
APPENDIX C

**RESOLUTION
PLAN OF OPERATIONS
DESCRIPTION OF
PROPOSED
ACTIVITIES**

Resolution Copper Mining, LLC - Description of Proposed Activities on Tonto National Forest

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Surface Disturbance			
Exploration Boreholes								
QC-04	Exploration	T2S, R12E, NE 1/4 Section 2	Forest Service	Yes	0.3 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size 3,000ft drill trunk hole using open hole technique trunk hole deepened to 7,000ft by diamond drilling multiple deflections by motor/diamond drilling 	1 LF-90 Rotary Drill Rig 1 Schram 685 Rotary Drill Rig 1 mud tank 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Throughout mine-planning stage Concurrent reclamation – After completion of drilling and testing activities the pad will be graded and reclaimed. Closure – Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
MB-03	Exploration	T2S, R12E, SE 1/4 Section 2	Forest Service	Yes	0.3 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size 3,000ft drill trunk hole using open hole technique trunk hole deepened to 7,000ft by diamond drilling multiple deflections by motor/diamond drilling 	1 LF-90 Rotary Drill Rig 1 Schram 685 Rotary Drill Rig 1 mud tank 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy - Throughout mine-planning stage Concurrent reclamation – After completion of drilling and testing activities the pad will be graded and reclaimed. Closure – Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
OF-1	Exploration	T1S, R12E, S ½ Section 33	Forest Service	No	0.2 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size 3,000ft drill trunk hole using open hole technique trunk hole deepened to 7,000ft by diamond drilling multiple deflections by motor/diamond drilling 	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy - Throughout mine-planning stage Concurrent reclamation – After completion of drilling and testing activities the pad will be graded and reclaimed. Closure - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
OF-2	Exploration	T1S, R12E, NE ¼ NE ¼ Section 32	Forest Service	Yes	0.3 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size 3,000ft drill trunk hole using open hole technique trunk hole deepened to 7,000ft by diamond drilling multiple deflections by motor/diamond drilling 	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe	Initiation – January 2009 Length of Occupancy - Throughout mine-planning stage Concurrent reclamation – After completion of drilling and testing activities the pad will be graded and reclaimed. Closure - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
OF-3	Exploration	T1S, R12E, SW 1/4 SW 1/4 Section 33	Forest Service	No	0.2 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size 3,000ft drill trunk hole using open hole technique trunk hole deepened to 7,000ft by diamond drilling multiple deflections by motor/diamond drilling 	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe	Initiation – January 2009 Length of Occupancy - Throughout mine-planning stage Concurrent reclamation – After completion of drilling and testing activities the pad will be graded and reclaimed. Closure - Drill hole abandonment will be conducted in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest Service-approved mix.
Deep Hydrogeologic Testing and Monitoring Wells								
DHTW-01	Deep hydrologic monitoring for depth to groundwater, lithology of drill cuttings, aquifer hydraulic parameters, and chemical quality data	T1S, R13E, N ½ SE ¼ Section 28	Forest Service	Yes	0.3 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size 2,000-meter core drill hole completed with 4-inch steel casing 1m X 1m concrete pad be installed at wellhead 	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 Lang LM-200 series tophead rotary drill rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – July 2009 Length of Occupancy –Six to eight weeks on site for drilling and well testing—long term monitoring location throughout life of mine Concurrent reclamation – After completion of drill and testing activities the drill pad will be graded and reclaimed according to operating procedures. Closure – Long term monitor well through life of mine

Resolution Copper Mining, LLC - Description of Proposed Activities on Tonto National Forest

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				Within Existing Disturbance?	Estimated Surface Disturbance			
DHTW-02	Deep hydrologic monitoring for depth to groundwater, lithology of drill cuttings, aquifer hydraulic parameters, and chemical quality data	T1S, R13E, SW ¼ SW ¼ Section 21	Forest Service	No	0.3 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size 2,000-meter core drill hole completed with 4-inch steel casing 1m X 1m concrete pad be installed at wellhead 	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 Lang LM-200 series tophead rotary drill rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – September 2009 Length of Occupancy – Six to eight weeks on site for drilling and well testing—long term monitoring location throughout life of mine Concurrent reclamation – After completion of drill and testing activities the drill pad will be graded and reclaimed according to operating procedures. Closure - Long term monitor well through life of mine
DHTW-03	Deep hydrologic monitoring for depth to groundwater, lithology of drill cuttings, aquifer hydraulic parameters, and chemical quality data	T1S, R13E, SW ¼ SW ¼ Section 26	Forest Service	Yes	0.3 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size 2,000-meter core drill hole completed with 4-inch steel casing 1m X 1m concrete pad be installed at wellhead 	1 UDR-5000 Core Drill Rig 1 CP-50 Core Drill Rig 1 Lang LM-200 series tophead rotary drill rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation –November 2009 Length of Occupancy – Six to eight weeks on site for drilling and well testing—long term monitoring location throughout life of mine Concurrent reclamation – After completion of drilling and testing activities the drill pad will be graded and reclaimed according to operating procedures. Closure - Long term monitor well through life of mine
Shallow Hydrologic Monitoring Wells								
H-C	Explore groundwater in Whitetail Conglomerate of underlying units where Apache Leap Tuff is absent; provide additional control for direction and magnitude of water level gradients south of the Resolution Parcel; provide aquifer parameters for Whitetail of underlying units	T2S, R13E, NW ¼ NW ¼ Section 20	Forest Service	No	0.3 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size Approximately 1500 ft hole (12” diameter to start reduced to 9” then 6” depending on depth. Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring 	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	Initiation – May 2009 Length of Occupancy – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period Concurrent reclamation – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. Closure - Long term monitor well through life of mine
H-E	Evaluate present water levels/aquifer conditions in Apace Leap Tuff/Whitetail Conglomerate/Older units near edge of Apace Leap	T2S, R13E, SW ¼ NW ¼ Section 7	Forest Service	No	0.2 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size Approximately 1500 ft hole (12” diameter to start reduced to 9” then 6” depending on depth. Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring 	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	Initiation – July 2009 Length of Occupancy – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period Concurrent reclamation – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer Closure - Long term monitor well through life of mine.
H-F	Evaluate potential enhanced fracturing on downthrown side of main NS fault east of Devils Canyon, east from the Resolution Parcel; provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients northeast of the Resolution Parcel; provide additional aquifer parameters	T1S, R13E, NW ¼ SE ¼ Section 27	Forest Service	No	0.3 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size Approximately 1500 ft hole (12” diameter to start reduced to 9” then 6” depending on depth. Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring 	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	Initiation – April 2009 Length of Occupancy — Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period Concurrent reclamation – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. Closure - Long term monitor well through life of mine

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H-G	Evaluate potential enhanced fracturing on downthrown side of main NS fault east of Devils Canyon; provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients northeast of the Resolution Parcel; provide additional aquifer parameters for tuff; provide baseline and long-term monitoring data for potential impacts to Top-of-the-World area wells	T1S, R13E, SW ¼ of NE ¼ Section 22	Forest Service	Yes	0.3 ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring 	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	Initiation – March 2009 Length of Occupancy – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period Concurrent reclamation – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. Closure - Long term monitor well through life of mine
H-I	Provide additional control in Apache Leap Tuff aquifer for direction and magnitude of water level gradients in east part of Devils Canyon drainage basin; provide additional aquifer parameters for tuff	T1S, R13E, NW ¼ of SE ¼ Section 26	Forest Service	No	0.2ac	<ul style="list-style-type: none"> 80ft X 100ft drill pad size Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring 	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	Initiation – October 2009 Length of Occupancy – Three to four weeks for drilling and well set-up and construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period Concurrent reclamation – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer. Closure - Long term monitor well through life of mine
H-K	Provide additional control in Apache Leap Tuff aquifer on water level gradient direction and magnitude north of Resolution Parcel; provide additional aquifer parameters for tuff	T1S, R13E, SW ¼ SW ¼ Section 21	Forest Service	No	0.3 ac (same site as DHTW-02)	<ul style="list-style-type: none"> 80ft X 100ft drill pad size Approximately 1500 ft hole (12" diameter to start reduced to 9" then 6" depending on depth. Well completion with steel casing, pump and or transducers, gravel pack, sounder access and inflatable packers designed for continual monitoring 	1 Lang LM-140 series tophead rotary drill rig or equivalent 1 mud tank 1 heavy duty air compressor 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 front end loader 1 backhoe 1 tracked jaw crusher	Initiation – June 2009 Length of Occupancy – Three to four weeks for drilling and well setup & construction - periodic visits with pump rig to reconfigure packers and transducers during mine planning period. Concurrent reclamation – Sites will be reclaimed but left accessible for long term monitoring of the Apache Leap Aquifer Closure - Long term monitor well through life of mine. Upon completion of long-term monitoring, site will be abandoned in accordance with ACC R12-15, ARS Title 45, Chapter 2, Article 10, as administered by the ADWR. Cleared areas will be ripped and seeded with Forest-approved mix.
Tunnel Characterization Boreholes								
PVT-3	Geotechnical drilling for tunnel characterization	T1S, R13E, SE ¼ SE ¼ Section 29	Forest Service	No	0.1 ac	<ul style="list-style-type: none"> 60ft X 100ft drill pad size Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") Hydrological tests will be conducted in open hole 	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – September 2009 Length of Occupancy – Four to five weeks for drilling, hydrological and geotechnical testing Concurrent reclamation – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. Closure – Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-4	Geotechnical drilling for tunnel characterization	T1S, R13E, NW ¼ SW ¼ Section 27	Forest Service	No	0.2 ac	<ul style="list-style-type: none"> 60ft X 100ft maximum drill pad size Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") Hydrological tests will be conducted in open hole 	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – October 2009 Length of Occupancy – Four to five weeks for drilling, hydrological and geotechnical testing Concurrent reclamation – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. Closure - – Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. Cleared areas will be ripped and seeded with Forest Service-approved mix.

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				Within Existing Disturbance?	Estimated Surface Disturbance			
PVT-5	Geotechnical drilling for tunnel characterization	T1S, R13E, NW ¼ NE ¼ Section 27	Forest Service	No	0.2 ac	<ul style="list-style-type: none"> 60ft X 100ft drill pad size Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") Hydrological tests will be conducted in open hole 	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation –November 2009 Length of Occupancy — Four to five weeks for drilling, hydrological and geotechnical testing Concurrent reclamation – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. Closure - – Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-6	Geotechnical drilling for tunnel characterization	T1S, R13E, SW ¼ NE ¼ Section 23	Forest Service	No	0.2 ac	<ul style="list-style-type: none"> 60ft X 100ft drill pad size Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") Hydrological tests will be conducted in open hole 	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – January 2010 Length of Occupancy – Four to five weeks for drilling, hydrological and geotechnical testing Concurrent reclamation – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. Closure - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-7	Geotechnical drilling for tunnel characterization	T1S, R13E, NE ¼ NE ¼ Section 23	Forest Service	Yes	0.3 ac	<ul style="list-style-type: none"> 60ft X 100ft maximum drill pad size Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") Hydrological tests will be conducted in open hole 	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – February 2010 Length of Occupancy – Four to five weeks for drilling, hydrological and geotechnical testing Concurrent reclamation – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. Closure - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-8	Geotechnical drilling for tunnel characterization	T1S, R14E, NE ¼ SE ¼ Section 7	Forest Service	No	0.2 ac	<ul style="list-style-type: none"> 60ft X 100ft drill pad size Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") Hydrological tests will be conducted in open hole 	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer	Initiation – April 2010 Length of Occupancy — Four to five weeks for drilling, hydrological and geotechnical testing Concurrent reclamation – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. Closure - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. Cleared areas will be ripped and seeded with Forest Service-approved mix.
PVT-9	Geotechnical drilling for tunnel characterization	T1 S, R13E, NE ¼ NW ¼ Section 22	Forest Service	Yes	0.2 ac	<ul style="list-style-type: none"> 60ft X 100ft drill pad size Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") Hydrological tests will be conducted in open hole 	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – May 2010 Length of Occupancy — Four to five weeks for drilling, hydrological and geotechnical testing Concurrent reclamation – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing ghas been conducted. Closure - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. Cleared areas will be ripped and seeded with Forest Service-approved mix.

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				Within Existing Disturbance?	Within Existing Disturbance?			
APV-6	Geotechnical drilling for tunnel characterization	T1S, R13E, SW ¼ SE ¼ Section 23	Forest Service	Yes	0.1 ac	<ul style="list-style-type: none"> 60ft X 100ft drill pad size Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") Hydrological tests will be conducted in open hole 	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – January 2010 (if alternate tunnel route is chosen) Length of Occupancy – Four to five weeks for drilling, hydrological and geotechnical testing Concurrent reclamation – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. Closure - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. Cleared areas will be ripped and seeded with Forest Service-approved mix.
APV-8	Geotechnical drilling for tunnel characterization	T1S, R13E, S1/2 Section 13	Forest Service	Yes	0.3 ac	<ul style="list-style-type: none"> 60ft X 100ft drill pad size Approximately 1200 ft hole 12" surface casing then core drilled to TD with HQ (2.5") Hydrological tests will be conducted in open hole 	1 Lang LM-140 series tophead rotary drill rig 1 UDR-1500 Core Drill Rig 1 mud tank 1 Schram 685 Rotary Drill Rig 2 pipe trucks 1 water storage tank 2 generators for drill rigs 1 Cat bulldozer 1 track hoe 1 tracked jaw crusher	Initiation – March 2010 (if alternate tunnel route is chosen) Length of Occupancy — Four to five weeks for drilling, hydrological and geotechnical testing Concurrent reclamation – Sites will be reclaimed. Decision on designating individual wells as long term monitoring locations will be made after testing has been conducted. Closure - Those sites not designated as long term monitor locations will be abandoned in accordance with ADWR standards similar to the exploration holes with slight modifications due to the relatively shallow depth and absence of deflections. Cleared areas will be ripped and seeded with Forest Service-approved mix.

Existing Access Road Improvements

FR-315	Roadway improvements for access to H-C	T2S, R13E, portions of Sections 19, 20, and 30; T2S, R12E, portions of Section 25	Forest Service	Yes	[Note 1]	Improve approximately 3.6 miles of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 320	Roadway improvements for access to PVT-8	T1S, R14E, Section 7S ½	Forest Service	Yes	[Note 1]	Improve approximately 0.6 mile of existing road FR 320 is located within the 1920's alignment of US 60. No adverse impact would occur to the site due to the implementation of the following procedures: <ul style="list-style-type: none"> Fill potholes will fill dirt Use only rubber-tire vehicles Cleanly remove ramps used to access drill pad Keep vegetation removal to a minimum An archaeologist will monitor site construction.	1 front end loader 1 water truck	Initiation – November 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. Closure - On periodic maintenance until well is not needed. Areas will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 898	Roadway improvements for access to APV-8	T1S, R13E, E ½ of Sections 11 and 14	Forest Service (a portion of FR 898 traverses privately owned lands)	Yes	[Note 1]	Improve approximately 0.7 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – November 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. Closure - On periodic maintenance until well is not needed. Areas will be reclaimed (ripped and seeded with a Forest Service-approved mix).

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FR 2261	Roadway improvements for access to H-C	T2S, R13E, portion of N½ Section 20	Forest Service	Yes	[Note 1]	Improve approximately 0.3 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 2440	Roadway improvements for access to drill sites QC-04 and MB-03	T2S, R12E, Sections 2 S ½, and 3 SE ¼	Forest Service (FR 2440 traverses privately owned lands located within the TNF)	Yes	[Note 1]	Improve approximately 0.9 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Three to four weeks Concurrent reclamation – Road will be maintained through out life of mine for long term monitoring well on Resolution fee land. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. Closure - Remain on maintenance for life of mine
FR 2461	Improvements to an existing road and grading and clearing for extension of road to access PVT-5	T1S, R13E, Sections 22 SE ¼, 23 W½, and 27 N ½	Forest Service	Partially	[Note 1]	Improve approximately 0.9 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 2463	Roadway improvements for access to PVT-6	T1S, R13E, Section 23 N½	Forest Service	Yes	[Note 1]	Improve approximately 0.5 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 2466 (and small section of FR 2467)	Roadway improvements for access to various well sites and geotechnical borehole sites	T1S, R13E, Sections 22, 23, 26, 27, and 34; T2S, R13E, Section 4.	Forest Service (a portion of FR 2466 extends on to adjacent State Lands)	Yes	[Note 1]	Improve approximately 4.2 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. Closure On periodic maintenance throughout life of mine
FR 2469	Roadway improvements for access to shallow well site H-I	T1S, R13E, Sections 26 and 35; T2S, R13E, Section 3	Forest Service (a portion of FR 2469 extends on to adjacent State Lands)	Yes	[Note 1]	Improve approximately 1.7 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix Closure On periodic maintenance throughout life of mine. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 2505	Roadway improvements for access to APV-6	T1S, R13E, Section 23 S½	Forest Service	No	[Note 1]	Improve approximately 0.5 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).

Resolution Copper Mining, LLC - Description of Proposed Activities on Tonto National Forest

Activity Name	Purpose and Uses	Location	Land Ownership	Location		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Estimated Surface Disturbance			
FR 2511	Potential roadway improvements for helicopter support and access to PVT-7	T1S, R13E, portions of S½ Section 13 and N½ of Section 24	Forest Service	Yes	[Note 1]	Improve approximately 0.5 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 3139	Roadway improvements for access to H-C	T2S, R13E, portion of NE¼ Section 20	Forest Service	Yes	[Note 1]	Improve approximately 0.4 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
FR 3786	Roadway improvements for access to drill site MB-03	T2S, R12E, SW ¼ and SE ¼ Section 2	Forest Service	Yes	[Note 1]	Improve approximately 0.4 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – May 2009 Length of Occupancy – Three to four weeks Concurrent reclamation – Road can be reclaimed when drilling is completed at QC-04 Closure - On periodic maintenance for life of mine
Existing unidentified road from FR 315 to H-E	Roadway improvements to gain access to H-E	T2S, R13E, portions of N ½ Section 7 and SE ¼ Section 6	Forest Service	Yes	[Note 1]	Improve approximately 0.8 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
Existing unidentified road from FR 2440 to QC-04	Roadway improvements for access to drill site QC-04	T2S, R12E, NE ¼ Section 2	Forest Service	Yes	[Note 1]	Improve approximately 0.1 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – May 2009 Length of Occupancy – Three to four weeks Concurrent reclamation – Road can be reclaimed when drilling is completed at QC-04. Closure – Remain on maintenance for life of mine
Existing unidentified road from FR 2466 to H-F	Improvements to existing road for access to H-F	T1S, R13E, SE ¼ Section 27	Forest Service	Yes, heavily vegetated trail alignment	[Note 1]	Improve approximately 0.7 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).
Existing unidentified road from Highway 60 to PVT-9	Roadway improvements for access to PVT-9	T1S, R14E, Sections 5 SW ¼ and 8 NW ¼	Forest Service	Yes	[Note 1]	Improve approximately 0.1 mile of existing road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – December 2009 Length of Occupancy – Roads to instrumented hydro wells will be used throughout life of mine and reclaimed when monitoring is no longer required. Concurrent reclamation – By-passed sections of road at hairpins will be ripped and seeded with a Forest Service-approved mix. The contractor will provide a detailed traffic management plan and coordinate with the Department of Public Safety for access to Forest Roads from any state or federal highway to ensure public safety. Closure - On periodic maintenance until well is not needed. Will be reclaimed (ripped and seeded with a Forest Service-approved mix).

Resolution Copper Mining, LLC - Description of Proposed Activities on Tonto National Forest

Activity Name	Purpose and Uses	Location	Land Ownership	Disturbance		Facility Description	Equipment Used	Phasing/Abandonment
				Within Existing Disturbance?	Within Existing Disturbance?			
New Access Roads								
New access road from FR 2458 to DHTW-02	Grading and clearing for new access road to monitoring well DHTW-02	T1S, R13E, SW ¼ SW ¼ Section 21	Forest Service	No	[Note 2]	Approximately 175 feet of new access road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation –June 2009 Length of Occupancy – Throughout life of mine Concurrent reclamation – This road will be reclaimed when monitoring is no longer required. Closure - On periodic maintenance throughout life of mine
New access road from FR 2458 to H-K	Grading and clearing for new access road to monitoring well H-K	T1S, R13E, SW ¼ SW ¼ Section 21	Forest Service	No	[Note 2]	Approximately 150 feet of new access road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation –June 2009 Length of Occupancy – Throughout life of mine Concurrent reclamation – This road will be reclaimed when monitoring is no longer required. Closure - On periodic maintenance throughout life of mine
New access road from FR 2461 to PVT-5	Grading and clearing for new access road to tunnel characterization borehole PVT-5	T1S, R13E, portions of N ½ of Section 27	Forest Service	No (extension of existing FR 2461)	[Note 2]	Approximately 330 feet of new access road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Throughout life of mine Concurrent reclamation – This road will be reclaimed when monitoring is no longer required for mine-planning purposes. Closure - On periodic maintenance throughout life of mine
New access road from FR 3791 to OF-1	Grading and clearing for new access road to exploration drill site OF-1	T1S, R13E, SW ¼ SE ¼ Section 33	Forest Service	No	[Note 2]	Approximately 1,070 feet of new access road	1 track hoe 1 hammer hoe 1 front end loader 1 water truck 1 tracked jaw crusher	Initiation – January 2009 Length of Occupancy – Throughout life of mine Concurrent reclamation – This road will be reclaimed when monitoring is no longer required for mine-planning purposes. Closure - On periodic maintenance throughout life of mine

Note 1: The maximum area of disturbance for existing road improvements was estimated using roadway profiles created with 2007 aerial imagery and 10-foot contour intervals. Approximately 33.3 acres would be disturbed as a result of roadway improvements along portions of approximately 16.9 miles of existing access roads.

Note 2: The maximum area of disturbance for new roads was estimated using roadway profiles created with 2007 aerial imagery and 10-foot contour intervals and a maximum disturbance width of 15 feet. Approximately 0.6 acre of disturbance would be required for the construction of 0.3 mile of new access road.