SAMPLING AND ANALYSIS PLAN

OCTOBER 2009

Submitted To:

New Mexico Mining and Minerals Division
&
U.S. Forest Service (Cibola National Forest)

Prepared by:

Roca Honda Resources, LLC
4001 Office Court, Suite 102, Santa Fe, NM 87507

Contents

Acronyms and Abbreviations
Section 1.0 Introduction
Section 2.0 Meteorology and Air Quality
Section 3.0 Topography
Section 4.0 Vegetation
Section 5.0 Wildlife
Section 6.0 Topsoil
Section 7.0 Geology
Section 8.0 Surface Water
Section 9.0 Ground Water
Section 10.0 Radiological Survey
Section 11.0 Historic Places and Cultural Properties
Section 12.0 Present and Historic Land Use
Section 13.0 Prior Mining Operations
Attachment 1 Field Quality Assurance Plan
Attachment 2 Fernandez Company Access Agreement
Plate 1 Wells within Five Miles of the Roca Honda Permit Area

Acronyms and Abbreviations

ACSG	automatic crest-state gage
ASTM	American Society for Testing and Materials
cfm	cubic feet per minute
cfs	cubic feet per second
COC	chain of custody
cpm	counts per minute
DMS	data management system
FQAP	Field Quality Assurance Plan
ft	foot (feet)
ft^3	cubic feet
g	gram(s)
GIS	Geographic Information System
GPS	global positioning system
HEPA	high-efficiency particulate air
ICP/MS	inductively coupled plasma/mass spectrometry
lpm	liters per minute
m	meter
mbar	millibar
MeV	megaelectron volt
MIS	Management Indicator Species
mm	millimeter
MMD	New Mexico Mining and Minerals Division
m/s	meters per second
NAAQS	National Ambient Air Quality Standards
NAWQA	National Water Quality Assessment
NEPA	National Environmental Policy Act
NIST	National Institute of Standards and Technology
NMAC	New Mexico Administrative Code
NMDGF	New Mexico Department of Game and Fish
NRHP	National Register of Historic Places
OFR	Open-File Report
Paragon	Paragon Analytics, Inc.
pCi	picoCurie
PWI	Permits West, Inc.
QA	Quality Assurance
QC	Quality Control
QMS	Quality Management System
RHR	Roca Honda Resources, LLC
RSO	Radiological Safety Officer
SAP	Sampling and Analysis Plan
SOC	Species of Concern
SOP	Standard Operating Procedure
Strathmore	Strathmore Resources (U.S.) Ltd.
TAT	turnaround time
TDS	total dissolved solids
TLD	thermoluminescent dosimeters

Acronyms and Abbreviations (continued)

TSP	Total Suspended Particulate
TWRI	Techniques of Water-Resources Investigation
µg/L	micrograms per liter
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFSH	U.S. Forest Service Handbook
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USNRC	U.S. Nuclear Regulatory Commission
UTM	Universal Transverse Mercator
VOA	volatile organics analysis

SAMPLING AND ANALYSIS PLAN

Section 1.0

Introduction

OCTOBER 2009

Submitted To:

New Mexico Mining and Minerals Division
&
U.S. Forest Service (Cibola National Forest)

Prepared by:

Roca Honda Resources, LLC
4001 Office Court, Suite 102, Santa Fe, NM 87507

Contents

1.0 Roca Honda Project SAP 1-1
1.1 Introduction 1-1
1.2 Description of Proposed Mining Operations 1-3
1.3 References 1-8

Figures

Figure 1-1. Roca Honda Permit Area Location Map 1-2
Figure 1-2. Surface Facilities and Disturbed Areas Within the RH Mine Permit Area 1-4
Figure 1-3. Planned Surface Disturbances in Section 16. 1-5
Figure 1-4. Planned Surface Disturbances in Section 10. 1-6
Figure 1-5. Planned Surface Disturbances in Section 9. 1-7

1.0 Roca Honda Project SAP

1.1 Introduction

This Sampling and Analysis Plan (SAP) is submitted to the New Mexico Mining and Minerals Division (MMD) by Strathmore Resources (U.S.) Ltd. (Strathmore) on behalf of Roca Honda Resources, LLC (RHR), as the first phase in the process of applying for a permit for a new mining operation pursuant to Part 6 of the New Mexico Mining Act Rules. The second phase will be submittal of the mine permit application. This SAP covers collection and analysis of baseline data in support of the permit application to be submitted to the MMD for RHR's proposed Roca Honda uranium mine. The mine will be located in Sections 9, 10, and 16 of Township 13 North, Range 8 West (T13N R8W), in McKinley County, New Mexico. The Roca Honda permit area is shown on Figure 1–1. Section 16 is owned by the State of New Mexico. The surface of Section 16 is leased to Fernandez Company, Ltd. (aka the Lee Ranch). The mineral estate is leased to RHR. Sections 9 and 10 are U.S. Forest Service (USFS) lands. RHR holds the unpatented mining claims on these two sections. The permit area is approximately 1,920 acres. The permit area boundary includes some areas that have been previously disturbed by exploration drilling activities for uranium conducted in the 1960s, 1970s, and 1980s, prior to RHR's mineral ownership. RHR will mine uranium ore by conventional underground methods from the Westwater Canyon Member of the Morrison Formation, approximately 2000 feet beneath the surface.

An initial review of available environmental data in the Roca Honda permit area was conducted in preparing this SAP. Much of the existing data was collected in the 1970s and 1980s to support operations of the Rio Grande Resources, Inc., Mount Taylor uranium mine (aka the Gulf Mt. Taylor Mine). Information for each topic or environmental medium (e.g., meteorology, geology) was compiled and additional data needs for each topic were identified.

This SAP presents the data needs and describes how the needs will be addressed. For each topic where data needs were identified, the sampling objectives and data needs are summarized and data collection methods are described. In addition to addressing data needs identified, RHR will describe the sampling and analysis methods and procedures for each topic or medium pursuant to 19.10.6.602.D(12)(a) NMAC. This SAP is organized by medium or topic of concern. Each section is outlined to the extent possible pursuant to 19.10.6.602.D(12)(a) NMAC:

12. *Sampling and Analysis Plan.*
    (a) The applicant shall submit a proposed Sampling and Analysis Plan (SAP) to the Director for review prior to baseline data collection. Six copies should be submitted to facilitate the review. The proposed SAP should contain, at a minimum, the following information for each relevant resource:

    (i) sampling objectives;
    (ii) a list of data to be collected;
    (iii) methods of collection;
    (iv) parameters to be analyzed for;
    (v) maps stating proposed sampling locations;
    (vi) sampling frequency;
    (vii) laboratory and field quality assurance plans; and
    (viii) a brief discussion supporting the proposals

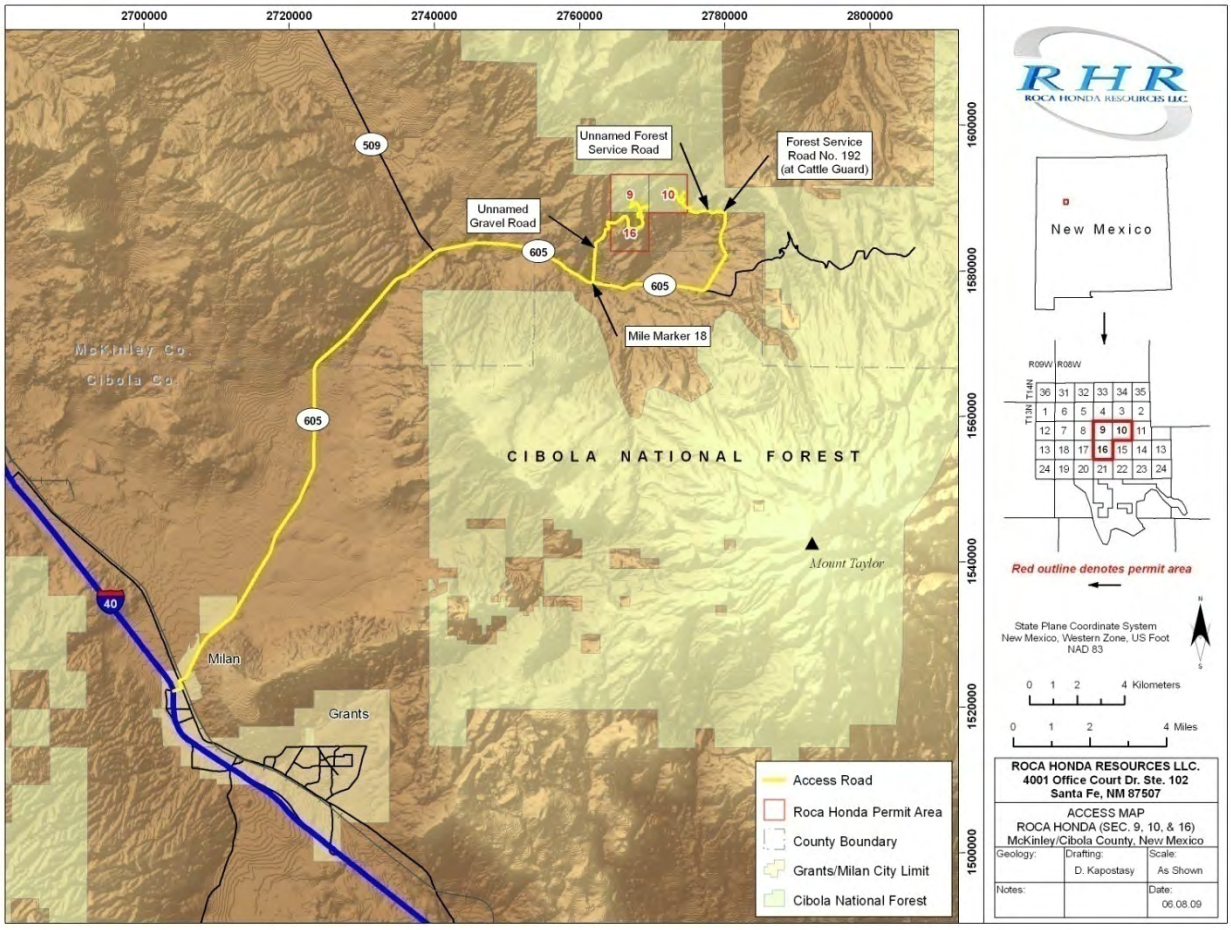

Figure 1-1. Roca Honda Permit Area Location Map

The field work will be performed by Strathmore for RHR in compliance with Strathmore's *Quality Management System* (QMS) *Program* (Strathmore 2006) and a *Field Quality Assurance Plan* (FQAP) specifically for this SAP, included as Attachment 1.

The following general description of the mining operations is included for the reader to understand the baseline data gathering needs related to the planned mine construction and operations. A mine plan will be submitted at a later date with the mine permit application to detail the construction and operation of the mine.

1.2 Description of Proposed Mining Operations

Underground mining at the Roca Honda mine permit area is planned to begin first in Section 16 and then proceed into Sections 9 and 10. Preliminary drawings of surface facilities and the extent of mining are shown in the next several figures. All figures are preliminary and subject to change as design progresses. Figure 1–2 shows the mine surface facilities and areas of disturbance in the permit area. Figures 1–3, 1–4 and 1-5 show a more detailed view of the planned surface disturbances in Sections 10, 16, and 9, respectively. Site preparation activities will generally proceed in the following order:

1. Archaeological survey and plan to avoid sites
2. Section 16 survey and site preparation
3. Install dewatering wells
4. Construct water treatment facility
5. Begin dewatering in Section 16
6. Begin construction of Section 16 mine production shaft
7. Construct Section 16 surface facilities and associated infrastructure
8. Section 10 site preparation
9. Install dewatering wells
10. Begin dewatering in Section 10
11. Construct Section 10 mine production shaft
12. Construct Section 10 surface facilities and associated infrastructure

Many activities will overlap. Proposed fenced areas will change as the mine is developed. One mine production shaft will be constructed on Section 16 and one on Section 10. The excavated shaft material will be brought to the surface, segregated as appropriate, and placed in designated stockpiles. Dewatering is planned to begin prior to shaft construction using a number of pumping wells.

Following completion of the production shaft, the first ventilation (vent) shaft will be constructed. This vent shaft will also provide an emergency escape way for mine personnel working underground. Additional vent shafts and escape ways will be installed as dictated by the mine needs as it develops. Seven (7) vent shafts are shown on Figure 1-2. The final number and location are subject to change as the mine design materializes through operations. More definitive locations of these shafts will be identified in the mine plan.

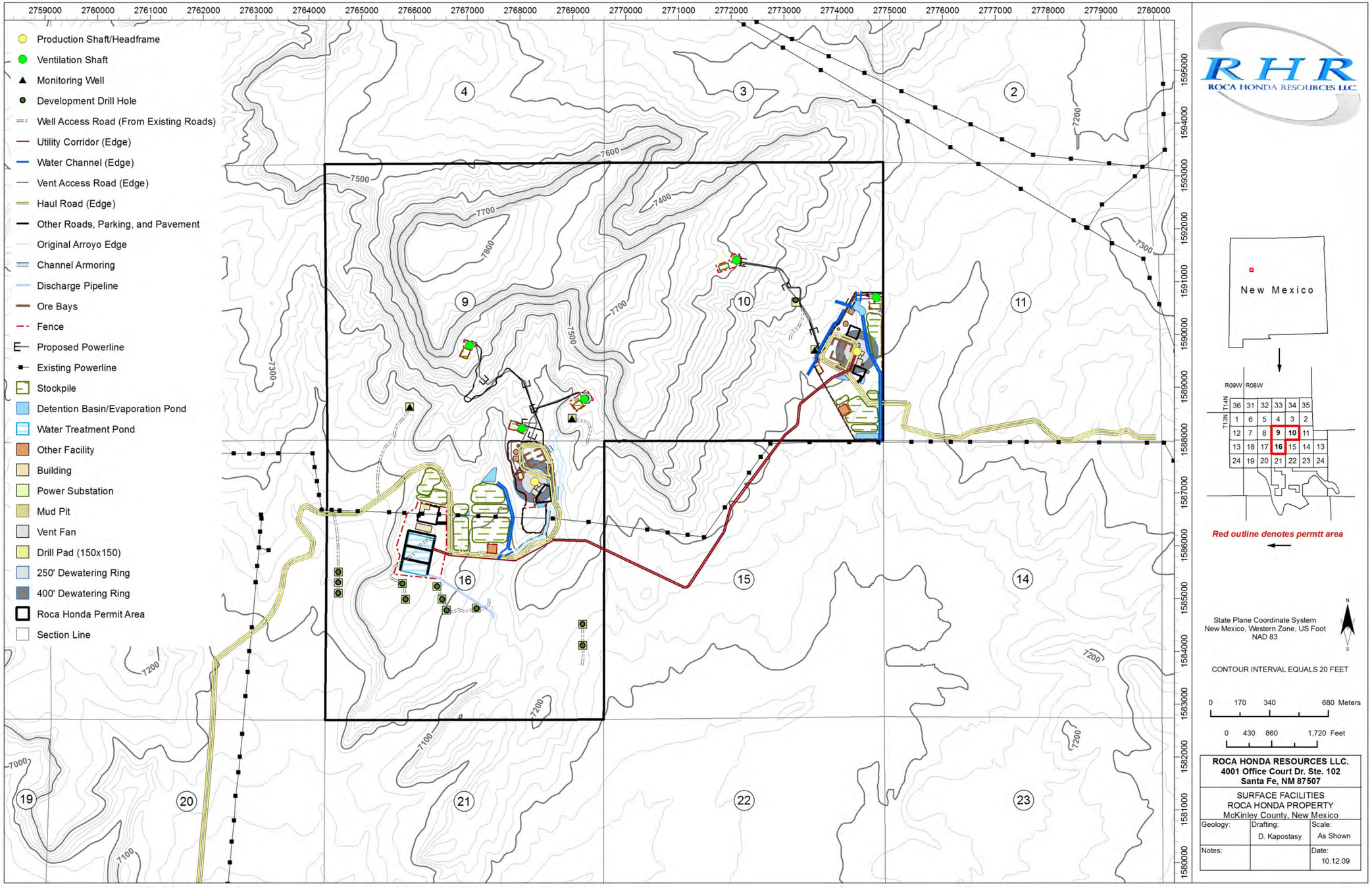

Figure 1-2. Surface Facilities and Disturbed Areas Within the RH Mine Permit Area.

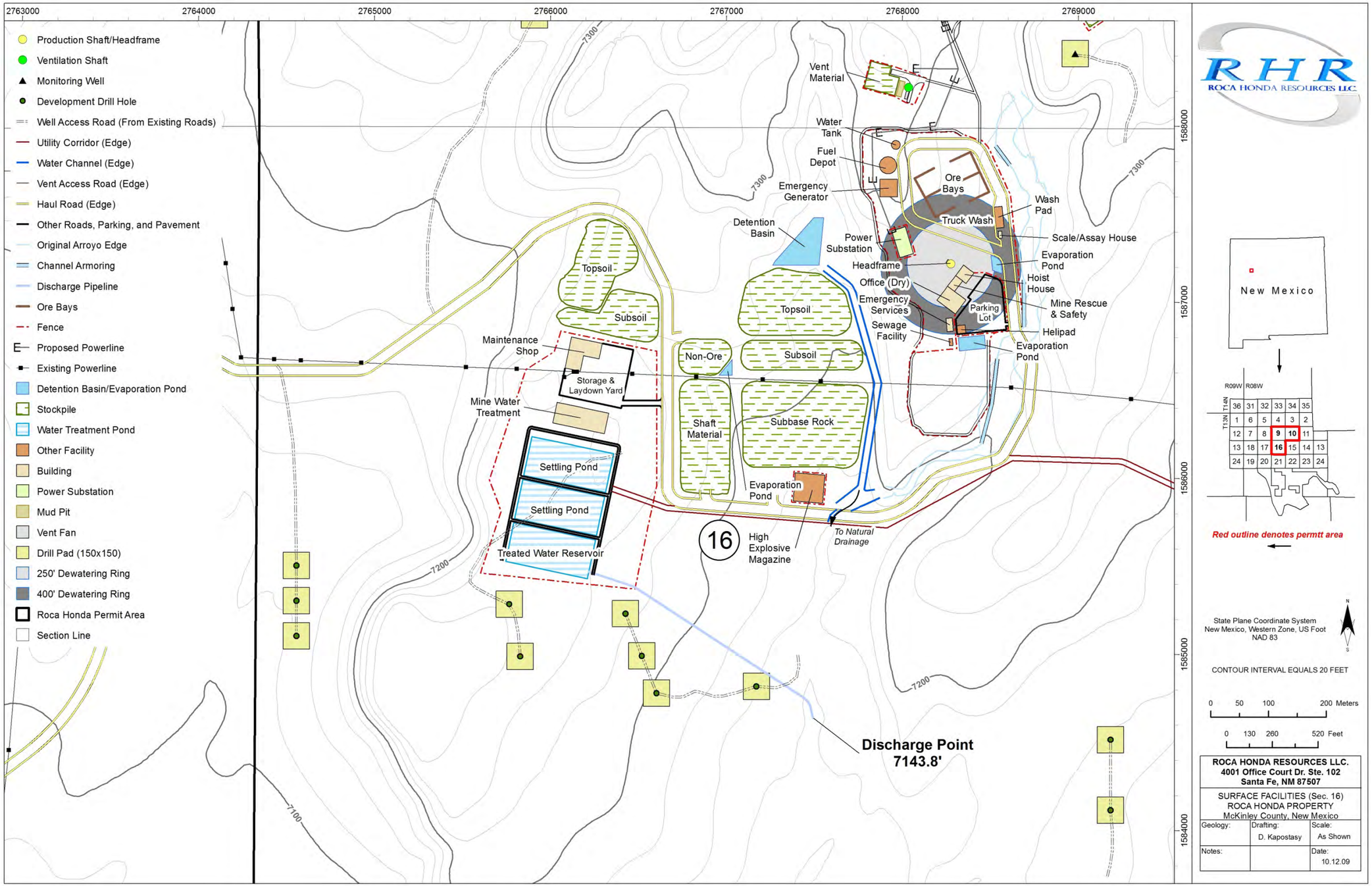

Figure 1-3. Planned Surface Disturbances in Section 16.

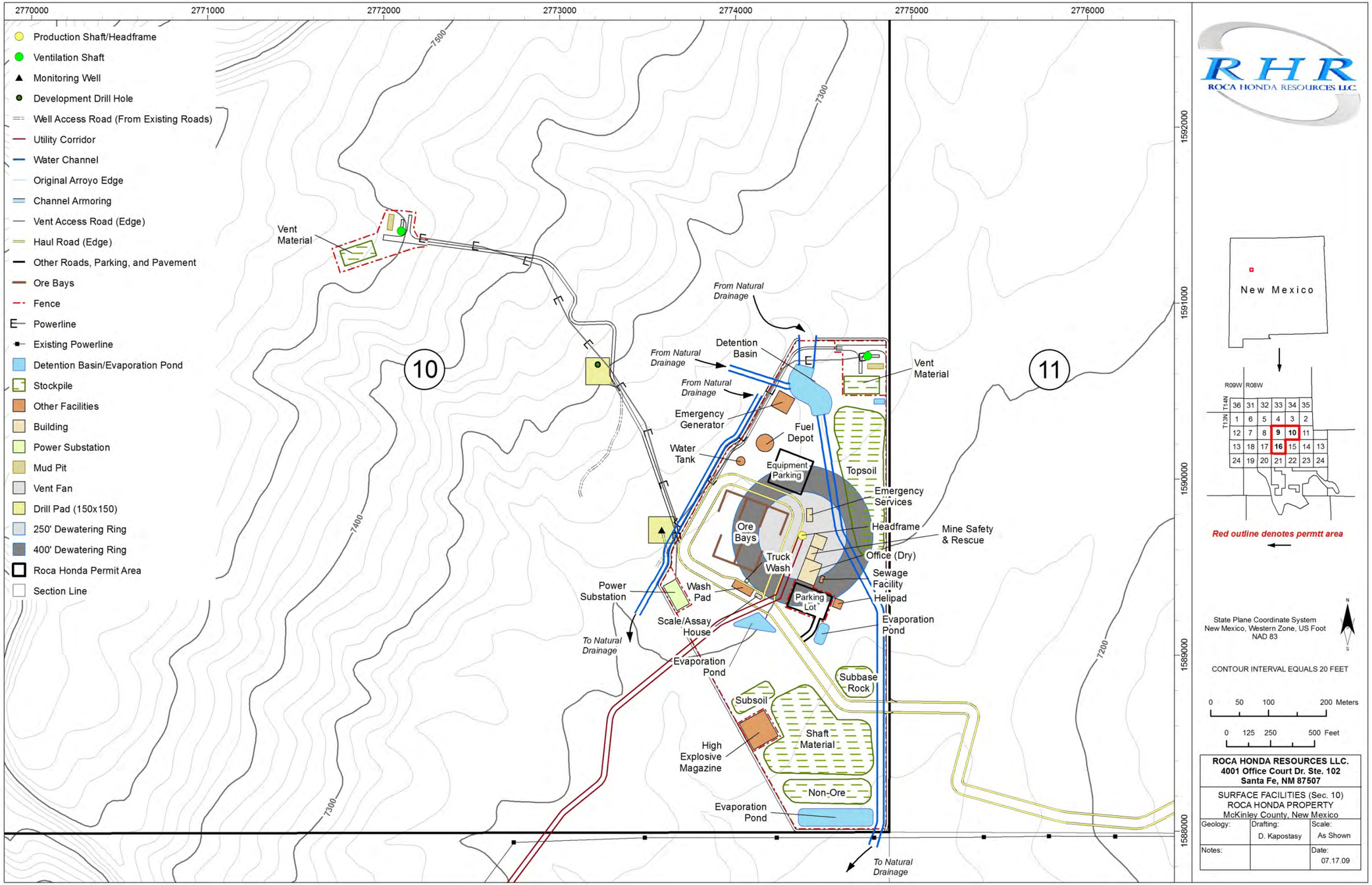

Figure 1-4. Planned Surface Disturbances in Section 10.

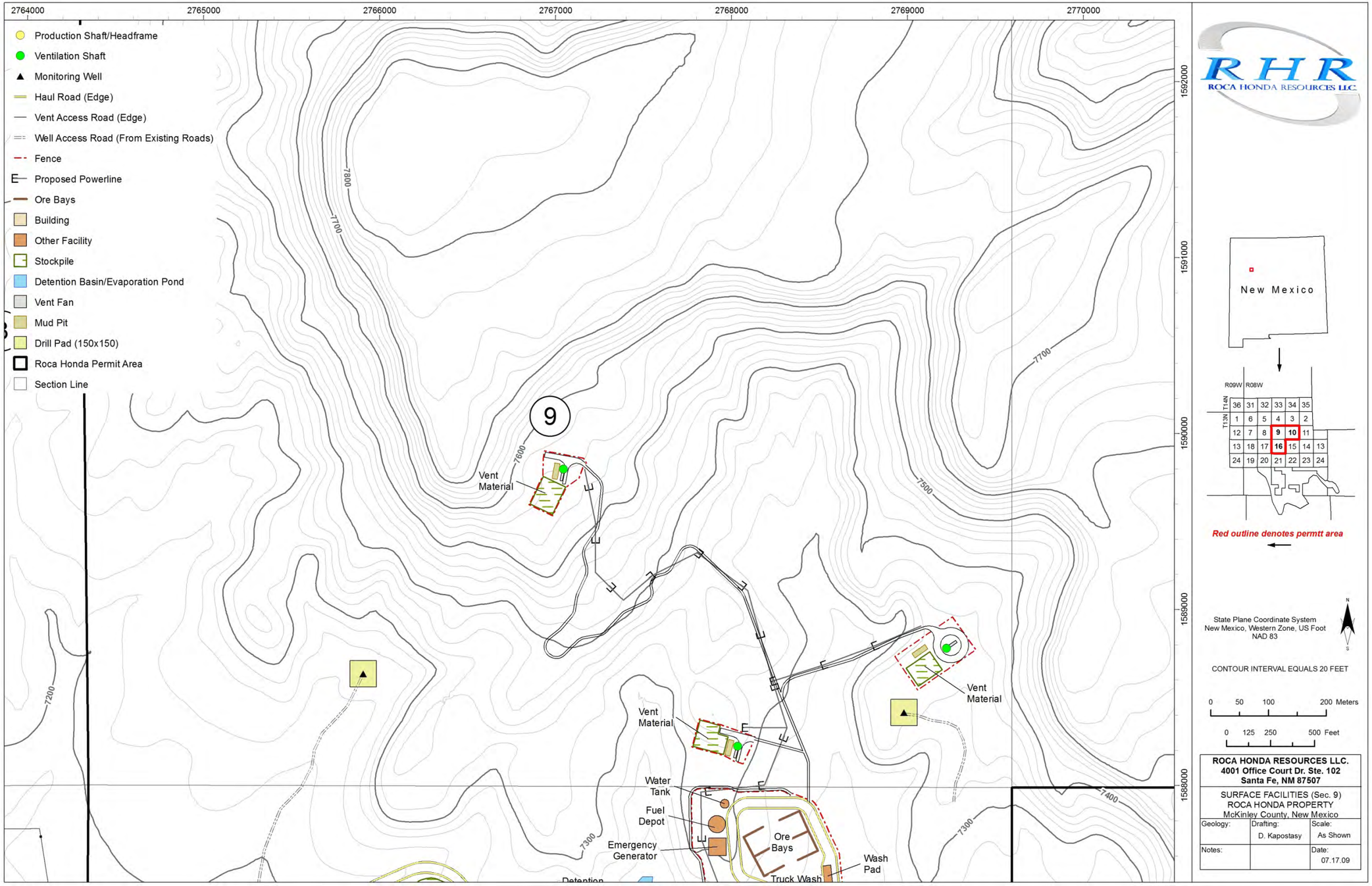

Figure 1-5. Planned Surface Disturbances in Section 9.

Mine development will advance outward from the production shafts. All material removed from underground will be segregated and stockpiled appropriately. Material not shipped off-site will be returned back underground to the maximum extent possible at the end of operations as part of final site reclamation. The active mine life is estimated to be approximately 17 years.

The planned mining method at Roca Honda is underground modified room and pillar, in which the mined material is extracted across a horizontal plane, creating open areas or "rooms" and leaving "pillars" of un-mined material which support the roof of the mine. This type of mine is developed on a grid, creating a regular mining pattern, which can be modified to accommodate certain geologic features. The size of the pillars is calculated based on the competency, or load-bearing capacity, of the material above and below the area being mined. As mining advances, roof bolts are placed in the ceiling of the rooms to prevent ceiling collapse.

A water treatment facility will be constructed on Section 16 to treat water resulting from mine dewatering activities and surface runoff. The facility is currently designed to handle up to 8,000 gallons per minute (gpm) maximum flow. Final design will be based on the results of a hydrologic pump test to be performed at a later date. Pumping is anticipated to continue for approximately 20 years (17 years of mine life plus 3 years prior to start of mining). Water produced from the Section10 mine will be pumped via pipeline to the water treatment facility on Section 16.

Surface disturbance at the mine sites will be minimized to the maximum extent possible. For example, non-ore bearing material produced during mining from an active drift, i.e. the passage excavated to gain access to the ore, will be used to fill abandoned drifts as the mine progresses. This approach will significantly reduce the amount of material that will be stored on the surface during the mine life. Final reclamation will begin following cessation of active mining operations. All surface facilities/buildings as well as the mine shafts and head-frames will be decommissioned. The building debris will be recycled or sent to a landfill for disposal. All heavy equipment will be removed from underground. Stockpiled material will be backfilled into the haulage drifts and shafts.

Dewatering will continue until subsurface activities are complete. When no longer needed, the water treatment plant and ponds will be decommissioned. All stockpile areas will be graded and reseeded; roads will be reseeded as well. Roads to monitoring wells will be left to accommodate monitoring as necessary. Perimeter fences will be left in place during reclamation and monitoring activities and removed when reclamation is complete. The disturbed areas will be reclaimed per the approved mine reclamation plan.

1.3 References

NMAC (New Mexico Administrative Code) 19.10.6.602. Title 19, "Natural Resources and Wildlife," Chapter 10 "Non-Coal Mining," Part 6, "New Mining Operations," Section 602 "Permit Application Requirements," New Mexico Mining Commission.

Strathmore Minerals Corporation (Strathmore), 2006. *Quality Management System Program*, Rev 0, May.