ADDITION OF NEW APPENDIX 10

Swift Fox Survey Protocol

Appendix 10
Swift Fox Survey Protocol

The following protocol is a modification of a swift fox protocol included in Mineral Exploration Permit Number NE0210824 (dated August 19, 2009) issued by the Department of Environmental Quality (NDEQ) to Crow Butte Resources, Inc (NDEQ 2009). This permit primarily addresses impacts associated with drilling of boreholes for purposes of mineral exploration. The primary modification of the Appendix 10 protocol is expanding the type of activities potentially impacting the swift fox to include, in addition to drilling of boreholes, uranium in situ satellite project development activities. Satellite "project development" includes construction of satellite facilities (process building and associated storage structures, evaporation ponds, wellfield development (surface preparation, monitor and injection/recovery wells, wellhouses, and trunklines/piping), well workover, boreholes outside of wellfields, and project roadways. Reference to "project development" in this protocol refers to these activities. Project development activities apply to initial construction/wellfield development, operations and decommissioning. Decommissioning includes decontaminating, dismantling, and removing satellite facilities and associated wellfield buildings/equipment/wells and, site reclamation and groundwater restoration.

Swift fox are typically found in topographically flat (slopes <20%) arid regions. In Nebraska, suitable habitat is in the short-grass prairie ecoregion where vegetation is less than 40 cm tall. They can be found in large expanses of prairie as well as prairie intermixed with agriculture. Dens are also found in anthropogenic areas such as near roads and trails, and in agricultural fields, culverts pipes and buildings (Tannerfeldt et al 2003). Swift fox are highly mobile and will use a variety of dens throughout the year. However, a female swift fox with young pups will typically be tied to one den until the pups are old enough to disperse from the den. Swift fox den entrances have a diameter of 17 to 23 cm.

Required Surveys:

CBR will avoid impacting the swift fox species by selecting project development areas that are not in suitable habitat and by avoiding certain locations during specific times of the year. Surveys shall be conducted that are consistent with the Nebraska Game and Parks Commission (NG&PC) standard protocol included in CBR's Mineral Exploration Permit Number NE0210824 as Attachment 1.

The survey form to be used for swift fox surveys is attached to this protocol.

Project development activities will occur within a designated permit boundary. If project development activities within this permit boundary are such that specific protocol requirements (e.g., designated distances from swift fox dens) cannot be avoided as stated in this protocol, CBR will consult with the NDEQ and NG&PC as to the feasibility of alternate actions. No work will be conducted until any such issue has been resolved with the NDEQ and NG&PC.

Surveyors:

Surveys shall be conducted by a qualified individual who has experience working with the species or has been trained to identify swift fox burrows, dens and sign (scat, tracks, etc.).

Location:

Surveys shall be conducted at project development sites discussed above where suitable habitat is present within the range of the species.

Season:

Surveys shall be conducted year-around in areas of suitable habitat where project development activities are planned.

Timing:

Surveys shall be conducted within one week of initiating project development activities described above under Location.

Survey Technique:

The "denning season" is defined as the period of time when adult swift fox give birth and raise pups. In Nebraska, the swift fox denning season is from April 1 through August 31.

During the denning season, the area that must be surveyed for dens includes project development activities plus an additional 230 meters around the affected areas. When developing wellfields, numerous boreholes will initially be drilled. In this situation, the "affected area" will be the perimeter of the wellfield for the addition of 230 meters to the survey area, as opposed to each drill site. Under such conditions (i.e. work over multiple days or months), only one survey shall be submitted for that period indicating the duration of planned activities in the survey area. During other periods of time (e.g., operations), when individual boreholes are drilled at one time or a workover rig is used for well maintenance, then the additional 230 meters will be applied to the drill site. The above procedures will allow the operator the option of the most effective type of survey to use - wellfield boundary or individual drill site. The satellite facilities will be located within a 30-acre fenced-in site. The swift fox survey will be conducted prior to construction using an additional 230 meters around the fence boundary.

During the non-denning season (September 1 through March 31), the area that must be surveyed for dens includes the project development activities plus an additional 100 meters around the affected areas. When developing wellfields, numerous boreholes will initially be drilled. In this situation, the "affected area" will be the perimeter of the wellfield for the addition of 100 meters to the survey area, as opposed to each drill site. Under such conditions (i.e. work over multiple days or months), only one survey shall be submitted for that period indicating the duration of planned activities in the survey area. During other periods of time (e.g., operations), when individual boreholes are drilled at one time or a workover rig is used for well maintenance, then the additional 100 meters will be applied to the drill site. The above procedures will allow the operator the option of the most effective type of survey to use - wellfield boundary or individual drill site. The satellite facilities will be located within a 30-acre fenced-in site. The swift fox survey will be conducted using an additional 100 meters around the fence boundary.

The survey will consist of walking transects and searching for dens within the survey area. Transects will be no more that 50 meters apart in order to thoroughly cover the area.

An active den may have fresh digging at the entrance, although this is not always the case (Jackson and Choate 2000). Sign, such as scat or tracks, can also be indicate an active den. Swift fox tracks are approximately 2.54 cm wide and 3.8 cm long. Although this is the smallest canid species, tracks can be confused with other species, especially young coyotes. Inactive dens may be overgrown with vegetation, have spider webs over the entrance, or be caving in.

Conservative Measures:

If a potentially active swift fox den is identified, one of two conservation measures should be implemented:

1. The area of project development activities shall be done so activities are at least 230 meters from the den during the denning season, or 100 meters from the den during the non-denning season. For drilling sites, these can be moved to an appropriate distance from the den. A survey around any of these new activities must be conducted.

2. A track or scent station can be set up to determine if the den is being used by swift fox. If track or scent stations indicate swift fox are using the den, then project development activities within a minimum of 100 meters or 230 meters (whichever is appropriate for the season) of the den would be postponed until the den is abandoned. For drilling sites, they can be moved as outlined in #1 above. If track or scent stations indicate swift fox are not using the den, then drilling activities may proceed if there are not any other dens or swift fox within the survey area.

Track Station: Den use can be determined by clearing vegetation around the den and sifting a mixture of fine dry sand and unscented glycerin in a circular patter (~1 m in diameter) around the den hole, approximately 0.5 inches thick. Tracks of the animal using the den can then be identified the following morning as most animals using underground dens are nocturnal and will exit the den at night. Track stations are only good for one night. If the track station cannot be checked the following morning, a new sand and glycerin mixture should be applied to the area around the den hole and surveyed the next morning.

Scent Station: Swift fox scent station surveys can be conducted any time of the year, although tracks will not show on bare, frozen ground. However, snow can be used as a tracking medium in winter. Scent stations are created by clearing any vegetation in an area and sifting a mixture of fine dry sand and unscented glycerin in a circular patter (~1 m in diameter) approximately 0.5 inches thick. A plaster tablet soaked in cod/salmon oil mixture (or either) is placed in the center of the station. Scent stations are then placed at locations selected based on the suitability of the surrounding habitat and the presence of certain structures (fence rows, gates, intersections, trails, etc.) that facilitate movement. Weather permitting, they are reset for 3 consecutive days or until at least one station shows sign of swift fox visitation (tracks, feces). Scent stations should not be used within 300 meters of a known or suspected active den as these methods may attract predators.

Survey Reports

A monthly survey report shall be submitted to Nebraska Game and Parks Commission (NG&PC) and Nebraska Department of Environmental Quality (NDEQ) describing all surveys for the swift fox that were conducted during the previous month in connection with project development

activities. The survey report shall include the names of the surveyors and their credentials, date and time of the survey, weather conditions, locations surveyed, methods, results, and a discussion of applicable conservation measures implemented. If the swift fox is not identified, the above information must be recorded and included in the report to be submitted at the end of the month. If a species is identified within the survey area, NG&PC must be notified by telephone within twenty-four (24) hours of identification. Written documentation of identification and the survey report shall be submitted with five (5) days of species identification, along with indication of conservation measures. All survey reports shall be submitted no later than the 28th day of the month following the end of the reporting period, even if the species being surveyed are not detected at a particular site. Copies of the reports shall be kept on site for inspection by the NDEQ.

References:

Jackson, V.I. and J.R. Chaote. 2000. *Dens and den sites of the swift fox, Vulpes velox.* The Southwestern Naturalist 45(2):212:220).

Nebraska Department of Environmental Quality (NDEQ). 2009. *Mineral Exploration Permit Number NE0210824.* August 19, 2009.

Tannerfeldt, M., A. Moehrenschlager and A. Angerbjorn. 2003. *Den ecology of swift, kit, and arctic foxes. A review. In the Swift Fox: Ecology and conservation of swift foxes in a changing world,* M. Sovada and L. Carbyn editors. Canadian Plains Research Center, University of Regima.

August 2009

Nebraska Department of Environmental Quality
Threatened and Endangered Species Survey Report

Surveyor' Name(s)_____

Credentials: (e.g., who certified the surveyor and date of certification or surveyor's knowledge of surveyed species)

_____

_____

Date of Survey: _____ Time of Survey: _____

Weather Condition:

Temperature: _____°F Wind Speed & Direction: _____

Other





Sunny Partly Cloudy Cloudy Snowing Raining _____

Legal Location or GPS coordinates (Lat/Long or UTM) of survey area (include datum, i.e., NAD83, WGS84:_____

County: _____

Vegetative Cover (i.e. corn stubble, plowed field, wetland, short grass prairie 10-20 cm tall

Methods used to survey affected area (.i.e. Mountain Plover Survey Protocol, 5 transects 50 ft apart)

_____

_____

Were any of the following species identified in the area?

Mountain Plover	Yes/No
River Otter	Yes/No
Swift Fox	Yes/No

If so, what conservation measures were taken? (Attach if necessary)

_____

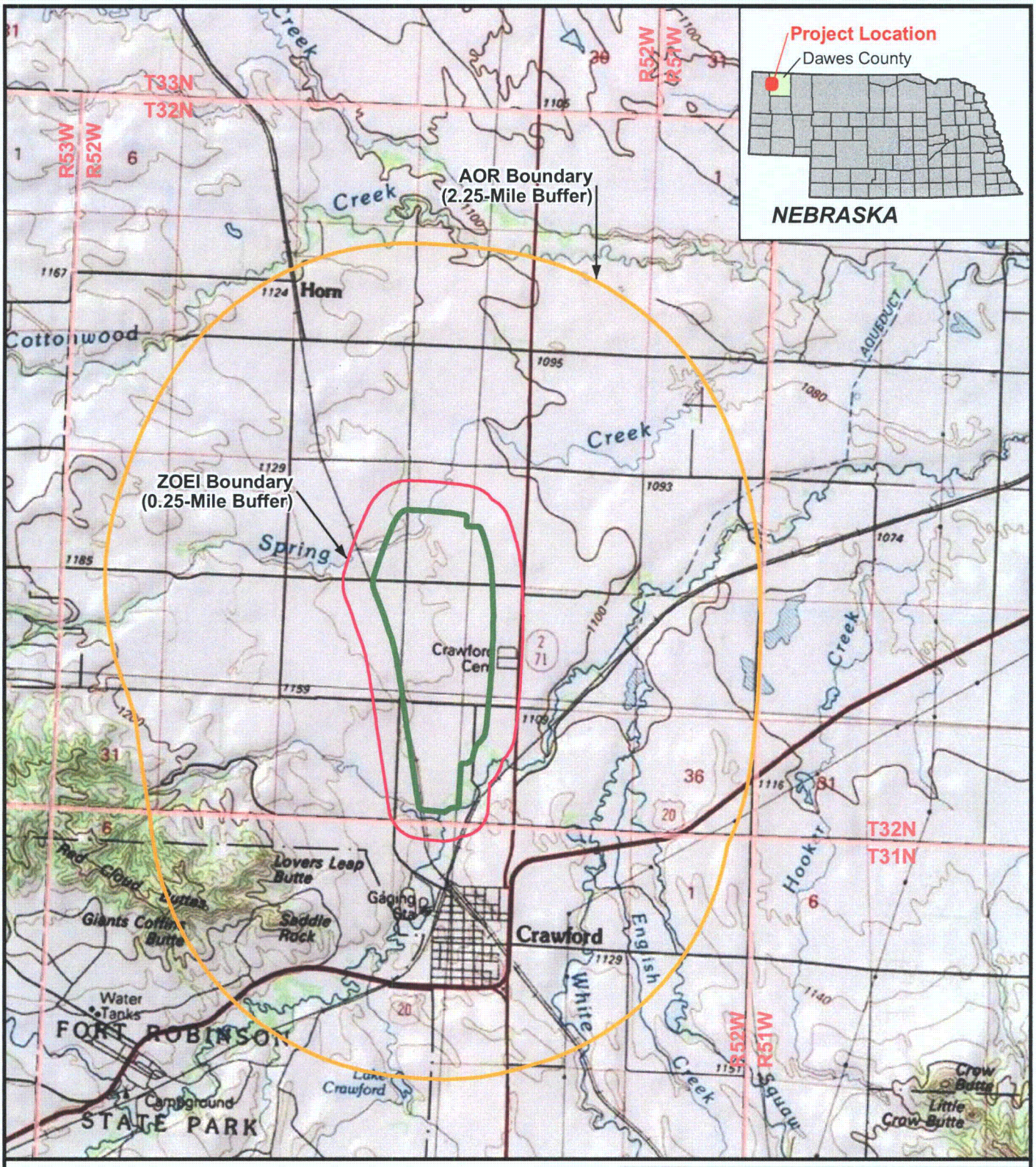
_____

If species is identified, record the location of the species in GPS coordinates. Also indicate locational certainty (i.e. 3 birds were flushed 50 yards NW from this point). Photographs may be sent with survey reports to aid in site description and species identification.

Submit survey reports <u>monthly</u> to:

Nebraska Game & Parks Commission
Attn: Env. Analyst Supervisor
Nebraska Natural Heritage Program
2200 N 33rd Street
Lincoln, NE 68503

Nebraska Dept. of Env. Quality
Attn: Mineral Exploration Program
P.O. Box 98922
Lincoln, NE 68509



Legend

- Proposed North Trend Expansion Area (NTEA)
- Zone of Endangering Influence (ZOEI)
- Area of Review (AOR)

NOTE: Both buffer distances are relative to the boundary of the proposed North Trend Expansion Area.

0 3,000 6,000 Feet

N
W E

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FIGURE Appl.1-1
PROJECT LOCATION MAP
ZOEI AND AOR

PROJECT: CO001322.0001 MAPPED: JC CHECKED: J.CEARLEY

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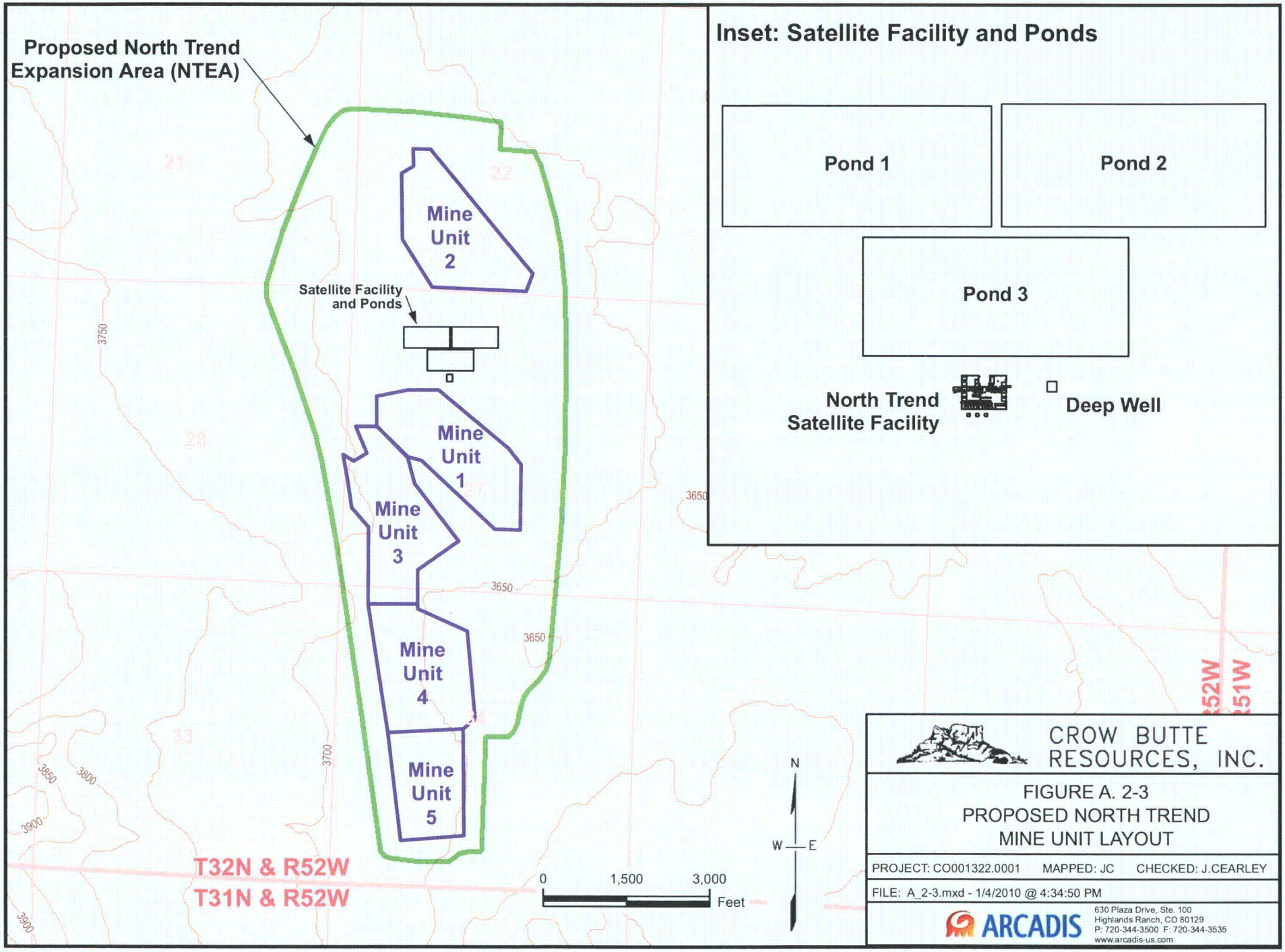
Proposed North Trend Expansion Area (NTEA)
Mine Unit 2
Satellite Facility and Ponds
Mine Unit 1
Mine Unit 3
Mine Unit 4
Mine Unit 5
T32N & R52W
T31N & R52W
3750
3650
3700
3850
3800
3900
0
1,500
3,000
Feet
N
W
E
Inset: Satellite Facility and Ponds
Pond 1
Pond 2
Pond 3
North Trend Satellite Facility
Deep Well
CROW BUTTE RESOURCES, INC.
FIGURE A. 2-3
PROPOSED NORTH TREND
MINE UNIT LAYOUT
PROJECT: CO001322.0001 MAPPED: JC CHECKED: J.CEARLEY
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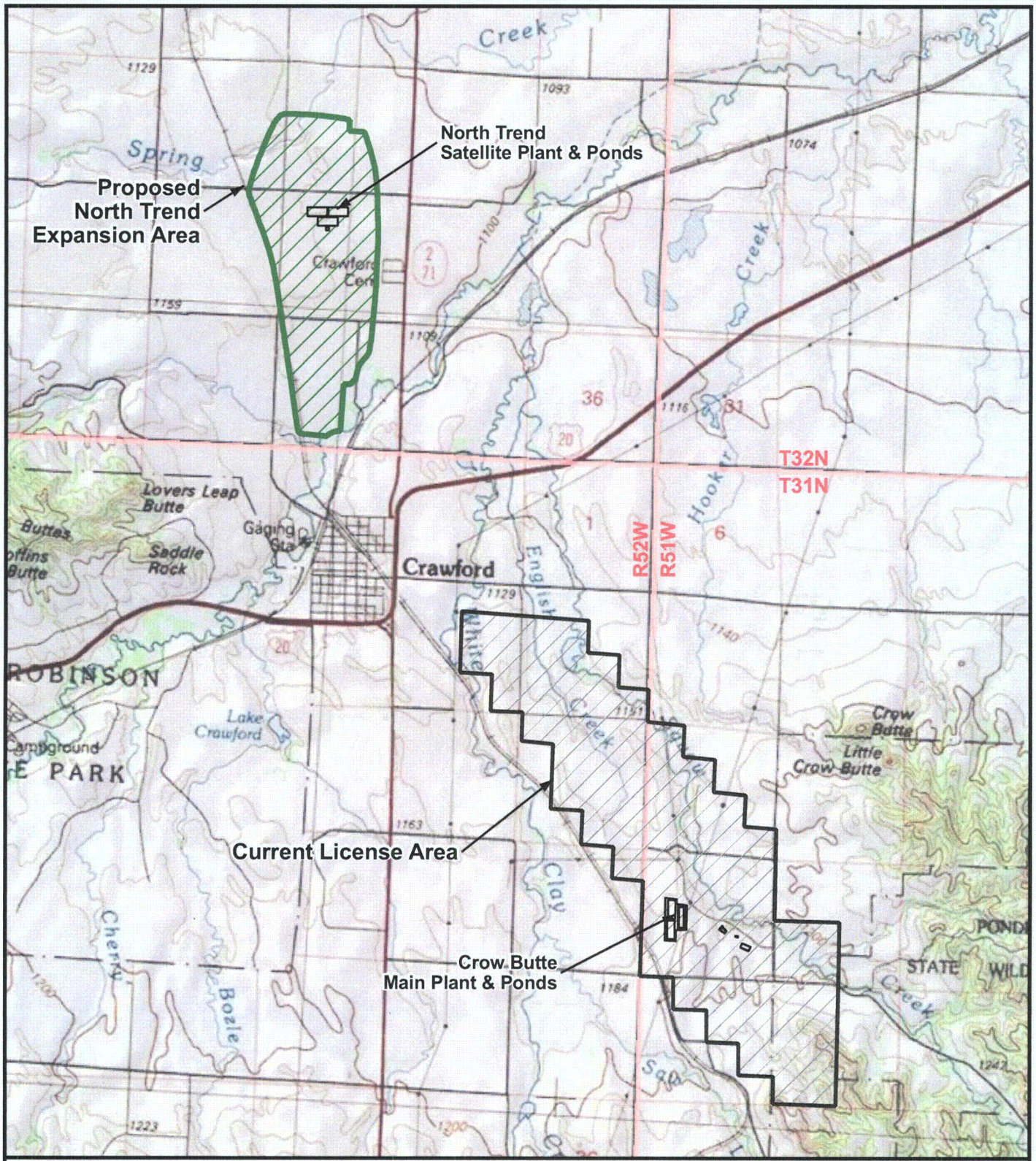
Figure A. 2-4 North Trend Expansion Area Mine Unit Schedule

ID	Task Name	Start	Finish
1	North Trend Production and Restoration	Mon 4/2/12	Sun 12/31/23
2	North Trend Facility Construction	Mon 4/2/12	Fri 3/1/13
3	North Trend Production	Fri 3/1/13	Thu 7/1/21
4	Mine Unit NT-1	Fri 3/1/13	Fri 4/1/16
5	Mine Unit NT-2	Mon 7/1/13	Tue 6/28/16
6	Mine Unit NT-3	Mon 12/1/14	Mon 1/1/18
7	Mine Unit NT-4	Tue 12/1/15	Fri 12/27/19
8	Mine Unit NT-5	Thu 12/1/16	Thu 7/1/21
9	Groundwater Restoration	Tue 12/1/15	Sun 12/31/23
10	Mine Unit NT-1	Tue 12/1/15	Mon 12/31/18
11	Mine Unit NT-2	Fri 7/1/16	Tue 12/31/19
12	Mine Unit NT-3	Fri 9/1/17	Thu 12/31/20
13	Mine Unit NT-4	Mon 9/3/18	Fri 12/31/21
14	Mine Unit NT-5	Mon 9/2/19	Sat 12/31/22
15	Final Site Reclamation	Mon 1/2/23	Fri 12/29/23



Legend

- Plants_and_Ponds
- Proposed North Trend Expansion Area
- Current License Area

N
W — E

0 0.5 1 Miles

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FIGURE B.2-1
CURRENT LICENSE AREA BOUNDARY
& PROPOSED NORTH TREND BOUNDARY

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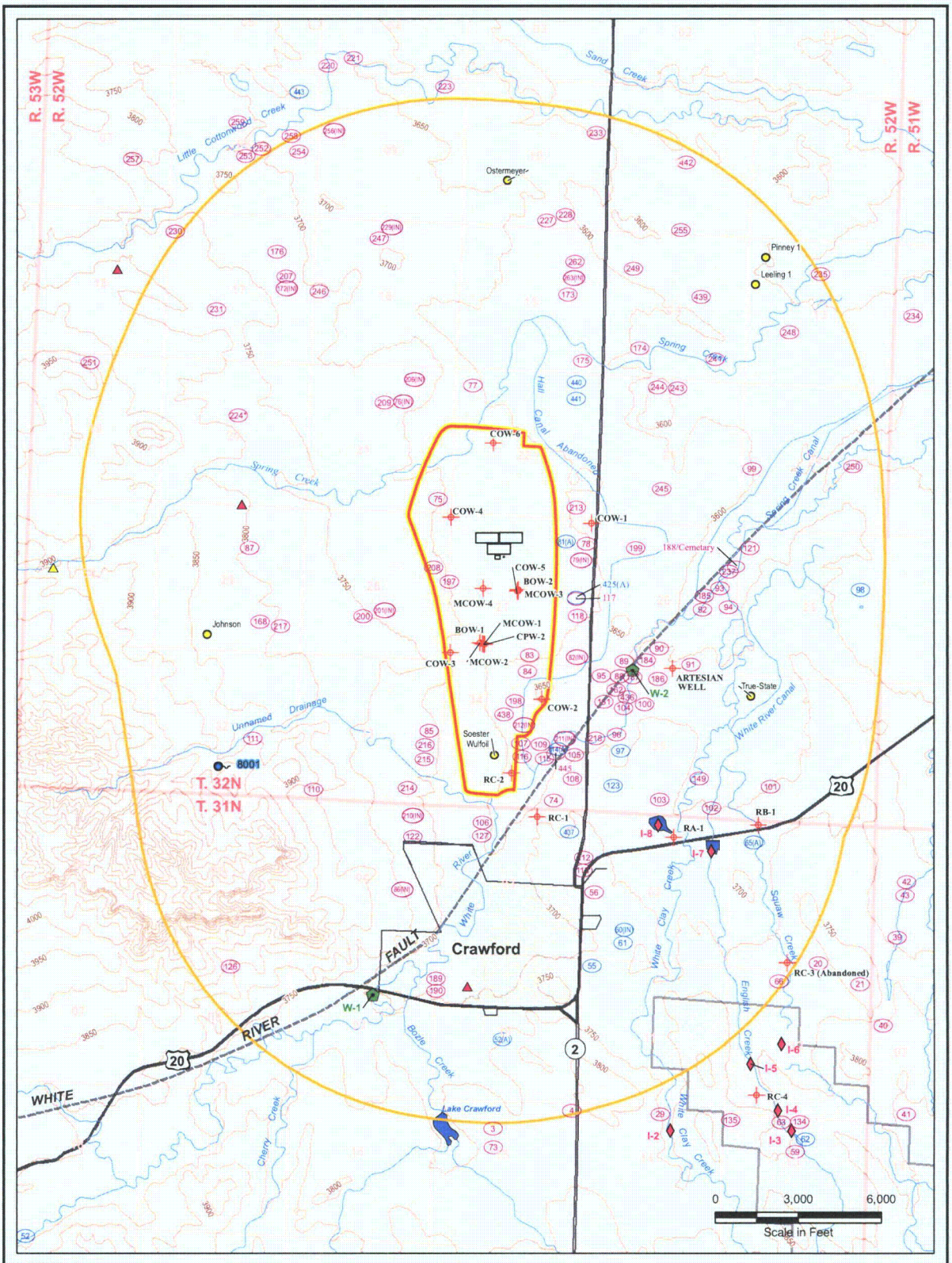

LEGEND

- Monitoring Well
- Oil/Gas Deep Exploration Well
- Concrete Aggregate Pit
- Sand & Grave Pit
- Brule Water Well (Active)
- Brule Water Well (Abandoned)
- Brule Water Well (Inactive)
- Chadron Water Well (Active)
- Chadron Water Well (Abandoned)
- Chadron Water Well (Inactive)
- Surface Water Monitor
- Water Impoundment
- Spring
- Elevation Contours (in Feet)
- Facilities (Ponds, Satellite Facilities, Deep Well)
- Class III Permit Boundary
- Proposed North Trend Expansion Area (NTEA)
- 2.25-Mile Buffer of Proposed NTEA Boundary
- Lakes
- Streams

N
W E

* Location of well 224 is approximated.

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FIGURE C.1-1
MAJOR SURFACE FEATURES/STRUCTURES WITHIN AOR
AS PER TITLE 122, CHAPTER 11, SECTION 006.09

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LEGEND

- Commercial
- Motel
- Rural Residence
- City Limit of Crawford
- Boundary of Fort Robinson
- Proposed North Trend Expansion Area (NTEA)
- 2.25-Mile Buffer of Proposed NTEA Boundary

N
W — E

0 3,000 6,000
Scale in Feet

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FIGURE C.1-3
AERIAL PHOTO DEPICTING LOCATION OF RURAL RESIDENCES AND OTHER LAND FEATURES IN THE AREA OF REVIEW

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: C_1-3.mxd - 12/30/2009 @ 1:45:28 PM

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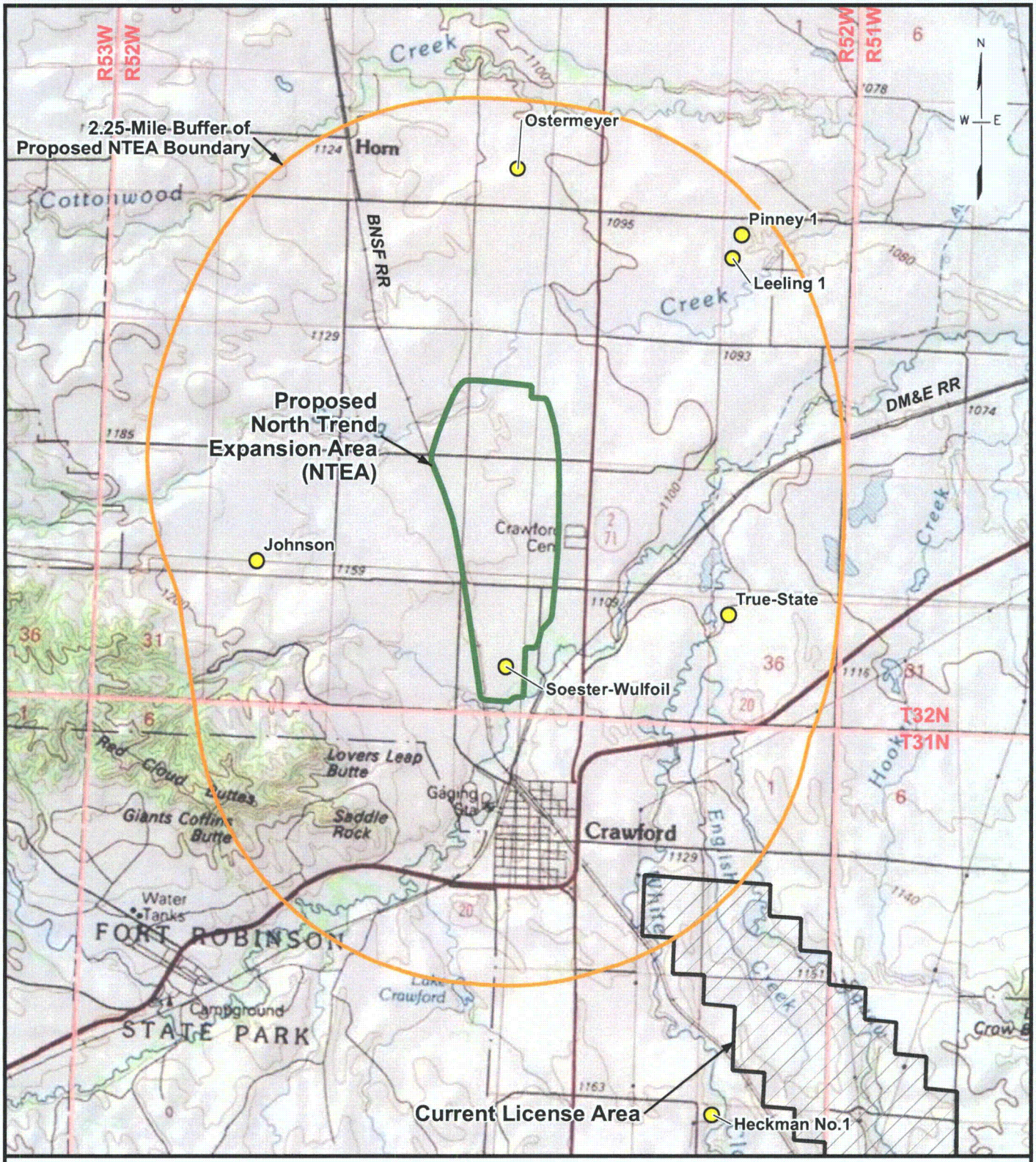

Legend

- Oil/Gas Deep Exploration Well
- Proposed North Trend Expansion Area (NTEA)
- 2.25-Mile Buffer of Proposed NTEA Boundary
- Current License Area

BNSF RR - Burlington Northern Santa Fe Railroad
DM&E RR - Dakota, Minnesota and Eastern Railroad

Source: Nebraska Oil and Gas Commission (NOGC). 2008. [Web page]. http://www.nogcc.ne.gov/ (Well data and publications). Accessed on April 01, 2008.

0 0.5 1 Miles

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FIGURE D. 1-1
North Trend Expansion Area
Location of Oil/Gas Test Holes

PROJECT: CO001322.0001 MAPPED: JC CHECKED: J.CEARLEY

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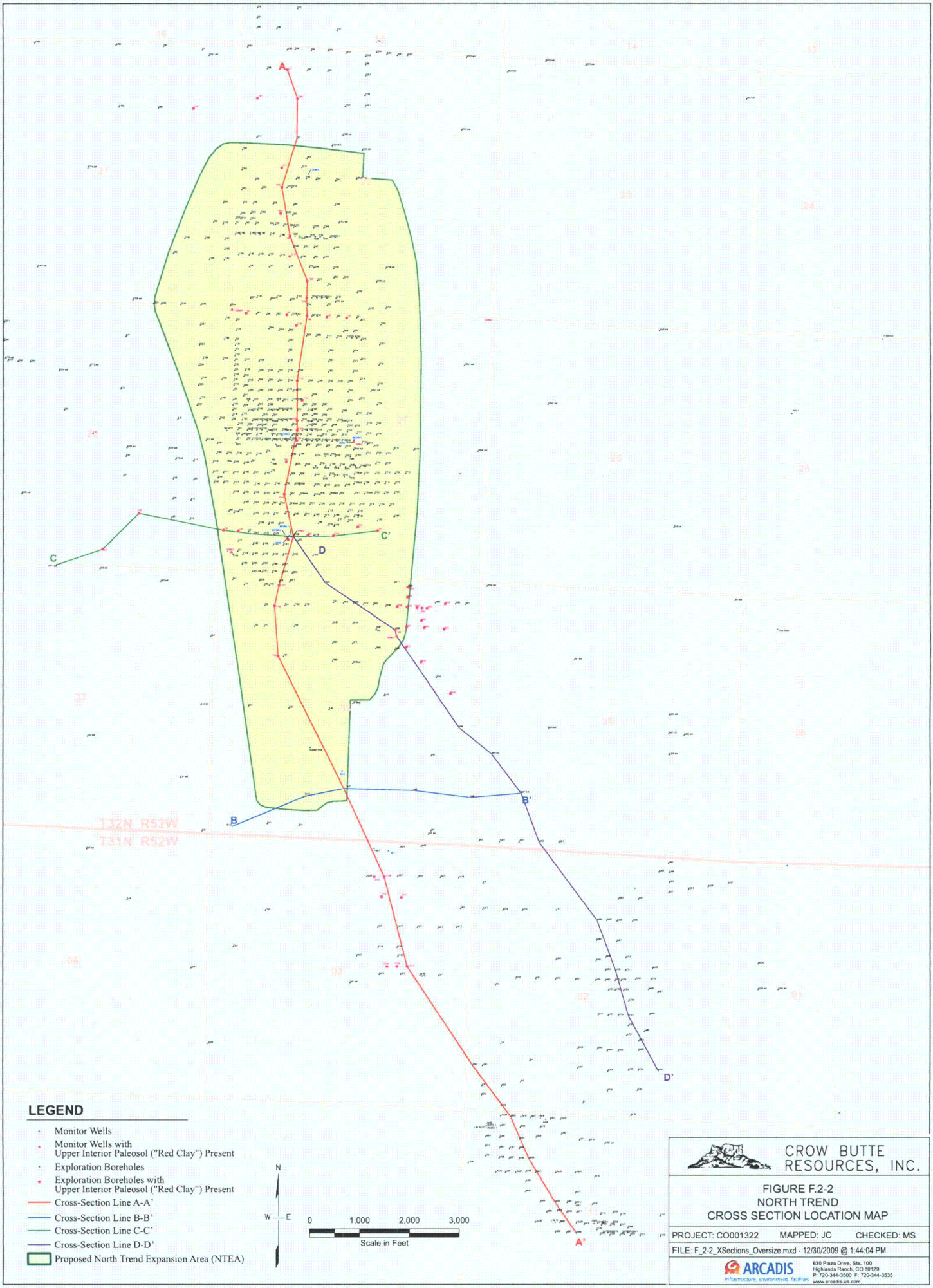

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FIGURE F.2-2
NORTH TREND
CROSS SECTION LOCATION MAP

PROJECT: CO001322 MAPPED: JC CHECKED: MS

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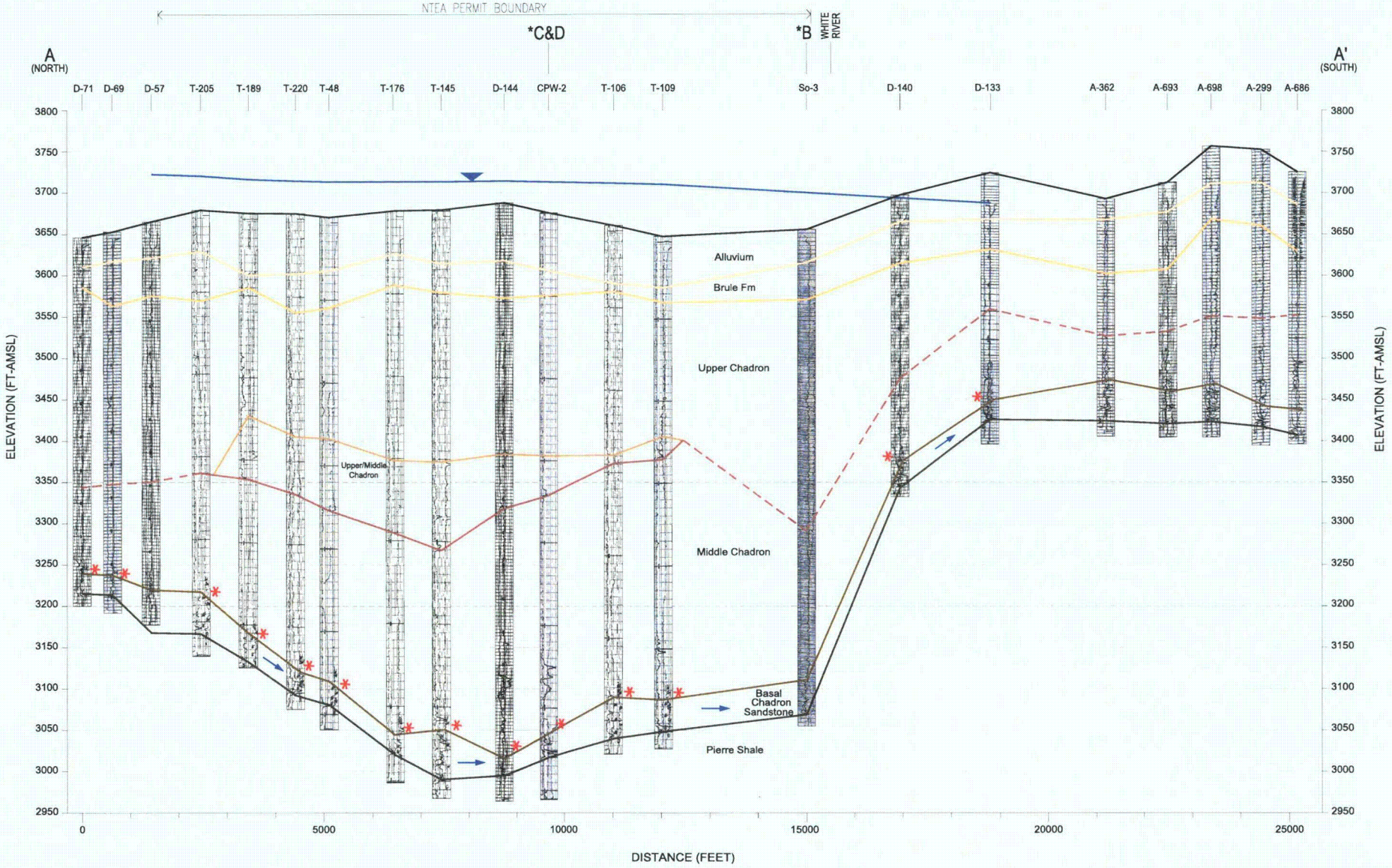

Notes:

1) Geologic units that underlie the Pierre Shale are not shown.
2) For locations where the Upper/Middle Chadron Fm was not observed in elogs, the contact between the Upper Chadron Fm and the Middle Chadron Fm was extrapolated based on known occurrence, and is shown as dashed lines.
3) Groundwater elevations were measured on 4/16/2008 (FT-AMSL).

* Letter indicates location of intersecting cross-section lines shown on Figure 4.

Legend:

- Topographic Surface
- Top of Brule Fm
- Top of Upper Chadron
- Top of Upper/Middle Chadron
- Top of Middle Chadron
- Top of Basal Chadron Sandstone
- Top of Pierre Shale
- Potentiometric Surface (Basal Chadron Sandstone) - 4/16/08
- Groundwater Flow Direction
- Approximate Location of Upper Interior Paleosol ("Red Clay")

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FIGURE F. 2-3a
NORTH TREND STRUCTURAL
CROSS-SECTION: A-A'

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: Fig 5a.dwg DATE/TIME: 11/12/2009 12:15 PM

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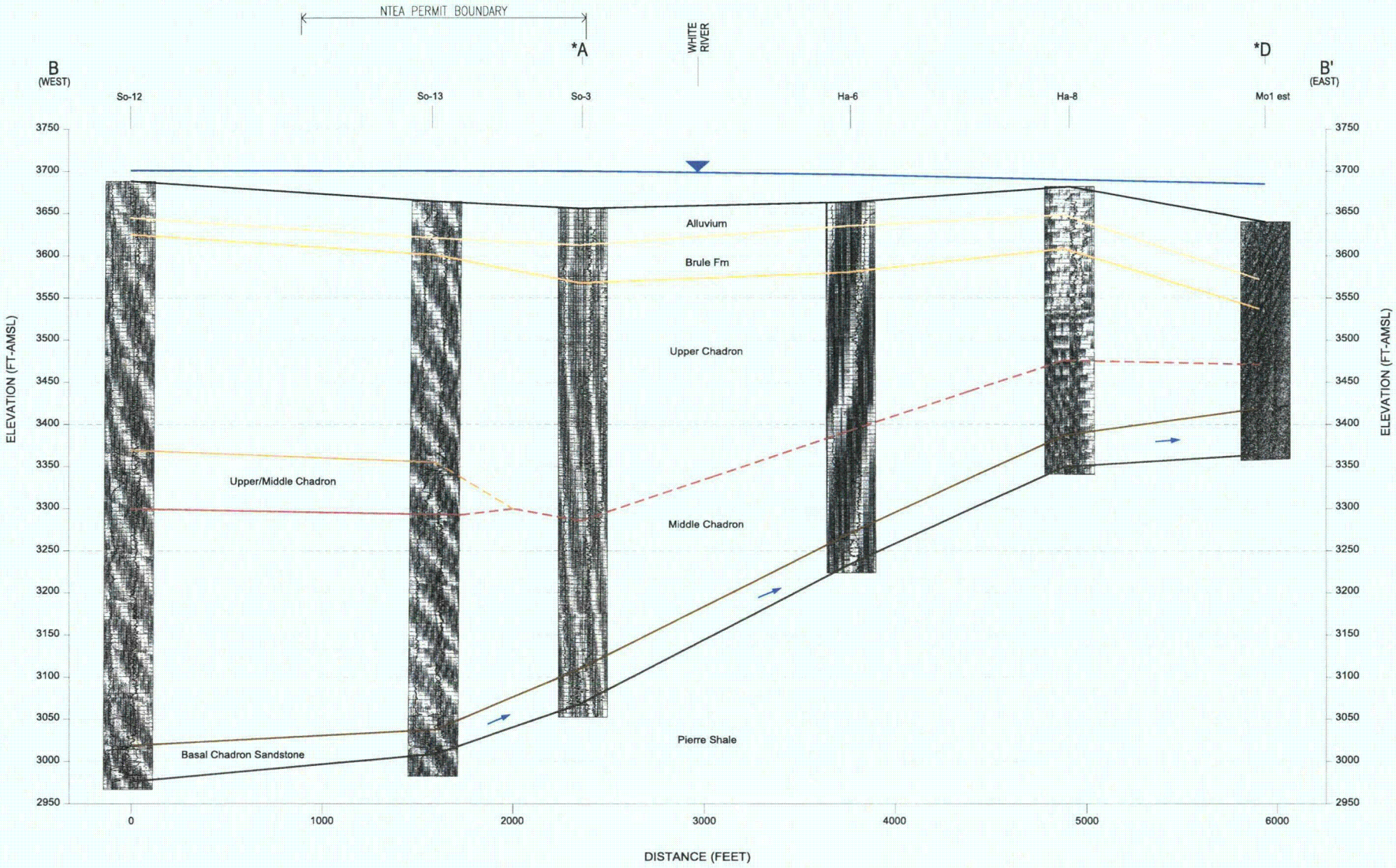

Notes:

1) Geologic units that underlie the Pierre Shale are not shown.
2) For locations where the Upper/Middle Chadron Fm was not observed in elogs, the contact between the Upper Chadron Fm and the Middle Chadron Fm was extrapolated based on known occurrence, and is shown as dashed lines.
3) Groundwater elevations were measured on 4/16/2008 (FT-AMSL).

* Letter indicates location of intersecting cross-section lines shown on Figure 4.

Legend:

- Topographic Surface
- Top of Brule Fm
- Top of Upper Chadron
- Top of Upper/Middle Chadron
- Top of Middle Chadron
- Top of Basal Chadron Sandstone
- Top of Pierre Shale
- Potentiometric Surface (Basal Chadron Sandstone) - 4/16/08
- Groundwater Flow Direction

CROW BUTTE RESOURCES, INC.

FIGURE F. 2-3b
NORTH TREND STRUCTURAL
CROSS-SECTION: B-B'

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: Fig 5b.dwg DATE/TIME: 11/12/2009 12:24 PM

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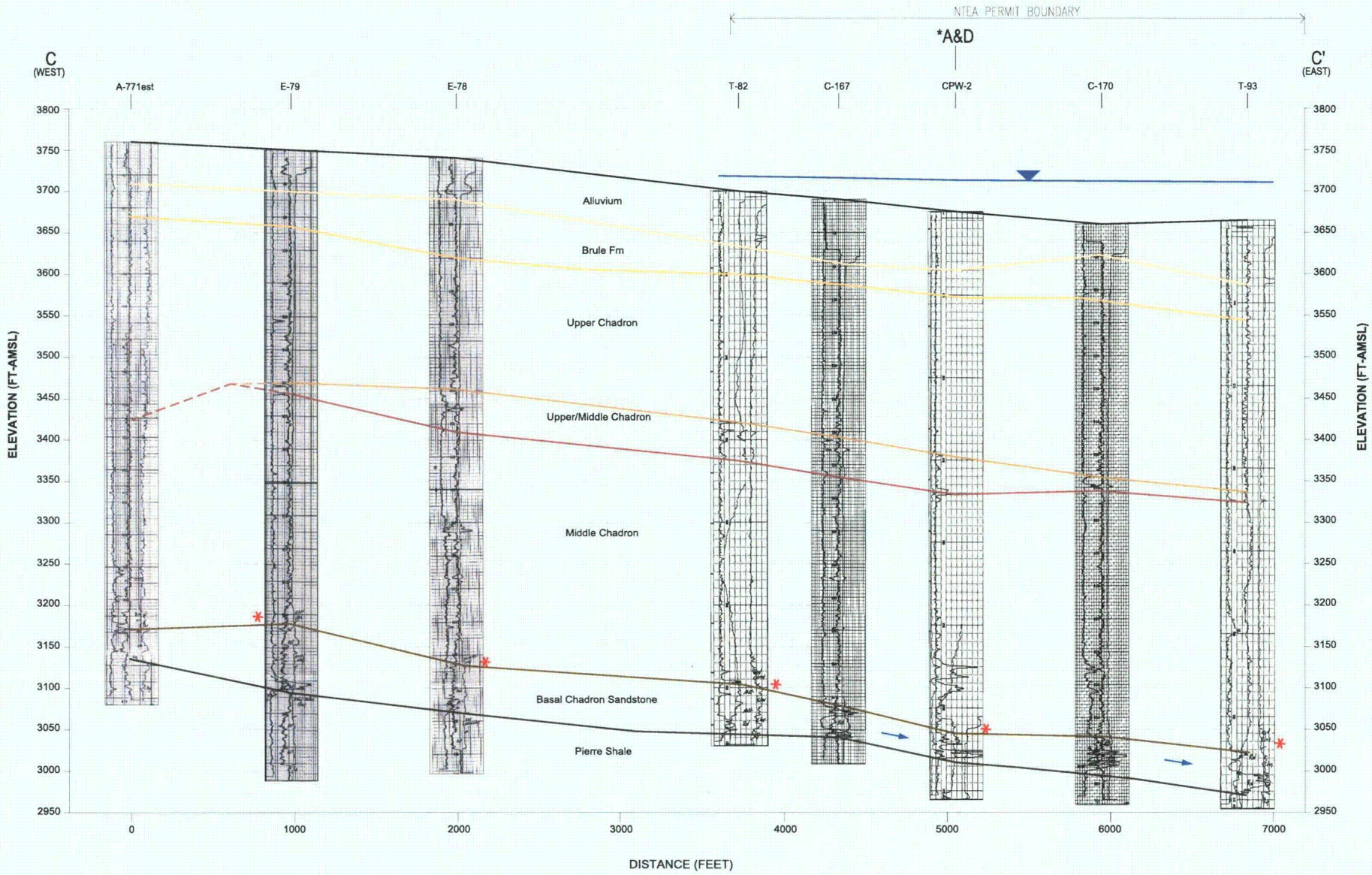

Notes:

1) Geologic units that underlie the Pierre Shale are not shown.
2) For locations where the Upper/Middle Chadron Fm was not observed in elogs, the contact between the Upper Chadron Fm and the Middle Chadron Fm was extrapolated based on known occurrence, and is shown as dashed lines.
3) Groundwater elevations were measured on 4/16/2008 (FT-AMSL).

* Letter indicates location of intersecting cross-section lines shown on Figure 4.

Legend:

- Topographic Surface
- Top of Brule Fm
- Top of Upper Chadron
- Top of Upper/Middle Chadron
- Top of Middle Chadron
- Top of Basal Chadron Sandstone
- Top of Pierre Shale
- Potentiometric Surface (Basal Chadron Sandstone) - 4/16/08
- Groundwater Flow Direction
- Approximate Location of Upper Interior Paleosol ("Red Clay")

CROW BUTTE RESOURCES, INC.

FIGURE F. 2-3c
NORTH TREND STRUCTURAL
CROSS-SECTION: C-C'

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: Fig 5c.dwg DATE/TIME: 11/12/2009 12:30 PM

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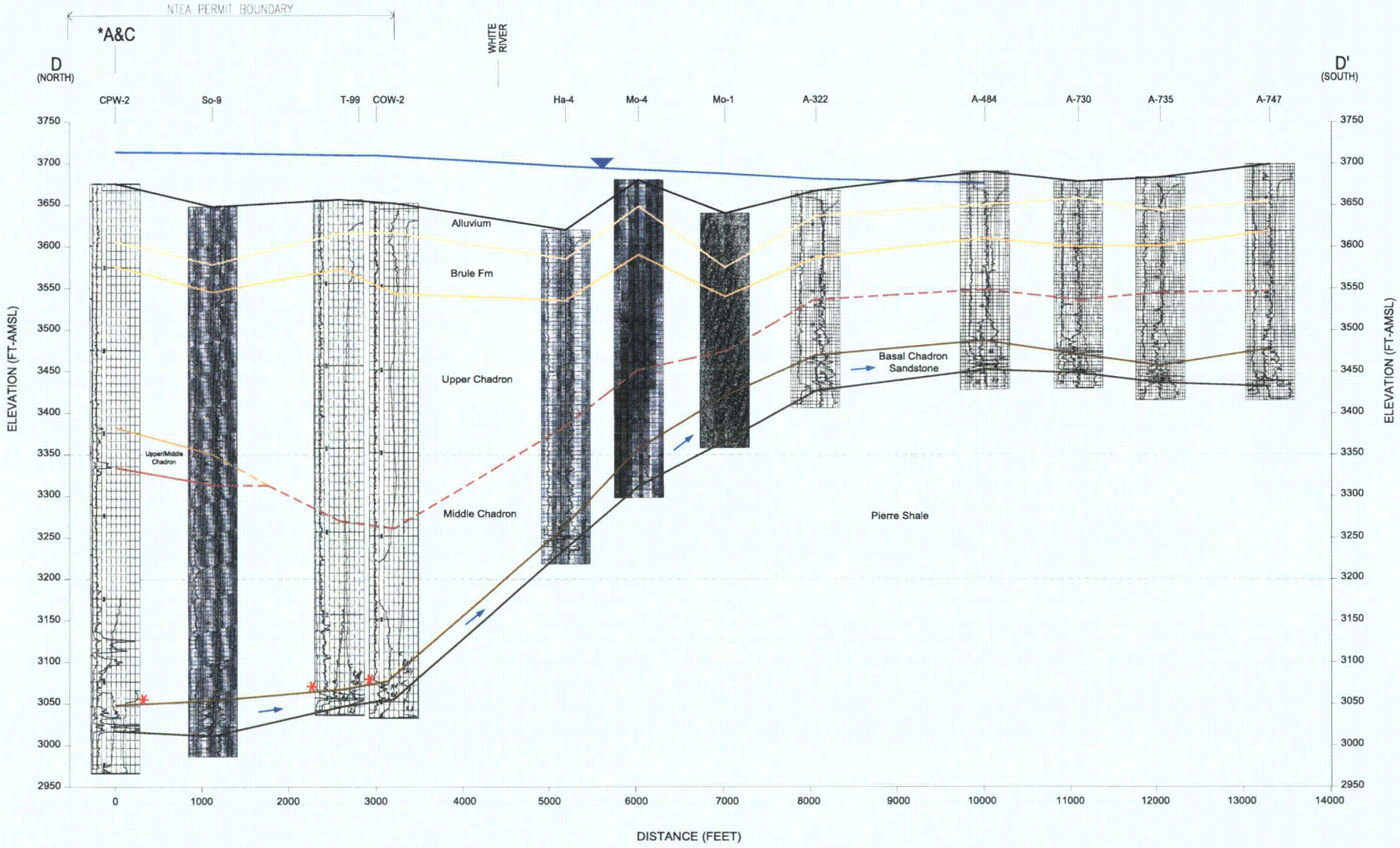

Notes:

1) Geologic units that underlie the Pierre Shale are not shown.
2) For locations where the Upper/Middle Chadron Fm was not observed in elogs, the contact between the Upper Chadron Fm and the Middle Chadron Fm was extrapolated based on known occurrence, and is shown as dashed lines.
3) Groundwater elevations were measured on 4/16/2008 (FT-AMSL).

* Letter indicates location of intersecting cross-section lines shown on Figure 4.

Legend:

- Topographic Surface
- Top of Brule Fm
- Top of Upper Chadron
- Top of Upper/Middle Chadron
- Top of Middle Chadron
- Top of Basal Chadron Sandstone
- Top of Pierre Shale
- Potentiometric Surface (Basal Chadron Sandstone) - 4/16/08
- Groundwater Flow Direction
- Approximate Location of Upper Interior Paleosol ("Red Clay")

CROW BUTTE RESOURCES, INC.

FIGURE F.2-3d
NORTH TREND STRUCTURAL
CROSS-SECTION: D-D'

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: Fig 5d.dwg DATE/TIME: 11/12/2009 12:33 PM

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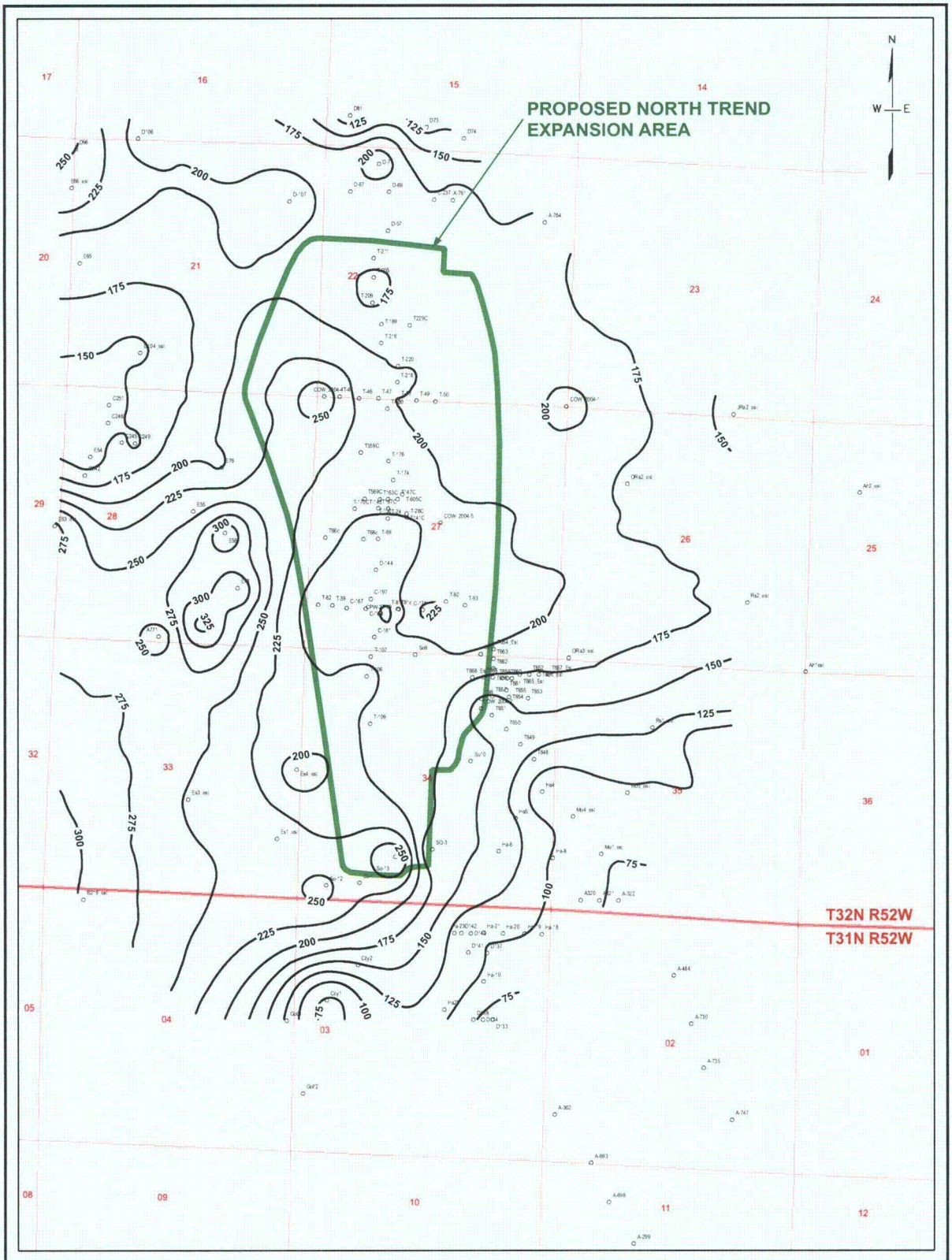

LEGEND

- Exploration Borehole
- Isopach Contour (Feet)
- Proposed North Trend Expansion Area (NTEA)

0 1,000 2,000
Scale in Feet

Contour Interval in feet

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FIGURE F.3-2
NORTH TREND ISOPACH MAP - UPPER CHADRON

FILE: F_3-2_NTIsopach_UpperChadron.mxd - 1/4/2010 @ 2:51:32 PM

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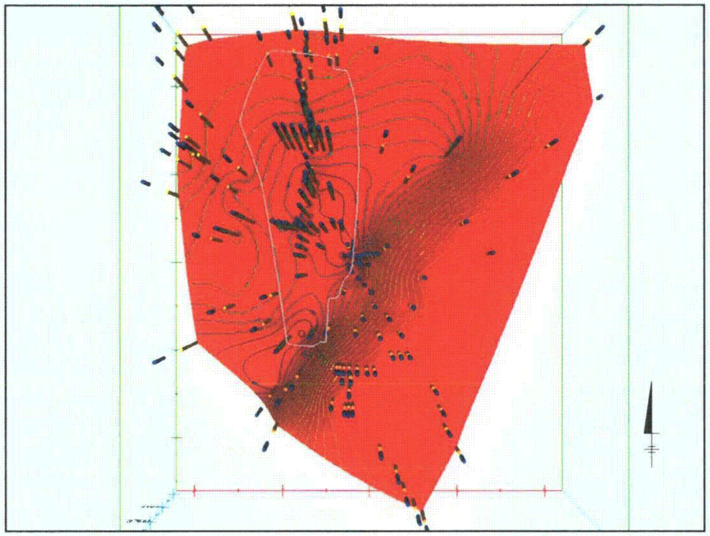
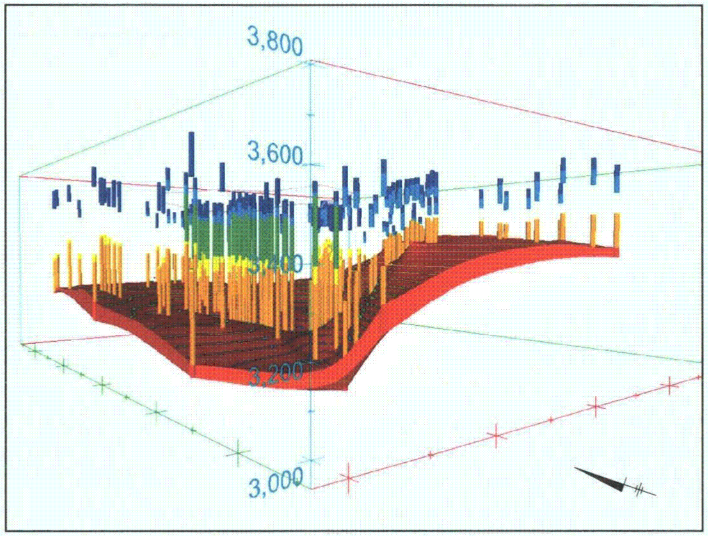
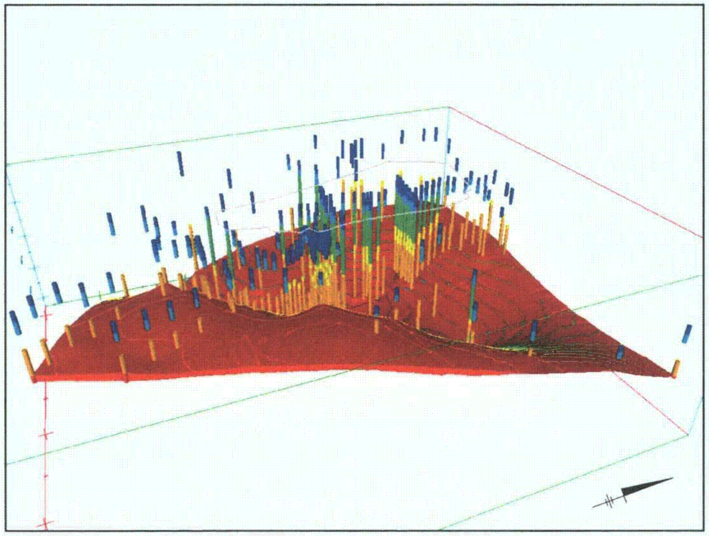


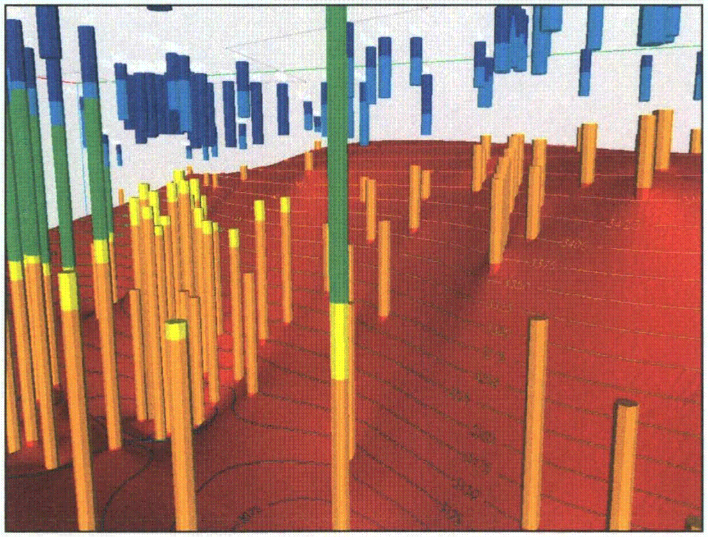
PLAN VIEW (PERMIT BOUNDARY SHOWN)



OBLIQUE VIEW - FACING NORTHEAST (PARALLEL TO FOLD AXIS)



OBLIQUE VIEW - FACING NORTHWEST (PERPENDICULAR TO FOLD AXIS)



OBLIQUE VIEW - FACING EAST-NORTHEAST INTO NORTH LIMB OF FOLD

LEGEND:

STRATIGRAPHY

- Alluvium
- Brule Fm
- Upper Chadron Fm (Big Cottonwood Creek Mbr)
- Upper/Middle Chadron Fm (Big Cottonwood Creek Mbr)
- Middle Chadron Fm (Peanut Peak Mbr)
- Basal Chadron Fm (Chamberlain Pass Fm)

NOTES:

- All of the 3D model output has a 10x vertical exaggeration.
- Elevations are in ft-amsl (axes and contours).

CROW BUTTE RESOURCES, INC.

FIGURE F.3-3a
BASAL CHADRON SANDSTONE
(CHAMBERLAIN PASS FM)

PROJECT: CO001322 MAPPED: CHECKED: MS

FILE: FIGURE F.3-3a

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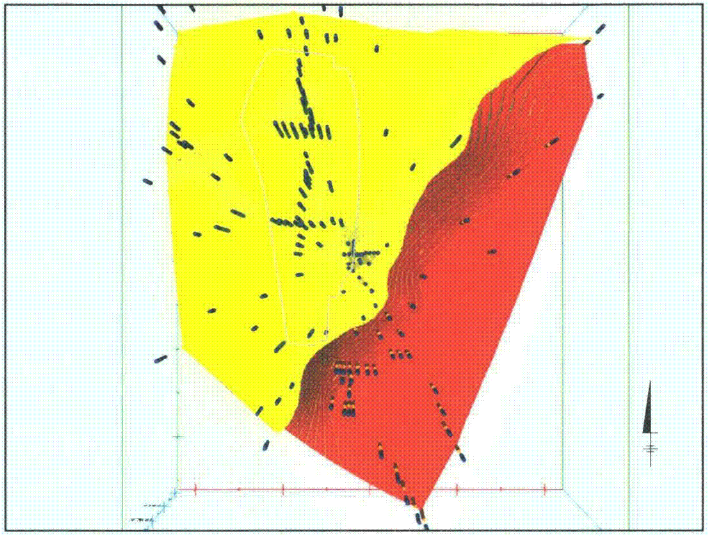
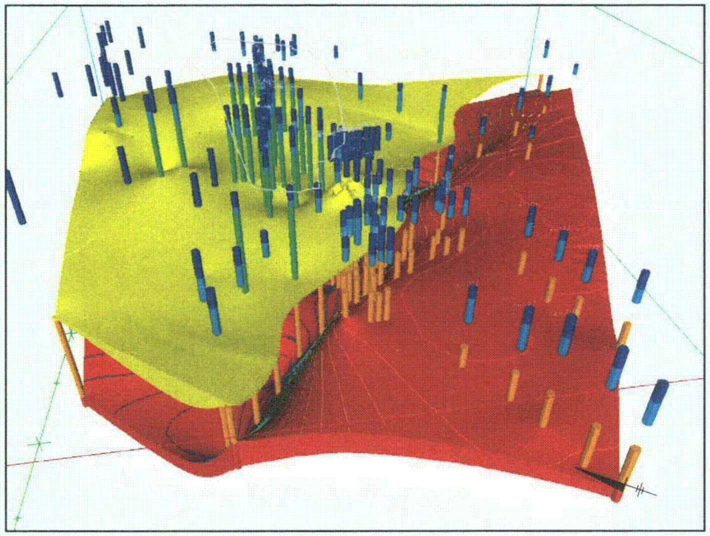
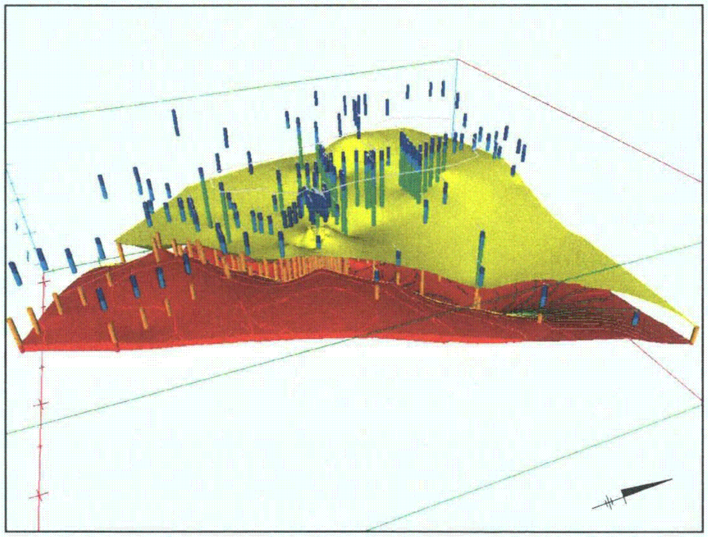
CO001322/0003/00002/CDR/CO001G01.CDR



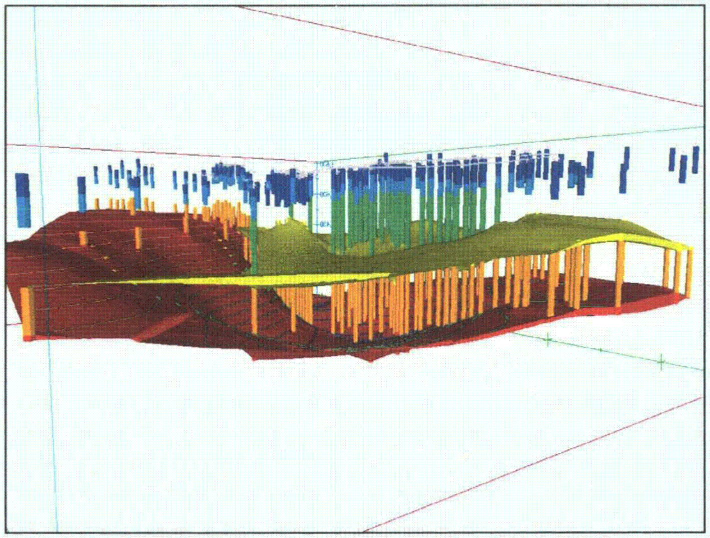
PLAN VIEW (PERMIT BOUNDARY SHOWN)



OBLIQUE VIEW - FACING NORTHEAST (PARALLEL TO FOLD AXIS)



OBLIQUE VIEW - FACING NORTHWEST (PERPENDICULAR TO FOLD AXIS)



OBLIQUE VIEW - FACING EAST-NORTHEAST INTO NORTH LIMB OF FOLD

LEGEND:

STRATIGRAPHY

- Alluvium
- Brule Fm
- Upper Chadron Fm (Big Cottonwood Creek Mbr)
- Upper/Middle Chadron Fm (Big Cottonwood Creek Mbr)
- Middle Chadron Fm (Peanut Peak Mbr)
- Basal Chadron Fm (Chamberlain Pass Fm)

NOTES:

- All of the 3D model output has a 10x vertical exaggeration.
- Elevations are in ft-amsl (axes and contours).

CROW BUTTE RESOURCES, INC.

FIGURE F.3-3b
BASAL CHADRON SANDSTONE (CHAMBERLAIN PASS FM) AND UPPER/MIDDLE CHADRON (BIG COTTONWOOD CREEK MBR)

PROJECT: CO001322 MAPPED: CHECKED: MS

FILE: FIGURE F.3-3b

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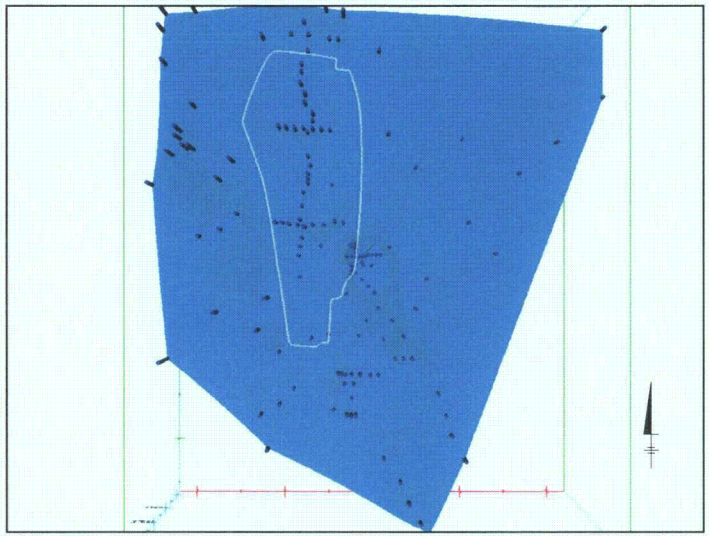
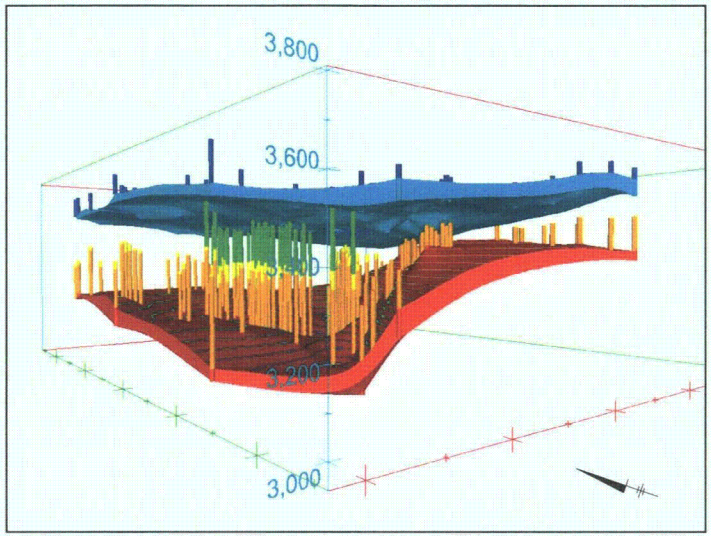
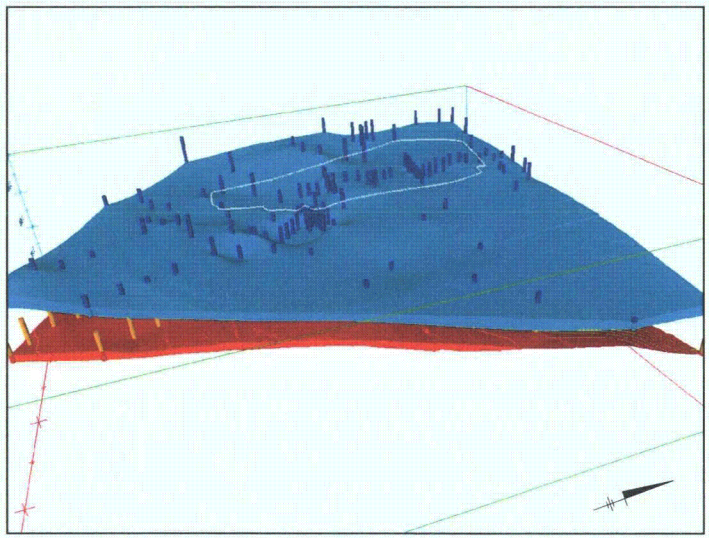


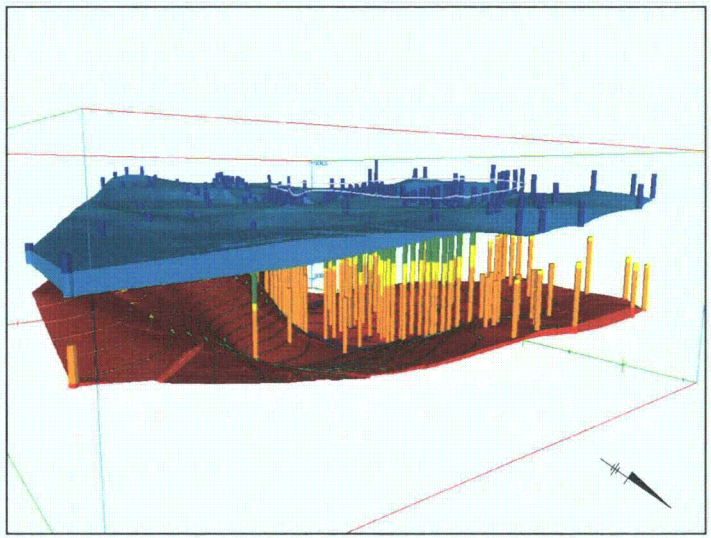
PLAN VIEW (PERMIT BOUNDARY SHOWN)



OBLIQUE VIEW - FACING NORTHEAST (PARALLEL TO FOLD AXIS)



OBLIQUE VIEW - FACING NORTHWEST (PERPENDICULAR TO FOLD AXIS)



OBLIQUE VIEW FACING SOUTHWEST (PARALLEL TO FOLD AXIS)

LEGEND:

STRATIGRAPHY

- Alluvium
- Brule Fm
- Upper Chadron Fm (Big Cottonwood Creek Mbr)
- Upper/Middle Chadron Fm (Big Cottonwood Creek Mbr)
- Middle Chadron Fm (Peanut Peak Mbr)
- Basal Chadron Fm (Chamberlain Pass Fm)

NOTES:

- All of the 3D model output has a 10x vertical exaggeration.
- Elevations are in ft-amsl (axes and contours).

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FIGURE F.3-3c
BASAL CHADRON SANDSTONE (CHAMBERLAIN PASS FM) AND BRULE FM

PROJECT: CO001322 MAPPED: CHECKED: MS

FILE: FIGURE F.3-3c

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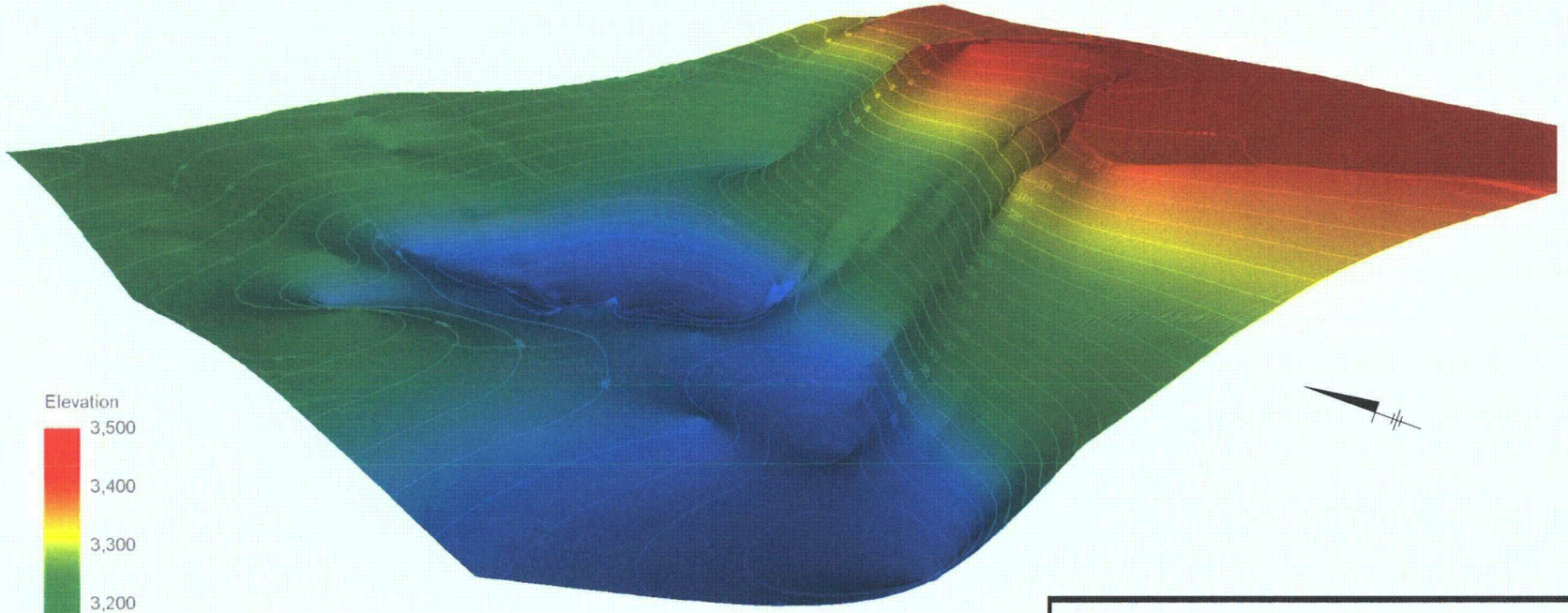

NOTES:

- All of the 3D model output has a 10x vertical exaggeration.
- Elevations are in ft-amsl (color legend and contours).

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FIGURE F.3-3d
TOP OF PIERRE SHALE

PROJECT: CO001322 MAPPED: CHECKED: MS

FILE: FIGURE F.3-3d

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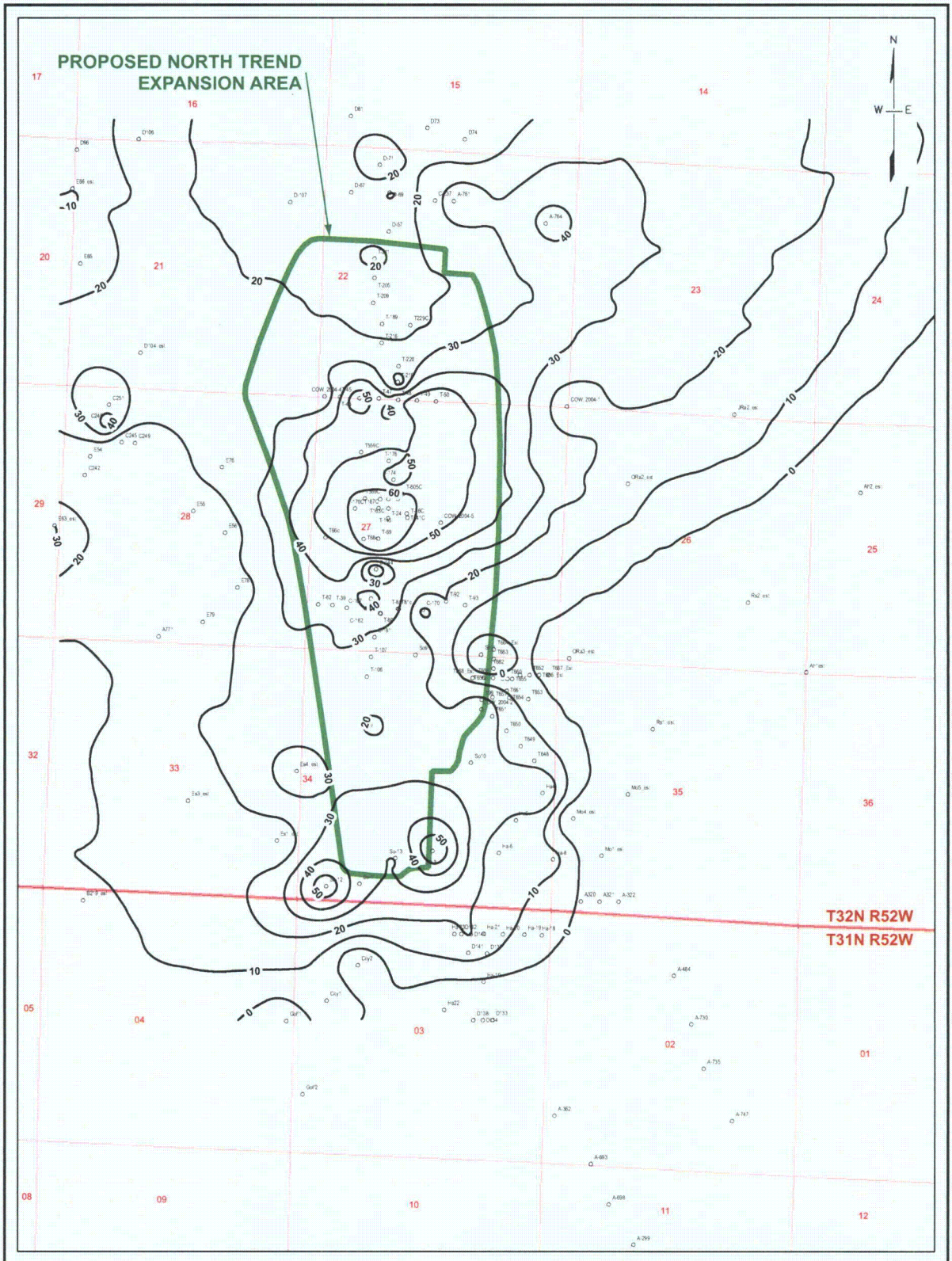

LEGEND

- Exploration Borehole
- Isopach Contour (Feet)
- Proposed North Trend Expansion Area (NTEA)

0 1,000 2,000
Scale in Feet

Contour Interval in feet

CROW BUTTE RESOURCES, INC.

FIGURE F.3-4
NORTH TREND ISOPACH MAP - UPPER/MIDDLE CHADRON

FILE: F_3-4_NTIsopach_UpperMiddleChadron.mxd - 1/4/2010 @ 2:48:24 PM

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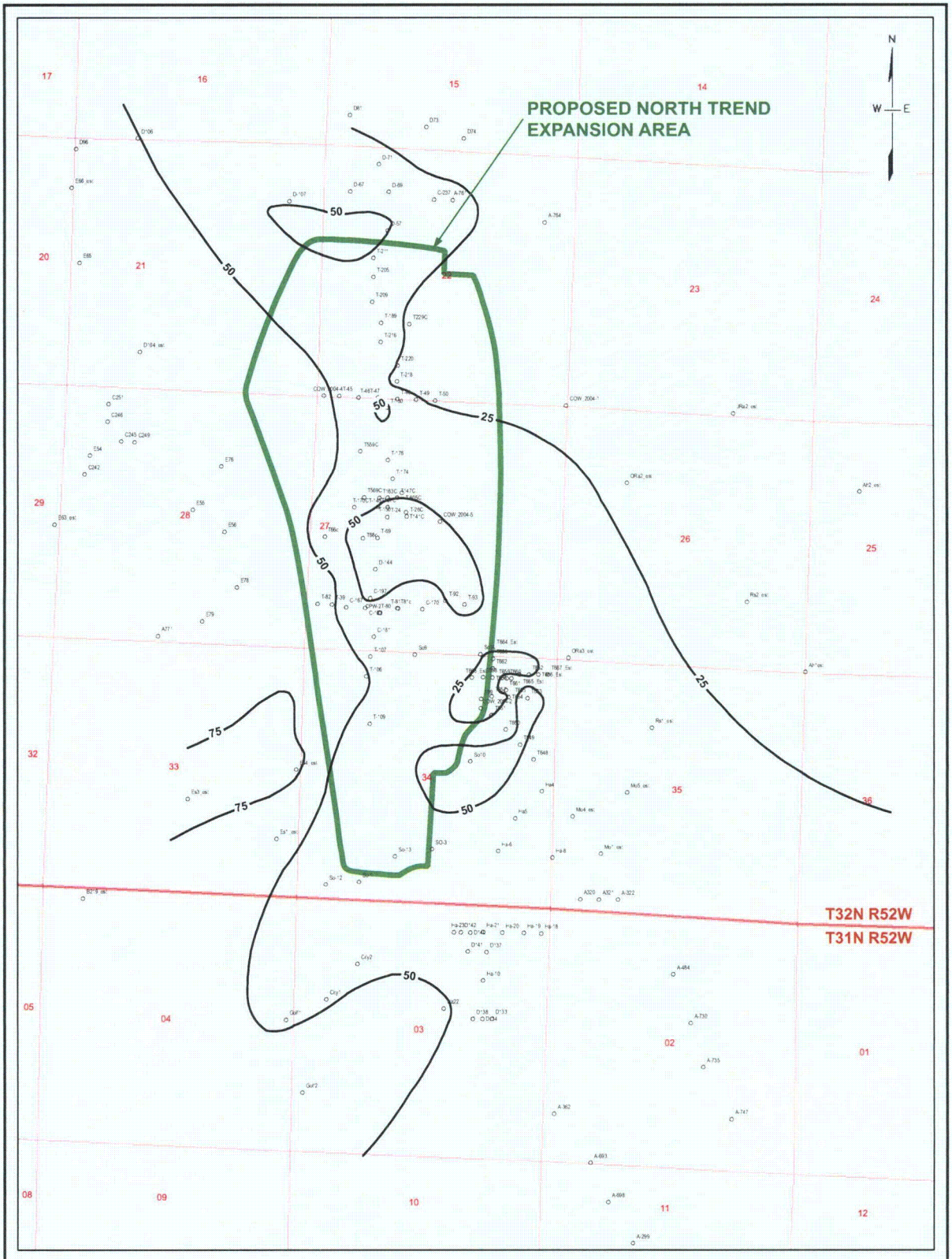

LEGEND

- Exploration Borehole
- Isopach Contour (Feet)
- Proposed North Trend Expansion Area (NTEA)

0 1,000 2,000
Scale in Feet

Contour Interval in feet

CROW BUTTE RESOURCES, INC.

FIGURE F.3-5
NORTH TREND ISOPACH MAP -
BASAL CHADRON SANDSTONE (REV 05/09)

FILE: F_3-5_NTIsopach_BasalChadron.mxd - 12/30/2009 @ 1:44:53 PM

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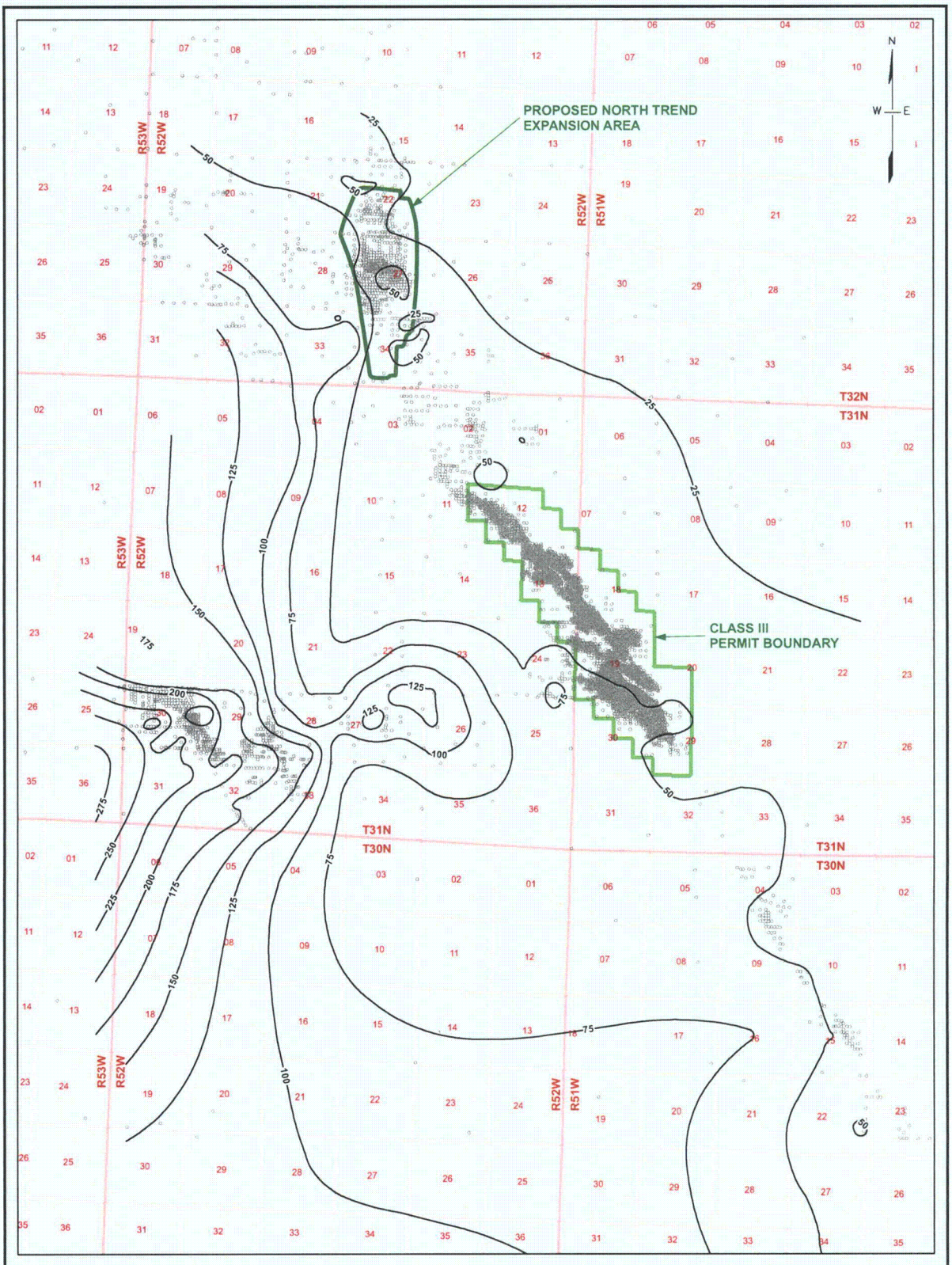

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FIGURE F.3-6
REGIONAL ISOPACH MAP -
BASAL CHADRON SANDSTONE (REV 05/09)

FILE: F_3-6_Regional_Isopach_Map_BasalChadron.mxd - 12/30/2009 @ 1:42:35 PM

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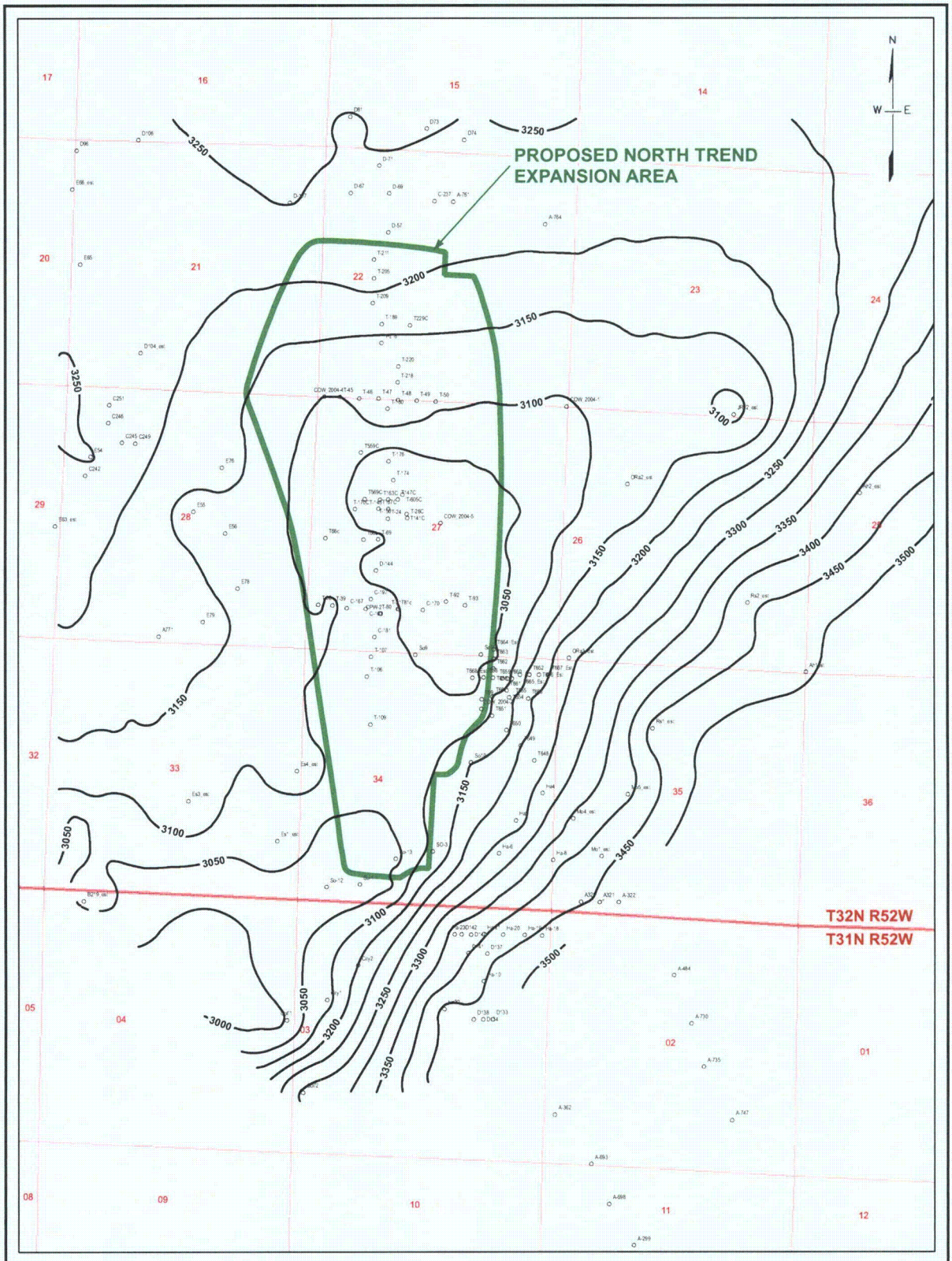

LEGEND

- Exploration Borehole
- Elevation Contour (Feet-AMSL)
- Proposed North Trend Expansion Area (NTEA)

0 1,000 2,000

Scale in Feet

Contour Interval in feet [amsl]

CROW BUTTE RESOURCES, INC.

FIGURE F.3-7
NORTH TREND CONTOUR MAP -
THE TOP OF PIERRE (REV 05/09)

FILE: F_3-7_NTIsopach_TopOfPierre.mxd - 12/30/2009 @ 1:45:54 PM

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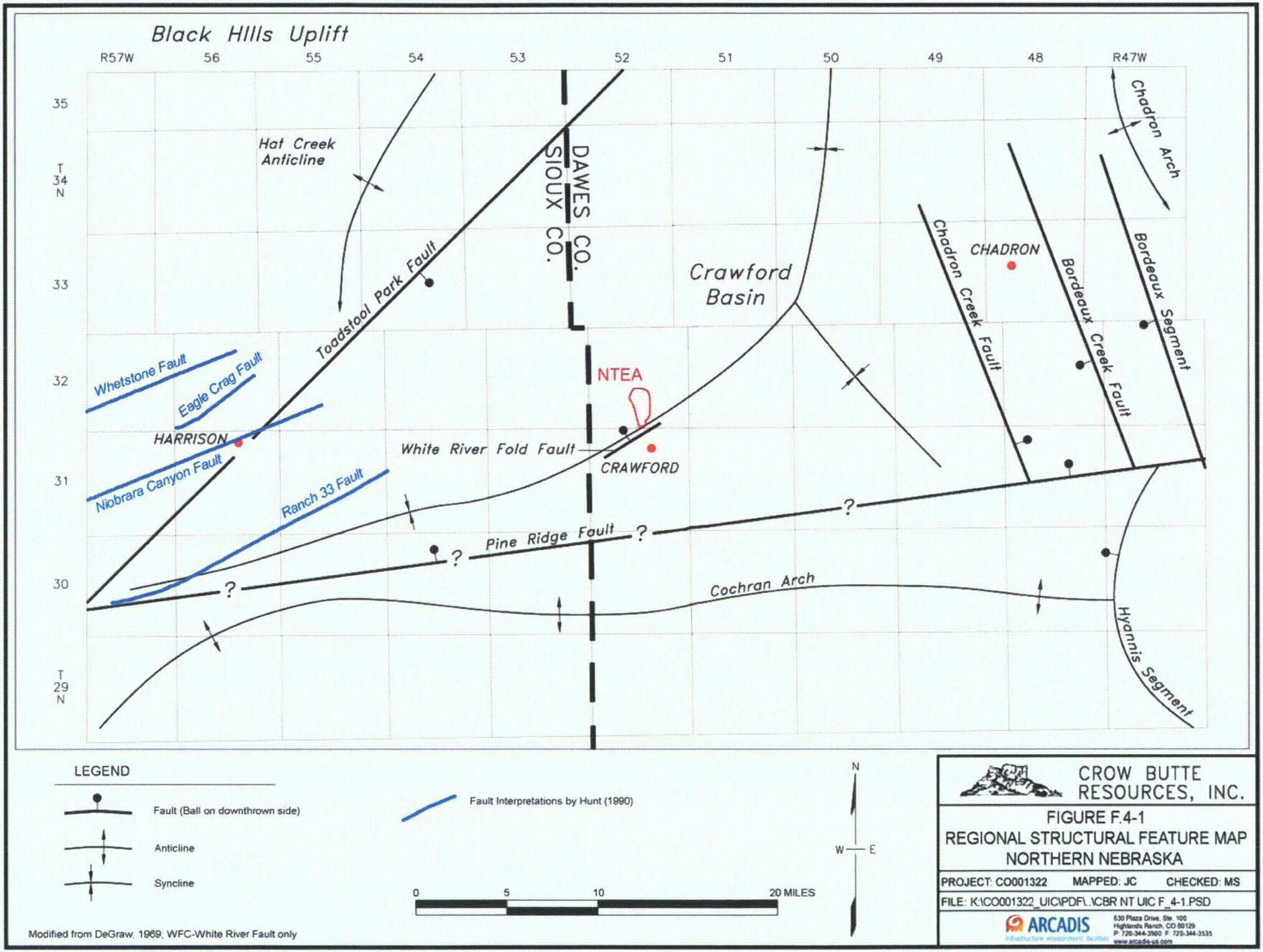
Black Hills Uplift
R57W
56
55
54
53
52
51
50
49
48
R47W
35
T 34 N
33
32
31
30
T 29 N
Hat Creek Anticline
DAWES CO.
SIOUX CO.
Toadstool Park Fault
Crawford Basin
Chadron Arch
CHADRON
Chadron Creek Fault
Bordeaux Creek Fault
Bordeaux Segment
Whetstone Fault
Eagle Crag Fault
HARRISON
Niobrara Canyon Fault
Ranch 33 Fault
NTEA
White River Fold Fault
CRAWFORD
Pine Ridge Fault
Cochran Arch
Hyannis Segment
LEGEND
Fault (Ball on downthrown side)
Anticline
Syncline
Fault Interpretations by Hunt (1990)
0
5
10
20 MILES
N
W
E
Modified from DeGraw, 1969; WFC-White River Fault only
CROW BUTTE RESOURCES, INC.
FIGURE F.4-1
REGIONAL STRUCTURAL FEATURE MAP
NORTHERN NEBRASKA
PROJECT: CO001322
MAPPED: JC
CHECKED: MS
FILE: K:\CO001322_UIC\PDF\..\CBR NT UIC F_4-1.PSD
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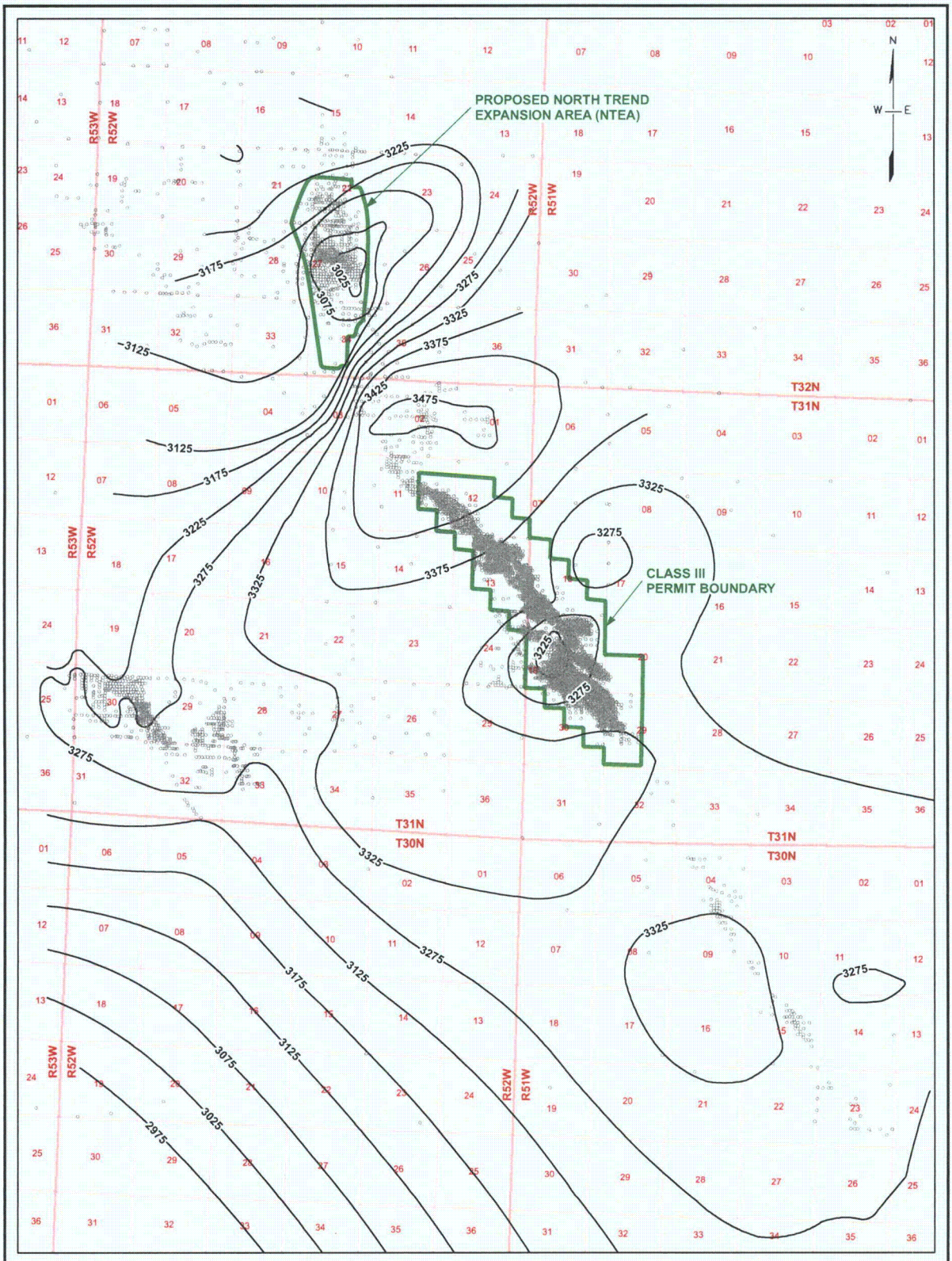

LEGEND

Exploration Borehole

Groundwater Potentiometric Surface (FT-AMSL)

0 4,000 8,000

Scale in Feet

Contour Interval in feet [amsl]

CROW BUTTE RESOURCES, INC.

FIGURE F.4-2
REGIONAL CONTOUR MAP OF THE TOP OF BASAL CHADRON SANDSTONE

FILE: F_4-2_Regional_Structure_Contour_Map_Top_of_BasalChadron.mxd - 12/30/2009 @ 1:40:59 PM

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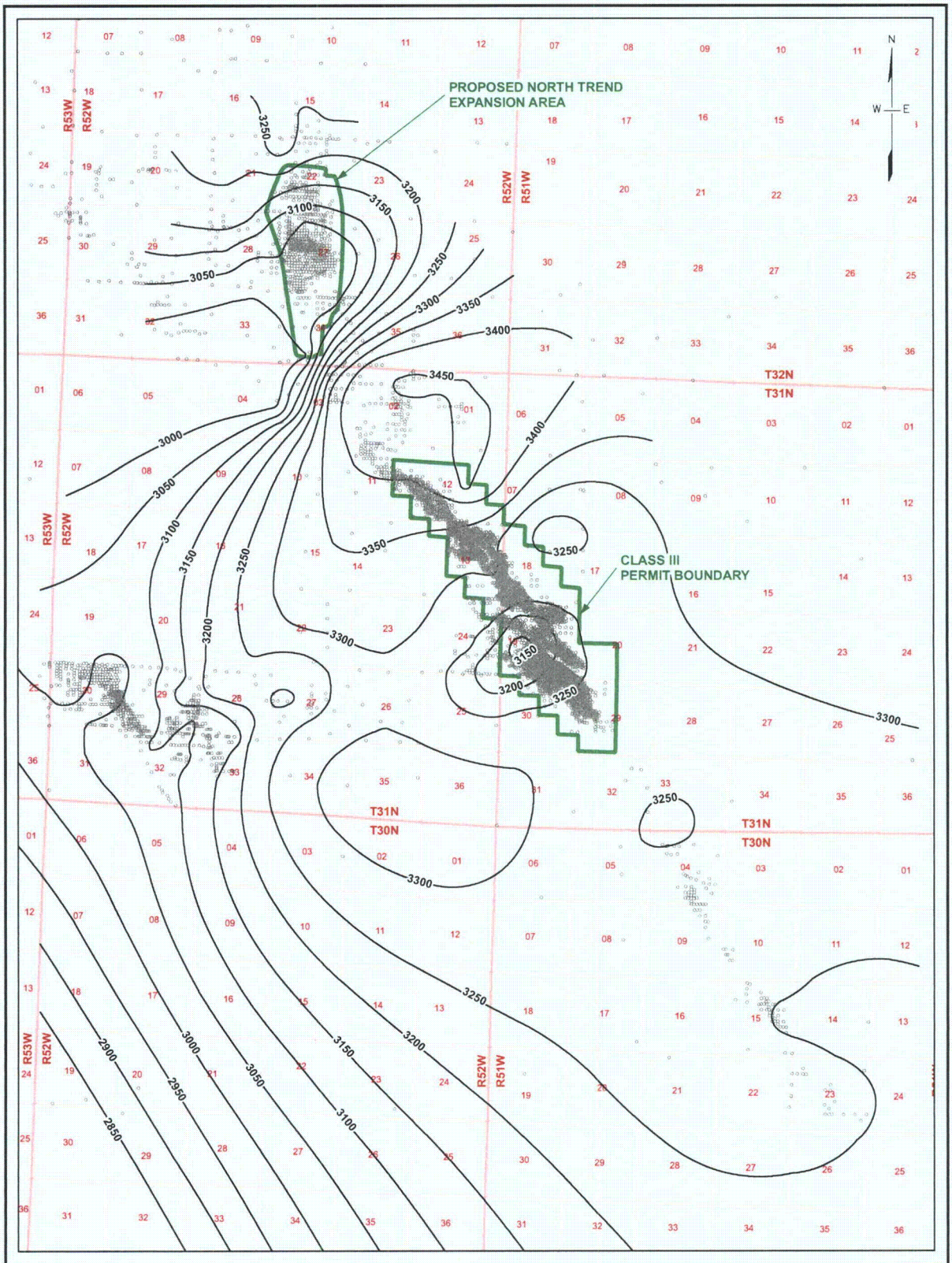

LEGEND

Elevation Contour (FT-AMSL)

section_poly

0 4,000 8,000

Scale in Feet

Contour Interval in feet [amsl]

CROW BUTTE RESOURCES, INC.

FIGURE F.4-3
REGIONAL CONTOUR MAP OF
THE TOP OF PIERRE SHALE (REV 05/09)

FILE: F_4-3_Regional_Contour_Map_Top_of_PierreShale.mxd - 11/12/2009 @ 1:57:15 PM

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LEGEND: Soils

- Bg, Bridget silt loam, 0 to 1 percent slopes
- DuB, Duroc very fine sandy loam, 1 to 3 percent slopes
- HbB, Haverson silt loam, occasionally flooded
- JmC, Jayem loamy very fine sand, 1 to 6 percent slopes
- KaD2, Thirtynine silt loam, 2 to 11 percent slopes, eroded
- KeB, Keith silt loam, 1 to 3 percent slopes
- KeD, Keith silt loam, 3 to 9 percent slopes
- KfD, Keith and Ulysses silt loams, 3 to 9 percent slopes
- KpD, Keota-Epping silt loams, 3 to 9 percent slopes
- Lo, Haverson loam, frequently flooded
- OgF, Oglala loam, 9 to 30 percent slopes
- OhF, Oglala-Canyon loams, 9 to 20 percent slopes
- Sn, Bankard loamy fine sand, frequently flooded
- SrC, Sarben fine sandy loam, 1 to 6 percent slopes
- SrD, Sarben fine sandy loam, 6 to 9 percent slopes
- SvF, Sarben and Vetal loamy very fine sands, 9 to 30 percent slopes
- VeC, Vetal and Bayard soils, 1 to 6 percent slopes

0 1,500 3,000

Scale in Feet

Source: Aerial - NAIP NE045, 2006; Soil - NRCS Soil Mart

CROW BUTTE RESOURCES, INC.

FIGURE F. 7-1
NORTH TREND SOILS

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: F_7-1_NT_Soils_11x17.mxd - 12/30/2009 @ 1:41:57 PM

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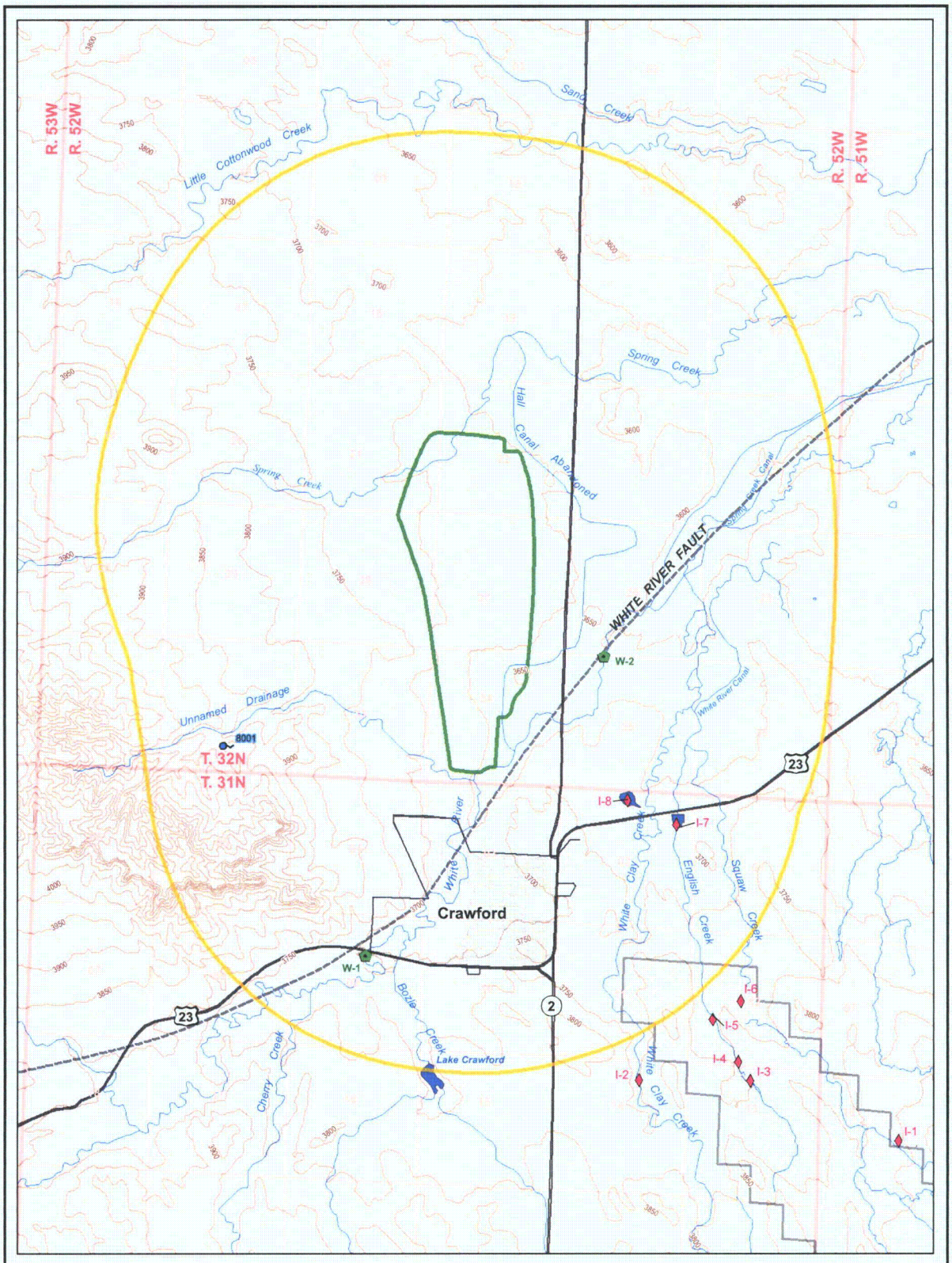

LEGEND

- Surface Water Monitor
- Surface Water Impoundment
- Spring
- Streams
- White River Fault
- Elevation Contours (in Feet)
- Lake/Spring
- Proposed North Trend Expansion Area (NTEA)
- Current License Area
- 2.25-Mile Buffer of Proposed NTEA Boundary

N
W — E

0 3,000 6,000
Scale in Feet

CROW BUTTE RESOURCES, INC.

FIGURE H.1-1
NORTH TREND
SURFACE WATER FEATURES

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: _H_1-1_NTSurfaceWater.mxd - 1/4/2010 @ 3:40:25 PM

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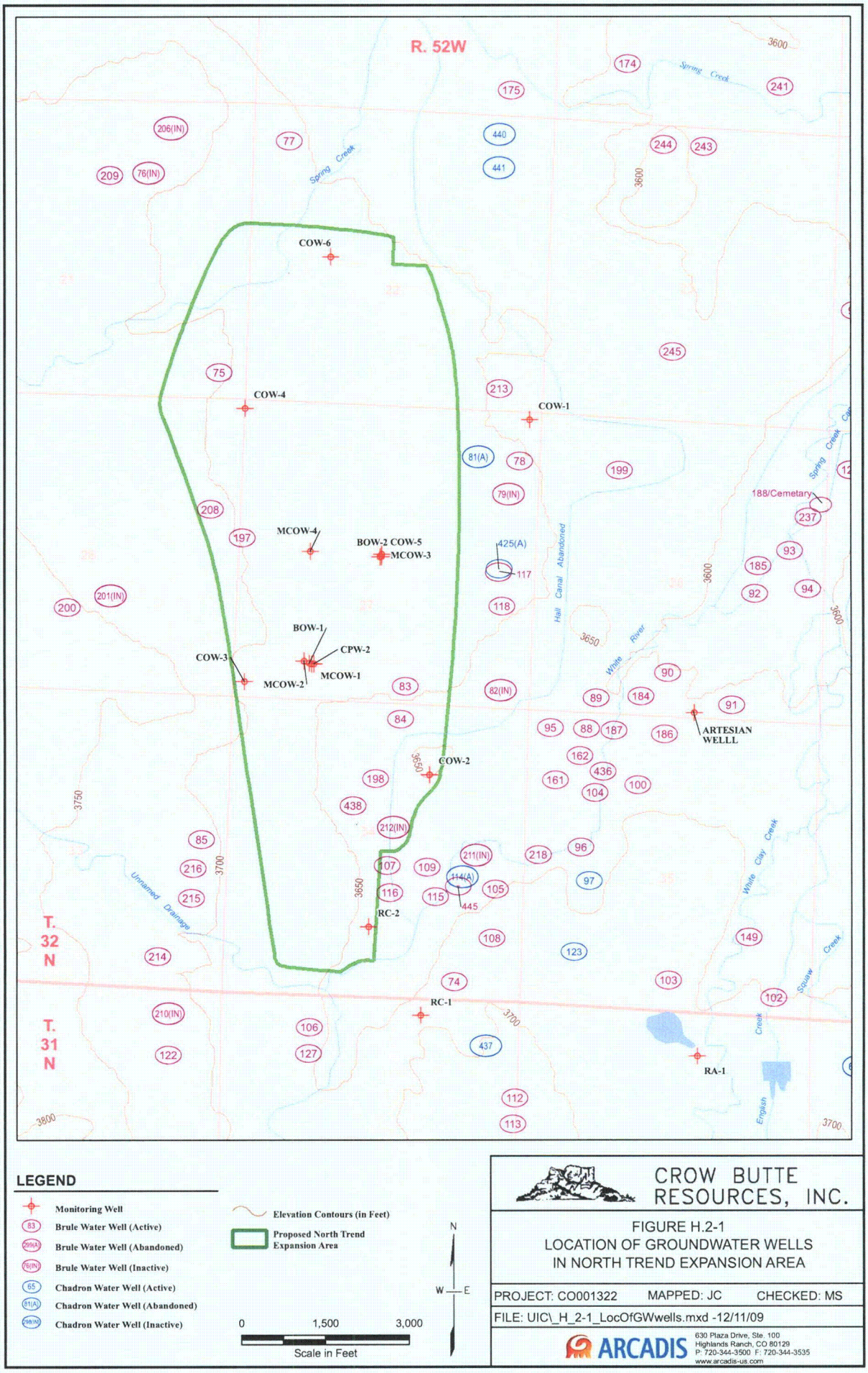

LEGEND

- Monitoring Well
- 83 Brule Water Well (Active)
- 299(A) Brule Water Well (Abandoned)
- 76(IN) Brule Water Well (Inactive)
- 65 Chadron Water Well (Active)
- 81(A) Chadron Water Well (Abandoned)
- 298(IN) Chadron Water Well (Inactive)
- Elevation Contours (in Feet)
- Proposed North Trend Expansion Area

0 1,500 3,000
Scale in Feet

N
W — E

CROW BUTTE RESOURCES, INC.

FIGURE H.2-1
LOCATION OF GROUNDWATER WELLS
IN NORTH TREND EXPANSION AREA

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: UIC_H_2-1_LocOfGWwells.mxd -12/11/09

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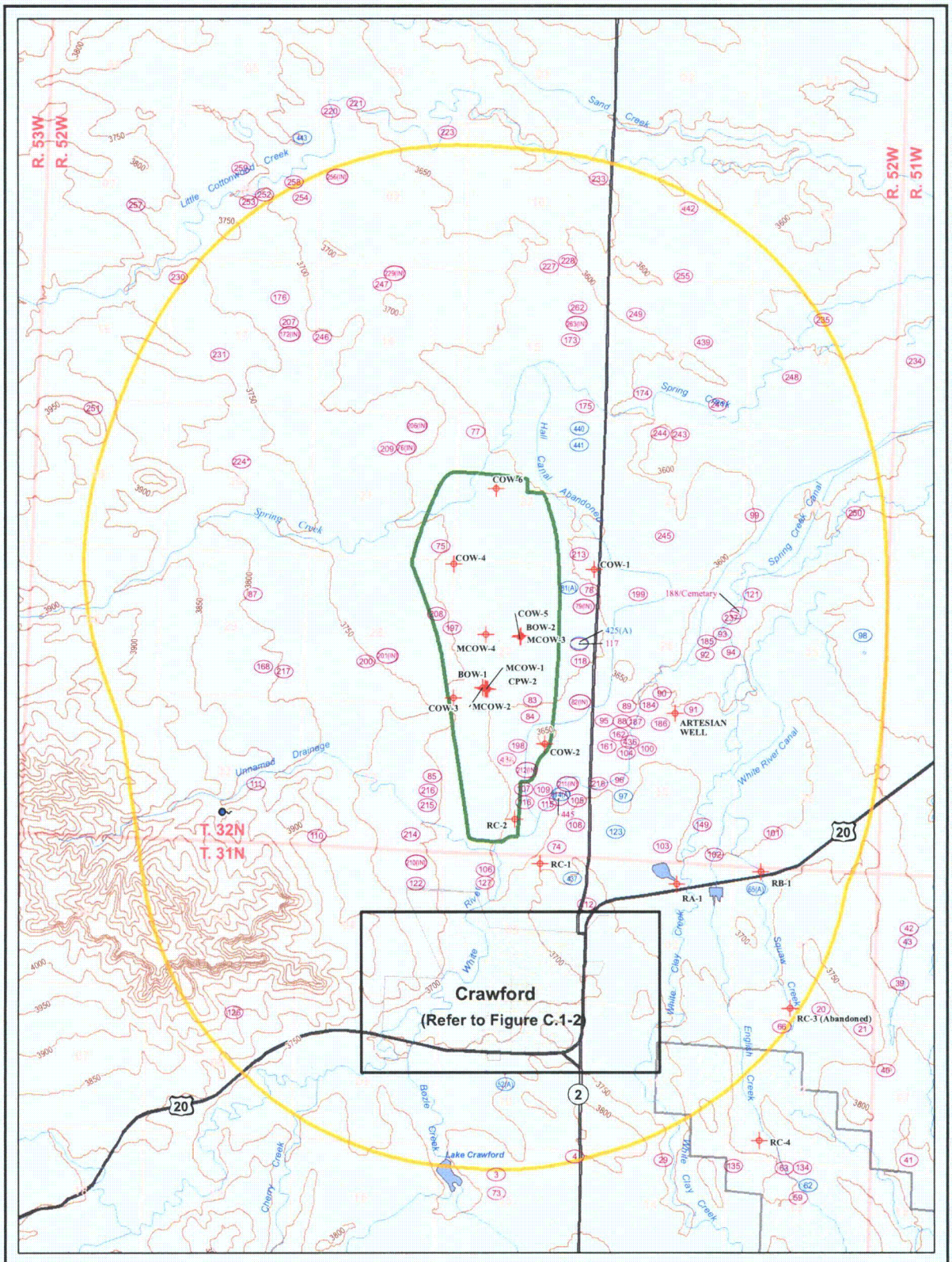

LEGEND

- Monitoring Well
- 83 Brule Water Well (Active)
- 299(A) Brule Water Well (Abandoned)
- 76(IN) Brule Water Well (Inactive)
- 65 Chadron Water Well (Active)
- 81(A) Chadron Water Well (Abandoned)
- 299(IN) Chadron Water Well (Inactive)
- Spring

* *Locations of some wells are approximate and are based on available information.*

- Lakes
- Streams
- Elevation Contours (in Feet)
- Proposed North Trend Expansion Area (NTEA)
- Class III Permit Boundary
- 2.25-Mile Buffer of Proposed NTEA Boundary

N
W — E

0 3,000 6,000

Scale in Feet

CROW BUTTE RESOURCES, INC.

FIGURE H.2-2
LOCATION OF GROUNDWATER WELLS WITHIN 2 1/4 MILES OF NORTH TREND EXPANSION AREA

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: UIC_H_2-2_LocOfGWwells_2mB.mxd - 12/11/09

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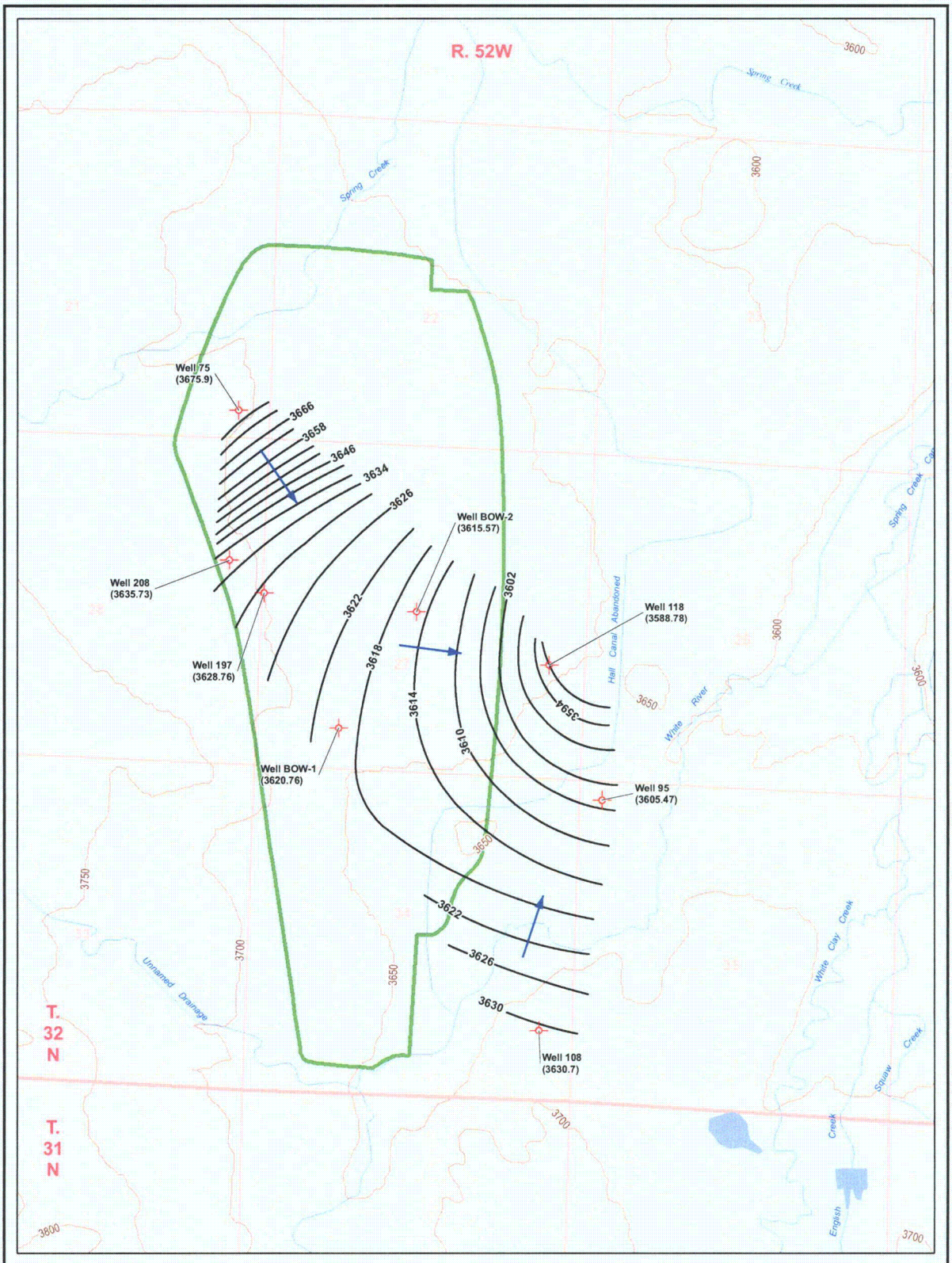

LEGEND

- North Trend Monitoring Well
- Elevation Contours (FT-AMSL)
- Groundwater Elevation Contour (FT-AMSL, 4-FT Interval)
- (3560.17) Groundwater Elevation (FT-AMSL)
- Stream or Canal
- Direction of Groundwater Flow
- Lake
- Proposed North Trend Expansion Area (NTEA)

0 1,500 3,000
Scale in Feet

N
W E

CROW BUTTE RESOURCES, INC.

FIGURE H.2-3
NORTH TREND EXPANSION AREA
WATER LEVEL MAP
BRULE FORMATION (06/09/08)

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: _H_2-3_NT_WL_Brule.mxd - 1/4/2010 @ 4:36:02 PM

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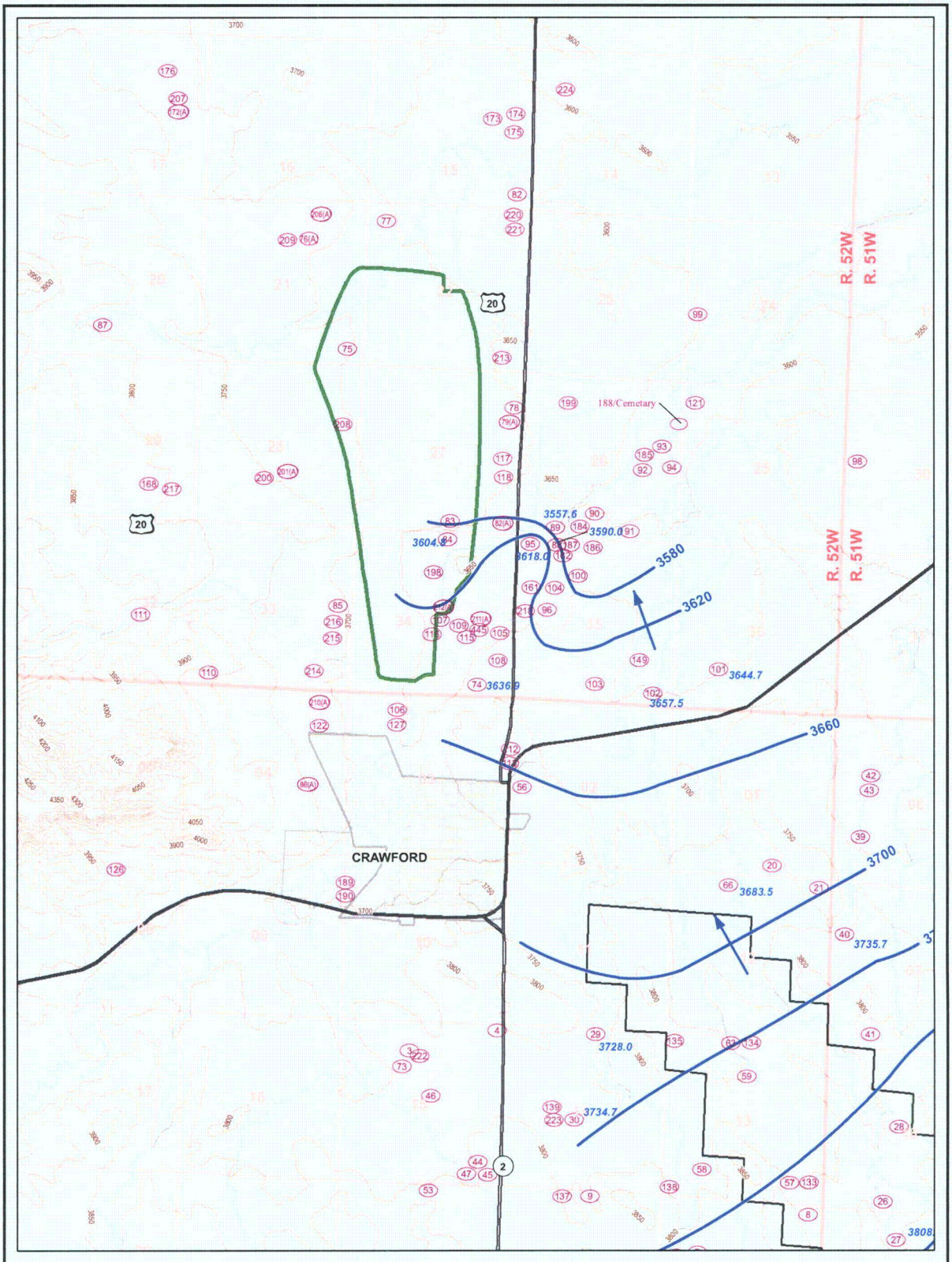

LEGEND

- Groundwater Elevation (Brule Formation, FT-AMSL)
- Elevation Contours (FT-AMSL, 40-Ft Interval)
- 129 / 3968.8 — Brule Formation Water Well and Water Level Elevation (FT-AMSL)
- Proposed North Trend Expansion Area (NTEA)
- Class III Permit Boundary
- Groundwater Flow Direction

0 3,000 6,000
Scale in Feet

N
W — E

CROW BUTTE RESOURCES, INC.

FIGURE H.2-4
REGIONAL WATER LEVEL MAP
BRULE FORMATION 1982-1983

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: _H_2-4_Regional_WL_Brule.mxd - 1/4/2010 @ 4:21:12 PM

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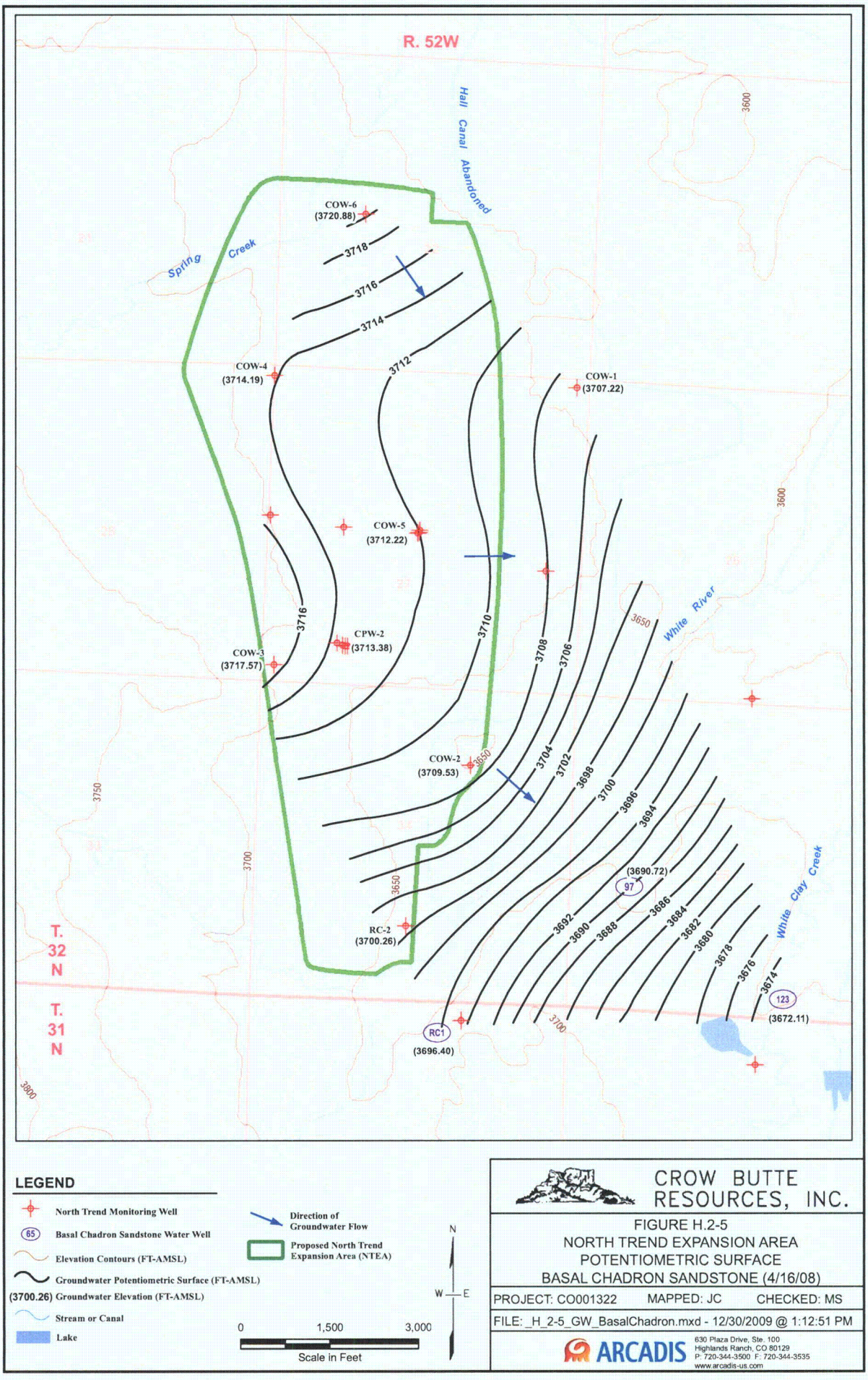
R. 52W
Hall Canal Abandoned
Spring Creek
White River
White Clay Creek
COW-6 (3720.88)
COW-4 (3714.19)
COW-1 (3707.22)
COW-5 (3712.22)
CPW-2 (3713.38)
COW-3 (3717.57)
COW-2 (3709.53)
RC-2 (3700.26)
RC1 (3696.40)
(3690.72)
(3672.11)
3718
3716
3714
3712
3710
3708
3706
3704
3702
3700
3698
3696
3694
3692
3690
3688
3686
3684
3682
3680
3678
3676
3674
3650
3600
3750
3800
T. 32 N
T. 31 N
LEGEND
North Trend Monitoring Well
Basal Chadron Sandstone Water Well
Elevation Contours (FT-AMSL)
Groundwater Potentiometric Surface (FT-AMSL)
(3700.26) Groundwater Elevation (FT-AMSL)
Stream or Canal
Lake
Direction of Groundwater Flow
Proposed North Trend Expansion Area (NTEA)
N
W E
0
1,500
3,000
Scale in Feet
CROW BUTTE RESOURCES, INC.
FIGURE H.2-5
NORTH TREND EXPANSION AREA
POTENTIOMETRIC SURFACE
BASAL CHADRON SANDSTONE (4/16/08)
PROJECT: CO001322 MAPPED: JC CHECKED: MS
FILE: _H_2-5_GW_BasalChadron.mxd - 12/30/2009 @ 1:12:51 PM
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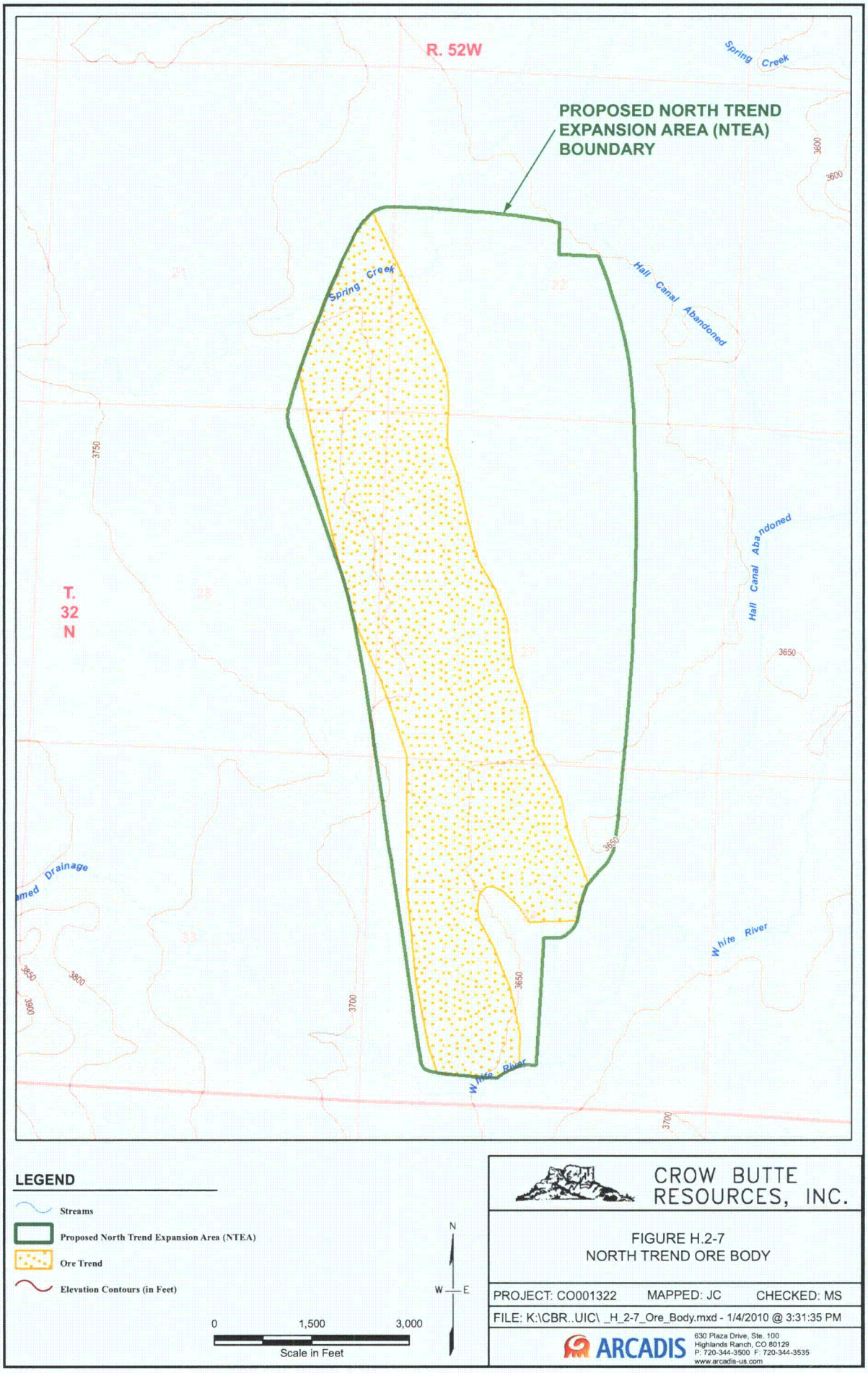

LEGEND

- Streams
- Proposed North Trend Expansion Area (NTEA)
- Ore Trend
- Elevation Contours (in Feet)

0 1,500 3,000
Scale in Feet

N
W — E

CROW BUTTE RESOURCES, INC.

FIGURE H.2-7
NORTH TREND ORE BODY

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: K:\CBR..UIC\ _H_2-7_Ore_Body.mxd - 1/4/2010 @ 3:31:35 PM

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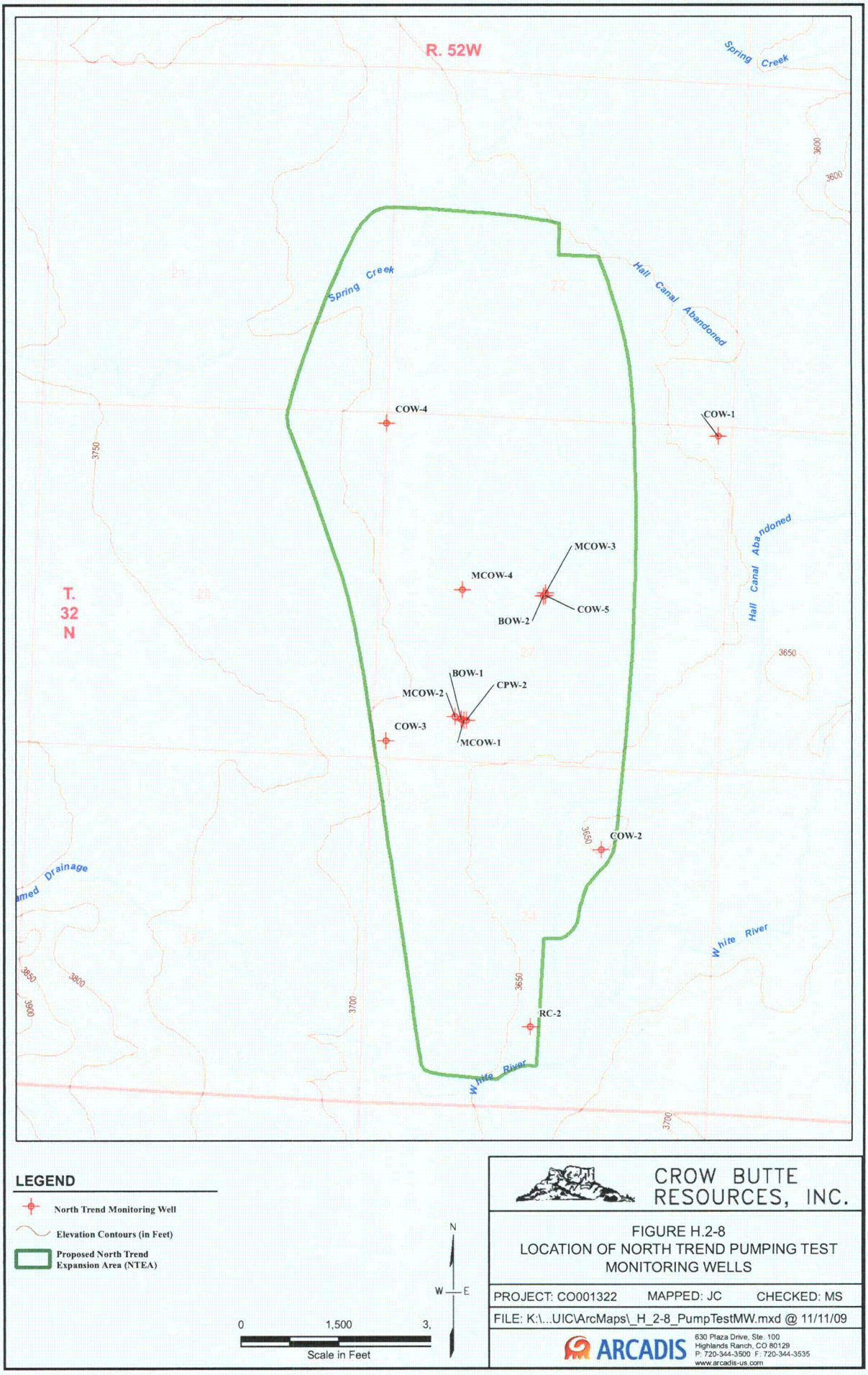

CROW BUTTE RESOURCES, INC.

FIGURE H.2-8
LOCATION OF NORTH TREND PUMPING TEST MONITORING WELLS

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: K:\...UIC\ArcMaps_H_2-8_PumpTestMW.mxd @ 11/11/09

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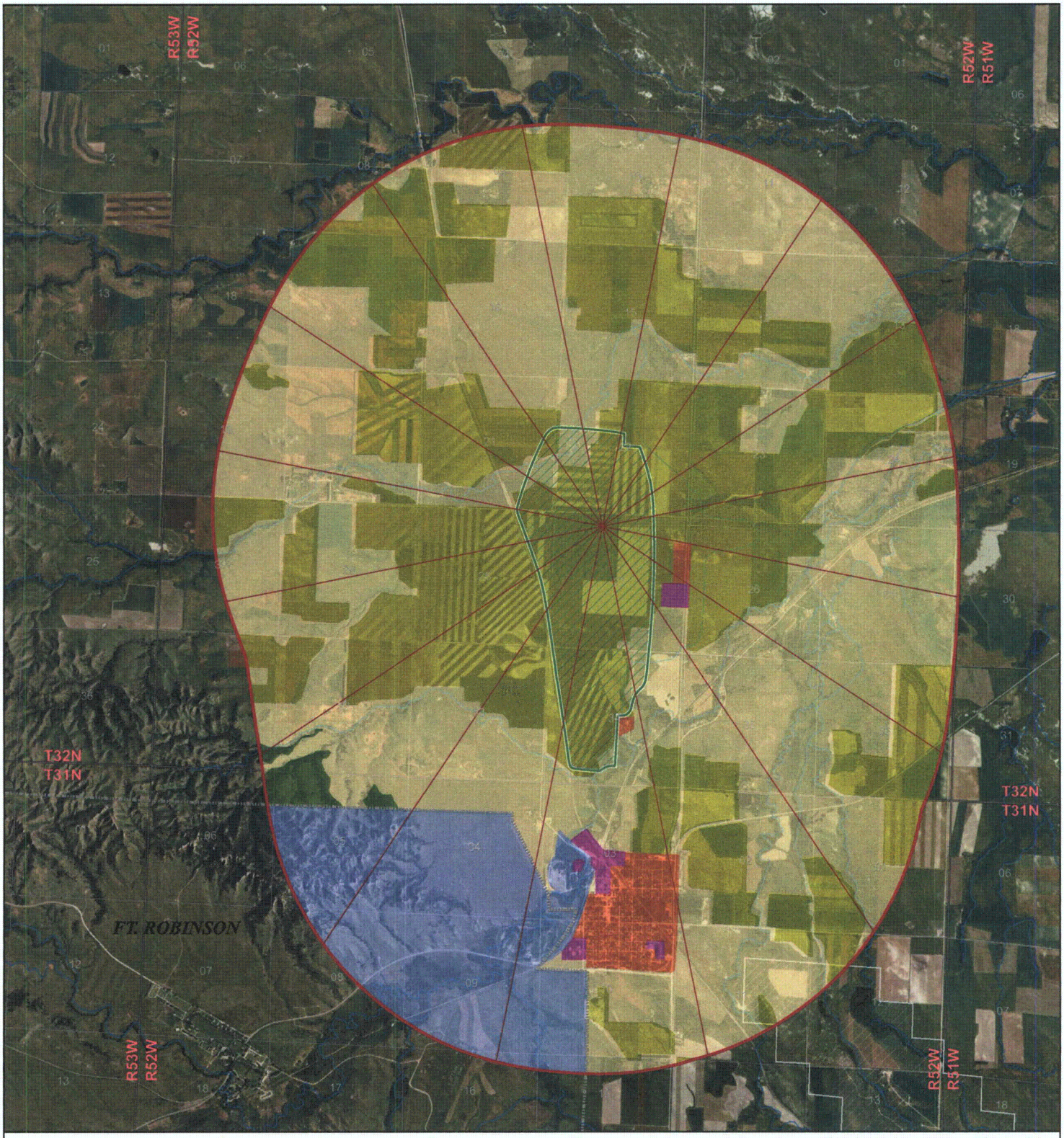

Legend

- Grid Sector
- Streams
- Proposed North Trend Expansion Area (NTEA)
- 2.25-Mile Buffer of Proposed NTEA Boundary
- Ft. Robinson Boundary
- Current License Area

Landuse

- Commercial and Services
- Residential
- Forest
- Recreation
- Crop
- Rangeland

N
W E

0 2,000 4,000 Feet

Source: Crow Butte Resources, Inc.

CROW BUTTE RESOURCES, INC.

FIGURE I. 1-1
NORTH TREND EXPANSION AREA
LAND USE

PROJECT: CO001322.0001 MAPPED: JC CHECKED: J.CEARLEY

FILE: I_1-1_NT_LandUse.mxd - 1/4/2010 @ 3:32:50 PM

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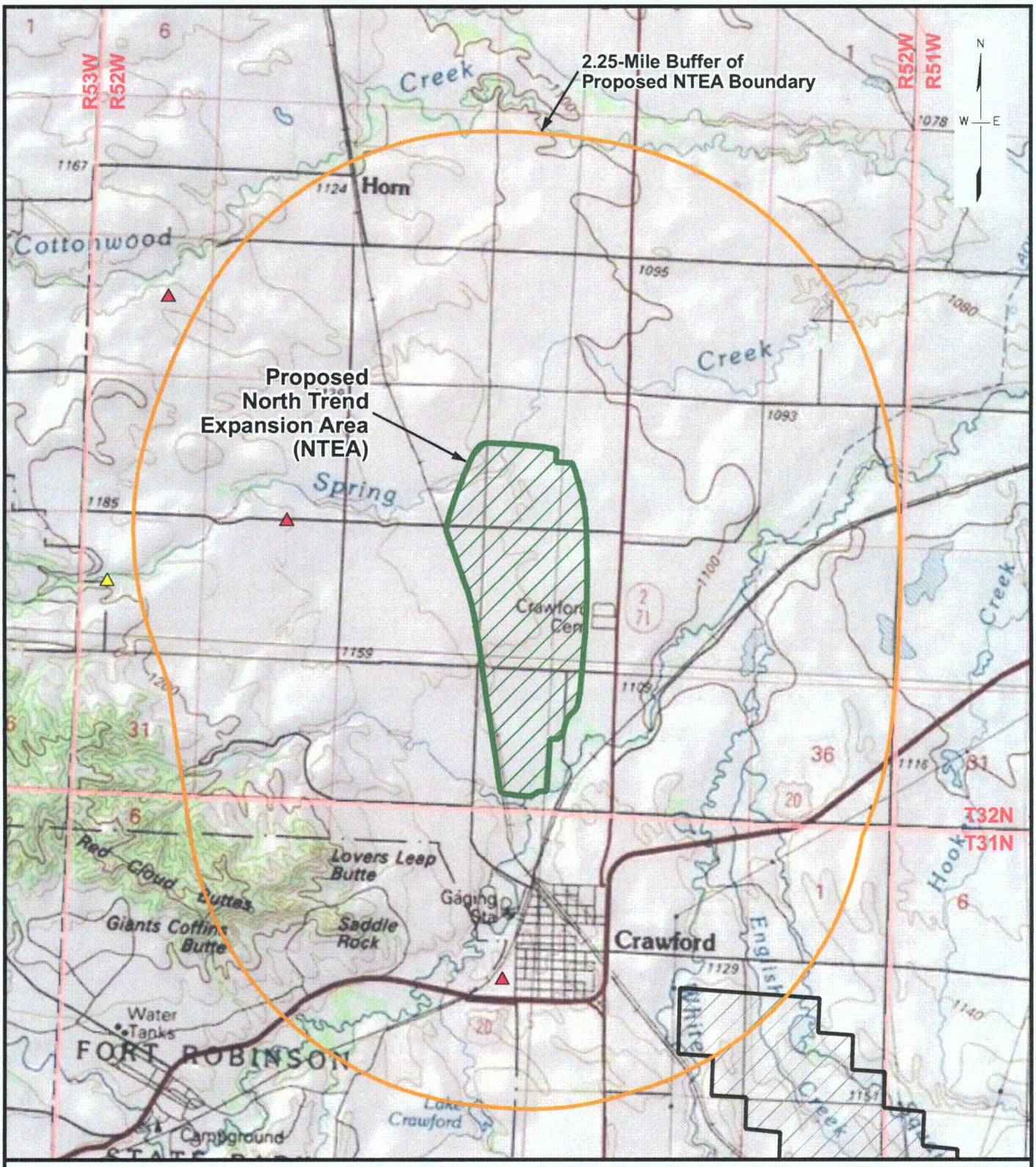

Legend

- Concrete Agg. Pit
- Sand & Grave Pit
- Proposed North Trend Expansion Area (NTEA)
- 2.25-Mile Buffer of Proposed NTEA Boundary
- Current License Area

Source:
Nebraska Oil and Gas Commission (NOGC). 2008. [Web page]. http://www.nogcc.ne.gov/ (Well data and publications). Accessed on April 01, 2008.

0 0.5 1 Miles

CROW BUTTE RESOURCES, INC.

FIGURE I. 1-2
North Trend Expansion Area
Location of Concrete Aggregate
and Sand and Gravel Pits

PROJECT: CO001322.0001 MAPPED: JC CHECKED: J.CEARLEY

FILE: I_1-2_NT_Pits.mxd - 11/11/2009 @ 10:36:36 PM

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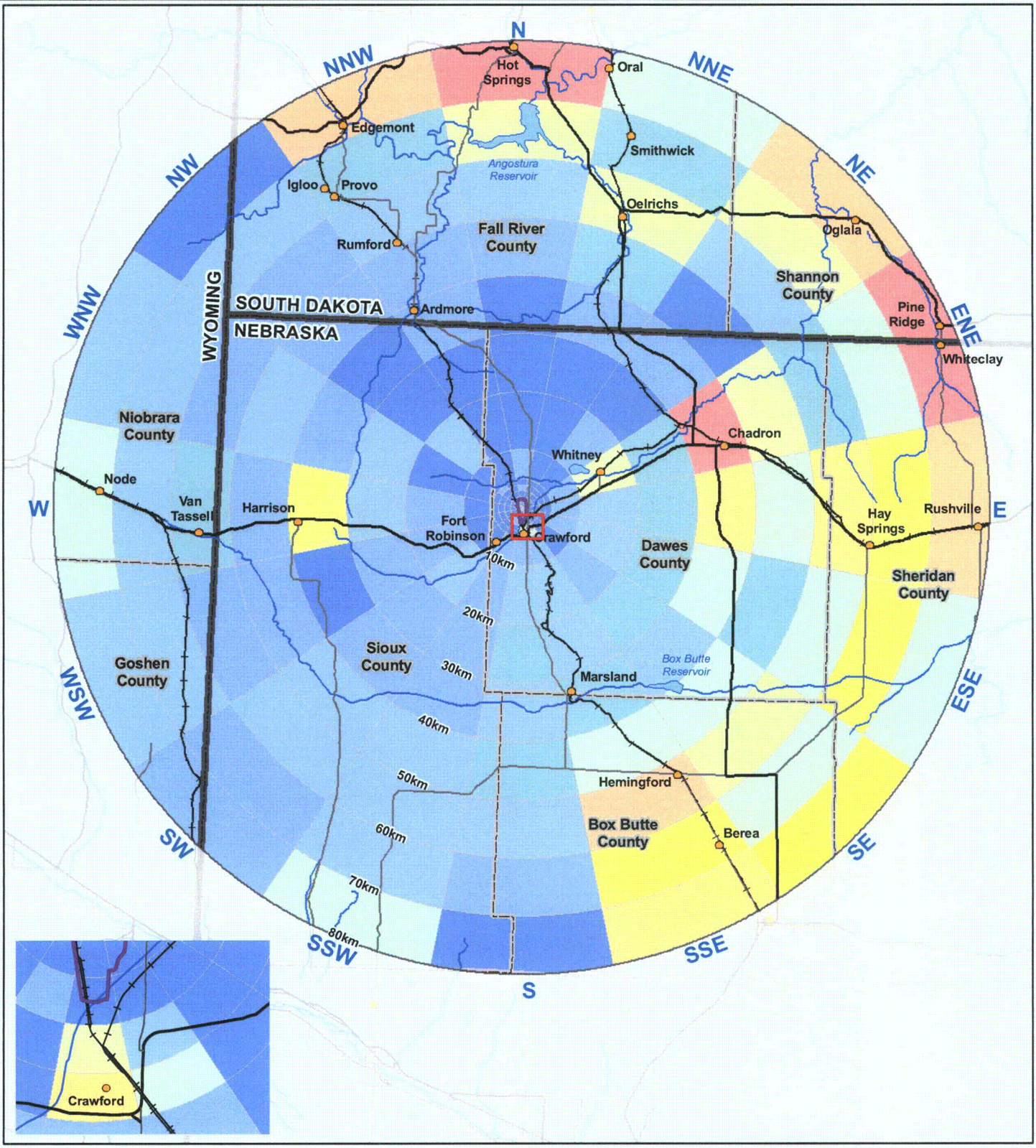

Legend

Proposed North Trend Expansion Area (NTEA)

Population (Census 2000)

0 - 8	120 - 192
9 - 23	193 - 349
24 - 38	350 - 837
39 - 61	838 - 1,597
62 - 119	1,598 - 5,970

N
W — E

0 20 40
Kilometers

CROW BUTTE RESOURCES, INC.

FIGURE I.2-1
SIGNIFICANT POPULATION CENTERS
WITHIN 80 KILOMETERS

PROJECT: CO001322.0001 MAPPED: JC CHECKED: L. WELCH

FILE: K:\CBR_NTEA_UIC\ I_2-1_Pop_Rose.mxd - 12/30/2009 @ 12:42:09 PM

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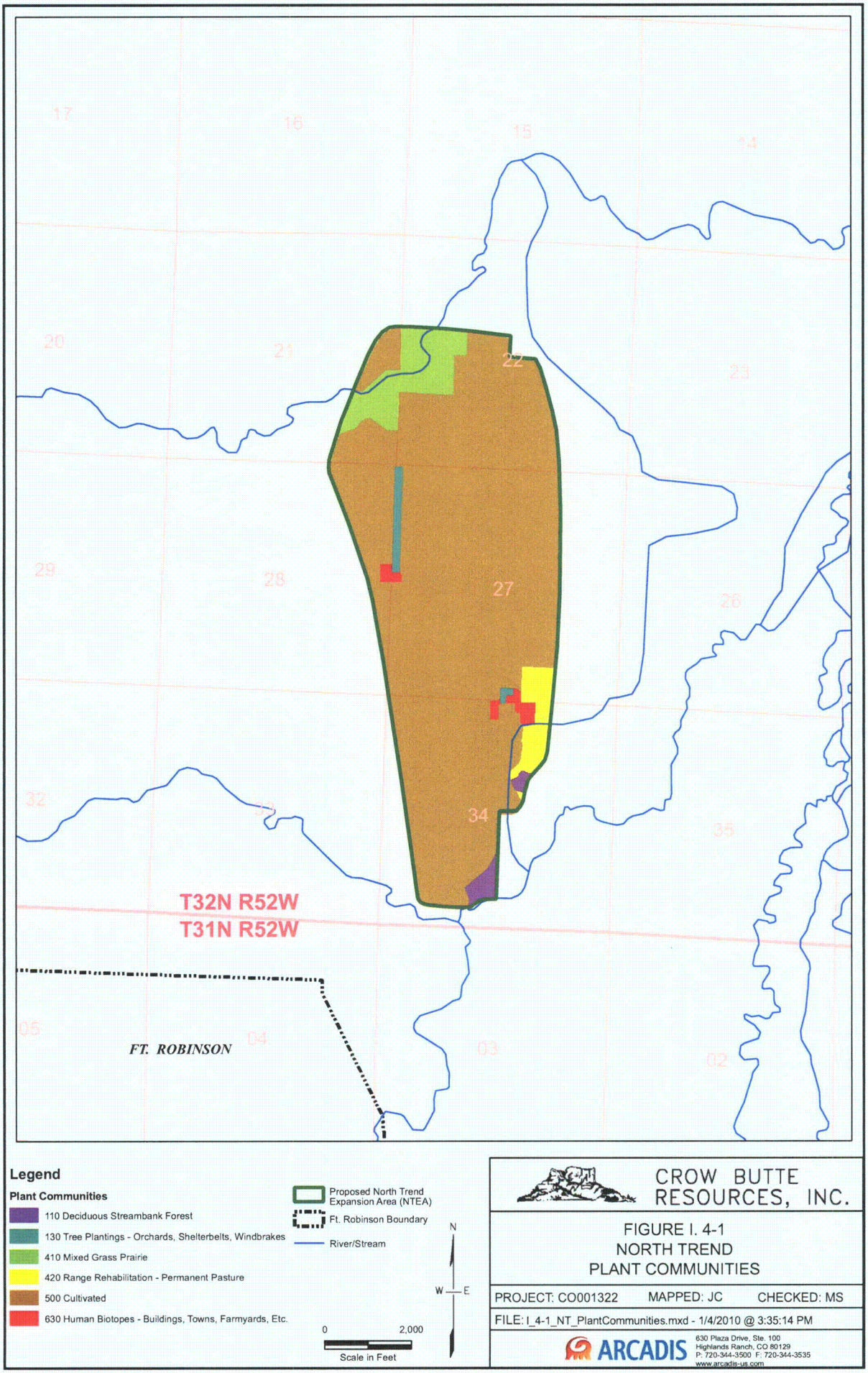

CROW BUTTE RESOURCES, INC.

FIGURE I. 4-1
NORTH TREND
PLANT COMMUNITIES

PROJECT: CO001322 MAPPED: JC CHECKED: MS

FILE: I_4-1_NT_PlantCommunities.mxd - 1/4/2010 @ 3:35:14 PM

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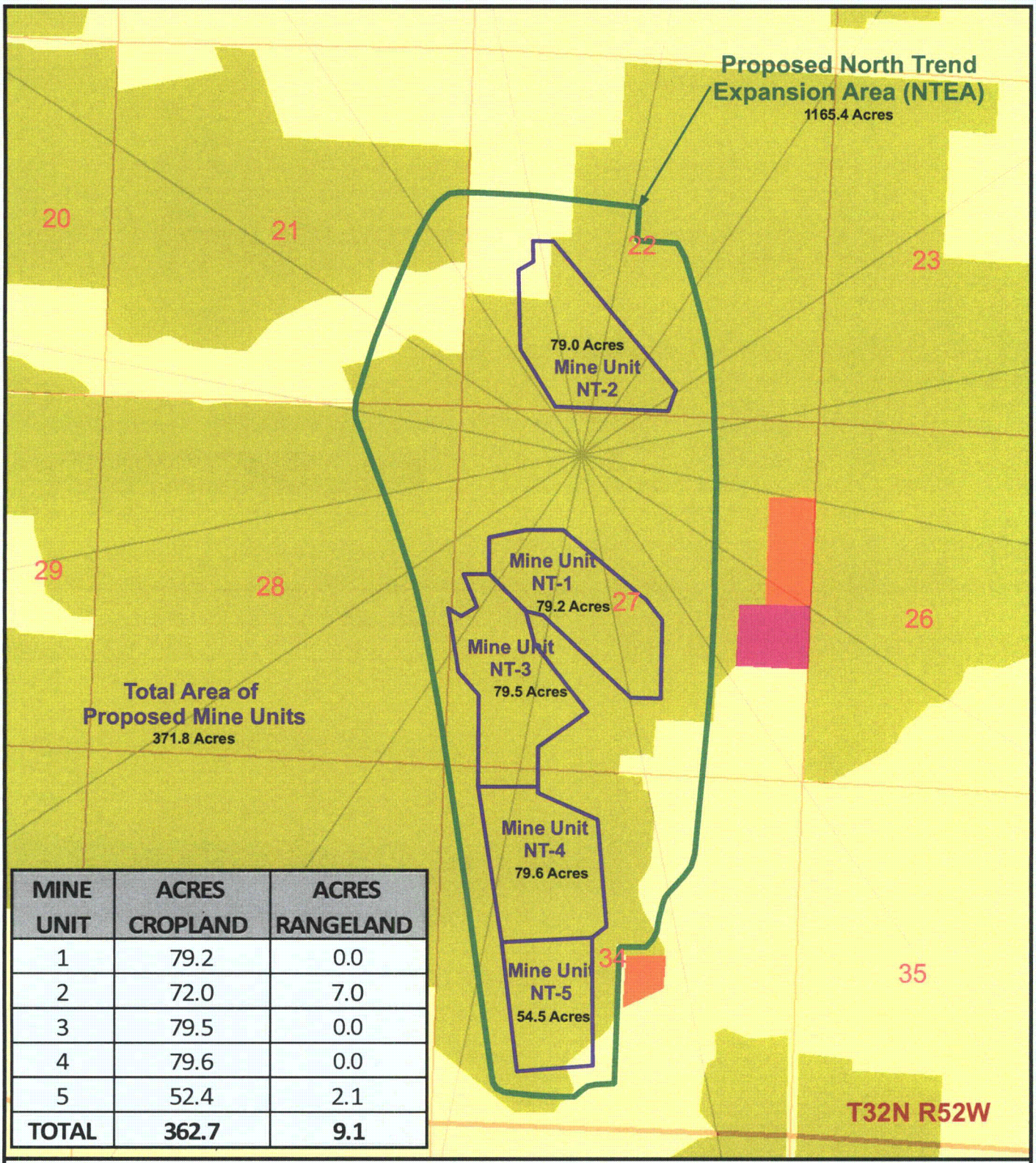

MINE UNIT	ACRES CROPLAND	ACRES RANGELAND
1	79.2	0.0
2	72.0	7.0
3	79.5	0.0
4	79.6	0.0
5	52.4	2.1
TOTAL	**362.7**	**9.1**

Legend

Land Use

- Commercial and Services
- Residential
- Crop
- Rangeland

N
W — E

0 1,000 2,000 Feet

CROW BUTTE RESOURCES, INC.

FIGURE I. 5-1
NORTH TREND
WELLFIELD LAND USE

PROJECT: CO001322.0001 MAPPED: JC CHECKED: J.CEARLEY

FILE: I_5-1_NT_WellfieldLandUse.mxd - 12/30/2009 @ 1:58:45 PM

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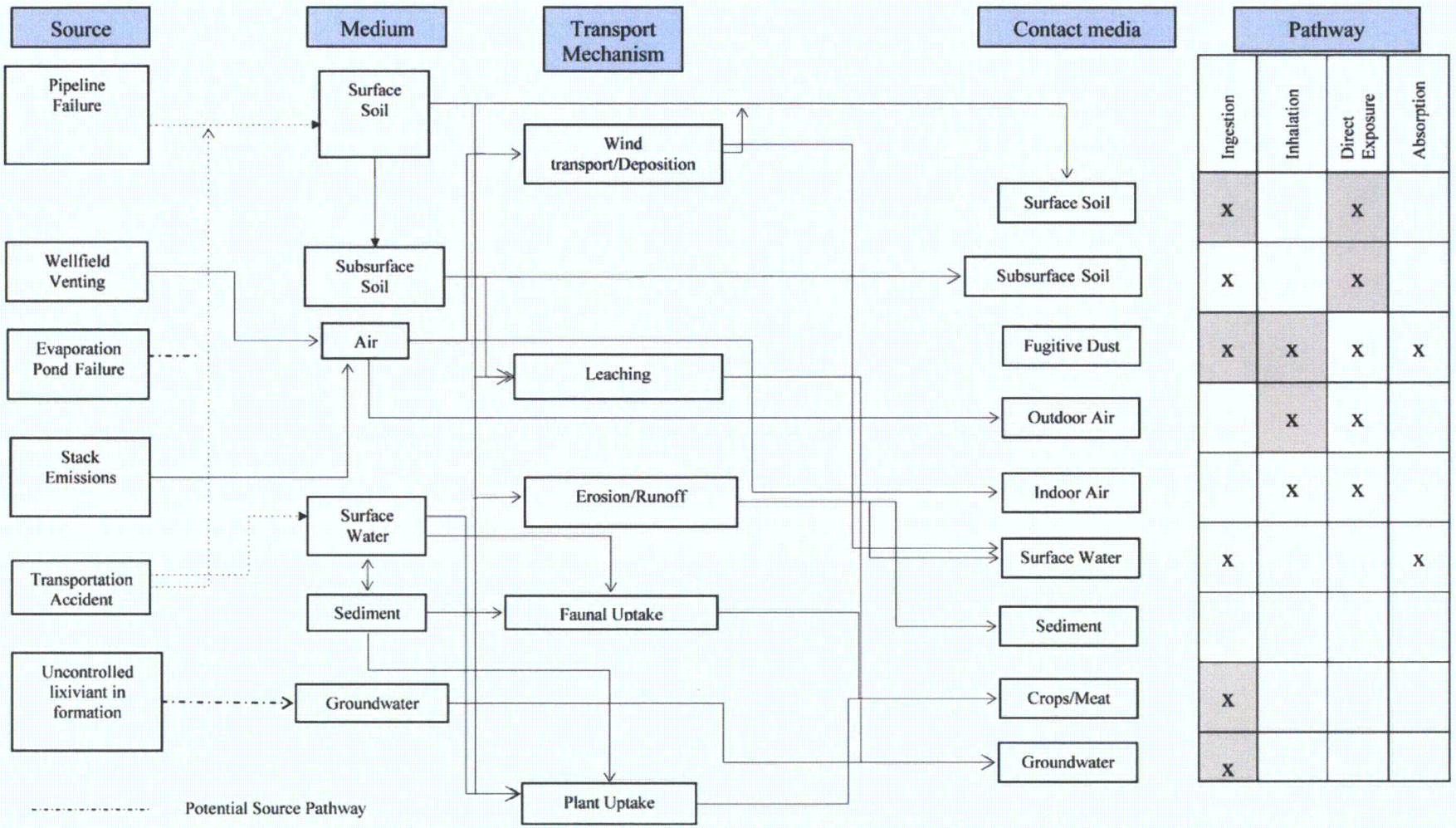

Note: X depicts the pathway that outlines the route which radiological emissions may follow to reach the public.
Gray shading depicts predominant pathway.

CROW BUTTE RESOURCES, INC.

FIGURE I.5-2
HUMAN EXPOSURE PATHWAYS FOR KNOWN AND POTENTIAL SOURCES OF RADIOLOGICAL EMISSIONS FROM THE NORTH TREND EXPANSION AREA

PROJECT: CO001322 MAPPED: JC CHECKED: JEC

FILE: CBR NT UIC I_5-2.psd @ 11/02/2009

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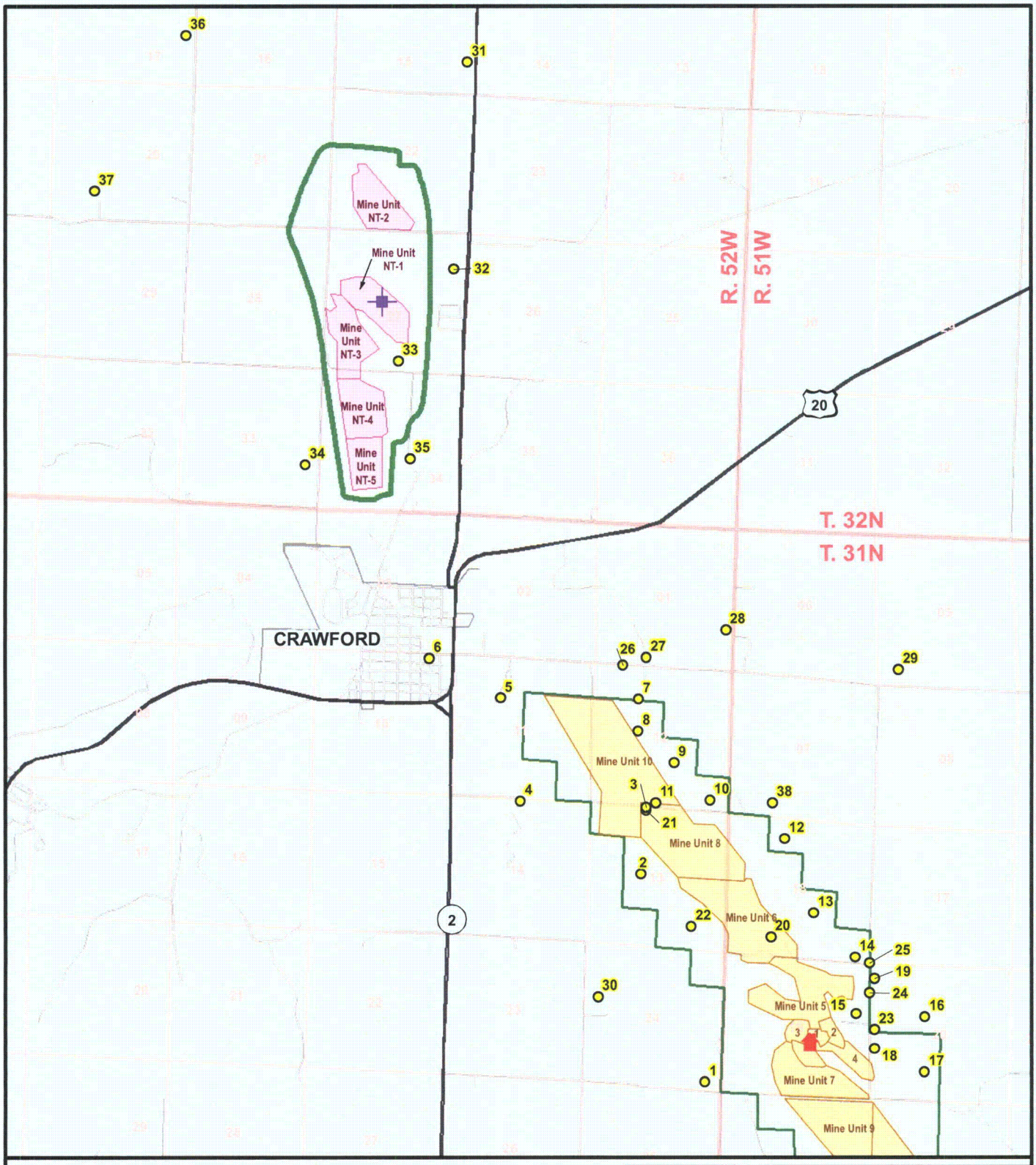

Legend

- MILDOS Receptor
- Main Plant
- North Trend Satellite Process Area
- Crow Butte Mine Units
- North Trend Mine Units
- Proposed North Trend Expansion Area (NTEA)
- Class III Permit Area
- Roads/Streets/Trails

N
W — E

0 0.5 1 Miles

CROW BUTTE RESOURCES, INC.

FIGURE I.5-3
MILDOS Receptors for
Main and Satellite Processing Facility

PROJECT: CO001322.0001 MAPPED: JC CHECKED: J.CEARLEY

FILE: I_5-3_MILDOSReceptors_Letter.mxd - 1/4/2010 @ 3:25:27 PM

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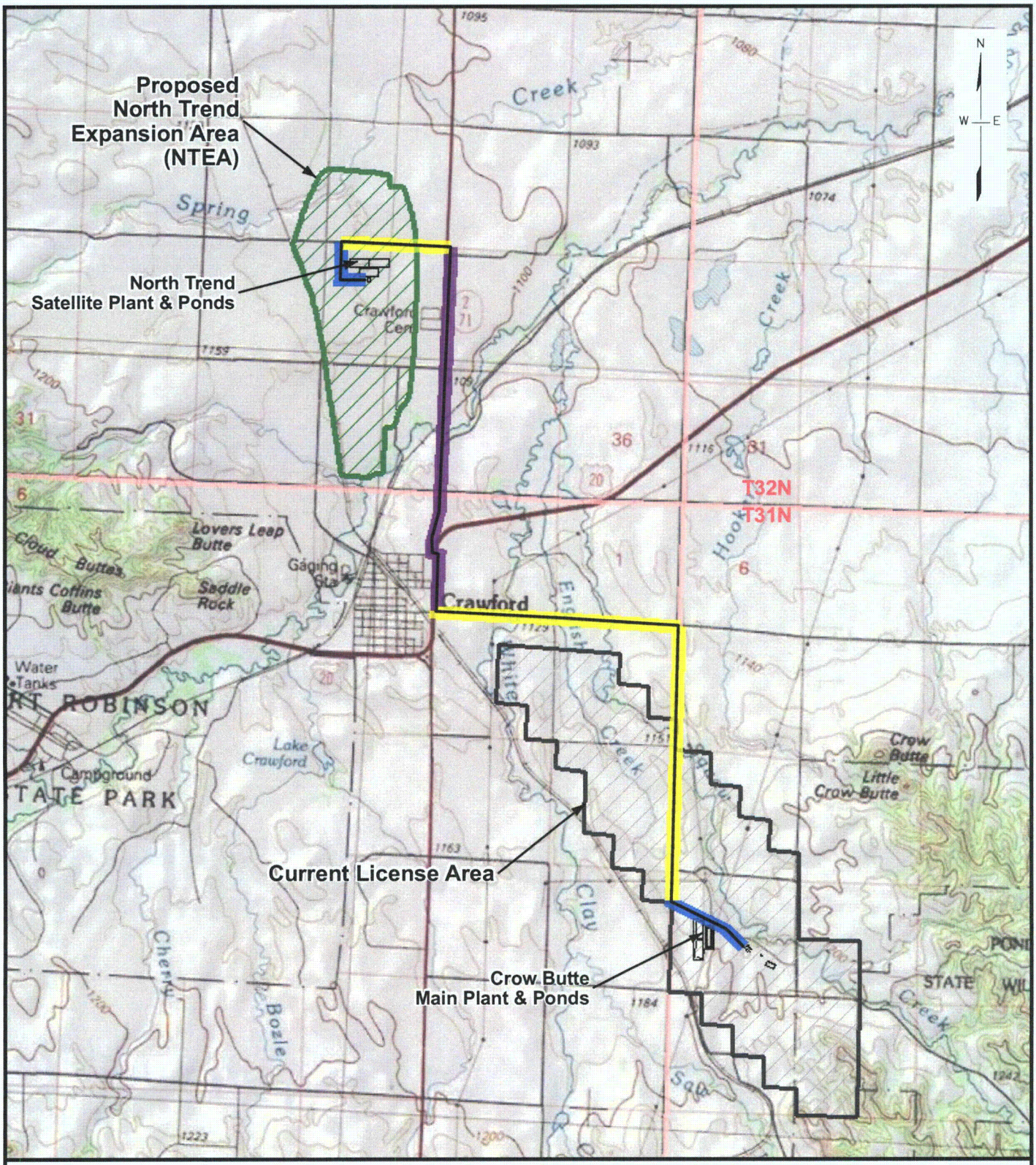

Legend

- Proposed Access Route
- Paved State/US Highway (US Highway 20 and NE State Highway 2/71)
- Unpaved CBR Road
- Unpaved County Road
- Proposed North Trend Expansion Area (NTEA)
- Current License Area

0 0.5 1 Miles

CROW BUTTE RESOURCES, INC.

FIGURE I. 5-4
Proposed Access Route Between
CBR's Current License Area and
North Trend Expansion Area

PROJECT: CO001322.0001 MAPPED: JC CHECKED: J.CEARLEY

FILE: CO001322\UIC\ArcMaps\I_5_4..mxd @ 05/01/2009

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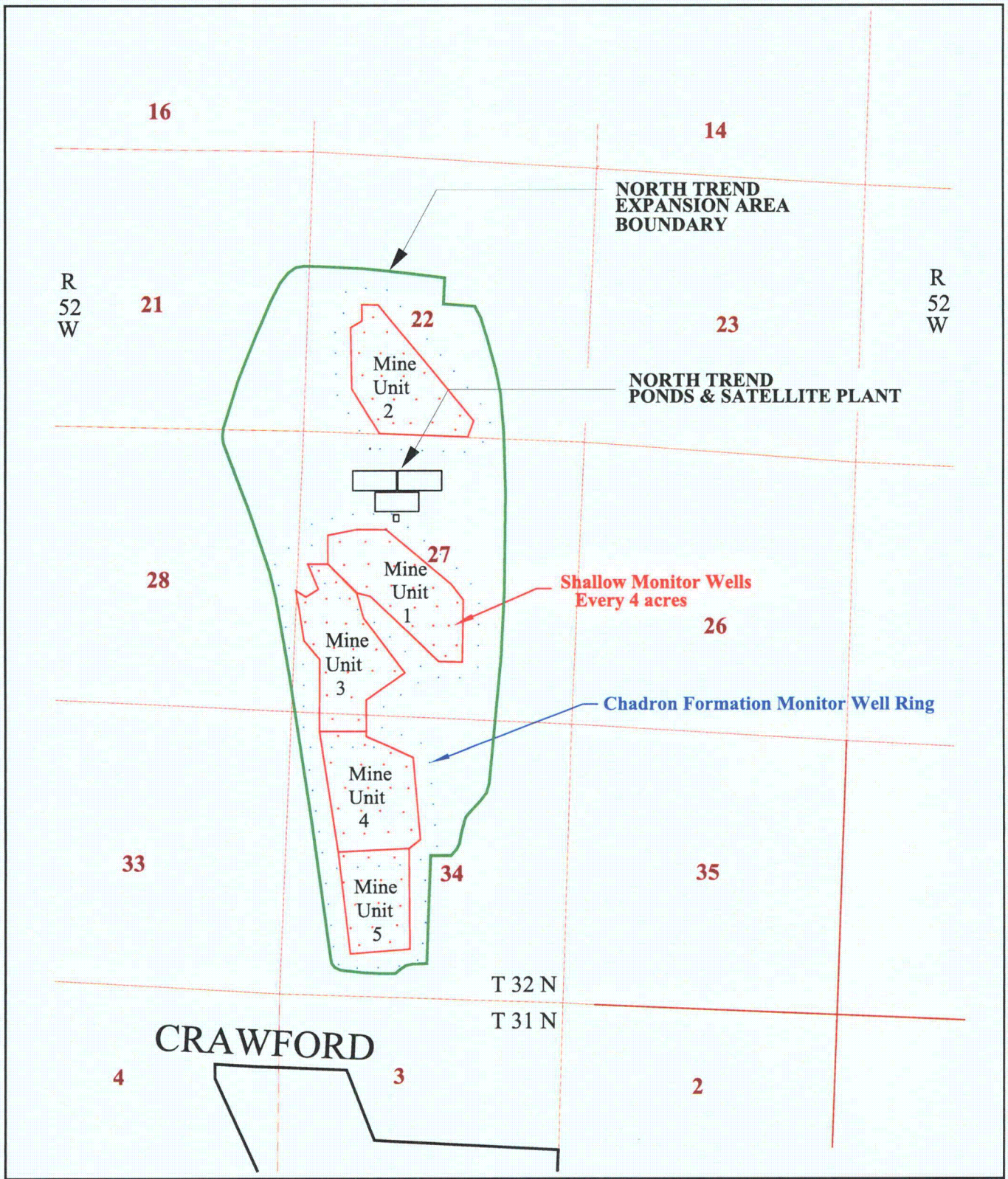

CROW BUTTE RESOURCES, INC.

FIGURE M.1-2
NORTH TREND
MONITOR WELL LAYOUT

PROJECT : CO001322 MAPPED: JC CHECKED: J. CEARLEY

FILE: Figure M_1-2.dwg @ 12/7/2009 11:07 AM

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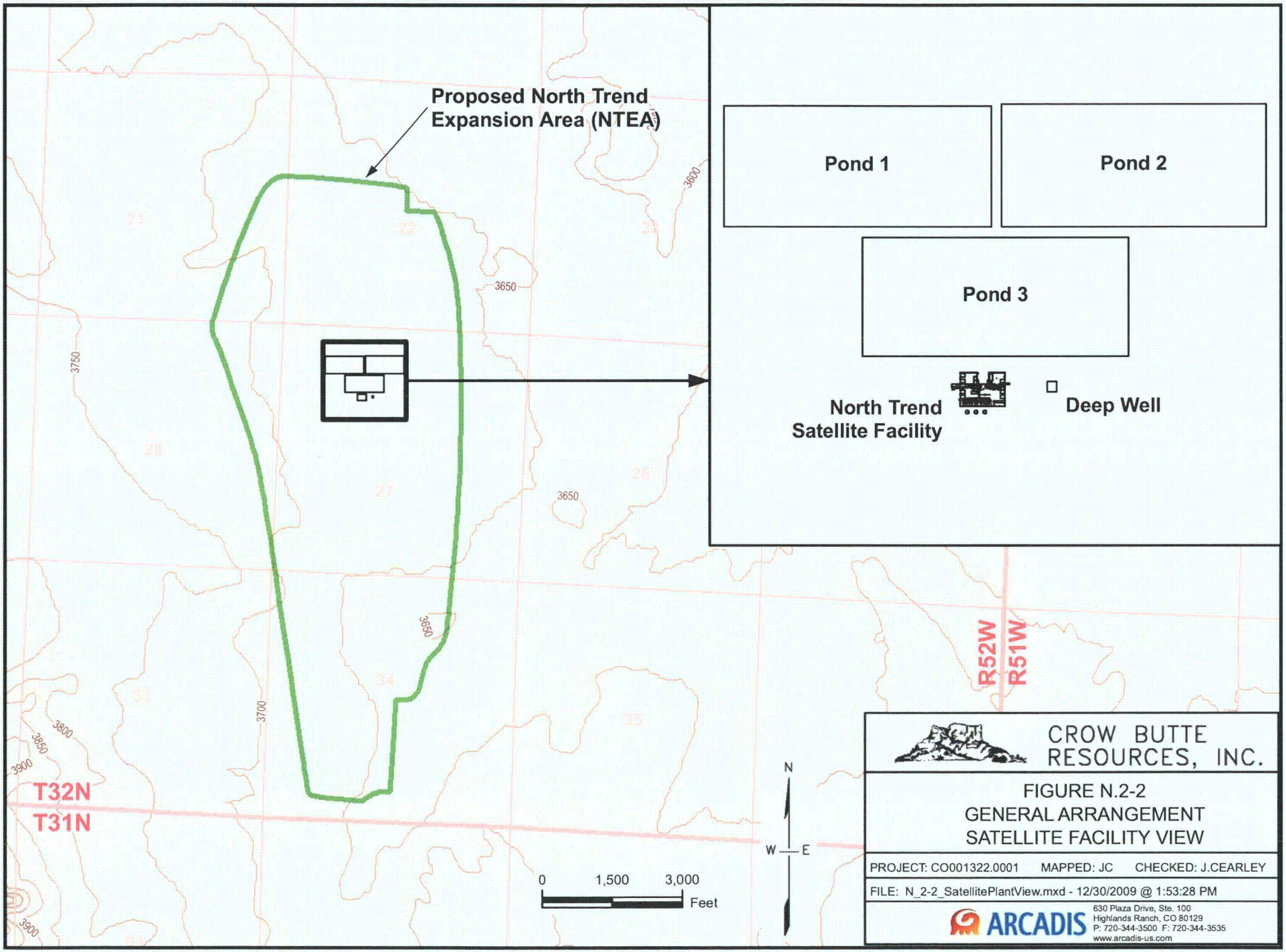
Proposed North Trend
Expansion Area (NTEA)
Pond 1
Pond 2
Pond 3
North Trend
Satellite Facility
Deep Well
3600
3650
3750
3700
3800
3900
T32N
T31N
R52W
R51W
0
1,500
3,000
Feet
N
W
E
CROW BUTTE
RESOURCES, INC.
FIGURE N.2-2
GENERAL ARRANGEMENT
SATELLITE FACILITY VIEW
PROJECT: CO001322.0001 MAPPED: JC CHECKED: J.CEARLEY
FILE: N_2-2_SatellitePlantView.mxd - 12/30/2009 @ 1:53:28 PM
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