. EPA'S FINDINGS OF FACT AND CONCLUSIONS OF LAW

### Statutory and Regulatory Background

11. Section 7003(a) of RCRA, 42 U.S.C. § 6973(a) states in pertinent part that: "upon receipt of evidence that the past or present handling, storage, treatment, transportation or disposal of any solid waste or hazardous waste may present an imminent and substantial endangerment to health or the environment, the Administrator may ... issu[e] such orders as may be necessary to protect public health and the environment."

12. Section 4004 (a) of RCRA, 42 U.S.C. § 6944 states, in pertinent part, that the "...Administrator shall promulgate regulations containing criteria for determining which facilities shall be classified as sanitary landfills and which shall be classified as open dumps...."

13. Section 1004 of RCRA, 42 U.S.C. § 6903 defines the term "open dump" to mean any facility or site where solid waste is disposed of which does not meet all the criteria for being

classified as a sanitary landfill under section 4004 and which is not a facility for disposal of hazardous waste.

14. The federal regulations promulgated at 40 C.F.R. Part 258, entitled Criteria for Municipal Solid Waste Landfills, “establish [the] minimum national criteria ... for all municipal solid waste landfill units.” 40 C.F.R. § 258.1.

15. Pursuant to 40 C.F.R. § 258.1(h), municipal solid waste landfill units which fail to meet the criteria set forth in Part 258 constitute open dumps.

16. Section 4005(a) of RCRA, 42 U.S.C. § 6945(a) states, in pertinent part: "...any solid waste management practice or disposal of solid waste or hazardous waste which constitutes the open dumping of solid waste or hazardous waste is prohibited."

17. Municipal solid waste landfills are subject to the federal regulations promulgated at 40 C.F.R. Part 258, entitled Criteria for Municipal Solid Waste Landfills. These regulations “establish [the] minimum national criteria ... for all municipal solid waste landfill units.” 40 C.F.R. § 258.1.

18. The Landfill is a “municipal solid waste landfill unit,” as that term is defined at 40 C.F.R. § 258.2

19. Existing municipal solid waste landfill units are subject to many of the requirements set forth in 40 C.F.R. Part 258.

20. The Landfill is also subject to the Non-Hazardous Solid Waste Management Regulations of Puerto Rico, administered by the Puerto Rico Environmental Quality Board (“EQB”).

21. The Landfill is not authorized by EPA to accept or dispose of “hazardous waste,” as that term is defined in Section 1004(5) of RCRA, 42 U.S.C. § 6903(5), and in 40 C.F.R. § 261.3.

#### Owner and Operator

22. Respondent Moca, a Municipality of the Commonwealth of Puerto Rico, owns the approximately 85 acre site (“Facility”) on which the Landfill is located. Respondent Moca had been the operator of the Facility prior to February, 2011.

23. Respondent Moca has contributed in the past and is currently contributing to the management and disposal of solid waste at the Facility.

24. Respondent Moca ECO-Park is a corporation doing business in Puerto Rico. Moca ECO-Park is a current operator of the Facility under a contract with Respondent Moca. Moca ECO-Park began operating the Facility in February, 2011.

25. Respondent Moca ECO-Park is currently contributing to the management and disposal of solid waste at the Facility.

Respondents are each a Person

26. Respondents Moca and Moca ECO-Park are each a “person” as that term is defined in Section 1004(15) of the Act, 42 U.S.C. § 6903(15).

Geographic and Geological Background

27. The Municipality of Moca is approximately 133 square kilometers in size and has a population of about 40,109 people (U.S. Census, 2010).

28. The Facility has an area of approximately 85 acres of which some 52 acres bears waste, constituting the Landfill. The Facility includes some acres of undisturbed karst terrain and is surrounded by undeveloped, forested karst terrain, cattle pastures, and some rural residential housing. See Appendix 1.

29. The Facility is located in a region that has an annual average rainfall of 76 inches per year.

30. The Landfill is located within karst terrane.

31. The Landfill overlays sinkholes and surface water run-off can discharge to other, adjacent karst sinkholes.

32. The Landfill is located over the North Coast Aquifer System with regional groundwater flow toward the north. Local groundwater flow may be to the south and east (according to the U.S. Geological Survey, 12 November 2013 Memorandum to EPA regarding the Moca Landfill).

33. The North Coast Aquifer System contains the most productive aquifers in Puerto Rico.

34. The Landfill is sited in a seismic zone.

Location Within/Adjacent to Sensitive Ecosystem

35. The Landfill is located within a karst limestone region of 1,425 square kilometers (550 square miles) that dominates the north-central coast of Puerto Rico. The karst region harbors the richest biodiversity in Puerto Rico. More than 1,300 species of plants and animals are present within this karst region. It is prime habitat for most of the native and endemic wildlife species, including 30 federally listed threatened and endangered species. Many of these species are only known to exist in karst ecosystems. Most of the endangered species present at the karst belt are plants with a restricted distribution that are vulnerable to habitat alteration and destruction by improper land use practices. More than 75 species of Neotropical migratory birds use the karst as wintering habitat.

36. As determined by the U.S. Fish and Wildlife Service, the local karst forested areas around the Moca Landfill may provide habitat for the following federal endangered species: *Buxus vahlii*, *Ottoschulzia rhodoxylon*, *Daphnopsis helleriana*, *Myrcia pagani*, *Zanthoxylum thomasianum*, *Shoepfia arenaria*, *Eugenia haematocarpa*, and the Puerto Rican Boa (*Epicrates inornatus*).

37. Development within the karst region of Puerto Rico is subject to Department of Natural and Environmental Resources (DNER) Law 292 - Law for the Protection and Conservation of the Karst Topography of Puerto Rico. The Landfill borders DNER's Protected Karst Zone Areas.

#### Landfill Background and Regulatory History

38. The Landfill has been receiving municipal solid waste since at least 1976.

39. The Municipality of Aguadilla operated the Landfill until 1994, when the Municipality of Moca assumed sole responsibility for the landfill operation. Since 1994, the Moca Landfill has been operated as a separate facility from the Aguadilla Landfill.

40. The closed Aguadilla Landfill borders the Moca Landfill to the north.

41. Pre-February 2011 reports from both EQB and the Solid Waste Authority of Puerto Rico have identified significant deficiencies at the Moca Landfill. More recent inspections by EQB and SWMA has observed improvements over past landfill operations.

42. As of March, 2013, the Landfill received an average of 300 tons per day of solid waste, primarily from the Municipalities of Aguadilla (33%), Moca (17%), San Sebastian (16%), Aguada (14%), Las Marias (2%), and private companies (*e.g.* Allied Waste, PBP, ConWaste and others)(18%) (according to waste calculations provided by Moca ECO-Park).

43. The area of the landfill expanded from approximately 20 acres in 1993 to approximately 52 acres by 2009. The landfill's waste footprint has not expanded during Moca ECO-Park's tenure. The landfill has been permitted by EQB.

#### Landfill Inspections, Findings and Environmental Impact

44. On or about March 25, 2003, October 24, 2012, and April 3, 2013, authorized representatives of EPA inspected the Landfill (the "2003, 2012, and 2013 Inspections"). During the Inspections and other visits, EPA obtained information, including direct observations, concerning the Landfill and its waste disposal practices, including the facts set forth herein.<sup>1</sup>

45. During at least one of these Inspections, EPA observed evidence of disease vectors (including cattle grazing on landfill), past and ongoing fires, buried automobiles, scavengers, daily cover mining operations which affected karst forest, waste dumped in and in the vicinity of

<sup>1</sup> EPA representatives also observed the Landfill in 2005, 2007 and 2009.

sinkholes, no inspection of incoming wastes, potentially unstable slopes, inadequate stormwater controls, and lack of daily cover.

46. During the 2003 Inspection, EPA was told of scavenger problems. During the 2013 Inspection, EPA observed evidence of burning of electrical wire on site. The Operator identified this as unauthorized burning of copper wire by scavengers.

47. During the October 24, 2012 Inspection, EPA observed a significant improvement over past landfill operational practices employed at the landfill.

48. During the October 24, 2012 inspection, EPA found evidence of activity on karst forest areas of the Facility during landfill cover soil mining operations. During the April 3, 2013 Inspection, EPA and U.S. Fish and Wildlife Service (FWS) officers inspected these areas with the Operator Moca ECO-Park. At that time, Moca ECO-Park agreed to cease mining operations in those areas designated by FWS as “old growth” karst forest and to cordon off those areas in a clear, highly visible manner.

49. The Landfill did not have proper cover as required by 40 C.F.R. § 258.21 during the 2003 Inspection and other direct EPA observations in May and November 2005, August 2007, and February 2009. Proper daily cover application in the active cells was observed during all the EPA inspections after Respondent Moca ECO-Park assumed the operational control of the landfill. Proper cover is required to control disease vectors, fires, leachate generation, odors, blowing litter, and scavenging. During the 2003 Inspection, many birds were visible on uncovered waste. In the 2003, 2012, and 2013 Inspections, there was evidence (*i.e.* hoof prints), of cattle on of the landfill.

50. During the 2003, 2012, and 2013 Inspections, some of the Landfill’s surfaces had steep slopes that were likely to be unstable, including those leading directly to sinkholes.

51. During its Inspections, EPA observed that the Landfill lacked stormwater runoff controls. These controls are required by 40 C.F.R. § 258.26. The Landfill also had no retention or treatment of stormwater. Stormwater, originating from the Landfill, flows overland into adjacent sinkholes.

52. Uncontrolled surface water run-off can flow onto and infiltrate and percolate into surface soils, potentially adversely impacting soil and/or groundwater. Uncontrolled run-off is more likely to occur in instances where, as at this Landfill, there is substantial rainfall and steep surface gradients with poor or no landfill cover.

53. The Landfill does not have an operational impermeable liner. Liners, which are required for “new municipal solid waste landfill units” and “lateral expansions” as those terms are defined in 40 C.F.R. § 258.2, minimize the possibility that liquids, including leachate, can percolate and seep through a landfill, infiltrate the subsurface, and contaminate soil and groundwater.



54. During the March 2003 Inspection, EPA observed leachate seepage flow from the Landfill's waste directly into an adjacent sinkhole. Dead vegetation was observed surrounding the sinkhole during this and later inspections.
55. Leachate is a "liquid that has passed through or emerged from solid waste and contains soluble, suspended or miscible materials removed from such waste." 40 C.F.R. § 258. 2. Landfill leachate may be contaminated with hazardous constituents such as toxic chemicals, heavy metals, and complex organic compounds. Leachate can also contain microbial pathogens.
56. Increased volumes of leachate are generated by and released from landfill units, such as the Moca Landfill, that do not have requisite engineering controls in place such as surface water run-on controls, impermeable liners and leachate collection systems. Failure to have these controls increases the likelihood that the aquifer beneath the Landfill can become contaminated by operations at the Landfill.
57. Municipal solid waste may contain microorganisms that can cause disease in man and animals. These pathogenic microorganisms include enteric bacteria, fungi, viruses, and human and animal parasites. Pathogenic bacteria and viruses, originating with soiled diapers, animal waste, and other sources, may survive conditions within sanitary landfills, and may be leached to ground or surface water.
58. Pursuant to 40 C.F.R. § 258.1, MSWLF Facilities in operation as of 1994 that continue to accept solid waste for disposal, may not laterally expand unless the expansion cell or area meets certain design criteria as set forth in 40 C.F.R. § 258.40, including installation of an impermeable liner membrane and a leachate control system, which acting together, prevent uncontrolled leachate releases from the MSWLF.
59. An adequate groundwater monitoring system is necessary to determine if contaminants are being released into groundwater and are migrating away from the Landfill. Groundwater contaminated by landfill operations could contain hazardous constituents such as toxic chemicals, heavy metals, and complex organic compounds.
60. As of April 2013, no groundwater monitoring wells or other groundwater monitoring program were known by the Operator, Moca ECO-Park, to exist at the Landfill.
61. Landfill gas is generated during the natural process of anaerobic decomposition of refuse contained in a landfill. Landfill gas is predominantly methane and carbon dioxide, and small amounts of non-methane organic compounds ("NMOCs") such as ethane, toluene and benzene. NMOCs are a collection of toxic pollutants, which when released into the atmosphere can lead to adverse effects. Methane gas is odorless and highly combustible. The accumulation of methane gas within a landfill can potentially cause fires and/or explosions.
62. Subsurface migration is the underground movement of landfill gas from landfills to other areas within the landfill property or outside the landfill property. Most subsurface migration occurs at older, unlined landfills because there is minimal barrier for lateral migration of landfill



gas. It is possible for landfill gas to travel underground, accumulate in enclosed structures, and ignite. Incidences of subsurface migration have caused fires and explosions on both landfill property and private property.

63. Carbon dioxide and methane are greenhouse gases that can contribute to climate change, and NMOCs contribute to ozone formation. Methane is of particular concern because it is extremely effective in trapping heat in the atmosphere.

64. As of April 2013, the Landfill did not have an operational explosive gases control system. A methane monitoring system is required by 40 C.F.R. § 258.23.

65. The Landfill does not have adequate control regarding public access to the Landfill as required by 40 C.F.R. § 258.25. During the 2003 Inspection, EPA was told of scavenger problems. During the 2013 Inspection, EPA observed evidence of burning of electrical wire on site. The Operator identified this as unauthorized burning of copper wire by scavengers. Failure to adequately control public access increases the likelihood of individuals entering the Landfill and the potential for injury and unobserved waste disposal, thereby potentially jeopardizing human health and the environment.

66. Under 40 C.F.R. § 258.14, new MSWLF units and lateral expansions shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Director of an approved State/Tribe that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

67. Under 40 C.F.R. §§ 258.1 and 258.15 lateral expansions of MSWLF Facilities in operation since 1994 that are located in unstable areas must demonstrate that special engineering measures have been incorporated into the expansion design to ensure that the integrity of the structural components of the MSWLF unit will not be disrupted. "Unstable area" is defined in 40 C.F.R. § 258.15 includes karst terrane.

68. Landfill side slopes exceeding the standard 3:1 ratio, represent an increased potential for unstable slopes. EPA observed steep slopes exceeding 3:1 during the 2003 and 2012 Inspections. EPA measured slopes at 2.2:1 during the 2013 Inspection.

#### Respondents Moca's Recycling Program

69. Moca presently conducts only limited recycling in the Municipality.

70. An improved recycling program would reduce the amount of waste from the Municipality that has to be disposed of at the Landfill.

#### Conclusion

71. The lack of proper operational controls at the Landfill, including lack of run-off controls, lack of leachate collection, lack of impermeable liners, lack of groundwater monitoring, lack of

explosive gases control, and lack of adequate access controls at the Landfill all contribute to the handling and disposal of solid waste in a manner that may present an imminent and substantial endangerment to human health and the environment.

72. The location of the Landfill in an area of sensitive ecosystems and the risks of contamination to underlying aquifers contribute to the handling and disposal of solid waste in a manner that may present an imminent and substantial endangerment to human health and the environment.

#### IV. DETERMINATION

73. Based on the foregoing EPA's FINDINGS OF FACT AND CONCLUSIONS OF LAW and the full Administrative Record, the Regional Administrator of EPA Region 2, upon receipt of evidence and information that the past and present handling and disposal of solid wastes at the Landfill may present an imminent and substantial endangerment to human health and the environment, has determined that the issuance of this Order is necessary to protect public health and the environment.

#### V. ORDER AND WORK REQUIREMENTS

74. IT IS HEREBY ORDERED that Respondents shall perform the actions required by this Order and comply with its provisions. Respondents shall fully cooperate with EPA representatives in carrying out the provisions of this Order.

75. All submissions of documents to EPA by Respondents pursuant to this Order shall be in English (unless a Spanish-only submission is approved by EPA). Portions of such documents that are intended to direct and execute work and other operations at the Landfill shall be prepared in both English and Spanish. Documents shall be submitted to EPA electronically in an accessible form that incorporates necessary signatures. Reasonable extensions of deadlines for required translations will be granted by EPA upon request by Respondents.

76. Respondents shall submit RCRA and Recycling reports to EPA pursuant to the requirements of Appendix 4 of this Order.

##### Operational Requirements

77. Respondent Moca ECO-Park shall continue to prevent any expansion of the waste footprint and of the soil mining footprint of the Facility into old Karst Forest, except as allowed under an EPA-approved Karst Forest Protection, New Cell, or Closure Plan. (Respondents may continue mining in the areas identified as non-old Karst Forests pending approval of the Karst Protection Plan).

78. Respondents have agreed to maintain a Buffer Zone, defined in the pdf version of the map in Appendix 1, in which waste disposal has been permanently discontinued, in order to protect undisturbed old karst forest and enhance landfill slope stability. Respondent Moca ECO-

Park shall continue to restrict ongoing waste disposal to the interior of the areas designated as Active Cells 1, 2 and 3, maintaining a single active face, unless for operational reasons, the use of multiple active faces cannot be avoided. These areas are defined in Appendix 1 as agreed to by both Respondents and EPA. Retire Cell is intended to constitute the last solid waste disposal area prior to the closure of the Landfill. Waste disposal in the New Cell will be as allowed within the New Cell(s) Plan approved by EPA and EQB. The Inactive Cell(s) and the Buffer Zone, also defined in Appendix 1, consisting of all other areas of the landfill directly impacted by waste disposal, shall not be used for waste disposal except as allowed within an Inactive Cell(s) Closure Plan approved by EPA and shall, in any case, be limited to minor slope contouring and fill operations.

79. Respondent Moca ECO-Park shall continue to maintain, and improve as needed, substantial, visible demarcations of the boundaries between the Active Cell(s) and the Buffer Zone so as to prevent any disposal of waste within the Buffer Zone. Respondents are allowed to place internal roads, stormwater and leachate collection and conveyance infrastructure within the buffer zone areas. Respondents have agreed to establish and maintain:

- a. Buffer Zones of at least 5 meters between the Active Cell(s) and each of the following: Inactive Cells (as measured from the top of the slope); forested areas (other than mogotes); soil mining areas; maintenance/operations areas; and the disturbed mogote identified in Appendix 1 as “Cell 4” and “Future Lined Cell;” and<sup>2</sup>
- b. Buffer Zones of at least 10 meters between the Active Cell(s) areas and the bottom slope of any karst mogote (except for the disturbed mogote identified in Appendix 1 as “Cell 4” and “Future Lined Cell”).

80. Respondent Moca ECO-Park shall continue to randomly inspect incoming loads of waste to be deposited at the Landfill so as to prevent the disposal of i) regulated hazardous wastes and PCBs prohibited under 40 CFR § 258.20; ii) liquid wastes prohibited by 40 C.F.R. § 258.28; and iii) white Goods, scrap tires, or any bulk disposal of recyclable material, bulk ash (except in a lined, permitted cell compliant with 40 C.F.R Part 258), or bulk green waste (as those terms are defined in the Recycling Program paragraphs below) at the Landfill. Respondent Moca ECO-Park shall maintain a log of incoming waste loads. The log shall contain the delivery date, name of the hauler or carter, a brief description of each load’s contents and an estimate of its volume, as well as details (similar to those just listed) regarding the receipt and rejection of any loads with unacceptable materials.

81. No later than ten (10) calendar days after the effective date of this Order, Respondent Moca ECO-Park shall cause the following NOTICE to be posted in Spanish and English at the Landfill entrance in large lettering on a mounted sign at least four feet by five feet in size:

### NOTICE

<sup>2</sup> For karst terrane terminology definitions, see: *A Lexicon of Cave and Karst Terminology with Special Reference to Environmental Karst Hydrology*, EPA/600/R-02/003.

**THIS LANDFILL IS SUBJECT TO A UNITED STATES ENVIRONMENTAL PROTECTION AGENCY ADMINISTRATIVE ORDER ON CONSENT WITH THE MUNICIPALITY OF MOCA AND THE LANDFILL OPERATOR: MOCA ECO-PARK.**

Respondent Moca ECO-Park shall confirm in writing to EPA, within seven (7) days of posting, that the Notice has been posted, and shall send EPA one or more photographs either in digital form or clearly developed of the Notice sign.

82. Respondent Moca ECO-Park shall continue to undertake best efforts to maintain adequate security at the Landfill to restrict unauthorized access to the Landfill so as to prevent scavenging, trespass, and unauthorized waste disposal. Such security measures shall include maintenance of existing fencing and ensuring that entrance gates are locked during non-business hours, when the Landfill is otherwise not operating, and when the Landfill does not have someone controlling the entrance or inspecting incoming loads.

If either EPA or Respondents determine that the security measures implemented are insufficient, Respondent Moca ECO-Park shall submit to EPA for review and approval, a plan for additional steps to ensure that unauthorized access to the Landfill is prevented (“Enhanced Security Plan”). Such additional measures may include additional security personnel, installation and maintenance of additional gates, and fencing. Unless otherwise indicated by EPA, the Enhanced Security Plan shall be submitted within forty five (45) calendar days of either notification by EPA or Respondent’s own determination of such need and shall include a schedule for implementation. Upon receipt of EPA’s approval, Respondent shall carry out the provisions of the Enhanced Security Plan.

83. Respondent Moca ECO-Park shall continue to cover disposed solid waste with six inches of earthen material, and/or an acceptable alternative daily cover, at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging. Daily cover must be maintained except for days in which severe weather condition makes it impossible to maintain daily cover.

84. Respondent Moca ECO-Park shall continue to use only a single active face unless, for operational reasons, the use of multiple active faces cannot be avoided.

85. Respondent Moca ECO-Park shall submit a written report to EPA within ninety (90) calendar days of the effective date of this Order, or by such other later deadline as is approved by EPA in writing, documenting compliance with the Operational Requirements set forth in Paragraphs 77 – 84. The report shall be accompanied by the certification set forth in Section VII. CERTIFICATIONS of this Order.

Early Submittals and Other Operational Requirements

86. Within sixty (60) calendar days of the effective date of this Order, Respondent Moca ECO-Park shall submit to EPA for review and approval a Karst Forest Protection Plan (“Karst Protection Plan”) and shall timely make such revisions to this Plan as requested by EPA. The Karst Protection Plan is intended to establish operational measures to protect undisturbed karst forest and endangered species.

87. Within thirty (30) calendar days of notification of EPA’s approval of the Karst Protection Plan, Respondent Moca ECO-Park shall commence implementation of the Karst Protection Plan and shall comply with conditions and any implementation timetable agreed to by EPA in its approval. Upon EPA request, Respondents shall submit written reports to EPA concerning implementation of the approved Karst Protection Plan.

88. Within ninety (90) calendar days of the effective date of this Order, Respondent Moca ECO-Park shall submit to EPA, for review, Interim Erosion and Sediment Control and Stormwater Pollution Prevention Plans (“Interim Stormwater Plans”) for the Active Cells and equipment maintenance and operations areas of the Facility. Such plans shall include provisions to limit stormwater runoff from these areas onto the Inactive Cell(s). Unless otherwise notified by EPA in writing, Respondents shall implement these Interim Stormwater Plans, in accordance with their provisions and timetable until the plan is revised and updated pursuant to Paragraph 100 of this Order.

89. Respondent Moca ECO-Park shall meet the following landfill operation and supervision requirements:

- a. Upon the effective date of this Order, an onsite operator will continue to be present at the Landfill during all times of operation. The onsite operator must have at least one year of experience in operating a solid waste landfill.
- b. Within one hundred eighty (180) calendar days of the effective date of this Order, the onsite operator must have completed Solid Waste Association of North America (“SWANA”) Landfill Operations Basics training or an equivalent education program approved in advance by EPA which includes:
  - i. The basics of landfill gas, stormwater, and leachate management and groundwater monitoring;
  - ii. Equipment selection, waste inspections and prohibitions, security measures, cell construction, daily cover, and litter and dust management; and
  - iii. The fundamentals of accident prevention.

Such training must be maintained annually.

- c. Within one hundred and eighty (180) calendar days of the effective date of this Order, the management of the Landfill will be supervised by an individual who is:
  - iv. Properly trained in the operation of landfills and the implementation of design and operational plans;

- v. Properly trained in the operation of landfill gas collection and treatment systems ( before such systems, if required, are operational at the landfill);
  - vi. Properly trained in the implementation of closure and post-closure plans (before such implementation commences) ; and
  - vii. A certified supervisor of landfill operations (“SOLO”).
- d. The SOLO certification shall be the SWANA Certified Manager of Landfill Operations or an equivalent independently-proctored exam and continuing education program approved in advance by EPA. SOLO certifications must be maintained or the equivalent training and exams provided annually. The SOLO certification requirement is subject to the reasonable availability of this training in Spanish in Puerto Rico. Respondent MOCA ECO-Park may substitute a combination of relevant professional experience and continuing training for the SOLO certification for existing employees or officials employed as of the effective date of this Order.

90. Within one hundred eighty (180) calendar days of the effective date of this Order, Respondent Moca ECO-Park shall develop, enforce, and maintain a Facility-wide Safety and Health Program. This Program must meet the provisions set forth in Appendix 2 and be tailored to meet the specific safety and health risks represented by operations at the Landfill, including:

- a. Steep slopes;
- b. Unstable conditions (including sinkholes);
- c. Landfill gas;
- d. Pathogens;
- e. Hazardous waste (including household hazardous waste);
- f. Fire;
- g. Identification of confined spaces; and
- h. Use of heavy equipment.

#### Waste Extent Determination

91. Within one hundred eighty (180) calendar days of the Effective Date, Respondent Moca shall submit to EPA, for review and approval, a Solid Waste Delineation Protocol designed to determine the full (*i.e.*, total, complete and comprehensive) extent of solid waste disposal as distinguished from the EQB permitted extent. Respondent Moca can utilize for the protocol, with appropriate field validations, the 2004 Malcom Pirnie delineation report as well as any more recent readily available waste delineation study. The submittal shall also include a clear delineation of the area that has been permitted by EQB for solid waste disposal and any supporting documentation including Respondent’s EQB permit. Unless otherwise agreed to by EPA, this protocol shall be designed so that the waste extent survey will cover two distinct areas:



- a. Delineation of Bulk Waste Area. Respondent Moca shall determine, in areas where the waste extent is obscured by foliage, topography or otherwise, the actual extent of bulk waste disposal along the entire landfill perimeter through the use of soil borings and/or trenching. "Bulk Waste" shall mean the contiguous or mostly contiguous solid waste disposed anywhere in the Landfill area to a depth of 6 inches or more. Respondent Moca shall delineate the bulk waste disposal along the entire perimeter of the Landfill ("Bulk Waste Perimeter") by establishing a series/system of highly visible markers. The Bulk Waste Perimeter shall be defined by modification of the recent land survey plan prepared by Land Surveyor Francisco Pérez (or other means agreed to by EPA) and kept in the facility records. Respondent Moca shall provide and maintain access for inspection of the landfill slope base and for any engineering controls that may be present such as stormwater channels and leachate interception systems.
- b. Assessment of Peripheral Disposal Areas. Respondent Moca shall determine, to the extent practicable, considering accessibility and safety, taking into account private property access considerations and the steep terrain, the location of other solid waste deposits, including but not limited to scrap metal, in the area extending 50 meters beyond the Bulk Waste Perimeter (or other, reasonable, alternative distance or area acceptable to EPA, taking into account the difficult terrain). The location and characteristics of these solid waste deposits shall be documented and entered into the facility records and a report shall be provided to EPA. In particular, any scrapped vehicles, tanks, drums, and any other vessels potentially containing fluids shall be identified. Private property access considerations shall be governed by Section XIX. ON-SITE AND OFF-SITE ACCESS.

Within one hundred fifty (150) calendar days of EPA's approval of the Solid Waste Delineation Protocol, Respondent Moca shall undertake and complete the approved Protocol.

92. Within sixty (60) calendar days of completion of the work required under the approved Solid Waste Delineation Protocol, Respondent Moca shall submit to EPA, for review and approval, a Solid Waste Delineation Report and Plan that shows the results of the investigations and includes an Action Plan to implement the following requirements:

To:

- a. Establish conclusively a Revised Waste Disposal Perimeter, which shall be used for this Order for all relevant future construction, maintenance, and planning activities, including closure.
- b. To the extent not previously achieved, demarcation of the Revised Waste Disposal Perimeter through a system of engineering constructs such as permanent roadway, labeled concrete post systems, and/or perimeter fencing. Access to this new



permanent perimeter for inspection and repairs of the landfill slope (via vehicular or pedestrian access) and for any engineering controls such as stormwater channels and leachate interception systems, shall be maintained for the life of this Order.<sup>3</sup>

- c. Identification and removal of scrapped vehicles, tanks, drums, and any other vessels, potentially containing fluids, and any other waste material representing a significant, ongoing risk of releases, located beyond the Revised Waste Disposal Perimeter to relocation/disposal site(s). Note: The activities required herein under this subparagraph shall be implemented only upon prior EPA approval and, if so requested by EPA, under EPA's direct or an EPA designee's oversight. Except as noted above, Respondents are not required by this Order to recover solid waste disposed beyond the Revised Waste Disposal Perimeter. Respondent Moca shall take steps to limit the negative impacts of any investigative and/or removal activities taking place in the area located between the Revised Waste Disposal Perimeter of the Landfill and the 50 meter investigation limit for the Peripheral Disposal Areas.

93. Within one hundred twenty (120) calendar days of EPA approval of the Solid Waste Delineation Report and Plan, or by such other later deadline as is approved by EPA in writing, Respondent Moca shall complete the approved tasks and Respondents shall incorporate the Revised Waste Disposal Perimeter into any required Landfill system designs and plan either party prepares. The area within the Revised Waste Disposal Perimeter will constitute the "Existing Landfill".

94. Within one hundred eighty (180) calendar days of EPA approval of the Solid Waste Delineation Report and Plan, Respondent Moca ECO-Park shall complete and submit to EPA, for review and approval, a design manual or conceptual designs for constructing and implementing improvements to the existing control measures. Within one hundred eighty (180) calendar days of EPA approval of the design manual/conceptual designs for constructing and implementing improvements to the existing control measures, Within one hundred eighty (180) calendar days of EPA's approval of the design manual/conceptual designs, Respondent Moca shall submit any required engineering plans and drawings and a schedule for constructing and implementing improvements to the existing control measures. The deliverables shall include, but not be limited to the following:

A Storm Water Control Plan for the Active Cell(s) and equipment maintenance and operations areas of the Facility that will comply with or include the following:

- a. Meet the criteria set forth at 40 C.F.R. § 258.26 (run-on/run-off control systems), which requires owners and operators of municipal solid waste landfill units to design, construct and maintain a run-on control system to prevent storm water run-on flow

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<sup>3</sup> EPA recognizes the likelihood that portions of the Bulk Waste Perimeter are located in difficult terrain. In demonstrably difficult terrain, "engineering constructs" and "access" "for inspection and repairs of the landfill slope" may be reasonably limited to labeled posts and footpaths, both of which would have to be maintained.

onto the active portion (*i.e.*, not closed and capped) of the Landfill during the peak discharge from a 25-year storm;

- b. Meet the criteria set forth at 40 C.F.R. § 258.26, which requires owners and operators of municipal solid waste landfill units to design, construct and maintain a run-off control system from the active portion (*i.e.*, not closed and capped) of the landfill to collect and control at least the water volume resulting from a 24-hour, 25-year storm;
- c. A system to minimize in an economically sustainable and safe manner the discharge of contaminated surface waters from the Active Cells into sinkholes using phyto remedial barriers or other means approved by EPA.
- d. Be designed to become part of the storm water control system that will be part of the final Closure Plan.

95. After review and approval by EPA, Respondent Moca shall undertake and complete the implementation and construction of the improvements in accordance with the EPA approved timetable.

#### Intermediate Cover

96. Except as noted below, within one hundred eighty (180) calendar days of the Effective Date, Respondents shall complete application of Intermediate Cover on all areas of the Landfill where waste is not being deposited on a regular basis. Any intermediate cover shall be maintained until a Final Cover is installed. For purposes of this Order, Intermediate Cover is defined as a waste cover, more durable than daily cover, consisting of at least 12 inches of compacted soil (or other approved alternative cover material) with appropriate storm water erosion controls (*e.g.*, vegetated cover, temporary chutes, channels, berms, and/or swales). <sup>4</sup>An Intermediate Cover is intended to further limit precipitation infiltration and to control disease vectors, fires, odors, blowing litter and scavengers until active disposal operations are resumed in the affected area or as a preliminary closure step prior to the installation of a final landfill cover. Respondents may request that EPA approve installation of an alternative form of Intermediate Cover that will provide equivalent protection. Exceptions:

- a. Portions of Inactive Cells with substantial vegetative cover shall not be disturbed except as allowed or required by an EPA-approved plan (*e.g.*, Closure, Stormwater, Karst Protection Plans);
- b. Portions of Active Cells with substantial vegetative cover need not be disturbed if no waste is exposed and Respondents determine that the existing, substantial vegetative cover offers equivalent or greater erosion controls and provides limits to precipitation infiltration, disease vectors, fires, odors, blowing litter, and scavengers.

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<sup>4</sup> Intermediate cover can include existing daily cover to the extent it is compacted soil and consistent with the requirements for intermediate cover.

### Ground Water Monitoring

97. Within one hundred and eighty (180) calendar days of the Effective Date, unless a later date is agreed to by EPA, Respondent Moca ECO-Park shall submit to EPA, for review and approval, a Groundwater Monitoring Plan (comparable in scale to what would be required under 40 C.F.R. § 258, Subpart E) and implementation schedule that will be designed to detect contamination, above background levels, in the uppermost aquifer. Any acceptable Groundwater Monitoring Plan must both account for the special challenges of monitoring ground water in karst terranes as addressed in the EPA publication: Groundwater Monitoring in Karst Terranes and be economically and technically sustainable by Respondents. As EPA resources allow, EPA may consult and provide technical assistance to Respondents with development of a karst terrane Groundwater Monitoring Plan.

Upon notification of approval by EPA, Respondent Moca ECO-Park shall implement the Groundwater Monitoring Plan, in accordance with its approved provisions and timetable and in accordance with any contract between the Respondents allocating responsibility for such work

98. After implementation, Respondent Moca ECO-Park shall provide to EPA the preceding year's analytical results with supporting documents (such as quality assurance/quality control, and other information requested by EPA) from any required periodic groundwater monitoring on or before August 15 of each calendar year (see Appendix 4)

99. If information obtained through groundwater monitoring, or otherwise, indicates that measures and procedures are necessary to conduct a corrective action assessment and/or a corrective action remedy, as those terms are described in 40 C.F.R. §§ 258.56, 258.57, and 258.58, Respondents, as appropriate and consistent with closure provisions of this Order, shall undertake such measures or procedures as approved by EPA.<sup>5</sup>

### Schedule for Ceasing Receipt of Waste at the Landfill

100. This Order allows for continued waste placement within the Active Cells and any New Cell(s) that may be developed and approved, until the facility reaches the landfill capacity included in the appropriate, EPA-approved Closure Plan. No waste disposal shall occur in the Inactive Cell(s) and Buffer Zone indicated in Appendix 1 before a Closure Plan has been approved for these areas and thereafter only if such disposal is consistent with the approved Closure plan. After approval of the Closure Plans, all waste placement and associated operations must be conducted in accordance with approved Closure Plans.

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<sup>5</sup> EPA recognizes the possibility that any contamination detected through a Groundwater Monitoring Plan may have originated from the adjoining Aguadilla Landfill. EPA will take into consideration this in the event of Corrective Action.

Final capacity for a cell shall be determined by the terms of the approved Closure Plan elevations and the grading/slope limits of 3 horizontal to 1 vertical.

101. In the event that no approved New Cell Plan or no EPA-approved Closure Plan exists that allows for continued waste placement, Respondents shall permanently cease receiving waste for disposal in the Landfill no later than thirty six (36) months from the date the submission of the Closure Plan. Respondent Moca shall thereafter secure the Landfill against unauthorized waste disposal.

102. Respondent Moca shall commence closure activities according to the following:

- a. For the Active Cell(s) in compliance with the approved Closure Plan(s) and 40 C.F.R. Part 258, Subpart F by the earlier of the following dates: (a) the date that is 30 days after the date final capacity (final elevation/slopes) is reached in that cell(s), according to the appropriate, approved Closure Plan(s), or (b) the date that is 30 days after the date which the cell(s) receives the known final receipt of waste. Respondent Moca shall complete Closure activities in compliance with the approved Closure Plan(s) and 40 C.F.R. Part 258, Subpart F according to the schedule contained within the approved Closure Plan(s); and
- b. For any new cell, in compliance with the approved Closure Plan(s) and 40 C.F.R. Part 258, Subpart F by the earlier of the following dates: (a) the date that is 30 days after the date final capacity (final elevation/slopes) is reached in that cell(s), according to the appropriate, approved Closure Plan(s), or (b) the date that is 30 days after the date which the cell(s) receives the known final receipt of waste. Respondent Moca shall complete Closure activities in compliance with the approved Closure Plan(s) and 40 C.F.R. Part 258, Subpart F according to the schedule contained within the approved Closure Plan(s).

103. If sixty (60) calendar days before the date Respondents are required to cease to receive waste for disposal in the Landfill there is not a new, approved waste disposal area or areas within the Landfill that is open and operating to receive waste for disposal, Respondent Moca ECO-Park shall give written notice to carters serving customers outside of Moca and to municipalities outside Moca that dispose of waste in the Landfill specifying the date after which waste from such carters and municipalities may no longer be deposited at the Landfill. This notification shall be made earlier if contractual arrangements for waste disposal require more advance notification to carters or municipalities. Respondents shall send EPA an English translation of the notices and copies of the notices themselves.

104. After the Landfill ceases to receive waste deposits in a Cell(s) of the Landfill, Respondent Moca shall within thirty (30) days of the date when cessation is required provide and thereafter maintain Intermediate Cover, consistent with the Intermediate Cover requirements of this Order, throughout all parts of the Cell(s) until final closure of the Cell(s).

105. Within one hundred and eighty (180) calendar days of the effective date of this Order, Respondents shall notify EPA concerning any plans they may have and the timetable associated with those plans for the development of a new landfill cell or cells within the existing Landfill footprint or the existing soil mining footprint of the Active Landfill. Any new cell must meet the requirements of the federal landfill criteria set forth in 40 C.F.R. Part 258 (including a composite liner and a leachate collection system) and must not disturb existing “old growth” Karst Forest. In accordance with the provisions of Section VII, CERTIFICATIONS, herein, Respondents and a professional engineer shall certify to EPA that the development of the new cell meets the requirements of federal landfill design criteria set forth in 40 C.F.R. Part 258. (Respondent Moca may propose the establishment of a conservation easement as part of its application for a new cell).

106. Additionally, to the extent technically and economically feasible, any new cell shall incorporate areas of the Active Cell(s) within the lined cell area by capping the existing waste with a liner system for the new cell so that any waste within the new cell is over or substantially drains to a liner and leachate collection system..

#### All Closure and Post Closure Plans

107. Closure and Post Closure Plans under this Order shall consist of the following:
- a. Closure and Post-Closure Plans for the Active Cell(s) (including Buffer Zones);
  - b. Closure and Post-Closure Plans for the Inactive Cells; and
  - c. Closure and Post-Closure Plans for any new cells.

Provided that no waste is being disposed in the Inactive Cells, Respondent Moca and EPA have agreed that, for a limited time work on the Closure and Post-Closure Plans for the Inactive Cells will be delayed pending a collaborative determination as to the best environmentally protective, technically achievable, and economically sustainable plan for closing these areas. In the event that a reasonable effort to achieve mutual agreement fails, EPA reserves the right to require that Respondent Moca submit, within one hundred and eighty (180) calendar days of the date of EPA’s notification, 40 C.F.R. Part 258-compliant Closure and Post-Closure Plans for the Inactive Cells and that such Plans be carried out by Respondent Moca in accordance with the terms and schedules in the approved Plan.

#### Closure and Post-Closure Plans for the Active Cells (including Buffer Zones)

108. Professional Engineer and Plan Preparation: As soon as practicable after the effective date of this Order, Respondent Moca to the extent it has not already done so, shall retain the services of a professional engineer, experienced in landfill design and licensed by the Commonwealth of Puerto Rico or permitted to practice engineering in Puerto Rico, to prepare final Closure and Post-Closure Plans for the Active, New, and Inactive Cells of the



Landfill. These Plans must meet, at a minimum, the closure and post-closure criteria set forth in 40 C.F.R. §§ 258.60 and 258.61 and the requirements of Appendix 3: Closure and Post-Closure Plan Requirements.

### Timetable

109. The Closure Plans shall include a timetable for prompt implementation, including any stages or phases that may be part of the plan. The timetable shall provide dates for timely completion of any designated stages or phases that the plan may contain including completion of final closure of the Active, New, and Inactive Cells of the Landfill.

### Submittal of Closure and Post-Closure Plans

110. After their preparation by the professional engineer and acceptance by Respondent Moca, the Closure and Post-Closure Plans shall be submitted to EPA for review. The Plans shall include an engineering report and associated plans and specifications for permanent closure and shall include a closure construction schedule, specifications and timetable for installation of the GCCS system or alternative landfill gas system, identification of any required permits or other approvals, and necessary measures, procedures and information for post-closure care. The plans shall be submitted:

- a. Within two hundred ten (210) calendar days after the effective date of the Order for the Active Cells, unless EPA approves a later date in writing;
- b. Within one hundred twenty (120) calendar days after accepted by EPA of a notice of plans for a New Landfill Cell(s) for any New Cell(s), unless EPA approves a later date in writing; and
- c. Within one hundred twenty (120) calendar days after Respondents receive notification from EPA requiring submission of Closure and Post-Closure Plans for the Inactive Cells, unless EPA approves a later date in writing.

EPA will review the Plans and will notify Respondent Moca in writing of EPA's approval or non-approval of the Plans. In the event of non-approval of either the Closure or Post-Closure Plans, EPA will specify deficiencies in the Plan(s) in writing and outline necessary revisions or modifications. Thereafter, Respondent Moca shall within forty five (45) calendar days of receipt of EPA's notice of non-approval of the Plan(s), modify/revise the Plan(s) and resubmit the Plan(s) to EPA for final review. This process shall be repeated in the event of EPA's non-approval of the resubmitted Plan(s), but if the repeated process does not produce acceptable revised Plan(s), EPA may in its discretion determine that it is necessary to invoke the procedures set forth below in the Final Notice of Deficiencies paragraph, below. Throughout the process, EPA and Respondents shall confer as necessary and appropriate in order to clarify and resolve any outstanding issues. EPA will notify Respondents in writing of its final approval or non-approval of each of the Closure and Post-Closure Plans.

### Final Notice of Deficiencies

111. When EPA determines in its sole discretion that it is necessary to invoke the procedures in this subparagraph in order to achieve approvable Closure and Post-Closure Plans, it will notify Respondent Moca in writing setting forth a final date for Respondent Mocas' submission of acceptable Plan(s) to EPA. The written notice will specify the corrections, amendments and/or changes that Respondent Moca need to make to previously submitted Plan(s) to achieve EPA approval, and the reasons why such corrections, amendments and/or changes are necessary. The notification letter will carry the caption: FINAL NOTICE OF DEFICIENCIES across the top of the page and will specify the date by which the Plan(s), signed by the professional engineer and approved by Respondent Moca must be submitted to EPA. If the professional engineer believes in his best professional judgment that certain proposed corrections, amendments and/or changes described in the FINAL NOTICE OF DEFICIENCIES cannot or should not be complied with, Respondent Moca may provide notice to EPA that the matter is subject to the Dispute Resolution provisions set forth herein. After a decision on any matter or matters submitted for dispute resolution, EPA will, if necessary, submit a SECOND FINAL NOTICE OF DEFICIENCIES letter specifying the date by which the Plan(s) must be resubmitted to EPA. Thereafter, EPA will notify Respondents in writing of its final approval or non-approval of the Closure and/or Post Closure Plans. Respondent Moca's failure to submit acceptable Closure and/or Post Closure Plans by the date specified in the FINAL NOTIFICATION OF DEFICIENCIES, or in the event of a dispute resolution, by the date specified in the SECOND FINAL NOTIFICATION OF DEFICIENCIES, shall constitute Respondent Moca,s failure to comply with a requirement of this Order, and Respondent Moca shall be subject to stipulated penalties for such failure.

### Submittals to Puerto Rico Environmental Quality Board

112. Respondent Moca shall submit the final Closure and Post-Closure Plans to EQB for its review and comments prior to or simultaneously with their submittal to EPA. Respondent Moca shall diligently pursue any required approvals from EQB for such Plans.

### Closure Plan Implementation

113. Respondent Moca ECO-Park shall operate the Landfill prior to closure in accordance with the EPA-approved Closure Plan(s).

114. Within 90 days of EPA approval of any revised Closure Plan, Respondent Moca ECO-Park shall submit to EPA a certification that the Landfill is being operated in accordance with the approved Closure Plan(s). Such certification shall thereafter be submitted to EPA on an annual basis, on or before August 15 of each year (as part of the RCRA Report: see Appendix 4).



115. Respondent Moca shall implement the Closure Plans for each cell of the Landfill, in accordance with their approved provisions and the timetables in this Order and in the Closure Plans.

- a. Closure Plan Work: Respondent Moca shall begin Closure Plan work in accordance with its implementation schedule, or within twenty (20) calendar days of any required EQB approval, whichever comes later. Quarterly Reports: During implementation of the approved Closure Plan, Respondent Moca shall submit quarterly reports to EPA on the status of implementation activities. The quarterly reports shall be submitted no later than 20 calendar days after the end of each calendar quarter.
- b. Certification of Completion of Closure Plan Work: Respondent Moca shall notify EPA in writing within thirty (30) calendar days after completion of the Closure Plan work, and shall certify that the work has been performed in accordance with the provisions of the Closure Plan approved by EPA, its associated plans and specifications, and any permits or other forms of prior approval Respondent Moca obtained in connection with the Closure work. The notification shall be signed by a professional engineer. A senior official of Respondent Moca shall also certify that the work has been completed.
- c. Carrying Out The Post-Closure Plan: Respondent Moca shall carry out the provisions of the Post-Closure Plan. If monitoring discloses that repairs or alterations must be made to the landfill cap, the gas monitoring system, the groundwater monitoring system, or any other component, Respondent Moca shall timely make such repairs.
- d. Post-Closure Reports: Respondent Moca annually shall submit a report to EPA that describes post-closure activities during the preceding year as specified in Appendix 4.

#### Landfill Gas Control Requirements

116. Respondent Moca shall meet the requirements of Appendix 5: *Landfill Gas Control Requirements*.

117. Respondent Moca shall either:

- a. Plan, design, install, and operate a GCCS in accordance with the provisions of Appendix 5 if the Landfill's design capacity is equal to or greater than 2.5 million megagrams and 2.5 million cubic meters and the Landfill's NMOC report indicates that the landfill's NMOC emission rate is greater than 50 Mg/yr; or

- b. If a GCCS is not required under the Landfill Regulations, Respondent Moca shall plan, design, install, and operate an alternative landfill gas system to provide for significant reductions in methane and NMOC emissions, as set forth in Appendix 5.<sup>6</sup>

118. . To the extent technically and economically viable, Respondents agree to recover gas from the Landfill and either market it for energy recovery or directly use it to generate electrical power for market. Any energy recovery must be coordinated with the GCCS or other gas system to be installed by Respondents at the Landfill. Respondents shall maintain compliance with applicable regulations governing the GCCS in connection with any energy recovery system. Respondents agree to periodically, and upon EPA request, consult with and supply status reports to EPA on this matter. Upon request, and as EPA resources allow, EPA may provide technical assistance to Respondents with planning landfill gas to energy systems. Final determination on the technical and economic viability of landfill gas to energy systems, after due consultation with EPA, will be made by Respondents in their sole discretion.

#### Photovoltaic Power Generation and Landfill Cap System

119. In the event that such systemic difficulties are alleviated, to the extent technically and economically viable, Respondents agree to design and install an integrated geomembrane and photovoltaic power generation system applied as a closure system. Respondents agree to periodically, and upon EPA request, consult with and supply status reports to EPA on this matter. Upon request, and as EPA resources allow, EPA will provide technical assistance to Respondents with planning the PV Cap System. Final determination on the technical and economic viability of the PV Cap System, after consultation with EPA, will be made by Respondents in their sole discretion.

#### Recycling Program

120. Within one hundred eighty (180) days of the Effective Date of the Order, Respondent Moca shall submit a Recycling and Compostable Material Management Program (“Recycling Program”) to EPA for its review and approval. The Recycling Program shall be consistent with all Commonwealth of Puerto Rico regulations and/or requirements. EPA will review the Recycling Program, and provide its comments in writing to Respondent Moca. Within ninety (90) calendar days after receipt of EPA’s comments, or by any later date approved by EPA, Respondent Moca shall resubmit a revised Recycling Program. EPA and Respondent Moca will consult as necessary, and, after any further revisions are incorporated into the Recycling Program, EPA will notify Respondent Moca in writing of its approval of the Recycling Program. Respondent Moca shall carry out the Recycling Program in accordance with its implementation schedules, and the Program shall be implemented pursuant to this Order for as long as the Facility receives waste for disposal.

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<sup>6</sup>An example of an “alternate system for reducing methane and NMOC emissions from the Landfill” would be suitable solar-powered, continuous-ignition, passive flare systems.

The Recycling Program shall be consistent with all Commonwealth of Puerto Rico regulations and/or requirements regarding recycling. The Recycling Program shall have the goal of minimizing the municipality of Moca's disposal of Recyclable Material, Compostable Material (including Green Waste), Ash (except in a lined, permitted cell compliant with 40 C.F.R Part 258), Scrap Tires and White Goods at the Landfill and of reducing the bulk disposal of these materials from other Landfill customers. The Recycling Program must meet the provisions set forth in Appendix 6.

#### Recycling Program Implementation

121. Within one hundred twenty (120) days after EPA approval of the Recycling Program, the Respondents shall start the implementation of their respective responsibilities under the Recycling Program. The Recycling Program requirements under this Order shall end when the Landfill no longer receives waste for disposal.

122. Within ninety (90) days of EPA's approval of the Recycling Program, Respondent Moca shall develop an educational and outreach program that will be implemented along with the Recycling Program schedule. Steps to remind the community of the program shall be made on an annual basis. The educational program shall include schools, municipal facilities, small businesses, and households.

123. Respondent Moca shall develop and implement a plan of action for keeping Compostable Material and Recyclable Materials from being routinely disposed of at the Landfill from those households covered by the Recycling Program. The program shall include routine, documented inspections of incoming loads.

#### Recycling Program Reports

124. Respondent Moca shall submit biannual reports to EPA, on or before February 15 and August 15 of each year, summarizing the efforts undertaken since the last submitted report to implement the requirements of the Recycling Program and pilot composting program, as per Appendix 4: RCRA and Recycling Report.

### VI. FINANCIAL ASSURANCE

125. Compliance Requirements: Respondent Moca, by no later than February 15, 2016 shall submit to EPA for review and approval, a Financial Assurance Plan ("FAP"), describing how Respondent Moca shall comply with the requirements set forth in 40 C.F.R. Part 258 Subpart G. with respect to financial assurance for closure and post-closure care. Respondent Moca shall also submit to EPA Annual Financial Assurance Plan updates, as per Appendix 4: RCRA Report.

126. Financial Assurance For Corrective Action: In the event that corrective measures are required during the post-closure period, Respondent Moca shall come into compliance with the financial assurance requirements for corrective action as set forth in 40 C.F.R. § 258.73 by the time of submission of its next annual RCRA Report (Appendix 4) after the estimated cost of corrective measures has been established. Respondent Moca shall include evidence of the maintenance of the required financial assurance for corrective action in such annual post-closure report and succeeding annual reports filed pursuant to this Order.

## VII. CERTIFICATIONS

127. Wherever this Order requires that a “Certification” be submitted to accompany written reports or documents, the following Certification form shall be submitted, and shall be dated and signed by an authorized senior official of each Respondent, as appropriate:

“I certify under penalty of law that this document [Identify Document] and all attachments being submitted were prepared under my direction or supervision in order to ensure that qualified personnel properly gathered, evaluated and prepared this submission. Based on my review of the documents, data and other information available at the time of this certification, including my inquiry of the person or persons who prepared the submission, the information contained in this submission is to the best of my knowledge, true, accurate and complete. I am aware that there are significant potential penalties for submitting false information.”

## VIII. RETENTION OF RECORDS

128. Respondents shall maintain business records pertaining to the operations of the Landfill and the recycling and green waste management program and shall make such records available to EPA and its representatives for inspection upon request. Respondents shall also maintain business records pertaining to the work being performed pursuant to this Order, including the Recycling and Composting Program, and shall make such records available to EPA and its representatives for inspection upon request. Each record relating to closure shall be maintained for a period of at least five (5) years from the date that permanent closure of the Landfill is completed. Post-closure records shall be retained until the completion of post-closure or for a period of at least five (5) years whichever is longer. Records relating to recycling and green waste management program shall be maintained for a period of at least ten years from the Effective Date of this Order, and shall be maintained at the Moca’ Municipal offices located within Moca City Hall.

## IX. PROJECT COORDINATORS

129. On or before the effective date of this Order, EPA and the Respondents each shall designate a Project Coordinator (“PC”) and the name of at least one alternate who may function in the absence of the designated Project Coordinator. The Project Coordinators shall be responsible for overseeing implementation of this Order. EPA and the Respondents shall each have the right to change the PC and shall inform the other parties

should such change occur. The EPA has designated Carl Plössl, Environmental Engineer, as Project Coordinator and Steven Petrucelli, as Alternate Project Coordinator. Unless approved by EPA, counsel for Respondents may not serve as a PC.

130. All communications between Respondents and EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order, shall be directed to and through the respective Project Coordinators.

#### X. NOTICES

131. For purposes of this Order, all written communications, notices or submissions required by this Order shall be directed to a person specified by each party. EPA and the Respondents, with written advance notice, shall each have the right to change the person(s) who are to receive documents. The EPA has designated the EPA Project Coordinator as recipient, at the following address:

Carl Plössl  
Environmental Engineer  
U.S. Environmental Protection Agency, Region 2  
RCRA Compliance Branch, 21<sup>st</sup> Floor  
290 Broadway  
New York, New York 10007-1866

132. By no later than fifteen (15) calendar days after the effective date of this Order, Respondents shall designate a person or persons to receive such written communications, notices or response to submissions required by this Order and shall provide a mailing address for such person(s).

#### XI. EMERGENCY PROVISIONS/CORRECTIVE ACTION

133. In the event either of the Respondents identifies a current or immediate threat to human health or the environment at the Landfill other than those identified in Section III herein, Respondents shall immediately upon becoming aware of it, notify EPA orally and in writing within twenty four (24) hours summarizing the immediacy and magnitude of the potential threat to human health or the environment. The Respondents shall thereafter submit to EPA for approval, as soon as possible, a plan to mitigate this threat. EPA will approve or modify this plan, and the Respondents shall implement this plan as approved or modified by EPA. In the case of an extreme emergency, Respondents may act as they deem appropriate at their own risk.

134. In the event Respondents identify the need for corrective action due to conditions at the Landfill, or off-site, caused by contamination released from the Landfill, other than those conditions identified in Section III herein or identified by groundwater monitoring carried out pursuant to the Post-Closure Plan, Respondents shall notify EPA within fifteen (15) calendar days of such identification. After review of available information, EPA may,

after consultation with Respondents, require Respondents to prepare and implement a corrective action assessment and/or corrective action remedy. The corrective action assessment and/or corrective action remedy shall be implemented subject to EPA oversight.

135. If EPA determines that activities in compliance or non-compliance with this Order have caused or may cause a release of a hazardous waste or hazardous constituent, or may pose a threat to human health or the environment, EPA may direct Respondents, as it deems appropriate, to stop further implementation of this Order, or a portion of this Order, for such period of time as EPA determines may be needed to abate any such release or threat, and/or to undertake any action which EPA determines to be necessary.

136. If EPA determines the need for corrective action due to conditions at the Landfill, or off-site, caused by contamination released from the Landfill, other than those conditions identified in Section III herein or identified by groundwater monitoring pursuant to the Post-Closure Plan, EPA will notify Respondents and may, after consultation with Respondents, require Respondents to prepare and implement a corrective action assessment and/or corrective action remedy. The corrective action assessment and/or corrective action remedy shall be implemented subject to EPA oversight

## XII. RESERVATION OF RIGHTS

137. EPA expressly reserves, without limitation, all of its statutory and regulatory powers, authorities, rights, remedies and defenses, both legal and equitable, including the right to seek injunctive relief, cost recovery, monetary penalties, or punitive damages. EPA may exercise its authority under federal law to undertake removal or remedial actions.

138. This Order shall not be construed as a covenant not to sue, or as a release, waiver or limitation of any claim, rights, remedies, defenses, powers and or authorities which EPA has under RCRA, or any other statutory, regulatory or common law authority of the United States.

139. This Order shall not limit or otherwise preclude:

- a. EPA from taking any additional legal action against the Respondents should EPA determine that any such additional legal action is necessary or warranted.
- b. This Order shall not limit or otherwise preclude Respondents from taking legal actions, which may be otherwise brought, against any other person(s) for indemnification, contribution or other legal action it may deem appropriate; provided however, EPA is not a party in such actions. Third party actions initiated by or against Respondents shall not alter the obligations in the Order and shall not toll deadlines in this Order.

140. Notwithstanding compliance with the terms of this Order, the Respondents are not released for the costs of any response actions taken by EPA. EPA reserves the right to seek reimbursement from Respondents for any costs incurred by the United States.



XIII. STIPULATED PENALTIES

141. Unless the Respondents are excused under the "Force Majeure and Excusable Delay" provision of the Order, Respondents shall pay a stipulated penalty for failure to comply with any requirement, term, or condition set forth in or required by this Order. In instances where a single Respondent is responsible for compliance with a requirement, term, or condition of the Order, that single Respondent shall be liable for stipulated penalties for non-compliance. The stipulated penalty for each non-complying act is as follows:

a. For major requirements, terms, or conditions, including:

Failure to:

- i. Comply with the Operational requirements set forth in Paragraphs 77 through 84;
- ii. Comply with the Early Submittals and other Operational requirements set forth in paragraphs 86 through 88;
- iii. Comply with the Waste Extent Determination and improvement requirements set forth in paragraphs 91 through 95;
- iv. Comply with the Intermediate Cover requirements set forth in paragraph 96;
- v. Comply with the Groundwater Monitoring requirements set forth in Paragraph 97 through 99;
- vi. Comply with the Ceasing Receipt of Waste at the Landfill requirements set forth in paragraph 100 through 104;
- vii. Comply with the New Landfill Cell requirements set forth in Paragraphs 105 and 106;
- viii. Comply with the Closure and Post Closure Plan requirements set forth in Paragraph 107 through 111;
- ix. Comply with the Closure Plan Implementation requirements set forth in Paragraph 113 through 115;
- x. Comply with the Landfill Gas Control requirements set forth in Paragraph 116 through 117; and
- xi. Comply with the Recycling Program requirements set forth in Paragraph 120 through 123.

The stipulated penalty for each act of non-compliance is as follows:

<u>Period of Failure to Comply</u>	<u>Penalty for Non-compliance per Calendar Day</u>
1 <sup>st</sup> through 60 <sup>th</sup> day	\$200
61 <sup>st</sup> through 120 <sup>th</sup> day	\$500
121 <sup>st</sup> through 180 <sup>th</sup> day	\$1,000
181 <sup>st</sup> day and thereafter	\$3,000

b. For failure to comply with any other requirement, term, or condition set forth in or required by the Consent Order or this Amendment, excepting Health and Safety Program



requirements of paragraph 90 and Appendix 2. The stipulated penalty for each act of non-compliance is as follows:

<u>Period of Failure to Comply</u>	<u>Penalty for Non-compliance per Calendar Day</u>
1 <sup>st</sup> through 60 <sup>th</sup> day	\$100
61 <sup>st</sup> through 180 <sup>th</sup> day	\$200
181 <sup>th</sup> day and thereafter	\$500

c. Stipulated penalties shall be paid by cashier's or certified check, payable to the Treasurer, United States of America, and mailed to the:

U.S. Environmental Protection Agency  
 Fines and Penalties  
 Cincinnati Finance Center  
 P.O. Box 979077  
 St. Louis, MO 63197-9000

d. Said payment(s) shall be identified as **Moca Municipal Solid Waste Landfill, Moca, Puerto Rico** and must reference the **Docket Number** set forth on the title page of this Order.

142. All stipulated penalties begin to accrue on the day each act of noncompliance with any requirement, term, or condition set forth in or required by this Order first takes place. Said stipulated penalties shall continue to accrue through, and including, the day on which any failure to comply with such requirement, term, or condition is remedied. Nothing herein shall preclude, or is intended to preclude, the simultaneous accrual of separate stipulated penalties for each separate act of noncompliance with this Order. Penalties shall accrue regardless of whether EPA has notified Respondents of the act or acts of non-compliance, but need only be paid upon demand.

143. After receipt of a demand from EPA for stipulated penalties pursuant to this Section of the Order, Respondents may within thirty (30) calendar days of such demand, provide EPA with a written explanation of why they believe the stipulated penalties are not appropriate for the act(s) of non-compliance cited by EPA. If Respondents elect not to file such explanation, the stipulated penalties shall be paid within ninety (90) calendar days after receipt of the penalty demand.

144. The Director of the Division of Enforcement and Compliance Assistance may, in his or her sole discretion, reduce or eliminate such stipulated penalties based on Respondent's written explanation as specified immediately above. If Respondents makes a submittal as specified above, and the Division Director does not eliminate the stipulated penalties, then EPA will again notify Respondents in writing that the original or reduced stipulated penalties must be paid by Respondent. Respondents shall pay the stipulated penalties as set forth in EPA's notice pursuant to this sub-section within ninety (90) calendar days of their receipt of the notice.

145. At any time prior to Respondents' payment of stipulated penalties, the Director of the Division of Enforcement and Compliance Assistance may, for good cause as independently determined by him or her, reduce or eliminate the stipulated penalties. If the Director makes such determination, EPA will notify Respondents in writing of the change.

Except as provided above, all penalties owed to EPA under this Section XIII. STIPULATED PENALTIES, shall be due and owing within ninety (90) calendar days after receipt of the penalty demand. Interest shall also accrue on any amount not paid when due at the rate established by the Secretary of the Treasury pursuant to 31 U.S.C. § 3717.

146. If Respondents fail to pay stipulated penalties as required under this Order, EPA may refer this matter to the U. S. Department of the Treasury or the Department of Justice for collection under applicable law. Nothing in this section, however, limits, or shall be construed as limiting, any rights or remedies available to EPA to enforce this Order and to seek compliance with the terms and conditions of this Order or any other applicable law or regulation.

#### XIV. NON-RELEASE OF OTHER CLAIMS AND PARTIES/COOPERATION WITH THIRD PARTIES

147. Nothing in this Order shall constitute, or be construed to constitute, a release from any claim, cause of action or demand in law or equity brought by EPA against any person, firm, partnership, or corporation for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituent, hazardous substance, solid waste, hazardous waste, pollutant, or contaminant found at, taken to, taken from, or emanating from the Landfill.

148. In carrying out its responsibilities under this Order, Respondents, upon notification from EPA, shall use their best efforts to cooperate with any third party who is issued a unilateral or consent order relating to the closure of the Landfill. Respondents shall keep all such third parties fully informed of its activities pursuant to the Order's requirements and shall, unless otherwise agreed to by the parties, provide copies to such parties of all correspondence and submissions to EPA under the Order.

#### XV. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

149. Respondents shall indemnify, save and hold harmless the United States Government, its agencies, departments, agents, and/or employees, from any and all claims or causes of action arising from or on account of acts or omissions of Respondents or their agents, independent contractors, receivers, trustees, subcontractors or successors and/or assigns in carrying out activities required by this Order. This indemnification shall not be construed as in any way affecting or limiting the rights or obligations of the Respondents or the United States under their various contracts or statutes.

## XVI. OTHER APPLICABLE LAWS

150. Nothing herein shall relieve Respondents of their obligations to undertake all actions required by this Order in accordance with local, Commonwealth and federal laws and regulations. Respondents shall obtain all permits or approvals necessary to perform the work required by this Order.

## XVII. SEVERABILITY

151. If any provision or authority of this Order or the application of this Order to any party or circumstance is found to be invalid, or is temporarily stayed, the remainder of this Order shall remain in force and shall not be affected thereby.

## XVIII. FORCE MAJEURE AND EXCUSABLE DELAY

152. Respondents shall perform all the requirements of this Order within the time limits set forth, approved, or established herein, unless the performance is prevented or delayed solely by events which constitute a force majeure. A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of the Respondents which could not be overcome by due diligence and which delays or prevents performance by a date required by this Order. Such events do not include unanticipated or increased costs of performance, changed economic circumstances, normal precipitation events, or failure to obtain federal, Commonwealth, or local permits. Nothing in this Section XVIII. bars Respondents from seeking a scheduling modification pursuant to “XXI. MODIFICATION,” herein.

153. The Respondents shall notify in writing the EPA Project Coordinator within ten (10) days after becoming aware of any event, which they know or should know, constitutes a force majeure. Such notice shall detail the estimated length of delay, including necessary demobilization and remobilization, its causes, measures taken or to be taken to minimize the delay, and an estimated timetable for implementation of these measures. Respondents shall adopt all reasonable measures to avoid and minimize the delay. Failure to comply with the notice provision of this section shall constitute a waiver of Respondents’ right to assert a force majeure and may be grounds for EPA to deny Respondents an extension of time for performance.

154. After receiving notice from either of the Respondents that it is invoking the force majeure provisions of this Order, EPA will respond in writing indicating either EPA’s agreement that the event constitutes a force majeure or its disagreement and the reasons therefore.

155. If the Parties agree that a force majeure has occurred, the time for performance may be extended, upon EPA approval, for a period equal to the delay resulting from such circumstances. This shall be accomplished through written amendment to this Order, or modifying the schedule in a previously approved plan. Such an extension or modification

will not alter the schedule for performance or completion of any other tasks required by this Order unless EPA determines that the delayed task is a prerequisite or necessary requirement for other specified tasks and the schedule is specifically altered in accordance with XXI. MODIFICATION, herein.

156. In the event the parties cannot agree that any delay or failure has been or will be caused by a force majeure, or if there is no agreement on the length of the extension, the dispute will be resolved in accordance with the Dispute Resolution provisions contained in this Order.

#### XIX. ON-SITE AND OFF-SITE ACCESS

157. Respondents consent to and agree to EPA representatives, including authorized designees, employees, agents, contractors, subcontractors, or consultants entering and freely moving about the Landfill for, but not limited to, the following purpose(s): observing conditions and/or activities at the Landfill, including work performed pursuant to this Order, interviewing personnel, conducting sampling or monitoring, taking photographs and verifying information or data that have been submitted.

158. Respondents consent to and agree to make available to EPA for inspection, copying, or photographing, all records, files, photographs, documents, or any other writing, including monitoring and sampling data that pertain to any work undertaken pursuant to this Order.

159. To the extent that work required by this Order must be performed on property not owned or controlled by Respondents, Respondents shall use best efforts to obtain "Site Access Agreements" to perform such work within thirty (30) days of the date Respondents become aware or should be aware of the need to perform such work. Any such access agreement shall provide for reasonable access by EPA. In the event that Site Access Agreements are not obtained within the thirty (30) day period, Respondents shall notify EPA, in writing, documenting their best efforts to obtain such agreements.

160. Nothing in this Order shall be construed to limit or otherwise affect EPA's right of access and entry pursuant to any applicable laws and regulations.

161. Nothing in this Order shall be construed to limit or otherwise affect Respondents liabilities and obligations to perform corrective action, including corrective action beyond the Landfill property boundary, notwithstanding the lack of access. EPA may determine that additional on-site measures must be taken to address releases beyond the Landfill boundary if access to off-site areas cannot be obtained.

## XX. NO FINAL AGENCY ACTION

162. Notwithstanding any other provision of this Order, no action or decision by EPA pursuant to this Order, including without limitation, decisions of the Regional Administrator, Region 2, or any authorized representative of EPA, shall constitute final agency action giving rise to any rights of judicial review prior to EPA's initiation of a judicial action for a violation of this Order, which may include an action for penalties, an action to compel Respondents' compliance with the terms and conditions of this Order, or such other relief as may be available at law.

163. In any action brought by EPA for a violation of this Order, Respondents shall bear the burden of proving that EPA's action was arbitrary and/or capricious and not in accordance with law, or this Order. In any such action, EPA shall bear the burden of proving that Respondents has violated a term or terms of this Order.

## XXI. MODIFICATION

164. This Order may be amended by Respondents and EPA. Such amendment(s) shall be in writing, shall first be signed by Respondents, and shall have as their effective date the date on which they are signed by the EPA Regional Administrator.

165. Notwithstanding the above, EPA's and the Respondents' Project Coordinators may agree to changes in the scheduling of events. Any such changes shall be requested in writing by the Respondents and must be approved in writing by the EPA PC. Delays in obtaining required permits despite good faith, diligent efforts by Respondents to obtain them, will be grounds for extensions of deadlines for work requiring such permits.

166. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by the Respondents will be construed as an amendment or modification to this Order.

## XXII. TRANSFER OF OBLIGATIONS

167. Respondents shall give notice, and a copy, of this Order to any successor in interest prior to any transfer of ownership or responsibility for the Landfill. Respondents shall give notice to EPA at least sixty (60) days prior to any such transfer. No such transfer shall in any way alter, extinguish or otherwise affect Respondents' responsibility to meet all the terms and obligations of this Order. Respondents may, however, transfer the responsibility for unperformed obligations imposed by this Order to a new owner/operator of the Landfill, provided there is a demonstration provided to EPA's satisfaction that the new owner/operator is capable of undertaking these obligations and has expressly agreed to do so in writing, provided further that EPA has given its approval in writing to any such transfer of obligations, and provided finally that this Order has been modified to reflect the transfer. Any stipulated penalties which may have accrued pursuant to the terms of this Order shall remain the responsibility of the Respondents against whom the penalties

accrued unless EPA consents in writing to the transfer of said liability to the successor. The Order Modification reflecting the transfer of obligations to a successor party or parties may, if appropriate, establish modified schedules for continuing obligations under the Order.

### XXIII. DISPUTE RESOLUTION

168. All parties shall use their best efforts to informally and in good faith resolve all disputes and differences of opinion, which may arise concerning provisions of this Order. Notwithstanding the foregoing, if Respondents disagree, in whole or in part, with any disapproval or modification or other decision or directive made by EPA pursuant to this Order, Respondents shall notify EPA in writing of such disagreements and their basis or bases within twenty (20) calendar days of receipt of EPA's disapproval, modification, decision or directive. The notice shall set forth the specific points of the dispute, the position Respondents maintains, the basis or bases for Respondents' position, and any matters the Respondents consider necessary for EPA's review. EPA may unilaterally refuse to review any dispute brought by Respondents under this provision if Respondents fail to fully set forth the basis or bases of their position and/or fails to provide materials which are necessary for EPA's determination. EPA may, but is not obliged, to request that Respondents submit additional information regarding any points concerning any dispute brought by Respondents. EPA will determine which of its officials will have responsibility for a decision concerning a dispute. EPA shall provide to Respondents its decision in writing on the pending dispute, which decision shall be binding. The parties may continue to confer and to use informal efforts to resolve the dispute during the period that EPA's final determination is pending. Notwithstanding the above, Respondents may not invoke the dispute resolution procedures for the deadline for ceasing receiving solid waste for disposal at the Facility as established in an approved Closure Plan (or default deadline in the event of no approved Closure Plan), nor may Respondents invoke the dispute resolution procedures concerning which EPA official is designated by EPA as the official to make a determination concerning the dispute

169. EPA's decision on any dispute shall be incorporated into and become an enforceable part of this Order, and shall no longer be subject to dispute pursuant to this Order. Respondents shall proceed in accordance with EPA's decision regarding the matter in dispute. If Respondents do not actually perform the work in accordance with EPA's decision, EPA reserves the right in its sole discretion to conduct the work itself, and seek reimbursement from Respondents, seek enforcement of this Order, seek stipulated penalties, and/or seek any other appropriate relief. Any disputes arising under this Order, and EPA's decisions concerning such disputes, are not subject to judicial review until such time as EPA seeks judicial enforcement of this Order.

170. The existence of a dispute as defined herein, and EPA's consideration of such matters as are placed into dispute, shall excuse, toll or suspend during the pendency of the dispute resolution process the compliance obligation which is demonstrably dependent on the matters in dispute, and EPA shall not seek to impose a penalty for non-compliance with



the obligation for the period of time during which the obligation was excused, tolled or suspended, regardless of the final decision on the dispute. No compliance obligation shall be excused, tolled or suspended, unless Respondents' dispute is in good faith and Respondents exercises due diligence to resolve the dispute.

#### XXIV. TERMINATION

171. This Order and all of its terms and provisions<sup>7</sup> shall remain in effect until all of the activities called for by the Order are completed and Respondents are so notified in writing by the EPA. Such notice shall be signed by the Regional Administrator, EPA Region 2. Respondents may request that EPA Region 2 provide Respondents with such notice, and shall supply EPA with such information, including certifications, as EPA may specify.

#### XXV. ENFORCEMENT

172. The failure of Respondents to comply with any provision of this Order may be considered a violation of this Order. Such violation may give rise to an enforcement action pursuant to Section 7003(b) of the Act, 42 U.S.C. § 6973(b), as amended by the Debt Collection Improvement Act of 1996, 31 U.S.C. Section 3701 *et seq.*

173. Nothing herein shall preclude EPA from taking any additional enforcement actions, and/or such other actions as it may deem necessary for the abatement or prevention of an imminent threat to public health or the environment arising from conditions at the Landfill. Nor shall EPA be precluded from taking any such other enforcement actions under the Act or other laws as EPA may deem necessary based on additional information about conditions at the Landfill.

#### XXVI. COOPERATION AND POTENTIAL ASSIGNMENT OF RESPONSIBILITIES AMONG RESPONDENTS

174. Respondents shall use their best efforts to cooperate with any Respondent or Respondents that may be ordered to carry out legal obligations relating to the Facility. Each Respondent shall keep any such other Respondents or Respondents fully informed as to its activities pursuant to the Order's requirements, and shall provide copies to such Respondents or Respondents of correspondence and submissions to EPA under the Order. In the event that one or more additional Respondents are issued an Order to carry out legal obligations relating to the Facility, EPA reserves its right to assign some of the specific tasks set forth in this Order to any additional Respondent or Respondents that are ordered in the future to carry out legal obligations relating to the Facility.

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<sup>7</sup> Except for the Recycling Plan provisions which remain in effect until the landfill ceases to receive waste for disposal.



## XXVII. GENERAL PROVISIONS

175. Nothing in this Order constitutes a satisfaction or release from liability with respect to any conditions or claims arising as a result of past, current or future operation, ownership or use of the Landfill by the Respondents, their agents, officials, successors or assigns.

176. Nothing in this Order affects any right, claim, interest, defense or cause of action of EPA with respect to the Respondents or any third parties.

## XXVIII. CONSENT/AUTHORITY TO SIGN

177. Respondents consent to and agree not to contest EPA's jurisdiction to issue this Order. In addition, whether brought in an administrative or judicial proceeding, Respondents consent to and agree not to contest EPA's jurisdiction to enforce or compel compliance with any term of this Order. Respondents neither admit nor deny the EPA's Findings of Fact and Conclusions of Law stated herein. Respondents enter into this Order in good faith, and the execution of this Order is not intended and shall not be construed as an admission relating to any violations of any law or regulations or an assumption of liability beyond that expressly stated herein.

178. Finding this Order to be accurate and reasonable, Respondents consent to its issuance and its terms, and agree to undertake the actions required by the terms and conditions of this Order. Respondents consent to the issuance of this Order, as an Order, pursuant to Section 7003 of RCRA, 42 U.S.C. § 6973, and explicitly waive any rights they may have to request a hearing on this matter.

179. Respondents agree not to contest and agree to waive any defense concerning the validity of this Order, or any particular provision explicitly contained in the Order (including the appendices).

180. Each signatory to this Order certifies that he or she is fully authorized to sign this Order without reservation

## XXIX. EFFECTIVE DATE

181. The effective date of this Order shall be fifteen (15) days after the date the Order is signed by the Regional Administrator, EPA Region 2.

Moca Municipal Solid Waste Landfill  
Docket No. RCRA-02-2014-7302

Respondent Municipality of Moca, Puerto Rico

By: \_\_\_\_\_

Name: \_\_\_\_\_  
(PRINT)

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Moca Municipal Solid Waste Landfill  
Docket No. RCRA-02-2014-7302

Respondent Moca ECO-Park Corp.

By: \_\_\_\_\_

Name: \_\_\_\_\_  
(PRINT)

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Moca Municipal Solid Waste Landfill  
Docket No. RCRA-02-2014-7302

It is so Ordered:

\_\_\_\_\_ Date: \_\_\_\_\_

**Judith A. Enck**

Regional Administrator

U.S. Environmental Protection Agency, Region 2

290 Broadway

New York, New York 10007-1866



## **Appendix 1**

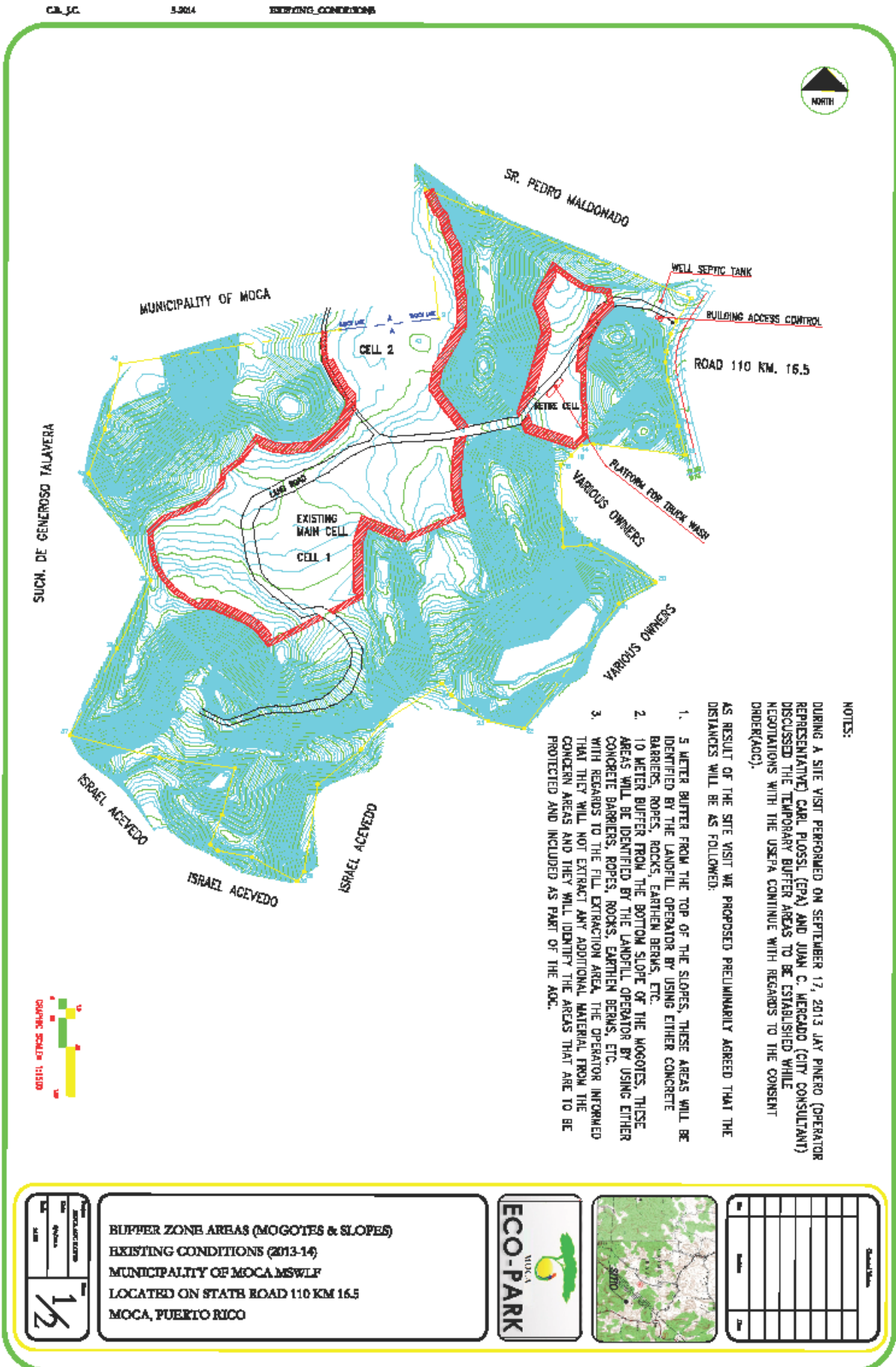
### Moca Landfill Active Cell(s), Inactive Cell(s), and Buffer Zone Delineation Maps

The following attached files contain the *Moca Landfill Active Cell(s), Inactive Cell(s), and Buffer Zone Delineation Maps*:

- BUFFER ZONE AREAS (MOGOTES & SLOPES) A.pdf
- BUFFER ZONE AREAS (MOGOTES & SLOPES) B.pdf

Representations of these maps, Figures 1 and 2, follow:

Figure 1: South Map



CB\_1C

3.2014

EXISTING CONDITIONS



- NOTES:
- DURING A SITE VISIT PERFORMED ON SEPTEMBER 17, 2013 JAY PINERO (OPERATOR REPRESENTATIVE) CARL FLORES (EPA) AND JUAN C. MERCADO (CITY CONSULTANT) DISCUSSED THE TEMPORARY BUFFER AREAS TO BE ESTABLISHED WHILE NEGOTIATIONS WITH THE USEPA CONTINUE WITH REGARDS TO THE CONSENT ORDER(AOC).
- AS RESULT OF THE SITE VISIT WE PROPOSED PRELIMINARILY AGREED THAT THE DISTANCES WILL BE AS FOLLOWS:
1. 5 METER BUFFER FROM THE TOP OF THE SLOPES, THESE AREAS WILL BE IDENTIFIED BY THE LANDFILL OPERATOR BY USING EITHER CONCRETE BARBERS, ROPES, ROCKS, EARTHEN BERRS, ETC.
  2. 10 METER BUFFER FROM THE BOTTOM SLOPE OF THE MOCOTES, THESE AREAS WILL BE IDENTIFIED BY THE LANDFILL OPERATOR BY USING EITHER CONCRETE BARBERS, ROPES, ROCKS, EARTHEN BERRS, ETC.
  3. WITH REGARDS TO THE FILL EXTRACTION AREA, THE OPERATOR INFORMED THAT THEY WILL NOT EXTRACT ANY ADDITIONAL MATERIAL FROM THE CONCERN AREAS AND THEY WILL IDENTIFY THE AREAS THAT ARE TO BE PROTECTED AND INCLUDED AS PART OF THE AOC.



DATE	12
SCALE	
BY	
NO.	
REV.	

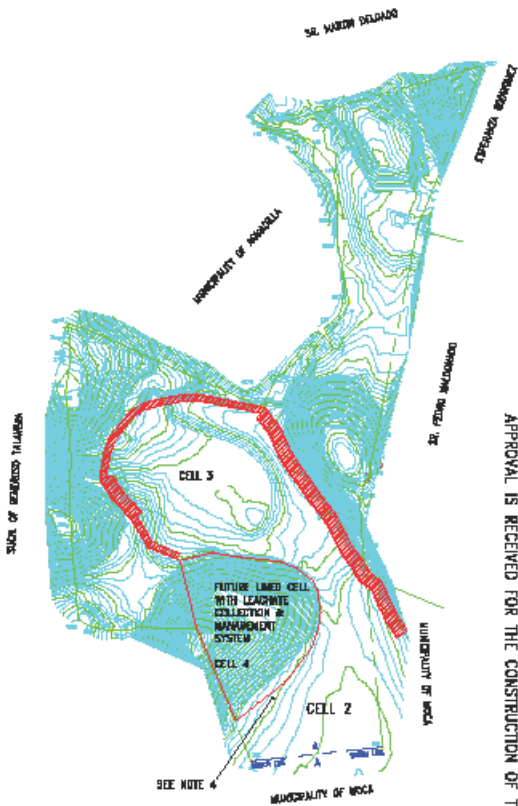
**BUFFER ZONE AREAS (MOCOTES & SLOPES)**  
 EXISTING CONDITIONS (2013-14)  
 MUNICIPALITY OF MOCA MSWLF  
 LOCATED ON STATE ROAD 110 KM 16.5  
 MOCA, PUERTO RICO



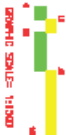
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BY	
NO.	
REV.	

Figure 2: North Map

CE\_1C I-3014 EXISTING CONDITIONS



- NOTES:
- DURING A SITE VISIT PERFORMED ON SEPTEMBER 17, 2013 JAY PINERO (OPERATOR REPRESENTATIVE) CARL PLESSI (EPA) AND JUAN C. MERCADO (CITY CONSULTANT) DISCUSSED THE TEMPORARY BUFFER AREAS TO BE ESTABLISHED WHILE NEGOTIATIONS WITH THE USEPA CONTINUE WITH REGARDS TO THE CONSENT ORDER(AOC).
- AS RESULT OF THE SITE VISIT WE PROPOSED PRELIMINARILY AGREED THAT THE DISTANCES WILL BE AS FOLLOWED:
1. 5 METER BUFFER FROM THE TOP OF THE SLOPES, THESE AREAS WILL BE IDENTIFIED BY THE LANDFILL OPERATOR BY USING EITHER CONCRETE BARRIERS, ROPES, ROCKS, EARTHEN BERMS, ETC.
  2. 10 METER BUFFER FROM THE BOTTOM SLOPE OF THE MOGOYES, THESE AREAS WILL BE IDENTIFIED BY THE LANDFILL OPERATOR BY USING EITHER CONCRETE BARRIERS, ROPES, ROCKS, EARTHEN BERMS, ETC.
  3. WITH REGARDS TO THE FILL EXTRACTION AREA, THE OPERATOR INFORMED THAT THEY WILL NOT EXTRACT ANY ADDITIONAL MATERIAL FROM THE CONCERN AREAS AND THEY WILL IDENTIFY THE AREAS THAT ARE TO BE PROTECTED AND INCLUDED AS PART OF THE AOC.
  4. AREA DESIGNATED AS CELL 4 CONSTITUTES AN AREA SUBJECT TO HISTORICAL SOLID WASTE PLACEMENT AND FILL EXTRACTION OPERATIONS, AS DISCUSSED WITH EPA, THIS AREA WILL BE SUBJECT TO THE CONSTRUCTION OF A LINED CELL THAT WILL MERGE WITH CELLS 2 AND 3, CONSEQUENTLY, THE BUFFER ZONE SHOWN ON THIS AREA ADJACENT TO CELL 4 IS TEMPORARY AND WILL NOT BE REQUIRED ONCE THE REQUIRED DESIGN APPROVAL IS RECEIVED FOR THE CONSTRUCTION OF THE PROPOSED COMPLIANT CELL 4.



Project	MOGA MSWLF
Task	Phase 1
Drawn	2/2
Scale	1:1000

**BUFFER ZONE AREAS (MOGOYES & SLOPES)**  
**EXISTING CONDITIONS (2013-14)**  
**MUNICIPALITY OF MOGA MSWLF**  
**LOCATED ON STATE ROAD 110 KM 16.5**  
**MOGA, PUERTO RICO**



Client Name	
Address	
City	
State	
Zip	

## Appendix 2

### Safety & Health Program

The Respondent Moca ECO-Park's Facility-wide Safety & Health Program must comply with applicable Commonwealth and Federal Occupational Safety & Health Administration ("OSHA") regulations. The following OSHA requirements must be considered within the Facility-wide Safety & Health Program (regulatory references are to Federal OSHA):

1. Management Commitment to Safety and Health
  - a. Provide employees with sanitary and safe working conditions [29 CFR §1926.20(a)].
  - b. Assign safety and health responsibilities [29 CFR 1926.20(b)].
  - c. Give safety and health designees authority to correct hazards [29 CFR 1926.32(f)].
  - d. Ensure employees that they may voice safety and health concerns without fear of reprisal [29 CFR 1903.11(d)].
  - e. Inform employees of hazards [29 CFR 1926.21(b), 29 CFR 1910.1020, 29 CFR 1910.1200, 29 CFR 1926 Subpart Z].
  - f. Coordinate hazard communication with other employers on site [29 CFR 1926.59, 29 CFR 1926.65, 29 CFR 1926.652].
  - g. Post the OSHA State or Federal Poster [29 CFR 1903.2(a)].
2. Hazard Identification and Determination
  - a. Evaluate operations, procedures, facilities, and equipment to identify hazards [29 CFR 1926.20(a), 29 CFR 1926.21(b), 29 CFR 1926 Subpart O, 29 CFR 1926.400 (b), 29 CFR 1926.416].
  - b. Monitor exposure levels [29 CFR 1926.55, 29 CFR 1926.62, 29 CFR 1926 Subpart Z, 29 CFR 1926.1101].
  - c. Ensure regular safety and health inspections [29 CFR 1926.20(b)(2)].
  - d. Conduct accident investigations [29 CFR 1904.4, 29 CFR 1926.20(b)].
  - e. Determine if engineering or administrative controls or personnel protective equipment are to be used [29 CFR 1926.20(f), 29 CFR 1926 Subpart E].
3. Hazard Elimination and Control
  - a. Ensure machines and tools are in safe working order and in compliance with relevant standards [29 CFR 1926.20(b)(3), 29 CFR 1926 Subpart O].
  - b. Institute engineering and work practice controls to eliminate health hazards [29 CFR 1926.55, 29 CFR 1926 Subpart E, 29 CFR 1926 Subpart Z].
  - c. Perform housekeeping to remove hazards posed by scrap and debris in work areas [29 CFR 1926.25, 29 CFR 1926.152(c)(5)].
  - d. Provide appropriate personal protective equipment when other controls are infeasible [29 CFR 1926.28(a), 29 CFR 1926 Subpart E].
  - e. Guarantee safe means of egress [29 CFR 1926.34].

4. Emergency Response Planning
  - a. Develop emergency response plans [29 CFR 1926.35, 29 CFR 1926.65(q)].
  - b. Develop fire prevention and protection programs [29 CFR 1926.24, 29 CFR 1926 Subpart F].
  
5. First Aid and Medical
  - a. Provide medical services, first aid treatment, and supplies [29 CFR 1926.50(a), 29 CFR 1926.103, 29 CFR 1926.50(c), 29 CFR 1926.50(d), 29 CFR 1926 Subpart Z].
  - b. Ensure availability of emergency rescue for injured employees [29 CFR 1926.50(e), 29 CFR 1926.106(a), 29 CFR 1926.21(b)(6)].
  - c. Post emergency numbers for physicians, hospitals, or ambulances [29 CFR 1926.50(f)].
  
6. Training
  - a. Train employees to recognize hazards [29 CFR 1926.21(b)(2), 29 CFR 1926.65, 29 CFR 1926.302(e)]
  - b. Train workers to recognize and avoid unsafe conditions [29 CFR 1926.21(b)(2), 29 CFR 1926.65, 29 CFR 1926.454].
  - c. Provide training on safe work practices and applicable standards [29 CFR 1926.21(b)].
  - d. Provide training on safe operation of equipment and machinery [29 CFR 1926.20(b)(4), 29 CFR 1926.302(e)].
  - e. Provide training on identification of confined and enclosed space hazards [29 CFR 1926.21].

### Appendix 3

#### Closure and Post-Closure Plan Requirements

Respondent Moca shall retain the services of a professional engineer, experienced in landfill design and licensed by the Commonwealth of Puerto Rico or permitted to practice engineering in Puerto Rico, to prepare final Closure and Post-Closure Plans for the different cells at the Landfill. These Plans must:

1. Meet the closure and post-closure criteria set forth in 40 C.F.R. §§ 258.60 and 258.61;
2. Incorporate measures to obtain any necessary permits or approvals and shall also incorporate measures to meet any applicable requirements of the Clean Water Act, 42 U.S.C. § 1252 et seq. (“CWA”) relating to storm water discharges and its implementing regulations, including permit requirements set forth in 40 C.F.R. Part 122, Subpart B, Section 122.26;
3. Incorporate the Revised Waste Disposal Perimeter as required in the paragraph above;
4. Be consistent with the Karst Protection Plan and if required by EPA it shall include a limited survey for locally listed or federally listed species in order to comply with the Endangered Species Act and local conservation laws, and to inform planning for an Inactive Cell(s) Closure Plan(s);
5. Provide for the sustainable management and disposal of leachate and leachate contaminated storm water, and include enhanced measures for collection/interception;<sup>8</sup>
6. Incorporate a closure cap design that provides substantial reductions in rainwater infiltration into the waste mass and in leachate generation;<sup>9</sup>
7. Meet the following landfill slope stabilization requirements:
  - a. Limit all landfill slopes to 3:1 or shallower (unless steeper slopes are approved by EPA in the Inactive Cell(s));
  - b. Conduct a stability assessment in order to avoid or prevent a destabilizing event (*e.g.*, earthquake, karst void collapse) from impairing the structural integrity of the landfill slopes (and other component systems);

---

<sup>8</sup> Any leachate management and disposal plan must be economically and environmental sustainable. EPA does not currently believe that onsite tank/pond storage and offsite disposal via tanker truck transport to a wastewater treatment plant are economically sustainable.

<sup>9</sup> “Substantial reductions” must be documented either through *in situ* field studies, the *Hydrologic Evaluation of Landfill Performance* (HELP) model, or any other method approved by EPA.



- c. The landfill stability assessment shall be prepared by a licensed, professional geotechnical engineer legally able to practice in the Commonwealth of Puerto Rico;
- d. Such a stability assessment must include:
  - i. An evaluation of subsurface conditions;
  - ii. An analysis of slope stability; and
  - iii. An examination of related design needs;<sup>10</sup>
- e. Slopes shall be designed or stabilized to have a minimum 1.5 safety factor on critical cross-sections against failure and yield accelerations for steady state/static conditions and a minimum 1.15 safety factor for seismic conditions;
- f. Slope stability monitoring, such as installed inclinometers and observation wells, shall be incorporate in any slope steeper than 3:1;
8. Incorporate the installation of a GCCS or any alternate system for reducing methane and NMOC emissions from the Landfill, in accordance with the Landfill Gas Control Requirements provisions of this Order;<sup>11</sup>
9. Incorporate the installation of a PV Cap System, if deemed viable, in accordance with the Photovoltaic Power Generation and Landfill Cap System provisions of this Order;
10. Take into account any physical intersection of the Active Cell(s) and any New Cell(s) that may be planned and that affect the design and implementation of the Closure Plan for the Active Cell(s) of the Landfill and their post-closure care.

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<sup>10</sup> See: <http://www.epa.gov/osw/nonhaz/municipal/landfill/techman/subpartb.pdf> EPA Solid Waste Disposal Facility Criteria, EPA530-R-93-017. Subpart B: Location Criteria.

<sup>11</sup> An example of an “alternate system for reducing methane and NMOC emissions from the Landfill” would be suitable solar-powered, continuous-ignition, passive flare systems.

## Appendix 4

### RCRA Report and Recycling Reports

On or before August 15 of each year, Respondents shall submit to EPA an Annual RCRA and Recycling Report (supplemented by a second Recycling Report to be submitted by February 15). Respondents may submit one combined report or may each submit a separate report. The report(s) must meet the requirements of Section VII CERTIFICATIONS. At a minimum, the Annual RCRA and the biannual Recycling Reports must include the following (the party responsible for submitting each report is indicated below in the parentheses):

1. Documentation of compliance with the Operational Requirements set forth above in Paragraphs 83 – 96. (Respondent Moca ECO-Park).
2. Update on the implementation of the approved Karst Protection Plan. (Respondent Moca ECO-Park).
3. Operation in Accord with Closure Plans: A certification that the Landfill is being operated in accordance with each of the approved Closure Plans. Elements: (Respondent Moca ECO-Park).
  - a. Detailed updated information on elevations and grading/slopes for each of the cells;
  - b. Estimates for remaining life of each cell;
  - c. Progress toward meeting each of the Closure and Post-Closure Plan Requirements
4. Permits and Approvals: A listing of all necessary permits and approvals required and a description of the status of each (including any anticipated, filed, pending, and finalized/approved. (Both Respondents).
5. Groundwater and Gas Monitoring: Preceding year's analytical results with supporting documents (such as quality assurance/quality control, and other information requested by EPA) from any groundwater and gas monitoring. (Respondent Moca ECO-Park).
6. Post Closure: After closure of a cell, include information on the status of the permanent landfill cap, operating and maintenance activities, and other relevant information. (Respondent Moca).
7. Recycling Plan Reports: Summary of the efforts undertaken since the prior submitted report to implement the requirements of the Recycling Program, beginning on August 15, 2015, and bi-annually thereafter (*i.e.*, February 15 and August 15 of each year). (Respondent Moca)The following information updated since the prior submitted report, without limitation, must be included:
  - a. The number of households serviced with Curbside Collection;

- b. The number and type of other locations serviced with Curbside Collection
- c. The tons of waste material generated in the Municipality that were Recycled under the Recycling Program, including a breakdown of the amount of Recyclable Material obtained using Curbside Pickup and the amount of Recyclable Material obtained using "Drop-Off" locations;
- d. If known, tons of waste material generated in the Municipality that were Recycled outside of the Recycling Program
- e. Tons of waste material generated in the Municipality that were sent to the Landfill or other solid waste landfills for disposal;
- f. With respect to the Recyclable Material collected under the Recycling Program, the percentage composition of each type of material in the wastestream; and
- g. The amount charged by MRFs to take Recycled Materials.

The first such report shall be submitted on August 15, 2015. The last such report shall be submitted after the final acceptance of waste at the landfill on the next August 15, after. The Municipality may submit supplemental reports to EPA to inform EPA of any information concerning market conditions, Commonwealth regulations, or other factors that may affect the Recycling Program.

In any of the report, the Respondents may submit to EPA proposed changes to the Recycling Program based on the information obtained during operation of the Recycling Program prior to the submission of the report, in order to improve the efficiency of the recovery efforts or to vary the quantity, quality, and diversity of Recyclable Materials collected.

- 8. Financial Assurance: Respondent Moca shall submit to EPA documentation of compliance with the financial assurance requirements for closure and post-closure, and, if applicable, compliance with the financial assurance requirements for any required corrective action.

## Appendix 5

### Landfill Gas Control Requirements

1. Respondents shall meet the following requirements regarding Gas Collection and Control Systems ("GCCS"):

- a. Within ninety (90) calendar days of the effective date of this Order, Respondents shall, to the extent not already performed, submit to EPA a design capacity report for the current calendar year which meets the substantive requirements of the New Source Performance Standards ("NSPS") for municipal solid waste landfills, 40 C.F.R. Part 60, Subpart WWW ("NSPS Subpart WWW") and/or the Puerto Rico Regulations for the Control of Atmospheric Pollution ("PRRCAP"), Part VII, Rule 701 et seq. ("Puerto Rico 111(d) Plan"), collectively hereinafter called the Landfill Regulations.
- b. Within ninety (90) calendar days of the effective date of this Order, Respondents shall, to the extent not already performed, submit a report which describes any modifications, as defined by 40 C.F.R. § 60.751, made to the Landfill since May 30, 1991.
- c. If the current calendar year design capacity report does not reflect the initial design capacity, previous design capacity calculations and/or reports shall be submitted.

For the following paragraphs (d) through (l), in the instance of a conflict between the regulatory language and this Order, the regulatory language governs. Respondents are responsible for informing EPA of any such conflicts.

- d. With any design capacity report submitted pursuant to "a." or "c." of this paragraph, submit a non-methane organic compound ("NMOC") emission rate report that reflects the emission rate calculation for the year(s) for which the design capacity report(s) was developed.
- e. If a design capacity report and/or NMOC emission rate calculation is not in accordance with the specifications of 40 C.F.R. § 60.757(a) and (b), EPA will notify Respondents in writing.
- f. Within fifteen (15) calendar days of receipt of an EPA notification provided pursuant to paragraph "e." above, Respondents shall modify the report and/or calculation in response to EPA's notification and resubmit the report to EPA.
- g. If a design capacity report, submitted pursuant to "a.", "c.", or "f." of this paragraph, indicates that the landfill's design capacity is equal to or greater than 2.5 million megagrams ("Mg") and 2.5 million cubic meters and an NMOC report, submitted pursuant to "d." or "f." of this paragraph, indicates that the landfill's NMOC emission

- rate is greater than 50 Mg/yr, within sixty (60) calendar days of the effective date of this Order, Respondents shall submit to EPA, in writing, a notification of intent to 1) submit a design plan for a gas collection and control system ("GCCS"); or 2) submit a Tier II NMOC emission rate calculation to demonstrate that the NMOC rate is less than 50 Mg/yr; or 3) submit Tier II and Tier III NMOC emission rate calculations simultaneously to demonstrate that the NMOC rate is less than 50 Mg/yr. All calculations and plans submitted must meet the substantive requirements of the Landfill Regulations.
- h. If Respondents' notification of intent, submitted pursuant to "g." of this paragraph, indicates that it shall submit only a Tier II emission rate calculation, Respondents shall submit that calculation within thirty (30) days of submission of the notification of intent.
  - i. If Respondents' notification of intent, submitted pursuant to "g" of this paragraph, indicates that it shall submit Tier II and Tier III emission rate calculations, Respondents shall submit that calculation within sixty (60) days of submission of the notification of intent.
  - j. If a NMOC emission rate calculation, submitted pursuant to "h." or "i." of this paragraph, is not calculated in accordance with the specifications of the Landfill Regulations, EPA will notify Respondents in writing.
  - k. Within twenty-one (21) calendar days of receipt of an EPA notification provided pursuant to "j." of this paragraph, Respondents shall revise its emission rate calculation in response to EPA's notification and resubmit the calculation to EPA.
  - l. Respondents shall submit to EPA a design plan for a GCCS that meets the substantive requirements of the Landfill Regulations in the following circumstances:
    - i. if Respondents' notification of intent, submitted pursuant to "g." of this paragraph, indicates that it shall submit a design plan for a GCCS;
    - ii. if Respondents' Tier II calculation, submitted pursuant to "h.", "i." or "k." of this paragraph, indicates that the landfill's NMOC rate is greater than 50 Mg/yr;
    - iii. if Respondents' Tier III calculation, submitted pursuant to "i." or "k." of this paragraph, indicates that the landfill's NMOC rate is greater than 50 Mg/yr; or
    - iv. if EPA makes a determination that Respondents' reports and/or calculations, submitted pursuant to this Order, have not satisfactorily demonstrated that the landfill's design capacity is less than 2.5 Mg or 2.5 million cubic meters and/or have not satisfactorily demonstrated that the NMOC rate calculations is less than 50 Mg/yr;

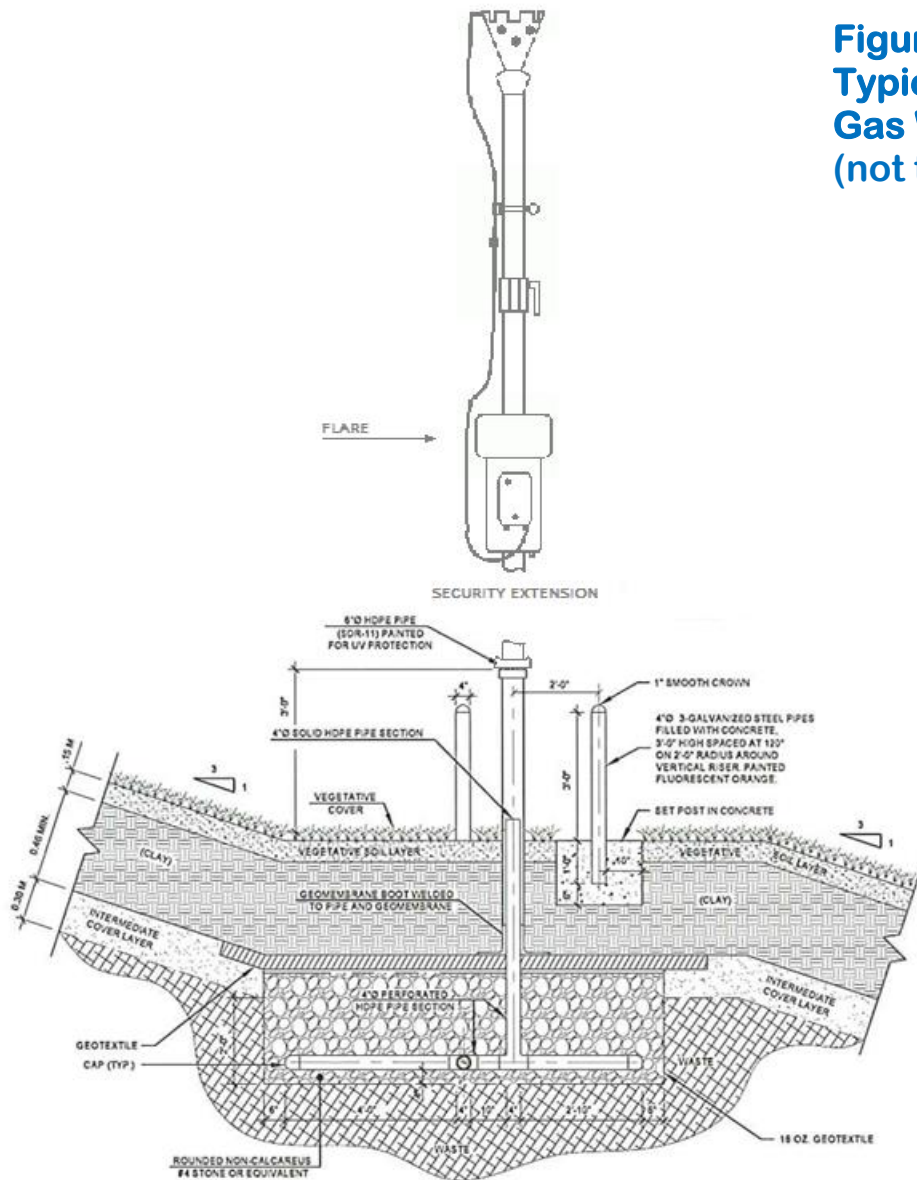
- m. Respondents shall submit the design plan required pursuant to "l." of this paragraph, within one hundred eighty (180) days of the submission of the report and/or calculation referenced in paragraph "l."
  - n. If Respondents submits a design plan in accordance with this Order, Respondents shall submit to EPA, together with its design plan for the GCCS, a start-up, shut-down, malfunction plan ("SSM") that contains the information specified in 40 C.F.R., Part 63, Subpart AAAA.
  - o. Within ninety (90) calendar days of submission of the design plan pursuant to this Order, in accordance with the Landfill Regulations, Respondents shall submit to EPA and EQB, an application for an operating permit under 40 C.F.R. Part 70 (Title V).
  - p. Within one (1) year of submission of the design plan, Respondents shall install and commence operation of the GCCS, in accordance with the design plan and thereafter operate the GCCS in accordance with the Landfill Regulations.
  - q. Within one hundred twenty (120) days after initial start-up of the GCCS, Respondents shall conduct performance testing and submit notifications and reports in accordance with the substantive requirements of 40 C.F.R. § 60.8 and the Landfill Regulations.
  - r. Respondents shall submit protocol for performance testing to EPA for approval no later than sixty (60) days after initial start-up of the GCCS.
  - s. Every calendar quarter after Respondents begin operation of the GCCS, Respondents shall monitor the surface concentrations of methane in accordance with the instrument specifications and procedures provided in 40 C.F.R. § 60.755.
  - t. Within thirty (30) calendar days of each calendar quarter after Respondents begin operation of the GCCS, Respondents submit quarterly monitoring reports to EPA that contain the data specified in "s." of this paragraph.
2. If a GCCS is not required under the Landfill Regulations, Respondent Moca shall plan, design, install, and operate an alternative landfill gas collection and control system ("LFG System") to provide for significant reductions in methane and NMOC emissions, as follows:
- a. The LFG System shall consist of a series of passive gas wells and flares installed as part of each Active Cell's closure cap;<sup>12</sup>
  - b. The LFG System shall meet or exceed flare operation standards specified at 40 CFR §60.18 (except for 40 CFR §60.18 (f)(2));

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<sup>12</sup>An example of an acceptable flare system would be suitable solar-powered, continuous-ignition, passive flares.



- c. LFG System flares shall be maintained and operated for at least five (5) years;
- d. Passive gas wells shall be spaced at least one per acre throughout the landfill;
- e. Flares shall be installed on at least 50% of the passive gas wells in a pattern designed to maximize LFG capture and treatment;
- f. Protection of the LFG System shall be incorporated into the Landfill security program or any Enhanced Security Plan; and
- g. Gas wells and flares shall be designed and constructed consistent with Figure 3 or other design acceptable to EPA.



**Figure 3:**  
**Typical Passive**  
**Gas Well**  
**(not to scale)**

## Appendix 6

### Recycling Program

#### Recycling and Composting Program

##### 1. Recycling Management Program Development

- 1.1. Within one hundred and twenty (120) calendar days after the effective date of this Order, the Municipality of Moca shall, pursuant to Section VII of the Order, submit to EPA for review and approval a plan for a Recycling and Composting Program (“Recycling Plan”), which shall be consistent with all applicable Commonwealth of Puerto Rico regulations and/or requirements. Respondent shall carry out the approved Recycling Plan in accordance with its implementation schedule, and pursuant to the terms of this Order.
- 1.2. The Recycling Plan shall include all the definitions and requirements that are set forth below, and shall include an implementation schedule covering each component of the Program. The Recycling Plan, which shall be implemented by the Municipality, shall have the goal of minimizing the Municipality of Moca’s disposal of “Recyclable Material,” “Ash” (except in a lined, permitted cell compliant with 40 C.F.R Part 258), “Scrap Tires,” “Auto Shredder Residue” (“ASR”), “White Goods,” and “Compostable Material,” as those terms are defined in Section 5 below, at the municipal solid waste landfill located in the Municipality (“Landfill”) or at any other solid waste landfill or incinerator. The Recycling Plan shall also have the goal of reducing these materials in bulk loads of waste brought to the Landfill from other customers.
- 1.3. The Municipality shall designate and retain a Qualified Municipal Recycling Manager who shall have the responsibility of implementing the approved Recycling Plan and submitting any required reports. This municipal officer must maintain the *Manager of Recycling Systems* or equivalent certification or must acquire it according to a time schedule approved by EPA. This certification requirement is subject to the reasonable availability of Spanish language training in Puerto Rico. Respondent Moca may substitute a combination of relevant professional experience and continuing training for the certification requirements for employees or officers employed as of the effective date of this Order.
- 1.4. The Recycling Plan shall include the following:
  - 1.4.1. The development and implementation of a Collection Plan so that all Recyclable Material, bulk Ash, Scrap Tires, ASR, White Goods, Agricultural Waste and Yard Waste<sup>13</sup> generated in locations throughout the Municipality are placed in bins or

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<sup>13</sup> Agricultural and Yard Wastes are Compostable Materials subject to the pilot program for composting materials referenced below in Section 1.4.5. However, because Agricultural and Yard Wastes can be collected immediately, they may be collected and managed under either the: Recycling Plan as referenced in Section 1.4.1; or the pilot and

other suitable receptacles for collection, on a regularly scheduled basis, in order to be transported to approved/permitted locations for proper disposition. The Municipality may collect and transport these materials itself and/or enter into agreements with licensed haulers to do so.

- 1.4.2. The Recycling Plan shall cover residences, apartment buildings, schools, hospitals, small businesses and governmental establishments (hereafter, “covered entities”), and shall contain provisions to ensure that collection bins, or other suitable receptacles, are utilized by the covered entities for the curbside collection of Recyclable Material and Compostable Material.<sup>14</sup>
- 1.4.3. The Recycling Plan shall provide for curbside collection at all residences (including apartment buildings), small businesses, schools, hospitals, and governmental establishments in urban areas. Additionally, it shall provide for curbside collection at all apartment buildings (with more than 10 units), schools, and governmental establishments in all rural areas.<sup>15</sup>
- 1.4.4. A program to recycle Recyclable Material, Scrap Tires, ASR and White Goods collected in the Municipality, or agreements with a MRF(s), or other facility(ies), to process these collected materials. All facilities processing these materials must have any permits/authorizations required by the Commonwealth for recycling.
- 1.4.5. A pilot program for composting material. The pilot Composting Program shall involve: a) increasing the use of Compostable Materials to create compost in residences, government and/or businesses; and/or b) the bulk collection of Compostable Materials for composting by the Municipality or by other entities that have entered into an agreement with the Municipality to collect and/or compost the Compostable Material pursuant to the program.
- 1.4.6. The development and implementation of disposal restrictions so that Bulk Disposal of Recyclable Material, bulk Ash (except in a lined, permitted cell compliant with 40 C.F.R Part 258), and bulk Compostable Materials, and the disposal of Scrap Tires, ASR, and White Goods does not occur at the Landfill. The

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approved composting programs referenced in Sections 1.4.5 and 4.2., respectively. In no instance, however, shall agricultural and/or yard waste be discarded in the Landfill.

<sup>14</sup> EPA believes that there are at least 14,360 households and 239 government or private establishments that should be subject to the Moca Recycling and Composting Program. See Municipality of Moca’s *Profile of General Population and Housing Characteristics: 2010*, from the 2010 U.S. Census, which is found at [http://factfinder2.census.gov/faces/nav/jsf/pages/community\\_facts.xhtml](http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml).

<sup>15</sup> The percentage of total municipal residences covered by curbside collection should at a minimum, be equal to the percentage of urban population indicated in Table 7, “Population by Urban and Rural: 2010” from *Puerto Rico: 2010, Population and Housing Unit Counts, 2010 Census of Population and Housing*, issued July 2012 and found at <http://www.census.gov/prod/cen2010/cph-2-53.pdf>. At an 87.4% urban[semi-urban] population, Moca has at least 12,550 households subject to curbside recycling.

program shall include routine, documented inspections of loads coming into the Landfill, and shall also include the prohibition by local ordinance or regulation of the disposal of these materials in the Landfill if Respondent determines such an ordinance or regulation to be necessary to achieve compliance with the disposal restrictions.

- 1.4.7. The identification of a specific area at the Landfill to temporarily store, pending the proper disposition of, any Recyclable Material, Ash, Compostable Materials Scrap Tires, ASR, and/or White Goods detected in, and removed from, incoming loads of waste (except as otherwise allowed within this Order). (This area shall only be used when the truck that delivered the material to the Landfill is not able to transport the material from the Landfill to another destination for proper handling.) The Plan must further ensure that these materials are removed from the temporary location and sent to designated facilities to be recycled and/or composted within seven (7) days of receipt. (or later for white goods and yard waste).
- 1.4.8. The establishment of Recycling Collection Centers in rural areas for covered entities not receiving curbside collection pursuant to Section 1.4.3 above. The Recycling Plan must indicate the location of these centers, the size of the population being served, and the process for collecting materials at, and transporting materials from, the centers for proper disposition.
- 1.4.9.
- 1.4.10. A plan for waste characterization, with respect to Recyclable Material and Compostable Material to determine material quality, quantity, and percentage composition in order to assist in identifying potential markets; and
- 1.4.11. A municipal survey measuring Recycling participation rates.
- 1.5. An educational and community outreach program, including community workshops, to educate the community regarding recycling and composting, their benefits, and guidelines for household and/or commercial implementation. Outreach must be extended to households, schools, municipal and other government facilities, small businesses, hospital and clinics, farms, and other establishments within the Municipality that generate solid waste.
- 1.6. Respondent shall develop a suitable enforcement program to address non-compliance with the municipality's approved Recycling Plan, including such actions or procedures as it may determine are suitable to help achieve compliance with the Recycling Plan.
- 1.7. When any compliance obligation under the Recycling Plan requires the Municipality to obtain a Commonwealth or local permit or approval, the Municipality shall submit timely and complete applications and take all other actions necessary to obtain such permits or approvals. Nothing in the Recycling Plan shall be interpreted to relieve the Municipality of any requirements imposed by Commonwealth law governing recycling or composting.

1.8. The Municipality may apply for federal or Commonwealth grants in connection with the implementation of the Recycling Plan. However, the Municipality shall be obligated to implement the Recycling Plan regardless of whether it is successful in obtaining any such grants.

1.9. Upon request and as EPA resources allow, EPA will provide technical assistance to the Municipality in the development of recycling and composting strategies, including identification of potential funding sources.

2. Recycling Plan Implementation

2.1. Within 60 days after EPA approval of the Recycling Plan or by such other date as is approved by EPA, the Municipality shall begin implementation of the Recycling Plan.

2.2. Respondent Moca ECO-Park shall continue its inspection program of incoming loads at the Landfill designed to keep Scrap Tires, ASR, White Goods, Bulk Recyclable Material, Bulk Ash, and Bulk Compostable Materials from being disposed of at the Landfill (except as otherwise allowed within this Order).

2.3. Within 120 days of EPA's approval of the Recycling Plan, and on an annual basis thereafter, the Municipality shall implement its educational and outreach program concerning recycling and composting.

2.3.1. .

3. Recycling Plan Reports

3.1. The Municipality shall submit biannual reports to EPA, on or before August 15 and February 15 of each year, summarizing the efforts undertaken during the prior six months to implement the requirements of the Recycling Plan. The first such report shall be submitted on or before February 15, 2016. The Municipality may submit supplemental reports to EPA to inform EPA of any information concerning market conditions, Commonwealth regulations, or other factors that may affect the Recycling Plan.

3.2. The Biannual reports must include, without limitation, the following information for the prior six month period:

3.2.1. The number of households serviced with Curbside Collection;

3.2.2. The number and type of other locations serviced with Curbside Collection;

3.2.3. The tons of waste material generated in the Municipality that were recycled under the Recycling Plan, including a breakdown of the amount of Recyclable and

Compostable Materials obtained using Curbside Collection; and the amount of Recyclable and Compostable Materials obtained at Recycling Collection Centers (referenced in Section 1.4 above);

- 3.2.4. Tons of waste material generated in the Municipality that were sent to the Landfill or other solid waste landfills or incinerators for disposal;
  - 3.2.5. The Recycling Rate of the Municipality;
  - 3.2.6. The material quality, quantity, and percentage composition of each type of Recyclable and Compostable Material collected under the Recycling Plan;
  - 3.2.7. To the extent the Municipality contracts with MRFs, the amount charged by MRFs to take Recycled Materials; and
  - 3.2.8. The status of the Pilot Composting Program.
- 3.3. In any of the biannual or supplemental reports, the Municipality may submit to EPA, for review and approval, proposed changes to the Recycling Plan based on the information obtained during operation of the Recycling Plan prior to the submission of the report, in order to improve the efficiency of the recovery efforts or to vary the quantity, quality, and diversity of Recyclable Material collected. Such reports may include a request to temporarily exempt certain materials from the list of Recyclable Material based on market conditions.
4. Improvement/Expansion of the Pilot Composting Program
- 4.1. On or before July 1, 2016, the Municipality shall submit to EPA (a) a report describing the results of its pilot Composting Program, and (b) for EPA's review and approval, a plan addressing areas of potential improvement and/or any expansion of the pilot Composting Program.
  - 4.2. The Municipality shall begin implementation of the approved revised municipal composting program within 60 days of EPA's approval of the revised program.
5. Definitions

The following definitions apply to recycling and composting conducted under this Order. To the extent, however, applicable regulations promulgated by the Commonwealth define these terms to include a wider range of materials, those materials are hereby incorporated by reference into the definitions below.

- 5.1. "Agricultural Waste" shall mean plant waste generated by residential sources, commercial sources and/or from agricultural activities including, but not limited to,



bean, nut and grain hulls and chaff, sugar cane bagasse, orchard pruning, and coffee bean hulls and ground.

- 5.2. "Ash" shall mean the residue matter that remains after burning and includes, but is not limited to, such residues produced by manufacturing, energy production, burning coal and other commercial processes.
- 5.3. "Auto Shredder Residue" or "ASR" shall mean the residues, after removal of metals, from the shredding of automobiles and major household appliances. ASR consists of glass, fiber, rubber, automobile liquids, plastics and dirt.
- 5.4. "Bulk" shall mean an agglomeration of waste consisting of predominantly the same material. Bulk disposal does not mean the disposal of a given waste material within a mixed, residential wastestream.<sup>16</sup>
- 5.5. "Compostable Material" shall mean Agricultural Waste, Yard Waste, food waste, and other biodegradable material not otherwise included in the definition of Recyclable Material.
- 5.6. "Composting" shall mean the controlled biological aerobic decomposition of organic material that is sanitized through the generation of heat and stabilized to the point that it is beneficial to plant growth in that it has the unique ability to improve the chemical, physical, and biological characteristics of soils or growing media.
- 5.7. "Curbside Collection" shall mean regular collection of Recyclable and/or Compostable Material directly from households and other establishments.
- 5.8. "Material Recovery Facility" or "MRF" shall mean a permitted facility where Recyclable Material is sorted into specific categories and processed, or transported to processors, for re-manufacturing (*i.e.*, making the recycled material into new products).
- 5.9. "Qualified Municipal Recycling Manager" shall mean one or more individuals who are certified as a *Manager of Recycling Systems* by the Solid Waste Association of North America ("SWANA") or an equivalent course of study and independently-proctored exam.(See 1.3)
- 5.10. "Recyclable Material" shall mean glass, paper, cardboard, metals, plastics, electronics, batteries, and other material that may be identified by EPA as economically recyclable in Puerto Rico.

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<sup>16</sup> Examples of bulk disposal of a given waste material include: (1) a clear, plastic bag containing mixed plastic; (2) 55-gallon drums of incinerator ash; and (3) A pickup truck bed of yard waste.

- 5.11. "Recycling" shall mean the separation, collection, processing, and sale or distribution of Recyclable Material as a precursor to making the recycled material into new products.
- 5.12. "Recycling Rate" shall be 100% multiplied by the tons of waste generated in the Municipality that were recycled divided by the total tons of waste material generated in the Municipality.
- 5.13. "Scrap Tires" shall mean motor vehicle, truck or heavy equipment tires that are discarded.
- 5.14. "Yard Waste" shall mean vegetation waste, such as grass, bushes, shrubs, trees and associated clippings, generated by residential and/or commercial sources through the maintenance of private or public lands.
- 5.15. "White Goods" shall mean refrigerators, stoves, washers, dryers, sinks or other such objects that are discarded.