

Consolidated List of Repairs for Safe Defueling

Repair #	Location	Repair Type (Structural Support, Assessment/Inspection/Calibration, Pipeline, Improvements)	Brief Description
1	Throughout Red Hill	Assessment/Inspection/Calibration	Perform surge analysis on fuel pipelines
2	Tank Gallery, Harbor Tunnel	Improvements	Install additional Pressure Indicating Transmitters (PITs) on piping
3	Tank Gallery, Underground Pump House	Assessment/Inspection/Calibration	Validate pressure rating on dresser couplings
4	Throughout Red Hill	Assessment/Inspection/Calibration	Validate pipeline pressure ratings
5	Tank Gallery	Improvements	Add equalization line to fuel pipes
6	Tank Gallery	Assessment/Inspection/Calibration	Ensure Oil Tight Door is functional
7	Throughout Red Hill	Assessment/Inspection/Calibration	Evaluate underlying cause(s) of pipeline sag
8	Tank Gallery	Pipeline	Provide welded pup replacement on JP-5 line
9	Tank Gallery	Improvements	Design pipeline system to withstand repeat surge event
10	Tank Gallery	Structural Support	Provide lateral restraint on JP-5 Line
11	Tank Gallery	Structural Support	Provide lateral restraint on F-24 Line
12	Tank Gallery	Improvements	Provide protection around valve to prevent damage
13	Tank Gallery	Structural Support	Repair Pipeline Support
14	Tank Gallery	Structural Support	Repair Pipeline Support
15	Tank Gallery	Structural Support	Repair Pipeline Support
16	Tank Gallery	Structural Support	Repair Pipeline Support
17	Tank Gallery	Structural Support	Repair Pipeline Support
18	Tank Gallery	Structural Support	Install pipeline lateral support
19	Tank Gallery	Structural Support	Install pipeline lateral support
20	Tank Gallery	Structural Support	Repair pipe cradle
21	Tank Gallery	Pipeline	Install bypass on pipeline

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22	Tank Gallery	Pipeline	Install bypass on pipeline
23	Tank Gallery	Pipeline	Install bypass on pipeline
24	Tank Gallery	Pipeline	Install bypass on pipeline
25	Tank Gallery	Structural Support	Install pipeline supports
26	Tank Gallery	Structural Support	Install pipeline supports
27	Tank Gallery	Pipeline	Install new pipe section
28	Tank Gallery	Pipeline	Install new pipe section
29	Tank Gallery	Structural Support	Install pipeline supports
30	Tank Gallery	Structural Support	Install pipeline supports
31	Tank Gallery	Pipeline	Replace pipe section
32	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate FOR line integrity
33	Harbor Tunnel	Pipeline	Repair FOR pipe section
34	North Road	Repair pipe sections	Repair pipe sections
35	North Road	Repair pipe sections	Repair pipe sections
36	Tank Gallery	Improvements	Install threaded caps on pipeline
37	Tank Gallery	Pipeline	Replace section of F-24 pipeline
38	Tank Gallery	Pipeline	Provide threaded plugs on valves
39	Tank Gallery	Structural Support	Realign pipeline supports
40	Tank Gallery	Structural Support	Install pipeline supports
41	Tank Gallery	Structural Support	Install pipeline supports
42	Tank Gallery	Pipeline	Replace pipeline valve

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43	Tank Gallery	Structural Support	Tighten fasteners on F-24 pipeline
44	Tank Gallery	Pipeline	Replace pipeline fasteners
45	Harbor Tunnel, Underground Pump House	Pipeline	Replace valves
46	Harbor Tunnel, Underground Pump House	Pipeline	Replace valves
47	Harbor Tunnel, Underground Pump House	Pipeline	Replace pipeline fasteners
48	Harbor Tunnel	Pipeline	Replace valves
49	Underground Pump House	Pipeline	Install pipe plugs
50	Underground Pump House	Pipeline	Repair pipe connections
51	Underground Pump House	Assessment/Inspection/Calibration	Evaluate conduit connections
52	Underground Pump House	Assessment/Inspection/Calibration	Perform calibration of all temperature and pressure devices in the UGPH.
53	Underground Pump House	Pipeline	Perform maintenance on valves
54	Underground Pump House	Pipeline	Provide threaded plug on F-24 line vent
55	Underground Pump House	Pipeline	Provide threaded plug on F-24 line vent
56	Underground Pump House	Pipeline	Perform maintenance on valves
57	Underground Pump House	Pipeline	Install valve fastener
58	Harbor Tunnel	Structural Support	Repair pipe supports
59	Harbor Tunnel	Structural Support	Repair pipe supports
60	Harbor Tunnel	Structural Support	Repair pipe supports
61	Harbor Tunnel	Structural Support	Repair pipe supports
62	Harbor Tunnel	Structural Support	Repair pipe supports
63	Harbor Tunnel	Structural Support	Repair pipe supports

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64	Harbor Tunnel	Structural Support	Repair pipe supports
65	Harbor Tunnel	Structural Support	Repair pipe supports
66	Harbor Tunnel	Structural Support	Repair pipe supports
67	Harbor Tunnel	Structural Support	Repair pipe supports
68	Harbor Tunnel	Structural Support	Repair pipe supports
69	Harbor Tunnel	Structural Support	Repair pipe supports
70	Harbor Tunnel	Structural Support	Repair pipe supports
71	Harbor Tunnel	Structural Support	Repair pipe supports
72	Harbor Tunnel	Structural Support	Repair pipe supports
73	Harbor Tunnel	Structural Support	Repair pipe supports
74	Harbor Tunnel	Structural Support	Repair pipe supports
75	Harbor Tunnel	Structural Support	Repair pipe supports
76	Harbor Tunnel	Structural Support	Repair pipe supports
77	Harbor Tunnel	Structural Support	Repair pipe supports
78	Harbor Tunnel	Structural Support	Repair concrete
79	Harbor Tunnel	Structural Support	Repair concrete
80	Tank Gallery	Pipeline	Install threaded caps on pipeline
81	Tank Gallery	Pipeline	Install plug on high point vent
82	Tank Gallery	Pipeline	Install plugs on valves
83	Harbor Tunnel	Pipeline	Inspect JP-5 pipeline
84	Harbor Tunnel, Underground Pump House	Pipeline	Replace valves

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85	Harbor Tunnel	Pipeline	Replace valves
86	Underground Pump House	Pipeline	Install pipe plugs
87	Underground Pump House	Assessment/Inspection/Calibration	Evaluate threaded connections
88	Underground Pump House	Assessment/Inspection/Calibration	Evaluate conduit connections
89	Underground Pump House	Improvements	Perform calibration of all temperature and pressure devices in the UGPH.
90	Underground Pump House	Pipeline	Service valves
91	Underground Pump House	Pipeline	Service valves
92	Underground Pump House	Pipeline	Replace valve
93	Underground Pump House	Pipeline	Service valve
94	Underground Pump House	Pipeline	Install plug
95	Tank Gallery	Structural Support, Pipeline	Replace pipe sections and pipe supports
96	Tank Gallery	Pipeline	Replace conduit
97	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate bell joint
98	Underground Pump House	Improvements	Provide covers on electrical fittings
99	Underground Pump House	Improvements	Provide covers on electrical fittings
100	Underground Pump House	Assessment/Inspection/Calibration	Evaluate valves
101	Underground Pump House	Assessment/Inspection/Calibration	Evaluate threaded connections
102	Underground Pump House	Pipeline	Replace fasteners
103	Underground Pump House	Assessment/Inspection/Calibration	Evaluate conduit connections
104	Underground Pump House	Improvements	Perform calibration of all temperature and pressure devices in the UGPH.

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105	Underground Pump House	Pipeline	Service valves
106	Underground Pump House	Pipeline	Install wheel nut
107	Underground Pump House	Pipeline	Install studs
108	Underground Pump House	Pipeline	Service valves
109	Underground Pump House	Pipeline	Replace fasteners
110	Underground Pump House	Pipeline	Install plugs
111	Tank Gallery	Pipeline	Install plug
112	Tank Gallery	Improvements	Replace pressure gage
113	Tank Gallery	Pipeline	Replace FOR pipe section
114	Tank Gallery	Pipeline	Replace fastener
115	Tank Gallery	Pipeline	Replace fastener
116	Tank Gallery	Pipeline	Service valve
117	Tank Gallery	Pipeline	Replace FOR pipe sections
118	Tank Gallery	Assessment/Inspection/Calibration	Evaluate sample pipes
119	Tank Gallery	Pipeline	Replace fasteners and provide cap
120	Tank Gallery	Pipeline	Repair pipe section
121	Tank Gallery	Pipeline	Tighten pipe fastener
122	Tank Gallery	Pipeline	Install plug
123	Lower Access Tunnel	Pipeline	Replace camlock cap and install fasteners
124	Lower Access Tunnel	Pipeline	Replace camlock cap and install fasteners
125	Lower Access Tunnel	Assessment/Inspection/Calibration	Evaluate condition of FOR line section

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126	Lower Access Tunnel	Pipeline	Install plug
127	Lower Access Tunnel	Pipeline	Install plug
128	Lower Access Tunnel	Pipeline	Repair pipe
129	Lower Access Tunnel	Pipeline	Re-plumb relief valve
130	Lower Access Tunnel	Pipeline	Tighten fastener on valve
131	Lower Access Tunnel	Pipeline	Re-plumb relief valve
132	Lower Access Tunnel	Structural Support	Replace pipe support
133	Lower Access Tunnel	Structural Support	Replace pipe support
134	Lower Access Tunnel	Structural Support	Replace pipe support
135	Lower Access Tunnel	Structural Support	Replace pipe support
136	Lower Access Tunnel	Structural Support	Replace pipe support
137	Lower Access Tunnel	Structural Support	Replace pipe support
138	Lower Access Tunnel	Structural Support	Replace pipe support
139	Lower Access Tunnel	Structural Support	Modify pipe support
140	Lower Access Tunnel	Structural Support	Modify pipe support
141	Lower Access Tunnel	Structural Support	Modify pipe support
142	Harbor Tunnel	Structural Support	Modify pipe support
143	Harbor Tunnel	Structural Support	Modify pipe support
144	Tank Gallery	Pipeline	Replace gate valve
145	Fueling Pier	Pipeline	Replace boot seals
146	Fueling Pier	Pipeline	Replace boot seals

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147	Fueling Pier	Pipeline	Replace boot seals
148	Fueling Pier	Pipeline	Replace boot seals
149	Fueling Pier	Pipeline	Replace boot seals
150	Fueling Pier	Pipeline	Replace boot seals
151	Fueling Pier	Pipeline	Replace boot seals
152	Fueling Pier	Pipeline	Replace boot seals
153	Fueling Pier	Pipeline	Replace boot seals
154	Fueling Pier	Pipeline	Replace boot seals
155	Fueling Pier	Pipeline	Replace boot seals
156	Fueling Pier	Pipeline	Replace boot seals
157	Fueling Pier	Pipeline	Replace boot seals
158	Fueling Pier	Pipeline	Replace boot seals
159	Fueling Pier	Pipeline	Replace boot seals
160	Fueling Pier	Pipeline	Replace boot seals
161	Fueling Pier	Pipeline	Replace boot seals
162	Fueling Pier	Pipeline	Replace boot seals
163	Fueling Pier	Pipeline	Replace boot seals
164	Fueling Pier	Pipeline	Replace boot seals
165	Fueling Pier	Pipeline	Replace boot seals
166	Fueling Pier	Pipeline	Replace boot seals
167	Fueling Pier	Pipeline	Replace boot seals

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168	Fueling Pier	Pipeline	Replace boot seals
169	Tank Gallery	Pipeline	Replace gasket
170	Tank Gallery	Assessment/Inspection/Calibration	Evaluate pipe section
171	Tank Gallery	Assessment/Inspection/Calibration	Evaluate pipe section
172	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
173	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
174	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
175	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
176	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
177	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
178	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
179	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
180	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
181	Lower Access Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
182	Harbor Tunnel	Pipeline	Replace pipe section
183	Harbor Tunnel	Pipeline	Re-anchor pipe section
184	Lower Access Tunnel	Pipeline	Re-anchor pipe section
185	Tank Gallery	Assessment/Inspection/Calibration	Evaluate pipe section
186	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
187	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
188	Harbor Tunnel	Assessment/Inspection/Calibration	Replace pipe section

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189	Tank Gallery	Assessment/Inspection/Calibration	Evaluate pipe section
190	Tank Gallery	Assessment/Inspection/Calibration	Evaluate pipe section
191	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
192	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
193	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
194	Harbor Tunnel	Pipeline	Install pipe clamp
195	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
196	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
197	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
198	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
199	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
200	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
201	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
202	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
203	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
204	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
205	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
206	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
207	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
208	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
209	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section

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210	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
211	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
212	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
213	Lower Access Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
214	Lower Access Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
215	Lower Access Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
216	Lower Access Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
217	Lower Access Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
218	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
219	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
220	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
221	Harbor Tunnel	Pipeline	Install pipe clamp
222	Lower Access Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
223	Lower Access Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
224	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
225	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
226	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
227	Tank Gallery	Assessment/Inspection/Calibration	Evaluate pipe section
228	Tank Gallery	Assessment/Inspection/Calibration	Evaluate pipe section
229	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section
230	Harbor Tunnel	Assessment/Inspection/Calibration	Evaluate pipe section

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231	Tank Gallery	Structural Support	Install shims on pipe supports
232	Tank Gallery	Structural Support	Install shims on pipe supports
233	Tank Gallery	Structural Support	Replace grout
234	Tank Gallery	Structural Support	Replace anchor bolt
235	Tank Gallery	Pipeline	Replace pipe section
236	Tank Gallery	Pipeline	Replace pipe section
237	Tank Gallery	Pipeline	Replace pipe section
238	Tank Gallery	Pipeline	Replace valve
239	Tank Gallery	Pipeline	Replace valve
240	Tank Gallery	Pipeline	Replace pipe section
241	Tank Gallery	Pipeline	Replace pipe section
242	Tank Gallery	Pipeline	Replace pipe section
243	Tank Gallery	Pipeline	Replace pipe section
244	Tank Gallery	Pipeline	Replace valve
245	Tank Gallery	Pipeline	Replace pipe section
246	Tank Gallery	Structural Support	Install new pipe support saddles
247	Underground Pump House	Pipeline	Install valve
248	Tank Gallery	Pipeline	Install pipe support pads
249	Tank Gallery	Pipeline	Replace pipe section
250	Tank Gallery	Structural Support	Install new pipe support
251	Tank Gallery	Structural Support	Strengthen existing pipe supports

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252	Tank Gallery	Structural Support	Install new pipe support
253	Tank Gallery	Structural Support	Install new pipe support