

**APPROVED “DEFINED SCOPES OF PRACTICE”  
for  
Registered Professional Technologists (Engineering)**

Following are examples of defined scopes of engineering practice that the APEGGA Board of Examiners has approved for Registered Professional Technologists (Engineering) [R.P.T.(Eng.)]. Scopes for individuals will vary, even within the same discipline; however, these scopes may be used as a guideline in developing scopes of practice. **It is important that the defined scope of practice accurately describes the applicant’s knowledge and abilities, and falls within the scope of “engineering”.**

1. “Design of low voltage power, control, and instrumentation system for oil and gas production and storage facilities.”
2. “Designing and directing the construction and maintenance of structures for the electric utility transmission, distribution and street lighting systems.”
3. “Heavy oil facilities – Scope development, cost estimating, engineering design and surveillance of construction to optimize and maintain fitness-for-purpose facilities.”
4. “Design of medium and low-voltage electrical power and electrical control systems for oil and gas facilities.”
5. “Design, inspect, test and report on fire protection suppression systems for industrial, commercial and residential facilities.”
6. “The design of instrumentation systems pertaining to processes within the oil and gas industry.”
7. “Design of sanitary sewage collection systems, storm water collection systems and storm water management systems.”
8. “Design of supervisory control and data acquisition, instrumentation and control, communications and low voltage electrical power systems for crude oil and natural gas facilities.”
9. “Mechanical Engineering: Heating, ventilation, air conditioning, refrigeration, plumbing systems and services for commercial, industrial and institutional facilities.”
10. “Design, installation, commissioning and analysis of instrumentation and electrical control systems for natural gas, petroleum, industrial and manufacturing facilities.”
11. Coordinate the design and implementation of oil and gas well drilling, abandonment, work-over and completion projects as well as pipeline and facilities construction projects. Coordinate production operations of oil and gas wells, pipelines and facilities.
12. Economic evaluations of proven and probable oil, natural gas, and by-products reserves, as well as assessments of unproven resources. It includes evaluating various secondary and tertiary recovery schemes.
13. Design and direct fabrication and construction of piping systems and facilities for gas transmission and distribution systems limited to valve assemblies, pig receiving and launching installations, measurement and pressure regulating stations.

\*\*\*\**Since No. 9 was approved, all subsequent scopes using a discipline will begin in the following manner  
“Within the discipline of .....”.*

.....over

14. Managing, reporting and directing the development, construction, maintenance and operation of civil engineering works. Design of earth works; roads; railroads facilities; water supply, treatment and distribution; sewage and storm drainage collection and treatment systems.
15. Engineering of Instrumentation and Control Systems for Industrial Facilities
16. Design of control and instrumentation systems for liquid and natural gas transportation systems.
17. Initiate, develop and provide detailed engineering design plans for the provisioning of Access Transport Network telecommunication facilities.
18. Design, Project Management, Procurement, Programming & configuration, Commissioning, Start Up and Maintenance of Control Systems, Safety Shut Down Systems and Data Communication Systems as related to the control of industrial processing and manufacturing facilities.
19. Designs, studies, calculates, specifies and prepares tender documents and technical reports for electrical systems as they apply to industrial, institutional, and commercial buildings and structures.
20. Drilling engineering – for Oil and Gas Wells in Western Canada.
21. Control system design for Distributed Control Systems (DCS) and Programmable Logic Controllers (PLC) systems.
22. Design and preliminary investigations of small to medium-sized community water-supply systems, related to intakes, infiltration galleries, pumping facilities, and storage, including the preparation of contract documents. Design and preliminary investigations of small to medium-sized community sanitary and storm sewer systems, related to gravity lines, lift stations, force mains, sewage lagoons, and storm water ponds, including the preparation of contract documents.
23. Within the discipline of Mechanical Engineering: HVAC, plumbing, site services and fire protection for industrial and commercial buildings.
24. Within the discipline of Mechanical Engineering: Design, inspection, operation, and maintenance of stationary equipment for refineries and gas plants.
25. Within the discipline of Mechanical Engineering: Design and specifications of pressure vessels, heat exchangers, storage tanks, limited to design under ASME Sec. VIII, Div. 1.
26. Within the discipline of Mechanical Engineering: Design and selection of equipment for conventional oil production facilities.
27. Reporting on and designing: rural and minor urban roads; roads and site grading for surface drainage within subdivision developments.
28. Within the discipline of Petroleum Engineering: - Design and implement conventional and underbalanced drilling programs and equipment.
29. The design and procurement of piping systems and material specifications for, and the operation of oil and gas production facilities.
30. Within the discipline of Petroleum Engineering: Coordinate and design implementation of oil and gas well abandonments, work overs and completion projects as well as pipeline and facility construction projects – Coordinate production of oil and gas wells.
31. Managing, reporting, and directing the construction, maintenance and operation of civil engineering works. Design of earth works; roads; sanitary sewers and storm drainage collection systems.
32. The design, application and management of corrosion control programs in oil and gas wells, gathering systems, gas plants and distribution services.

33. Design and construction of gathering, distribution, and injection pipeline systems for oil, gas, water and multi-phase fluids, and associated pumping, treating, and compression facilities in the oil and gas industry.
34. Planning, design and construction supervision for sewer collection and treatment facilities, water distribution and treatment facilities and road ways in municipalities and for land development projects.
35. Within the discipline of Electrical Engineering – For the evaluation, auditing, reporting on, planning, design, safety code inspection, commissioning, and start-up of extra low, low and high voltage (up to 25 kv) systems related to industrial facilities.
36. Design and construction supervision of instrumentation and controls systems in industrial petrochemical plants.
37. Design of and reporting on storm, sanitary and water supply systems, storm management facilities and roads for municipal works and site grading for commercial and residential developments
38. Design and construction involved in the engineering modification of natural gas compression equipment.
39. Design and implementation of low and medium voltage electrical power systems, instrumentation and control systems for industrial facilities.
40. Design, reporting and project management of high pressure sweet natural gas: - pipeline projects, - pipeline integrity programs.
41. Electric Utility Systems: - reporting on, directing and supervision of substation, transmission and distribution projects. – design of telecontrol systems for these projects.
42. Managing, reporting and directing the construction of municipal rehabilitation of land development projects. Design of related roadways and local sewer and water distribution systems.
43. Designing, estimating, preparing contract plans and project management for the design phase of urban roadways and related facilities.
44. Pipeline Engineering – Design of pipeline, pump station and storage facilities for low and high vapour pressure liquid transportation systems. Rehabilitation of pipeline, pump station and pipeline storage facilities.
45. Reporting on, reviewing and evaluating primary reserves and economic worth of oil and gas properties in Western Canada.
46. Conduct economic evaluations and assessments and prepare production forecasts for oil and gas properties.
47. Design, analyze and report on the economic recovery of hydrocarbon resources using conventional reservoir engineering techniques.
48. Design, reporting on and commissioning of mechanical systems for institutional, industrial, commercial and residential buildings (HVAC, plumbing systems, medical gas systems, fire sprinkler and hose standpipe systems and on-site services).
49. Design, specification and installation of instrumentation and control systems for oil and gas production facilities.
50. Mechanical Engineering for the design and project engineering of oil and gas production facilities, flow lines, and well sites.
51. Managing, reporting and directing the development, construction, maintenance and operation of civil engineering works. Designing of earthworks for site grading and roads; water distribution; sanitary and storm sewer collection systems.

52. Operations Engineering-supervisory control and data acquisition solutions for the natural gas transmission systems.
53. Design and implementation of instrumentation and control systems for industrial applications.
54. Managing, reporting and directing the development, construction, maintenance and operation of civil/municipal engineering works. Design of earthwork, urban and rural roadway improvements, water supply, treatment and distribution systems, wastewater collection, treatment and disposal systems.
55. Within the discipline of Petroleum Engineering: design surface and subsurface wellsite facilities; design and direct implementation of well workover programs; design, implement and analyze reservoir evaluation and exploitation programs.
56. Managing, reporting on and development of maintenance, operations and capital programs for municipal works and services.
57. Managing, reporting on and directing the development, construction and operation of civil engineering works. Design of roads, light rail tracks, storm and sanitary sewers, local water mains and earthworks.
58. Design of low voltage power and control systems for oil and gas, industrial and municipal facilities.
59. Design, construction and maintenance of pressure piping within the jurisdiction of A.S.M.E. B 31.3 and B. 31.3G up to 750 psig and 400° C.
60. Within the discipline of Mechanical Engineering – Design, manage and supervise the construction of oil and gas process facilities and associated gathering systems.
61. Within the discipline of Mechanical Engineering: design, manage and direct the development, installation, upgrading and maintenance of HVAC equipment for new and existing buildings, as classified by the National Building Code: Group C up to 250 M<sup>2</sup> and Group F3 up to 500 M<sup>2</sup>.
62. Perform aeronautical product design activities that include designing, substantiating, reporting on and directing the installation or modifications of avionics and electrical systems in aircraft.
63. Specifying the design, fabrication and inspection criteria for the repair, replacement or modification of oil and gas processing facilities equipment and piping system components.
64. Reporting on, designing and directing the construction of: irrigation/water resources distribution systems including, open channels, pipelines and hydraulic structures.
65. Within the discipline of mechanical engineering – project management and design of oil and gas production facilities.
66. Within the discipline of Petroleum Engineering: Manage, design and implement drilling, completions, workovers, abandonments of oil and gas wells, associated pipeline and facility construction projects. Manage and coordinate production operations of oil and gas wells and associated facilities.
67. Within the discipline of Petroleum Engineering: evaluating and reporting on oil and gas reservoirs for hydrocarbon reserves, production rates and economic values.
68. Reporting on and directing the construction of water resources and irrigation works. Design of related earthworks and hydraulics for pipelines, open channels and control structures.
69. Designing and managing the construction and maintenance of facilities for the electric utility transmission, substation and distribution systems.

70. Within the discipline of Mechanical Engineering: a) Design and project engineering of oil & gas facilities, flow lines, and well sites. b) Design and project engineering for materials processing and handling.
71. Reporting on, advising on, evaluating, designing, preparing plans and specifications for, or directing the construction, technical inspection, repair, maintenance and operation, of electrical equipment, protection, control and distribution systems.
72. Managing and reporting on the construction of civil engineering works. Design of site grading, roads, rail spurs, sanitary sewers, water mains and storm drainage collection systems within industrial facilities.
73. Within the discipline of mechanical engineering: Design and fabrication of oil and gas wellhead and Christmas tree equipment.
74. Design, equipment specification, configuration, installation, commissioning and maintenance of control, safety shutdown and data communication systems for industrial processing and manufacturing facilities.
75. Within the discipline of mechanical engineering: plumbing, fire protection, HVAC, and on-site services for institutional, industrial, residential and commercial buildings.
76. Design, specification and installation of instrumentation and control systems for industrial facilities.
77. Within the discipline of Mechanical Engineering: Project management and design of natural gas custody transfer measurement, pressure control, pipeline tie-in facilities and associated instrumentation.
78. Within the discipline of Petroleum Engineering: Design and implementation of workovers, completions and artificial lift systems.
79. Within the discipline of Mechanical Engineering: Design natural gas measurement, pressure control and distribution systems.
80. Within the discipline of chemical engineering: evaluate, advise, and report on the operations, control and optimization of industrial water treatment and crude oil wastewater treatment facilities.
81. Project management for the construction of waterworks facilities. Design modifications to existing water pump stations, storage reservoirs, water treatment plants and associated facilities.
82. Design, specification and implementation of instrumentation, control and shutdown systems for industrial facilities.
83. Reporting on, designing, and directing the construction and maintenance of electrical utility transmission and distribution line facilities.
84. Design, specification and installation of instrumentation, control and low voltage power systems for industrial facilities.
85. Reporting on, designing, and directing the construction and maintenance of electrical utility transmission and distribution line facilities.
86. Design of electrical systems for: - Gas processing and compression facilities; -Conventional and heavy oil field production facilities; - Material handling systems for thermal power generating facilities.
87. Designing of electrical distribution and street lighting systems. Managing and directing the construction and maintenance of electrical transmission, distribution, and street lighting facilities.

88. Reporting on, preparing specifications for and the design of pressure piping systems for Oil and Gas facilities.
89. Design and implementation of instrumentation and control systems for petrochemical facilities.
90. Reporting on, advising on, evaluating, preparing inspection plans and directing the technical inspection of boilers, pressure vessels and pressure piping systems.
91. Within the discipline of Mechanical Engineering: Design and inspection of piping and pipeline gathering systems for oil and gas facilities.
92. Within the discipline of Electrical Engineering: Design of control and low and medium voltage power systems for commercial, institutional and industrial facilities.
93. Within the discipline of Petroleum Engineering: Design and implementation of oil and gas well drilling, abandonment, work-over, and completion projects. Coordinate production operations of oil and gas wells and associated pipeline facilities.
94. Within the discipline of Petroleum Engineering: Planning, evaluating, advising on and coordinating the development of new and existing oil and gas reservoirs.
95. The Design of Instrumentation and Control Systems for Industrial Facilities.
96. Within the discipline of Mechanical Engineering: Design and coordinate the maintenance and optimization of existing surface facilities for oil and steam production.
97. Within the discipline of Mechanical Engineering: Design and construction management of heating, ventilation, air conditioning, plumbing, piping, fire protection and associated controls, for institutional, multi-unit residential, commercial, recreational and industrial facilities.
98. Within the discipline of Petroleum Engineering: \*Design and manage well completion, workovers and artificial lift facilities for conventional and thermal heavy oil projects. \*Manage production operations for conventional and thermal heavy oil facilities.
99. Within the discipline of Civil Engineering: Geometric design and reporting on construction of local roads and highways.
100. Design, specification and installation of instrumentation and control systems for oil, natural gas and industrial facilities.
101. Within the discipline of Mechanical Engineering: \*Design of oil and gas processing equipment.  
\*Manage, coordinate and implement the fabrication and supply of oil and gas processing equipment.
102. Within the discipline of Petroleum Engineering: Planning, evaluating and advising on the appraisal, development and production of new and existing oil and gas reservoirs.
103. Within the discipline of Chemical Engineering: Manage, supervise and participate in the development, evaluation, design, implementation, monitoring and optimization of specialty chemical treatment programs utilized within the oil and gas industry.
104. The design and management of corrosion control programs and preparation of related material specifications for oil and gas wells, gathering systems and associated facilities.
105. Design, specifications and installation of control and low voltage power systems for natural gas and industrial facilities.

106. Within the discipline of Electrical Engineering: Planning and designing telecommunication networks, which involve fiber optic transmission, digital multiplex and digital cross, connect systems.
107. Within the discipline of Petroleum Engineering: Coordinate and implement drilling, completion, work-over, abandonments and lease reclamations. Coordinate production operations of oil wells and associated pipelines and facilities.
108. Within the discipline of Petroleum Engineering: \*Economic evaluations of hydrocarbon reserves including secondary schemes. \*Coordinate the development and implementation of oil and gas well drilling, abandonment, workover and completion projects as well as gathering pipelines and facility construction projects. Coordinate production operations of oil and gas wells, pipelines and facilities.
109. Within the discipline of Petroleum Engineering: \* Developing, coordinating and implementing drilling, completion and production programs to optimize production of oil and gas assets. \*Economic evaluation of hydrocarbon reserves.
110. Managing, reporting and directing the construction, maintenance and operation of municipal civil engineering works. Design of local roads, storm and sanitary sewer collections systems, water distribution mains and earthworks for site grading.
111. Managing, reporting and directing the construction of land development projects. Design of earthworks, local roads, sanitary sewers, storm drainage collection and water distribution systems.
112. Design, specification and implementation of instrumentation and control systems for industrial facilities.
113. Design and implementation of low and medium voltage electrical power systems, instrumentation and control systems, supervisory control and data acquisition systems for industrial facilities.
114. Within the discipline of Petroleum Engineering: \*Analyze and report on the production testing of oil and gas wells. \* Design, analyze and report on oilfield artificial lift systems.
115. Within the discipline of Petroleum Engineering: \*Design and manage well completion, workovers and artificial lift facilities for conventional and heavy oil projects. \*Manage and coordinate production operations of oil and gas wells and associated facilities.
116. Design, direction, evaluation and reporting of inspection, maintenance and corrosion mitigation plans within oil and gas facilities and refineries. Subsequent re-rating, approval to operate and alteration/repair of stationary process equipment, associated pressure piping and gathering system pipelines.
117. Within the discipline of Mechanical Engineering: Design, specify and direct the construction, modification and maintenance of mechanical equipment and materials handling systems for industrial manufacturing facilities.
118. Within the discipline of Mechanical Engineering: Design and specification of heating, ventilation, air conditioning, refrigeration and plumbing systems for industrial, commercial, institutional and residential facilities.
119. Design, analyze and prepare general layout arrangements for structures and foundations associated with power transmission lines, substations, telecommunication towers and small electrical control buildings.
120. Within the discipline Mechanical Engineering: Design, reporting on, and commissioning mechanical systems (HVAC, plumbing, medical gases, site services, and fire protection) for institutional, industrial, commercial and residential facilities.

121. Managing, reporting and directing construction for civil engineering works. Design of local roads, water distribution systems, sanitary and storm sewer collection systems, and earthworks for site grading.
122. Design and implementation of instrumentation and control systems for refinery facilities.
123. Managing, reporting on and directing the development and construction of civil engineering works. Design of water supply and distribution systems, sanitary sewer systems, storm sewer systems, storm water management facilities, earthworks, and local roads.
124. Within the discipline of Electrical Engineering: Design and implementation of electrical heat tracing systems for industrial facilities.
125. Within the discipline of Electrical Engineering: Design of supervisory control, Data Acquisition, Protection and Communication systems for low voltage electrical power systems within industrial facilities.
126. Within the discipline of Chemical Engineering: Design and troubleshooting of gas plants and gas and oil gathering systems.
127. Within the discipline of Electrical Engineering: Planning, design, specification, analysis, and maintenance of software and hardware for audio surveillance intercept facilities.
128. Design, specification and implementation of instrumentation and control systems for petro-chemical facilities.
130. Within the discipline of Electrical Engineering: Design, reporting, inspection and implementation of electrical utility power distribution systems including protection and control.
131. Within the discipline of Petroleum Engineering: \*Design and implement oil and gas well workovers, completion and artificial lift projects. \* Design and coordinate production operations of oil and gas wells and associated gathering facilities. \* Develop and implement reservoir depletion programs.
132. Design of low voltage power and control systems for water and wastewater facilities.
133. Design, specification, configuration and installation of instrumentation and control systems for industrial facilities.
134. Design, calculation, procedures, inspection, reporting and failure analysis for weldability of materials.
135. Within the discipline of Civil Engineering: Managing and reporting on the construction and rehabilitation of pavement structures for highways and airports. Design of related soils, asphalt and concrete pavement structures.
136. Within the discipline of Civil Engineering: \*Managing, reporting and directing the construction and operation of irrigation and water resources distribution systems. \* Design of open channels, irrigation pipelines and associated hydraulic structures.
137. Design, specification and implementation of instrumentation and control systems for petrochemical facilities.