

BEYOND

SMART CITIES

CONSTRUCTION ENVIRONMENTAL

MANAGEMENT PLAN - CEMP

KRISHNAJI PAWAR, LEED AP BD+C, GSAS CGP, ISO 14001:2015, GCP

ENVIRONMENTAL SPECIALIST COURSE

ENVIRONMENTAL SPECIALIST

BEYOND SMART CITIES

BEYOND

SMART CITIES

SAMPLE CEMP PRESENTATION - 2

FOR ENVIRONMENTAL PROFESSIONALS

KRISHNAJI PAWAR, LEED AP BD+C, GSAS CGP, ISO 14001:2015, GCP

ENVIRONMENTAL SPECIALIST CURRICULUM

ENVIRONMENTAL SPECIALIST

BEYOND SMART CITIES

BEYOND

SMART CITIES

Mitigation of Environmental Aspects and Impacts

1. Dust Management

▶ Source Control

▶ Dust Suppression





BEYOND
SMART CITIES

2. Noise Management

- Noise Mitigation
- Information

QEZ-3 Project Noise Monitoring Graph for the Month of January 2017

1st week
2nd week
3rd week
4th week

1 Boulder Road (face) - A1 Segment 3 Rock Road (face) - A1 Boulder Rd. Co

BEYOND
SMART CITIES

3rd Party Noise & Stack Monitoring Results

Noise Monitoring Results

Client Name and the results of the noise monitoring at Al-Jaber & Partners
QEZ-3 Project

Industrial Plot (1), Near Third Crescent Street, Al-Jaber & Partners
QEZ-3 Project

1. Name of Industry : Al-Jaber & Partners QEZ-3 Project Site

2. Location : Near Third Crescent Street

3. Date of Monitoring : 20 September 2016

4. Time of Monitoring : 10:00 AM

5. Operation : Industrial water treatment operation

6. Condition of monitoring : All weather

7. Type : All weather

8. Location of monitoring : 100 m (100 meters from nearest property)

9. Type : All weather

10. Location of monitoring : 100 m (100 meters from nearest property)

Stack Monitoring Results

Industrial Plot (1), Near Third Crescent Street, Al-Jaber & Partners
QEZ-3 Project

1. Name of Industry : Al-Jaber & Partners QEZ-3 Project Site

2. Location : Near Third Crescent Street

3. Date of Monitoring : 20 September 2016

4. Time of Monitoring : 10:00 AM

5. Operation : Industrial water treatment operation

6. Condition of monitoring : All weather

7. Type : All weather

8. Location of monitoring : 100 m (100 meters from nearest property)

9. Type : All weather

10. Location of monitoring : 100 m (100 meters from nearest property)

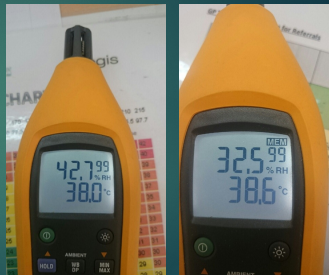
3. Exhaust Emission

- ▶ Emission Control
- ▶ Full Service Testing Station
- ▶ Vehicle inspection
- ▶ Emission test



4. Weather Monitoring

- ▶ Heat and Humidity Monitoring
- ▶ Wind Speed Monitoring



5. Hydrocarbon Spillage



6. Site Maintenance



7. Erosion and Sedimentation Control



8. Contaminated Soil



9. Dirt and Mud



10. Solid Waste



BEYOND

SMART CITIES

11. Groundwater Usage



BEYOND

SMART CITIES

AJP Reverse Osmosis Plant (Positive Impact)



04/06/2016 16:10

BEYOND

SMART CITIES

Environmental Inspection

Environmental Inspection		
Type of Inspection	Frequency	Aspects Covered
Site Environmental Inspection	Daily	Air Quality (e.g. dust, exhaust emission) Noise Hazardous Substances Dangerous Goods Soil and Groundwater Contamination Waste (e.g. collection, segregation, reuse, recycle and disposal) Flora and Fauna
Plant Inspection	Daily prior to use	Mechanical Features including Noise and Exhaust Oil, Diesel and Lubricant Leakage
Fire Safety Inspection	Monthly	General Work Area Flammable Liquid Storage Area Hazardous Substance Storage Area Compressed Gas Cylinder Storage Area Flammable/Combustible Material Storage Area Electrical Installations/Equipment Hot Work Area

BEYOND
SMART CITIES

Samples of Environmental & Fire Inspection Checklists

Environmental Inspection Checklist

Project Name: []

Client Name: []

Inspector: []

Date: []

Time: []

Location: []

Area: []

Sub Area: []

Notes: []

1. Are there any leaks?

2. Are there any odors?

3. Are there any visible emissions?

4. Are there any visible discharges?

5. Are there any visible spills?

6. Are there any visible leaks?

7. Are there any visible discharges?

8. Are there any visible spills?

9. Are there any visible leaks?

10. Are there any visible discharges?

11. Are there any visible spills?

12. Are there any visible leaks?

13. Are there any visible discharges?

14. Are there any visible spills?

15. Are there any visible leaks?

16. Are there any visible discharges?

17. Are there any visible spills?

18. Are there any visible leaks?

19. Are there any visible discharges?

20. Are there any visible spills?

21. Are there any visible leaks?

22. Are there any visible discharges?

23. Are there any visible spills?

24. Are there any visible leaks?

25. Are there any visible discharges?

26. Are there any visible spills?

27. Are there any visible leaks?

28. Are there any visible discharges?

29. Are there any visible spills?

30. Are there any visible leaks?

31. Are there any visible discharges?

32. Are there any visible spills?

33. Are there any visible leaks?

34. Are there any visible discharges?

35. Are there any visible spills?

36. Are there any visible leaks?

37. Are there any visible discharges?

38. Are there any visible spills?

39. Are there any visible leaks?

40. Are there any visible discharges?

41. Are there any visible spills?

42. Are there any visible leaks?

43. Are there any visible discharges?

44. Are there any visible spills?

45. Are there any visible leaks?

46. Are there any visible discharges?

47. Are there any visible spills?

48. Are there any visible leaks?

49. Are there any visible discharges?

50. Are there any visible spills?

51. Are there any visible leaks?

52. Are there any visible discharges?

53. Are there any visible spills?

54. Are there any visible leaks?

55. Are there any visible discharges?

56. Are there any visible spills?

57. Are there any visible leaks?

58. Are there any visible discharges?

59. Are there any visible spills?

60. Are there any visible leaks?

61. Are there any visible discharges?

62. Are there any visible spills?

63. Are there any visible leaks?

64. Are there any visible discharges?

65. Are there any visible spills?

66. Are there any visible leaks?

67. Are there any visible discharges?

68. Are there any visible spills?

69. Are there any visible leaks?

70. Are there any visible discharges?

71. Are there any visible spills?

72. Are there any visible leaks?

73. Are there any visible discharges?

74. Are there any visible spills?

75. Are there any visible leaks?

76. Are there any visible discharges?

77. Are there any visible spills?

78. Are there any visible leaks?

79. Are there any visible discharges?

80. Are there any visible spills?

81. Are there any visible leaks?

82. Are there any visible discharges?

83. Are there any visible spills?

84. Are there any visible leaks?

85. Are there any visible discharges?

86. Are there any visible spills?

87. Are there any visible leaks?

88. Are there any visible discharges?

89. Are there any visible spills?

90. Are there any visible leaks?

91. Are there any visible discharges?

92. Are there any visible spills?

93. Are there any visible leaks?

94. Are there any visible discharges?

95. Are there any visible spills?

96. Are there any visible leaks?

97. Are there any visible discharges?

98. Are there any visible spills?

99. Are there any visible leaks?

100. Are there any visible discharges?

Fire Safety Inspection Checklist

Project Name: []

Client Name: []

Inspector: []

Date: []

Time: []

Location: []

Area: []

Sub Area: []

Notes: []

1. Are there any fire hazards?

2. Are there any fire risks?

3. Are there any fire safety measures?

4. Are there any fire safety signs?

5. Are there any fire safety equipment?

6. Are there any fire safety training?

7. Are there any fire safety drills?

8. Are there any fire safety records?

9. Are there any fire safety audits?

10. Are there any fire safety reviews?

11. Are there any fire safety improvements?

12. Are there any fire safety recommendations?

13. Are there any fire safety actions?

14. Are there any fire safety follow-ups?

15. Are there any fire safety reports?

16. Are there any fire safety summaries?

17. Are there any fire safety conclusions?

18. Are there any fire safety recommendations?

19. Are there any fire safety actions?

20. Are there any fire safety follow-ups?

21. Are there any fire safety reports?

22. Are there any fire safety summaries?

23. Are there any fire safety conclusions?

24. Are there any fire safety recommendations?

25. Are there any fire safety actions?

26. Are there any fire safety follow-ups?

27. Are there any fire safety reports?

28. Are there any fire safety summaries?

29. Are there any fire safety conclusions?

30. Are there any fire safety recommendations?

31. Are there any fire safety actions?

32. Are there any fire safety follow-ups?

33. Are there any fire safety reports?

34. Are there any fire safety summaries?

35. Are there any fire safety conclusions?

36. Are there any fire safety recommendations?

37. Are there any fire safety actions?

38. Are there any fire safety follow-ups?

39. Are there any fire safety reports?

40. Are there any fire safety summaries?

41. Are there any fire safety conclusions?

42. Are there any fire safety recommendations?

43. Are there any fire safety actions?

44. Are there any fire safety follow-ups?

45. Are there any fire safety reports?

46. Are there any fire safety summaries?

47. Are there any fire safety conclusions?

48. Are there any fire safety recommendations?

49. Are there any fire safety actions?

50. Are there any fire safety follow-ups?

51. Are there any fire safety reports?

52. Are there any fire safety summaries?

53. Are there any fire safety conclusions?

54. Are there any fire safety recommendations?

55. Are there any fire safety actions?

56. Are there any fire safety follow-ups?

57. Are there any fire safety reports?

58. Are there any fire safety summaries?

59. Are there any fire safety conclusions?

60. Are there any fire safety recommendations?

61. Are there any fire safety actions?

62. Are there any fire safety follow-ups?

63. Are there any fire safety reports?

64. Are there any fire safety summaries?

65. Are there any fire safety conclusions?

66. Are there any fire safety recommendations?

67. Are there any fire safety actions?

68. Are there any fire safety follow-ups?

69. Are there any fire safety reports?

70. Are there any fire safety summaries?

71. Are there any fire safety conclusions?

72. Are there any fire safety recommendations?

73. Are there any fire safety actions?

74. Are there any fire safety follow-ups?

75. Are there any fire safety reports?

76. Are there any fire safety summaries?

77. Are there any fire safety conclusions?

78. Are there any fire safety recommendations?

79. Are there any fire safety actions?

80. Are there any fire safety follow-ups?

81. Are there any fire safety reports?

82. Are there any fire safety summaries?

83. Are there any fire safety conclusions?

84. Are there any fire safety recommendations?

85. Are there any fire safety actions?

86. Are there any fire safety follow-ups?

87. Are there any fire safety reports?

88. Are there any fire safety summaries?

89. Are there any fire safety conclusions?

90. Are there any fire safety recommendations?

91. Are there any fire safety actions?

92. Are there any fire safety follow-ups?

93. Are there any fire safety reports?

94. Are there any fire safety summaries?

95. Are there any fire safety conclusions?

96. Are there any fire safety recommendations?

97. Are there any fire safety actions?

98. Are there any fire safety follow-ups?

99. Are there any fire safety reports?

100. Are there any fire safety summaries?

BEYOND
SMART CITIES

Environmental Monitoring

Environmental Aspect	Type of Monitoring	Frequency	Criteria
Dust Emission	Visual and 3rd Party	Daily As required (Area)Monthly	Dust generation at source Visible dust plume
	Static Monitoring (Real Time) AQM-60	Continuous (24 hrs cycle)	Concentration of PM10 in microgram/cubic meter
Exhaust Emission	Visual 3rd Party	Daily (as part of Site Environmental Inspection) As required (Yearly)	Unusual smoke emission from plant, generator and vehicle exhausts
Ground Water (Dewatering)	Visual	As required Weekly(Monthly)	Appearance Turbidity
	Volume	As and when applicable	Volume of water pumped from wells to lagoons Volume of water pumped from lagoons to water truck
	Water quality (3rd Party Laboratory analysis of samples)	Before dewatering of trenches and after holding in lagoons	Appearance Odor pH Total Suspended Solids Total Dissolved Solids Turbidity Total Alkalinity Chemical Oxygen Demand Oil and Grease

BEYOND
SMART CITIES

Environmental Monitoring

Environmental Aspect	Type of Monitoring	Frequency	Criteria
Spillage of Hydrocarbons and Chemicals	Visual	Daily (as part of Site Environmental Inspection)	Leakage from plant and equipment Stains on ground surface
Contaminated Soil	Visual	During excavation	Discolored soil Strong odor Oily sheen
	Soil contamination (laboratory analysis of samples)	As and when potentially contaminated soil is exposed	Presence and concentration of hydrocarbons and hazardous compounds
Noise Emission	Noise level at source and at receiver point	As and when noisy activities are undertaken (Weekly internal and Monthly 3rd Party)	Noise level in dBA
Waste	Visual	Daily (as part of Site Environmental Inspection)	Waste collections skips
	Volume	Monthly	Volume reused Volume recycled Volume disposed
Energy and Water Consumption	Volume	Monthly	Volume of water consumed Volume of fuel consumed

Environmental Management Training



Spill Management Training on Site



Environmental Friendly Initiatives

► Tiny Lizard Relocation From QEZ-3 Site to MME Natural Reserve



Manual digging of burrows at Al-Ariq Natural Reserve.

► Existing Tree Relocation to Al-Wakra Municipality Yard



Tree Delivery Note		
Delivery Note No. 001	Date: 20/05/2018	
Item	QTY	
1. Prosopis juliflora	111	
Total QTY delivered		111
<p>Al Wakra Municipality Name: <i>Al Wakra Municipality</i> Signature: <i>[Signature]</i> Date: <i>20/05/2018</i></p> <p>Municipality Central Storage Name: <i>[Signature]</i> Signature: <i>[Signature]</i> Date: <i>20/05/2018</i></p> <p>AL WAKRA & DISTRICTS Name: <i>[Signature]</i> Signature: <i>[Signature]</i> Date: <i>20/05/2018</i></p>		

Tree Delivery Note		
Delivery Note No. 002	Date: 20/05/2018	
Item	QTY	
1. Prosopis juliflora	67	
2. Prosopis juliflora	1	
3. Prosopis juliflora	1	
4. Prosopis juliflora	4	
Total QTY delivered		73
<p>Al Wakra Municipality Name: <i>Al Wakra Municipality</i> Signature: <i>[Signature]</i> Date: <i>20/05/2018</i></p> <p>Municipality Central Storage Name: <i>[Signature]</i> Signature: <i>[Signature]</i> Date: <i>20/05/2018</i></p> <p>AL WAKRA & DISTRICTS Name: <i>[Signature]</i> Signature: <i>[Signature]</i> Date: <i>20/05/2018</i></p>		

BSC QEZ-3 Site Office Land scape Works



