United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E., Suite 400
Aberdeen, South Dakota 57401

IN REPLY REFER TO:
DESCRM
MC-208

SEP 0 6 2012

MEMORANDUM

TO: Acting Superintendent, Fort Berthold Agency

FROM: Regional Director, Great Plains Region

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, an Environmental Assessment has been completed and a Finding of No Significant Impact (FONSI) has been issued. The EA authorizes land use for three Bakken oil and gas wells located atop one well pad on the Fort Berthold Indian Reservation.

All the necessary requirements of the National Environmental Policy Act have been completed. Attached for your files is a copy of the EA, FONSI and Notice of Availability. The Council on Environmental Quality (CEQ) regulations require that there be a public notice of availability of the (40 C.F.R. Section 1506.6(b)). Please post the attached notice of availability at the Agency and Tribal buildings for 30 days.

If you have any questions, please call Marilyn Bercier, Regional Environmental Scientist, Division of Environment, Safety and Cultural Resources Management, at (605) 226-7656.

Attachment

cc: Tex Hall, Chairman, Three Affiliated Tribes (with attachment)
Elgin Crows Breast, Tribal Historic Preservation Officer (with attachment)
Derek Enderud, BLM, Bureau of Land Management (with attachment)
Steve Czeczok, KLJ (with attachment)
Eric Wortman, EPA (with attachment)
Carson Hood/Fred Fox, MHA Energy Dept. (with attachment)
Jonathon Shelman, Corps of Engineers (e-mail)
Jeff Hunt, Fort Berthold Agency (e-mail)

Finding of No Significant Impact

Kodiak Oil and Gas (USA), Inc. (Kodiak)

Environmental Assessment for
Drilling of Charging Eagle #9-19-24-4H3/Charging Eagle #9-19-13-13H/
Charging Eagle #9-19-13-12H Oil & Gas Wells (Three Well Pad)

Fort Berthold Indian Reservation
Dunn County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to drill three oil and gas wells located atop one well pad as follows:

- Charging Eagle #9-19-24-4H3, Charging Eagle #9-19-13-13H & Charging Eagle #9-19-13-12H well site located in T147N, R91W, 5th P.M., Section 19

Associated federal actions by BIA include determinations of effect regarding environmental resources and positive recommendations to the Bureau of Land Management regarding the Applications for Permit to Drill.

The potential of the proposed action to impact the human environment is analyzed in the following Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the EA, I have determined that the proposed project will not significantly affect the quality of the human or natural environment. No Environmental Impact Statement is required for any portion of the proposed activities.

This determination is based on the following factors:

1. Agency and public involvement solicited for the preceding NEPA document was sufficient to ascertain potential environmental concerns associated with the currently proposed project.

2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, public safety, water resources, and cultural resources. The remaining potential for impacts was disclosed for both the proposed action and the No Action alternatives.

3. Guidance from the U.S. Fish and Wildlife Service has been fully considered regarding wildlife impacts, particularly in regard to threatened or endangered species. This guidance includes the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) (NEPA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", and the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA).

4. The proposed action is designed to avoid adverse effects to historic, archaeological, cultural and traditional properties, sites and practices. Compliance with the procedures of the National Historic Preservation Act is complete.

5. Environmental justice was fully considered.

6. Cumulative effects to the environment are either mitigated or minimal.

7. No regulatory requirements have been waived or require compensatory mitigation measures.

8. The proposed project will improve the socio-economic condition of the affected Indian community.

Regional Director

9-6-2012
Date

ENVIRONMENTAL ASSESSMENT

United States Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

Kodiak Oil and Gas (USA), Inc.

Drilling of Charging Eagle #9-19-24-4H3/Charging Eagle #9-19-13-13H/Charging Eagle #9-19-13-12H Oil & Gas Wells
(Three Well Pad)

Fort Berthold Indian Reservation

September 2012

For information contact:

Bureau of Indian Affairs, Great Plains Regional Office
Division of Environment, Safety and Cultural Resources
115 4th Avenue SE
Aberdeen, South Dakota 57401
605-226-7656

Finding of No Significant Impact

Kodiak Oil and Gas (USA), Inc. (Kodiak)

Environmental Assessment for
Drilling of Charging Eagle #9-19-24-4H3/Charging Eagle #9-19-13-13H/
Charging Eagle #9-19-13-12H Oil & Gas Wells (Three Well Pad)

Fort Berthold Indian Reservation
Dunn County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to drill three oil and gas wells located atop one well pad as follows:

- Charging Eagle #9-19-24-4H3, Charging Eagle #9-19-13-13H & Charging Eagle #9-19-13-12H well site located in T147N, R91W, 5th P.M., Section 19

Associated federal actions by BIA include determinations of effect regarding environmental resources and positive recommendations to the Bureau of Land Management regarding the Applications for Permit to Drill.

The potential of the proposed action to impact the human environment is analyzed in the following Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the EA, I have determined that the proposed project will not significantly affect the quality of the human or natural environment. No Environmental Impact Statement is required for any portion of the proposed activities.

This determination is based on the following factors:

1. Agency and public involvement solicited for the preceding NEPA document was sufficient to ascertain potential environmental concerns associated with the currently proposed project.

2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, public safety, water resources, and cultural resources. The remaining potential for impacts was disclosed for both the proposed action and the No Action alternatives.

3. Guidance from the U.S. Fish and Wildlife Service has been fully considered regarding wildlife impacts, particularly in regard to threatened or endangered species. This guidance includes the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) (MBTA), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) (NEPA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", and the Endangered Species Act (16 U.S.C. 1531 et seq.) (ESA).

4. The proposed action is designed to avoid adverse effects to historic, archaeological, cultural and traditional properties, sites and practices. Compliance with the procedures of the National Historic Preservation Act is complete.

5. Environmental justice was fully considered.

6. Cumulative effects to the environment are either mitigated or minimal.

7. No regulatory requirements have been waived or require compensatory mitigation measures.

8. The proposed project will improve the socio-economic condition of the affected Indian community.

Regional Director

9-6-2012
Date

CONTENTS

Chapter 1 PURPOSE AND NEED FOR ACTION 1

1.1 Introduction 1
1.2 Description of the Proposed Action 1
1.3 Need for the Proposed Action 3
1.4 Purpose of the Proposed Action 3
1.5 Regulations that Apply to Oil and Gas Development Activities 3

Chapter 2 ALTERNATIVES 4

2.1 Introduction 4
2.2 Alternative A: No Action 4
2.3 Alternative B: Proposed Action 4
2.3.1 Charging Eagle 9-19 Well Site 5
2.3.2 Activities that Apply to Development of All Wells 8
2.3.2.1 Field Camps 8
2.3.2.2 Access Road 8
2.3.2.3 Well Pad 8
2.3.2.4 Drilling 11
2.3.2.5 Casing and Cementing 11
2.3.2.6 Completion and Evaluation 11
2.3.2.7 Commercial Production 12
2.3.2.8 Reclamation 13
2.3.3 Potential for Future Development 14

Chapter 3 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND IMPACTS 15

3.1 Introduction 15
3.2 Climate, Geologic Setting, and Land Use 15
3.2.1 Climate, Geologic Setting and Land Use Impacts/Mitigation 17
3.3 Soils 17
3.3.1 Soil Impacts/Mitigation 18
3.4 Water Resources 19
3.4.1 Surface Water 20
3.4.1.1 Surface Water Impacts/Mitigation 20
3.4.2 Ground Water 23
3.4.2.1 Ground water Impacts/Mitigation 25
3.5 Wetlands 25
3.5.1 Wetland impacts/Mitigation 25
3.6 Air Quality 25
3.6.1 Air Quality Impacts/Mitigation 26
3.7 Threatened, Endangered, and Candidate Species 27
3.7.1 Threatened Species 27
3.7.1.1 Threatened Species Impacts/Mitigation 28
3.7.2 Endangered Species 28
3.7.2.1 Endangered Species Impacts/Mitigation 30
3.7.3 Candidate Species 31

3.7.3.1 Candidate Species Impacts/Mitigation 31
3.8 Bald and Golden Eagles 32
3.8.1 Bald and Golden Eagle Impacts/Mitigation 34
3.9 Migratory Birds and Other Wildlife 34
3.9.1 Migratory Birds and Other Wildlife Impacts/Mitigation 36
3.10 Vegetation 37
3.10.1 Vegetation Impacts/Mitigation 40
3.11 Cultural Resources 40
3.11.1 Cultural Resources Impacts/Mitigation 42
3.12 Socioeconomic Conditions 42
3.12.1 Socioeconomic Impacts/Mitigation 43
3.13 Environmental Justice 43
3.13.1 Environmental Justice Impacts/Mitigation 45
3.14 Infrastructure and Utilities 45
3.14.1 Infrastructure and Utility Impacts/Mitigation 45
3.15 Public Health and Safety 46
3.15.1 Public Health and Safety Impacts/Mitigation 46
3.16 Cumulative Considerations 47
3.16.1 Past, Present, and Reasonable Foreseeable Actions 47
3.16.2 Cumulative Impact Assessment 49
3.17 Irreversible and Irretrievable Commitment of Resources 51
3.18 Short-term Use of the Environment versus Long-term Productivity 511
3.19 Permits 51
3.20 Environmental Commitments/Mitigation 51

Chapter 4 PREPARERS AND AGENCY COORDINATION 55

4.1 Introduction 55
4.2 Preparers 55
4.3 Agency Coordination 56
4.4 Public Involvement 56

Chapter 5 REFERENCES 57

FIGURES

Figure 1.1, Project Location Map 2
Figure 2.1, Charging Eagle #9-19 Spacing Unit 6
Figure 2.2, Charging Eagle #9-19 Study Area 7
Figure 2.3, Charging Eagle #9-19 Well Site Overview 10
Figure 3.1, Land Use 16
Figure 3.2, Surface Water Resources 22
Figure 3.3, Aquifers and Groundwater Wells 24
Figure 3.4, Bald and Golden Eagle Habitat and Nesting Sites 33

Figure 3.5, Pocket Gopher Mounds 35
Figure 3.6, Whitetail Deer Skull 35
Figure 3.7, Well Pad Vegetation 37
Figure 3.8, Access Road Vegetation North of BIA 22 near Wetland 38
Figure 3.9, Drainage to the South of Pad 38
Figure 3.10, Noxious Weed Patch 39
Figure 3.11, Existing and Proposed Oil and Gas Wells 48

TABLES

Table 3.1, Summary of Land Use Conversion 17
Table 3.2, Soils 18
Table 3.3, Topsoil Requirements for Future Site Reclamation 18
Table 3.4, Topsoil and Embankment Stockpile Locations 19
Table 3.5, Federal and State Air Quality Standards and Reported Data for Dunn Center 26
Table 3.6, Noxious Weed Species 39
Table 3.7, Employment and Income 44
Table 3.8, Demographic Trends 44
Table 3.9, Summary of Active and Proposed Wells 48
Table 4.1, Preparers 55

Appendix A: Agency Scoping Materials

Appendix B: Agency Scoping Responses

Appendix C: Plats

CHAPTER 1 PURPOSE AND NEED FOR ACTION

1.1 Introduction

This Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and the regulations of the Council on Environmental Quality (CEQ), 40 CFR parts 1500 through 1508. An EA is an informational document intended for use by both decision-makers and the public. It discloses relevant environmental information concerning the proposed action and the no action alternative.

1.2 Description of the Proposed Action

The Fort Berthold Reservation encompasses 988,000 acres, 457,837 of which are in tribal and individual Indian ownership by the Three Affiliated Tribes (Mandan, Hidatsa, and Arikara) and its members. The reservation is located in west central North Dakota and is split into three areas by Lake Sakakawea, which traverses the center of the reservation. It occupies portions of six counties: Dunn, McKenzie, McLean, Mercer, Mountrail, and Ward.

The Fort Berthold Reservation lies atop the Bakken Formation, a geologic formation rich in oil and gas deposits that extends approximately 25,000 square miles beneath North Dakota and Montana, United States and Saskatchewan and Manitoba, Canada. Approximately two-thirds of the Bakken Formation is beneath North Dakota. The Three Forks Formation lies beneath the Bakken. The North Dakota Department of Mineral Resources estimates that there are approximately two billion barrels of recoverable oil in each of these formations[1]. The Department's director estimates that there are 30 to 40 remaining years of production, or more if technology improves.

The proposed action includes a positive recommendation to the Bureau of Land Management (BLM) by the Bureau of Indian Affairs (BIA) and approval of right-of-way for Kodiak Oil & Gas (USA), Inc. (Kodiak) to construct the proposed well pad on the Fort Berthold Reservation, resulting in the drilling and completion of three wells. This well pad is proposed to be positioned in the following location and as shown on ***Figure 1.1, Project Location Map.***

Charging Eagle #9-19 well pad located in the NE¼SE¼ of Section 19, T147N, R91W, 5th P.M. and containing the following wells:

- Charging Eagle #9-19-24-4H3
- Charging Eagle #9-19-13-13H
- Charging Eagle #9-19-13-12H

[1] The Bakken contains about 169 billion barrels of oil and the Three Forks contains about 20 billion barrels; however, most of this is not expected to be recoverable.

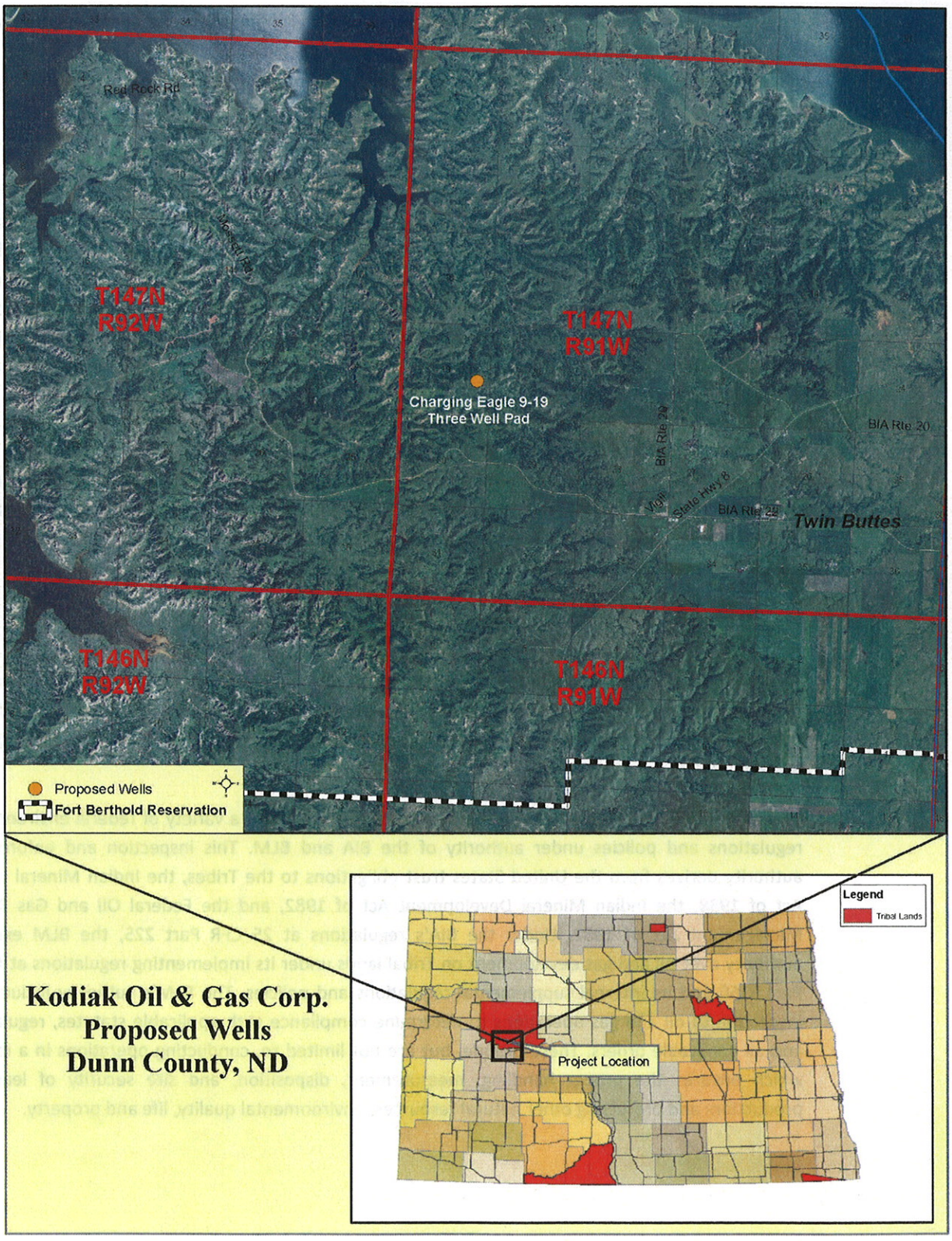


Figure 1.1, Project Location Map

Each well would have an associated drilling unit in which the minerals to be developed by that well are located. Proposed completion activities include acquisition of rights-of way, infrastructure (including subsurface gathering lines and buried electric lines) for the proposed wells, and roadway improvements.

1.3 Need for the Proposed Action

The Tribes own their mineral resources, which are held in trust by the United States government through the BIA. The BIA's positive recommendation to the BLM for approval of the Applications for Permit to Drill (APDs) of the three wells would provide important benefits to the Three Affiliated Tribes, including revenue that could contribute to the Tribal budgets, satisfy Tribal obligations, and fund land purchase programs to stabilize its land base. It would also provide individual members of the Tribes with needed employment and income. Furthermore, the proposed action gives the United States an opportunity to reduce its dependence on foreign oil and gas by the development of domestic sources of oil and gas.

1.4 Purpose of the Proposed Action

The purpose of the proposed action is to allow the Three Affiliated Tribes to provide for oil and gas development on the identified land on the Fort Berthold Reservation. Additionally, the purpose is to access commercially recoverable oil and gas resources on the lands subject to Kodiak's lease areas by drilling three wells at the identified location.

1.5 Regulations that Apply to Oil and Gas Development Activities

The BIA must comply with NEPA before it issues a determination of effect regarding environmental resources and provides a recommendation to the BLM regarding the APDs. Therefore, an EA for the proposed wells is necessary to analyze the direct, indirect, and cumulative impacts of the proposed project.

Oil and gas development activities on Indian lands are subject to a variety of federal environmental regulations and policies under authority of the BIA and BLM. This inspection and enforcement authority derives from the United States trust obligations to the Tribes, the Indian Mineral Leasing Act of 1938, the Indian Mineral Development Act of 1982, and the Federal Oil and Gas Royalty Management Act of 1982. Under the BIA's regulations at 25 CFR Part 225, the BLM exercises authority over oil and gas development on Tribal lands under its implementing regulations at 43 CFR Part 3160 and its internal supplemental regulations and policies. The BLM's authority includes the inspection of oil and gas operations to determine compliance with applicable statutes, regulations, and all applicable orders. These include, but are not limited to, conducting operations in a manner which ensures the proper handling, measurement, disposition, and site security of leasehold production; and protecting other natural resources, environmental quality, life and property.

CHAPTER 2 ALTERNATIVES

2.1 Introduction

This chapter provides information on the development and evaluation of project alternatives. The development of alternatives is directly related to the purpose and need for the project. Two alternatives are being considered for this project: a no action alternative and a proposed action alternative.

2.2 Alternative A: No Action

Under the no action alternative (Alternative A), the BIA would not recommend and BLM would not authorize the drilling of three oil and gas wells atop one well pad. There would be no environmental impacts associated with Alternative A; however, the Three Affiliated Tribes would not receive potential royalties on production or other economic benefits from oil and gas development on the reservation. Further, the oil and gas resources targeted by the proposed action would not be recovered and made available for domestic energy use.

2.3 Alternative B: Proposed Action

The proposed action (Alternative B) includes a positive recommendation by the BIA and authorization by the BLM to construct and drill three oil and gas wells atop an individual pad, as well as associated rights-of-way acquisition, roadway improvements, and infrastructure for the wells. Infrastructure may include subsurface gathering pipelines and buried electrical lines, both of which may be located within the access road corridor (200-foot wide area surveyed).

The proposed action would consist of construction of a well pad containing three well heads, an access road, associated infrastructure, and drilling within a spacing unit. The well pad is where the actual surface disturbance caused by drilling activities would occur. The spacing unit is the location of the minerals that are to be developed. The location of the proposed well pad, access road, and proposed drilling techniques were specifically selected to minimize surface disturbance.

The well pad would require new right-of-way for access points, supporting buried electrical lines, and gathering lines associated with oil and gas production. Rights-of-way would be located to avoid sensitive surface resources and any cultural resources identified in site surveys. Access roads would be improved to eliminate overly steep grades, maintain current drainage patterns, and provide an all-weather driving surface.

An intensive, pedestrian resource survey of the proposed well pad and access road was conducted on June 26, 2012 by Kadrmas, Lee & Jackson (KL&J) resource specialists. The purpose of these surveys was to gather site-specific data and photos with regard to botanical, biological, threatened and endangered species, eagles, migratory birds, and water resources. A study area of approximately 25 acres centered on the well pad center point and a 200-foot wide access road corridor was evaluated for the site. Resources were evaluated using visual inspection and pedestrian transects across the site. In addition, a survey for eagles and eagle nests within 0.5 miles of all project disturbance areas was conducted, as survey permission allowed. These surveys consisted of pedestrian transects focusing specifically on potential nesting sites within 0.5 miles of project disturbance areas, including

cliffs and wooded draws. Wooded draws were observed both from the upland areas overlooking the draws and from the bottomlands within the actual draws where visibility allowed.

The BIA EA on-site assessment of the proposed well pad and access road were conducted concurrent to some of the resource surveys. The BIA Environmental Protection Specialist, Kodiak, KL&J, and Juniper Archaeology (Juniper) participated in these assessments. Representatives from the Tribal Historic Preservation Office (THPO) were invited to the on-site assessment, but did not participate. During these assessments, construction suitability with respect to topography, stockpiling, drainage, erosion control, and other surface issues were considered. The well pad and access road locations were finalized, and the BIA gathered information needed to develop site-specific mitigation measures and best management practices (BMPs) to be incorporated into the final APDs. Those present at the EA on-site assessment agreed that the selected locations, along with the minimization/mitigation measures Kodiak plans to implement, are positioned to minimize impacts to sensitive wildlife and botanical resources. Comments received from the United States Fish and Wildlife Service (USFWS) during the scoping process have been considered in the construction of the proposed project.

2.3.1 Charging Eagle 9-19 Well Site

The Charging Eagle #9-19 site would consist of a three well pad located in the NE¼SE¼ of Section 19, T147N, R91W, 5th P.M. to access potential oil and gas resources within the spacing unit consisting of Section 19, T147N, R91W, and Sections 13 & 24, T147N, R92W, 5th P.M. Please refer to ***Figure 2.1, Charging Eagle #9-19 Spacing Unit.*** All three of the wells would access resources within this spacing unit. The Charging Eagle #9-19-24-4H3 well is targeting the Three Forks Formation, while the Charging Eagle #9-19-13-13H & Charging Eagle #9-19-13-12H wells are targeting the Bakken Formation.

The Charging Eagle #9-19 site would be accessed from the south. A new access road approximately 5,893 feet long would be constructed to connect the Charging Eagle #9-19 site to BIA 22 Roadway. This road would provide access to all three wells on the Charging Eagle #9-19 well pad. Minor spot grading may be needed to flatten existing landscape grades along the proposed access road alignment. At least one culvert and cattle guard would be installed along this new access road at the well pad entrance, with additional being placed if determined necessary during site construction. Please refer to ***Figure 2.2, Charging Eagle #9-19 Study Area*** for a depiction of the well site and access road corridor.

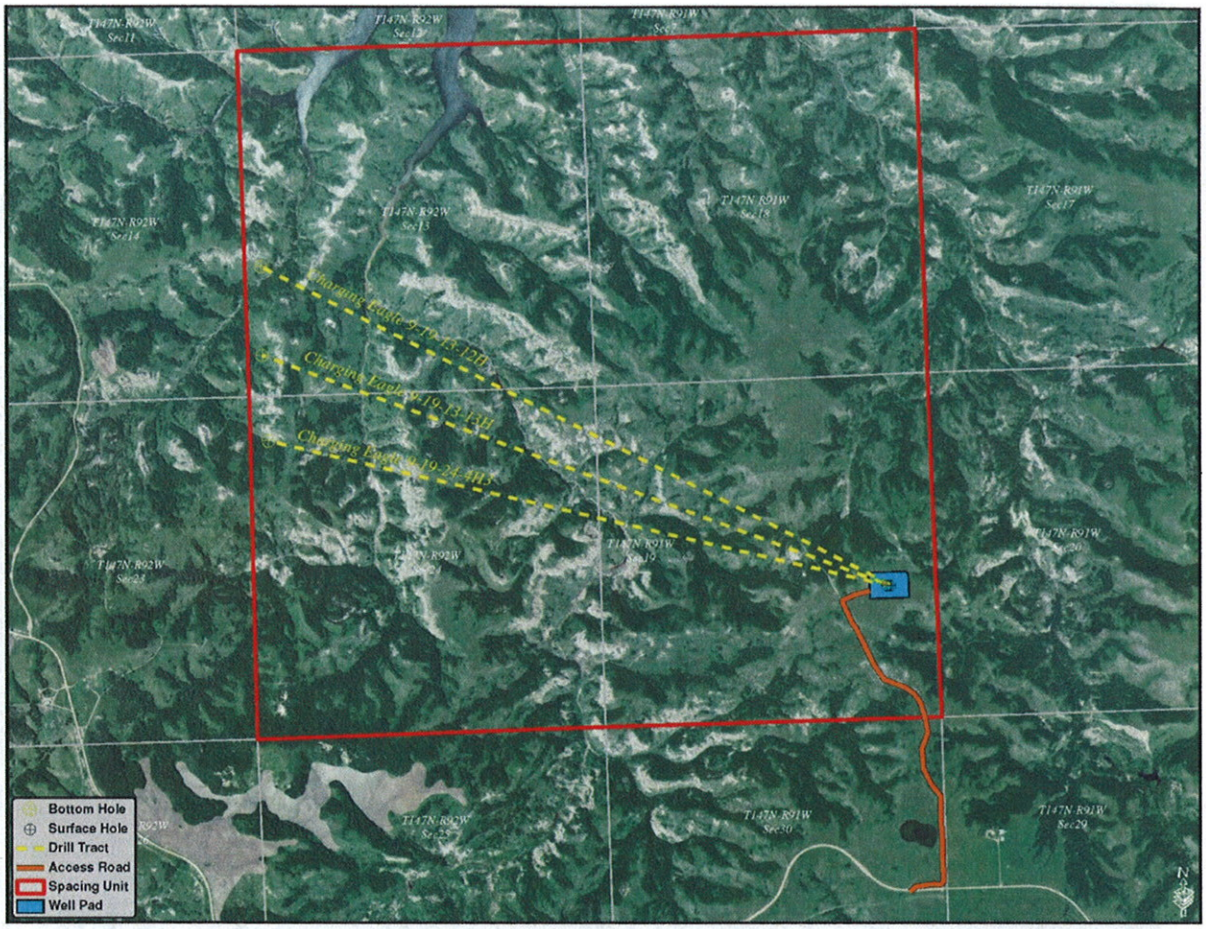


Figure 2.1, Charging Eagle #9-19 Spacing Unit

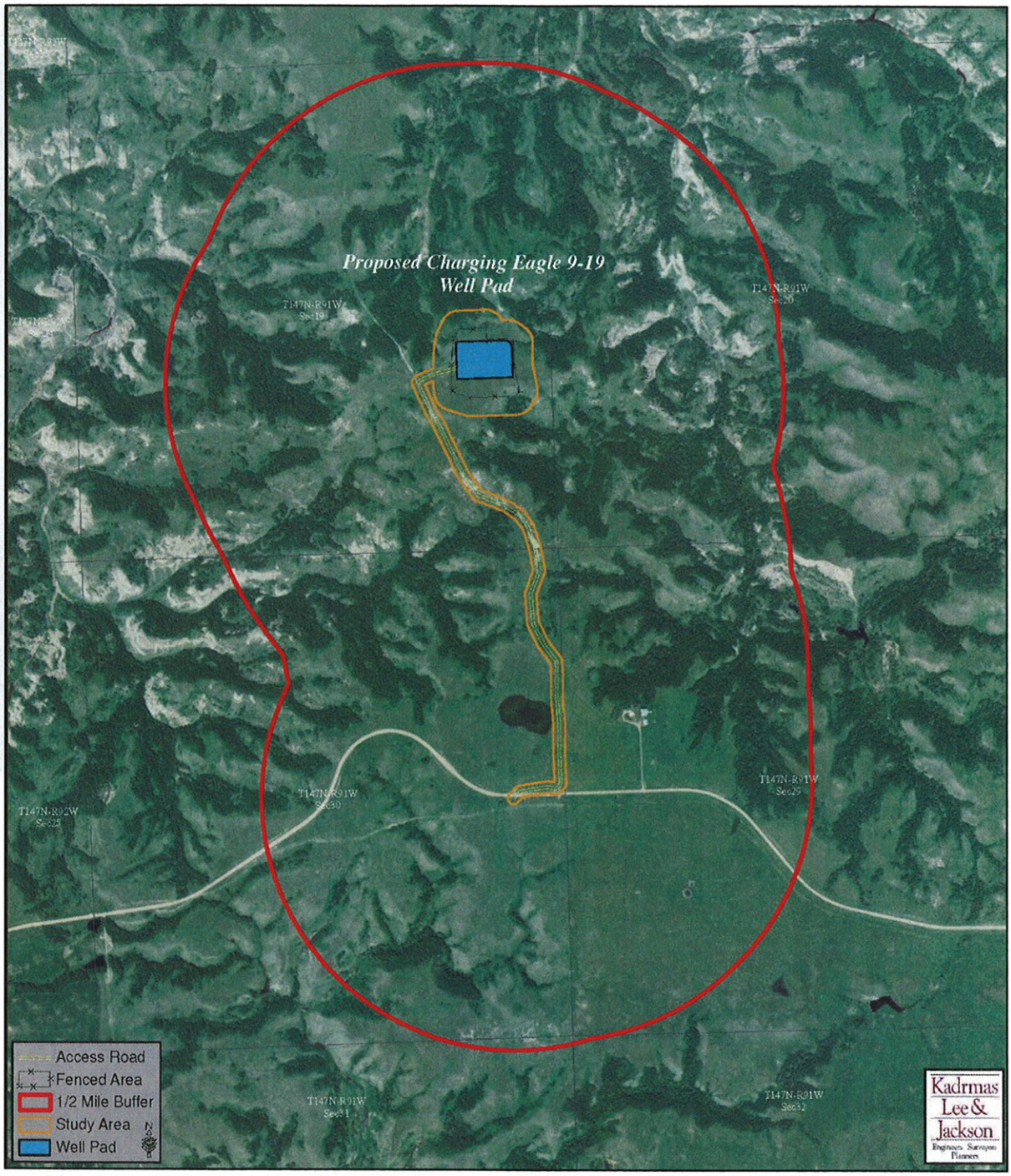


Figure 2.2, Charging Eagle #9-19 Study Area

2.3.2 Activities that Apply to Development of All Wells

The following sections include a discussion of items that would be consistent for construction of the proposed well sites.

2.3.2.1 Field Camps

Self-contained trailers may temporarily house key personnel on-site during drilling operations. No long-term residential camps are proposed. Sewage would be collected in standard portable chemical toilets or service trailers on-site and then transported off-site to a state-approved wastewater treatment facility. Other solid waste would be collected in enclosed containers and disposed of at a State-approved facility.

2.3.2.2 Access Road

Existing roadways would be used to the extent possible to access the proposed wells; however, the construction of a new access road would also be required. The running surface of the access road would be surfaced with crushed gravel or scoria from a previously approved location, and erosion control measures including straw wattles, silt fences, straw mulch, and/or hydro seeding would be installed on down sloping sides. A right-of-way width of 125 feet would be required for access road construction, utilities and pipelines. The access road would consist of a 20 to 28-foot wide roadway with the remainder of the disturbed area due to construction slopes, gathering pipelines, and electrical infrastructure. The outslope portions of the constructed access road would be re-seeded upon completion of construction to reduce access road related disturbance. Access road construction will comply with road design standards outlined in the BLM's Gold Book (4th Addition, 2007). Kodiak had an existing access road right-of-way width of 50-feet for approximately 5,400 feet of the access road. Due to the width of the construction and installation of utilities/pipelines, it was determined during the BIA onsite that the access road right-of-way would need to be widened to 125-feet. The access road corridor was surveyed and cleared by KL&J, Juniper, and BIA as proposed.

All efforts would be made to complete construction outside the migratory bird nesting season (February 1 through July 15) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that construction needs to take place during the migratory bird nesting season, a pre-construction survey for migratory bird nests would be conducted by a qualified biologist within five days prior to the initiation of all construction activities or the sites would be mowed/grubbed the previous fall and spring to deter birds from nesting in project areas. The findings of the pre-construction surveys would be reported to the BIA.

2.3.2.3 Well Pad

The proposed well pad would consist of a leveled area surfaced with a minimum of six inches of gravel or crushed scoria. The pad would be used for the drilling rig and related equipment, as well as an excavated, reinforced lined[2] pit to store drill cuttings. An 18-inch high berm would be installed along the north side of the well pad to prevent runoff from leaving the pad and entering the adjacent drainage. The berm would tie into cut. A semi-closed loop system would be used during drilling. The drill cuttings pit would be reclaimed to BLM and North Dakota Industrial Commission (NDIC) standards immediately upon finishing completion operations. The level well pad, plus cut and fill slope areas, required for drilling and completing operations (including cuttings pit for drill cuttings) would be approximately 400x600 feet (approximately 6.42 acres). The northeast corner would be

[2] The lining would have a minimum thickness of 20 mils.

brought in 75 feet and rounded to avoid impacting the drainage. The total quantity of land within the well pad fenced area would be approximately 10.3 acres. The cuttings pits would be fenced and covered with netting to protect wildlife from hazardous areas. To prevent livestock from accessing the site, the entire well pad would also be fenced. Please refer to ***Figure 2.3, Charging Eagle #9-19 Well Site Overview.***

The well pad area would be cleared of vegetation, stripped of topsoil, and graded to specifications in the APDs submitted to the BLM. Construction would comply with the standards and guidelines prescribed in the BLM's Gold Book. Topsoil would be stockpiled and stabilized until disturbed areas are reclaimed and re-vegetated. Excavated subsoils would be used in pad construction, with the finished well pad graded to ensure water drains away from the drill site. Erosion control at the site would be maintained through the use of BMPs, which may include, but are not limited to, water bars, bar ditches, diversion ditches, bio-logs, silt fences, and re-vegetation of disturbed areas. Additional site-specific BMPs are as follows:

- An 18-inch high berm would be installed on the north side of the well pad to prevent run-off.
- The northeast corner of the well pad would be brought in 75 feet and rounded to avoid impacting the drainage.
- The drainage near the northeast corner of the well pad would be armored with rock riprap to prevent erosion and stabilize the soil.
- A water diversion ditch would be place along the cut sides of the well pad to assist in diverting water around the pad.
- Woody vegetation cleared from the pad would be mulched and incorporated into topsoil stockpiles.
- The topsoil stockpile would not exceed four feet in height.
- The topsoil pile would be placed on the north side of the pad; the excess soil stockpile would be placed on the south side of the pad.
- Straw waddles or equivalent erosion control measures would be installed on cut and fill slopes.

All efforts would be made to complete construction outside the migratory bird nesting season (February 1 through July 15) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that construction needs to take place during the migratory bird nesting season, a pre-construction survey for migratory bird nests would be conducted by a qualified biologist within five days prior to the initiation of all construction activities or the site would be mowed the previous fall and spring to deter birds from nesting in project areas. The findings of the pre-construction surveys would be reported to the BIA.

Figure 2.3, Charging Eagle #9-19 Well Site Overview

2.3.2.4 Drilling

Following the access road construction and well pad preparation, a drilling rig would be rigged up at the well pad. The time for rigging up, drilling the well, and rigging down the well is anticipated to be about 30 days. During this phase, vehicles and equipment would access the site several times a day.

Initial drilling would be vertical to a depth of approximately 10,100 feet, at which time it would angle to become horizontal at 11,000 feet. Drilling would then be followed by lateral reaches into the Middle Bakken Member target. This horizontal drilling technique would minimize surface disturbance.

For the first 2,000 feet drilled at each well (commonly referred to as a "surface hole"), a fresh water based mud system with non-hazardous additives would be used to minimize contaminant concerns. Water would be obtained from a commercial source for this drilling stage. About eight gallons of water would be used per foot of hole drilled, for a total of about 40,000 gallons (20,000 gallons in the hole and 20,000 gallons as working volume at the surface). After setting and cementing the surface casing, an oil-based mud system consisting of about 80% diesel fuel and 20% saltwater would be used to drill the remainder of the vertical hole and curve. Seven-inch production casing would be set and cemented through the curve and into the lateral. A saltwater based drilling mud would then be utilized for the horizontal portion of the wellbore.

Drilling fluids would be separated from cuttings and contained in steel tanks placed on liners until they are ready for re-use. Any minimal fluids remaining in the drill cuttings pit would be removed and disposed in accordance with BLM and NDIC rules and regulations. Cuttings generated from drilling would be deposited in the cuttings pit on the southwest corner of the well pad. Kodiak would institute density test of soils at the entire well pad to ensure a requirement of > 95% soil compaction for site stabilization. This compaction is to be confirmed by a third party with a standard or modified soil proctor test or both, depending on the moisture content. This stabilizes fill areas for facilities so that there are not weight concerns that would normally occur in "non-engineered" fills. Fill would be placed in 6 to 8 inch lifts with documented density tests on each lift. The test results would be provided to BIA upon request. The cuttings pit would be placed on an area of cut. The pit would be lined to prevent seepage and contamination of underlying soil. Prior to its use, the pit would be fenced on the non-working sides. The access side would be fenced and netted until reclamation and completion operations to prevent wildlife and livestock from accessing the pit. In accordance with NDIC and BLM regulations and guidelines, drill cuttings would be solidified into an inert, solid mass by chemical means.

2.3.2.5 Casing and Cementing

Casing and cementing methods would be used to isolate all near-surface aquifers and hydrocarbon zones encountered during drilling.

2.3.2.6 Completion and Evaluation

Once each well is drilled and cased, approximately 30 additional days (depending on availability of services) would be required to complete and evaluate it. Completion and evaluation activities include cleaning out the well bores, pressure testing the casings, perforating and fracturing to stimulate the horizontal portion of the wells, and running production tubing for potential future commercial production. Fluids utilized in the completion process would be captured in tanks and would be disposed of in accordance with BLM and NDIC rules and regulations. Once each well is completed, site

activity and vehicle access would be reduced. If the well is determined to be successful, tank trucks (and, if appropriate, natural gas gathering lines) would transport the product to market.

2.3.2.7 Commercial Production

If commercially recoverable oil and gas resources are found at the proposed site, the site would become established as a production facility. Production equipment, including a well pumping unit, vertical heater/treater, storage tanks (typically four 400 barrel steel oil tanks and one 400 barrel fiberglass saltwater tank per well) and a flare with associated piping would be installed. The storage tanks and heaters/treaters would be surrounded by an impermeable berm that would act as secondary containment to guard against possible spills. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. All permanent above ground production facilities would be painted to blend into the surrounding landscape, as determined by the BIA, based on standard colors recommended by the BLM.

Oil would be collected in the storage tanks and periodically trucked to an existing oil terminal to be sold. Produced water would also be captured in storage tanks and periodically trucked to an approved disposal site. The frequency of trucking activities for both oil resources and produced water would be dependent upon volumes and rates of production. It is expected that oil would be trucked via existing oil field, BIA, and/or county roads off the Fort Berthold Reservation to a regional oil terminal. All haul routes used would be either private roads or roads that are approved for this type of transportation use by the local governing tribal, township, county, and/or state entities. All associated applicable permits would be obtained and compliance with restrictions enforced. Should regional oil, gas, and/or saltwater pipelines be installed, every attempt to tie production facilities at the proposed sites to these pipelines would be made, thereby minimizing truck traffic. Any future oil, gas, or saltwater transportation pipelines would be constructed within the 200-foot area surveyed or additional NEPA analysis and approval from the BIA would be undertaken.

When any of the proposed wells cease to flow naturally, a pump jack would be installed. After production ceases, the well would be plugged and abandoned, and the land would be fully reclaimed in accordance with BIA and BLM requirements.

Kodiak would mitigate the effects of the well pad by incorporating applicable conditions, mitigation measures, and BMPs from the BLM's regulations, BLM's Gold Book, and applicable BLM Onshore Oil and Gas Orders, including Numbers 1, 2, and 7.

Kodiak anticipates Saddle Butte Pipeline, LLC (Saddle Butte) or another pipeline service to be the pipeline provider for the wells proposed in this EA, should pipeline facilities be constructed. As current estimates expect the Bakken field to remain active for 30 to 40 years, it is important that pipeline systems are designed to perform for this period of time. Pipelines, if designed effectively and well maintained, may have an indefinite life expectancy.

To ensure their long-term viability, all pipelines would be coated with between 14–16 mils of fusion bonded epoxy coating, which helps protect the pipelines against corrosive elements in the soil. The coating would be inspected thoroughly at the time of installation, both visually and by electronic testing means. Specialty coatings that are applicable for underground fittings, bore crossings, etc. would be used to provide additional levels of protection in areas that require it. Velocities and pressure drops for the pipeline system would be carefully evaluated and lines are sized so as to

prevent erosion velocity. Additionally, lines are designed to be cleaned and inspected via internal tools (e.g., cleaning pigs and smart pigs), which helps in the identification of issues in the pipes.

Following design and installation, the pipeline service provider would immediately conduct a cathodic survey utilizing test stations, rectifier pads and other means designed by cathodic protection specialists. The pipeline service provider would also install pig launchers and receivers on its trunk lines and primary laterals to identify pipeline conditions both internally and externally to maintain the integrity of the pipeline system.

All pipeline installations would be monitored by an inspection/construction management team as well as independent third party contract experts. The pipeline service provider's construction specifications require contractors to allow for inspection, and that no pipeline is laid and backfilled without appropriate approvals. Hydrotesting of pipelines would be used to assure no possibility of leakage at the time of installation.

2.3.2.8 Reclamation

The drill cuttings would be dried during drilling operations and placed into a lined cuttings pit at the well site. Additional treatment of the cuttings, including stabilization, would be completed, and the pit would be backfilled and buried as soon as possible upon well completion. Other interim reclamation measures to be implemented upon well completion include reduction of cut and fill slopes where possible, redistribution of stockpiled topsoil, and re-seeding of the disturbed areas via hydro-seeding or matting. Per recommendations made at the BIA EA on-site, small trees or saplings impacted by the project shall be ground up and incorporated into topsoil piles to help stabilize the soil. If commercial production equipment is installed, the well pad would be reduced in size to accommodate the production facilities, while leaving adequate room to conduct normal well maintenance and potential recompletion operations, with the remainder of the well pad reclaimed. Reclamation activities would include leveling, re-contouring, treating, backfilling, and re-seeding with native vegetation. Erosion control measures including straw wattles, silt fences, straw mulch, and/or hydro seeding would be installed on down sloping sides. Stockpiled topsoil would be redistributed and re-seeded as recommended by the BIA.

If no commercial production were developed from one or any of the proposed wells, or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. As part of the final reclamation process, all well facilities would be removed, well bores would be plugged with cement, and dry hole markers would be set in accordance with NDIC and BLM requirements. The access road and well pad would be re-contoured to match topography of the original landscape, and re-seeded with a native grass seed mixture that is consistent with surrounding native species to ensure a healthy and diverse vegetative community that is free of noxious weeds. Erosion control measures including straw wattles, silt fences, straw mulch, and/or hydro seeding would be installed on down sloping sides. Maintenance of the grass seeding would continue until such time that the productivity of the stand is consistent with surrounding undisturbed vegetation and is free of noxious weeds. An exception to these reclamation measures may occur if the BIA approves assignment of an access road either to the BIA roads inventory or to concurring surface allottees.

Installation of the pipelines may require clearing and grading within the entire 125-foot right-of-way along the entire pipeline corridor. Every effort would be made to minimize surface disturbance during the construction process. Topsoil would be separated and stockpiled along either side of any

disturbed cross section to be used for prompt reseeding and reclamation of the disturbed area. If construction activities take place close to the end of construction season, topsoil would only be removed far enough in advance that the pipeline could be installed and the site re-graded prior to the end of the construction season. If topsoil cannot be spread in a timely manner that allows vegetation to reestablish prior to winter, topsoil would be spread the following spring and reseeded so as to not be susceptible to wind and/or water erosion over the winter.

For locations that are reclaimed in winter months or late fall such that no germination is possible, the pipeline service provider would either use a sprayed reinforcement, lain matting reinforcement, spread and crimp straw and/or would minimize erosion issues with straw wattle and silt fence through winter months. Any temporary reclamation measures would remain until the pipeline service provider can completely reclaim and revegetate the property in the spring. All temporary reclamation measures would be inspected on a monthly basis, or more frequently as necessary, throughout the winter. In addition, the pipeline service provider would also install straw bales on slopes as needed to provide erosion breaks.

Continued use of pasture and livestock grazing areas would be maintained during construction via use of temporary fencing or cattle guards when crossing land with livestock present and temporary crossings, as needed. Trenches would be excavated to a depth sufficient to maintain a minimum of 48 inches of ground coverage over the pipeline. It is understood that other utilities, including phone and water pipelines, may be present in the immediate area and would need to be coordinated with the appropriate utilities accordingly.

2.3.3 Potential for Future Development

Development beyond the drilling of the following wells and installation of supporting facilities, as described in this document, is not included with this proposal:

- Charging Eagle #9-19 well pad containing the following wells: Charging Eagle 9-19-24-4H3; Charging Eagle 9-19-13-13H; and Charging Eagle 9-19-13-12H

Further development would be subject to applicable regulations, including 43 CFR Part 3160, and the BLM's Onshore Oil and Gas Order No. 1 – Approval of Operations on Onshore Federal and Indian Oil and Gas leases, and would be subject to review under NEPA, as appropriate.

CHAPTER 3 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND IMPACTS

3.1 Introduction

This chapter describes the existing conditions within the study area. The existing conditions, or affected environment, are the baseline conditions that may be affected by the proposed action. This chapter also summarizes the positive and negative direct environmental impacts of the project alternatives, as well as cumulative impacts. Indirect impacts are discussed in impact categories where relevant. Information regarding the existing environment, potential effects to the environment resulting from the proposed alternative, and avoidance, minimization, and/or mitigation measures for adverse impacts is included.

3.2 Climate, Geologic Setting, and Land Use

The proposed wells and access road are situated geologically within the Williston Basin, where the shallow stratigraphy consists of sandstones, silts, and shales dating to the Tertiary Period (65 to 2 million years ago), including the Sentinel Butte and Golden Valley Formations. The underlying Bakken Formation is a known source of hydrocarbons; its middle member is targeted by the proposed project. Although earlier oil and gas exploration activity within the Fort Berthold Reservation was limited and commercially unproductive, recent advances in drilling technologies, including horizontal drilling techniques, now make accessing oil in the Bakken Formation feasible.

According to High Plains Regional Climate Center data collected at the Dunn Center 2 SW, North Dakota (322365) weather station from 1918-2011, temperatures in excess of 80 degrees Fahrenheit are common in summer months. The area receives approximately 16.4 inches of precipitation annually, predominantly during spring and summer. Winters in this region are cold, with temperatures often falling near zero degrees Fahrenheit. Snow generally remains on the ground from November to March, and about 36 inches of snow are received annually.

The topography within the project areas is primarily identified as part of the United States Geological Survey's (USGS's) Northwestern Great Plains, Little Missouri Badlands Ecoregion. According to the USGS, the Little Missouri Badlands Ecoregion consists of "soft silts and clays of the Sentinel Butte and Bullion Creek Formations which continually melt off the sparsely vegetated conical hillslopes. The collapse of caverns created by burning coal seams also hastens erosion. Rocky Mountain juniper grows on the hillslopes; cottonwood and green ash appear in the riparian areas. Ephemeral, flashy stream flow creates steep, downcut channels in the soft sediments along the tributaries to the Little Missouri River. Grazing and recreation are the dominant land uses."

The western and southern portions of the Fort Berthold Reservation consist of prairie grasslands and buttes. The northern and eastern areas of the reservation provide fertile farmland. The proposed project area is located within a predominately rural area located west of the town of Twin Buttes. According to National Agricultural Statistics Services (NASS) data, the proposed project area is a mixture of grasslands (95 percent) and woodlands (5 percent). Please refer to ***Figure 3.1, Land Use.***

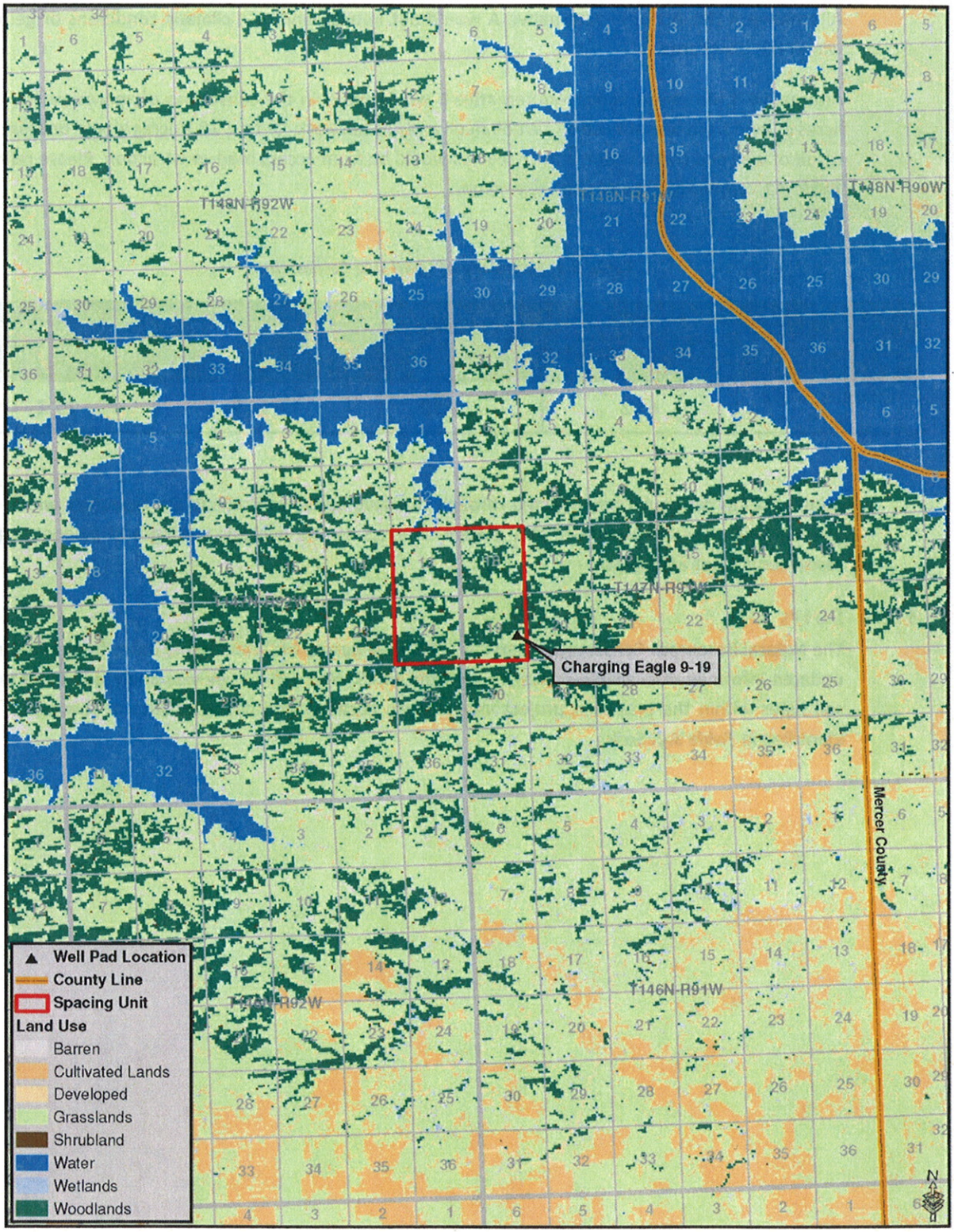


Figure 3.1, Land Use

3.2.1 Climate, Geologic Setting and Land Use Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact land use, climatic conditions or geology within the study area.

Alternative B (Proposed Action)—Alternative B would result in the conversion of approximately 27.2 acres of land from present use to part of an oil and gas network. Of this, 10.3 acres would be from the result of well pad construction and 16.9 acres would be from access road construction. Please refer to ***Table 3.1, Summary of Land Use Conversion.***

Table 3.1, Summary of Land Use Conversion

WELL PAD NAME	WELL PAD ACRES ONLY	PAD DISTURBANCE INSIDE FENCE ACRES	ACCESS ROAD ACRES	TOTAL ACRES BEING DISTURBED
Charging Eagle 9-19	6.42	10.30	16.9	27.2

Mineral resources would be impacted through the development of oil and gas resources within the spacing unit, as is the nature of this project. Impacts to the geologic setting and paleontological resources are not anticipated.

3.3 Soils

The Natural Resources Conservation Service (NRCS) Soil Survey of Dunn County dates from 1982, with updated information available online through the NRCS Web Soil Survey was analyzed. There are 9 soil types within the proposed project impact area. Location and characteristics of these soils are identified in ***Table 3.2, Soils.***

Table 3.2, Soils

MAP UNIT SYMBOL	SOIL NAME	PERCENT SLOPE	COMPOSITION (IN UPPER 60 INCHES)			EROSION FACTOR[3]		HYDROLOGIC SOIL GROUP[4]
			% SAND	% SILT	% CLAY	T	KF	
101B	Amor-Shambo Loams	3 to 6	40.1	37.2	22.7	3	.24	B
101C	Amor Loam	6 to 9	40.1	37.2	22.7	3	.24	B
62D	Dogtooth-Cabba complex	9 to 15	9.8	47.5	42.6	2	.32	D
9E	Cabba loam	15 to 45	40.5	39.5	20.0	2	.32	D
9D	Amor-Cabba Loams	9 to 15	40.1	37.2	22.7	3	.24	B
62B	Rhoades Silt Loam	0 to 6	10.2	50.4	39.3	2	.32	D
88B	Williams Loam	3 to 6	34.8	35.2	30.0	5	.28	B
88C	Williams Loam	6 to 9	34.8	35.2	30.0	5	.28	B
211F	Badlands-Cabba-Arikara Complex	25 to 70	17.8	65.0	20.5	5	.32	D

The soils listed have mostly moderate susceptibility to sheet and rill erosion. All of these soils can tolerate medium to high levels of erosion without loss of productivity. All are well drained and have no susceptibility to ponding or flooding. The average water table according to NRCS Soil Survey information for each of these soil types is recorded at greater than six feet, with exception of soil map unit 62B which was recorded at approximately 4.25 feet. Soil map unit 62B occurred along the middle extent of the access road, which occurred as an upland area during the onsite visit.

3.3.1 Soil Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact soils.

Alternative B (Proposed Action) — Construction activities associated with the proposed well pad and associated access road would result in soil disturbances, though impacts to soils associated with the proposed action are not anticipated to be significant. Stockpile quantities for the locations were calculated using an assumption of six inches of existing topsoil. Topsoil requirements for the site are identified in ***Table 3.3, Topsoil Requirements for Future Site Reclamation***.

Table 3.3, Topsoil Requirements for Future Site Reclamation

CUBIC YARDS OF TOPSOIL	CUBIC YARDS OF SUB-SOIL MATERIAL
5,175	25,630

[3] Erosion Factors indicate susceptibility of a soil to sheet and rill erosion by water. Kf indicates the erodibility of material less than two millimeters in size. Values of K range from 0.02 to 0.69. Higher values indicate greater susceptibility. T Factors estimate maximum average annual rates of erosion by wind and water that will not affect crop productivity. Tons/acre/year range from 1 for shallow soils to 5 for very deep soils. Soils with higher T values can tolerate higher rates of erosion without loss of productivity.

[4] Hydrologic Soil Groups (A, B, C, and D) are based on estimates of runoff potential according to the rate of water infiltration under the following conditions: soils are not protected by vegetation, soils are thoroughly wet, and soils receive precipitation from long-duration storms. The rate of infiltration decreases from Group A (high infiltration, low runoff) to D (low infiltration, high runoff).

Topsoil depths taken during the EA on-site surveys indicated a soil depth of six inches or greater at the well site, yielding sufficient quantity of topsoil for construction and reclamation activities. The stockpiles would be positioned to assist in diverting runoff away from the disturbed areas, thus minimizing erosion, and to allow for interim reclamation soon after the wells are put into production. Topsoil and embankment stockpile locations for the proposed site are identified in ***Table 3.4, Topsoil and Embankment Stockpile Locations.***

Table 3.4, Topsoil and Embankment Stockpile Locations

TOPSOIL STOCKPILE LOCATION	EXCESS SOIL STOCKPILE LOCATION
North Side of Pad	South Side of Pad

Soil impacts would be localized, and BMPs including straw wattles, silt fences, straw mulch, and/or hydro seeding would be implemented to minimize these impacts on down sloping sides. Surface disturbance caused by well development, road improvements and facilities construction would result in the removal of vegetation from the soil surface. This can damage soil crusts and destabilize the soil. As a result, the soil surface could become more prone to accelerated erosion by wind and water. BMPs used at the well site to reduce these impacts would include erosion and sediment control measures during and after construction, segregating topsoil from subsurface material for future reclamation, chipping any woody vegetation that is removed on-site and incorporating it into topsoil stockpiles, re-seeding of disturbed areas immediately after construction activities are complete, the use of construction equipment appropriately sized to the scope and scale of the project, ensuring the road gradient fits closely with the natural terrain and maintaining proper drainage. According to discussions at the field on-site assessment and standard industry practices, BMPs identified in the BLM Gold Book shall be utilized to further minimize site erosion, including straw wattles, silt fences, straw mulch, and/or hydro seeding on down sloping sides.

Soil compaction can occur through use of heavy equipment. When soil is compacted, it decreases permeability and increases surface runoff. This is especially evident in silt and clay soils. In addition, soils may be impacted by mixing of soil horizons. Soil compaction and mixing of soil horizons would be minimized by the previously discussed topsoil segregation.

Contamination of soils from various chemicals and other pollutants used during oil development activities is not anticipated. In the rare event that such contamination may occur, it shall immediately be reported to the BLM, the NDIC, and, where appropriate, the North Dakota Department of Health (NDDH). In addition, the procedures of the surface management agency shall be followed to contain spills and leaks.

3.4 Water Resources

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977, provides the authority to the Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE) to establish water quality standards, control discharges into surface and ground waters, develop waste treatment management plans and practices, and issue permits for discharges (Section 402) and for dredged or fill material (Section 404). Within the Fort Berthold

Reservation, the Missouri River and Lake Sakakawea are both considered navigable waters and are therefore subject to Section 10 of the Rivers and Harbors Act of 1899.

The EPA also has the authority to protect the quality of drinking water under the Safe Drinking Water Act (SDWA) of 1974. As amended in 1986 and 1996, the SDWA requires many actions to protect drinking water and its sources: rivers, lakes reservoirs, springs, and ground water wells[5].

The Energy Policy Act of 2005 excludes hydraulic fracturing operations related to oil, gas, or geothermal production activities from EPA regulation under the SDWA[6].

3.4.1 Surface Water

The project area is situated in the Great Plains region of North Dakota that borders the Badlands to the west. This is an arid area with few isolated surface water basins. The majority of the surface waters in the region are associated with the Missouri River, Lake Sakakawea, and tributaries to these water bodies. Surface water generally flows overland until draining into these systems.

The proposed well pad is located in the Lake Sakakawea basin, meaning surface waters within this basin drain to Lake Sakakawea. The project is located in the Waterchief Bay Watershed and the Bear Creek Sub-Watershed.

Runoff throughout the project area is by sheet flow until collected by ephemeral and perennial streams draining to Lake Sakakawea. The Charging Eagle #9-19 well pad is situated on an upland area. The majority of the well pad drains to the northeast into a wooded drainageway. The drainage extends east from the pad site for 0.1 miles, to the northeast for 0.3 miles, then converges with an intermittent stream known as East Fork and meanders north/northwest for 2.1 miles until entering Bear Creek Bay in Lake Sakakawea. The nearest wooded draw is located near the northeast corner of the well pad. A seasonal/temporary wetland and a smaller temporary wetland occur west of the southern extents of the access road near BIA 22 Roadway. One of the wetlands partially occurred within the study limits for the proposed access road area.

3.4.1.1 Surface Water Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact surface water.

Alternative B (Proposed Action)—No significant impacts to surface water are expected to result from Alternative B. The proposed project has been sited to avoid direct impacts to surface water and to minimize the disruption of drainage patterns across the landscape. Construction site plans would contain measures to divert surface runoff around the well pad by implementation of a water diversion ditch along the cut slopes. The BIA Environmental Specialist indicated during the onsite that the wetland could be impacted by up to a 1/10 of an acre if needed. It is anticipated that the access road would avoid the two wetlands during construction. If work is to take place within the wetlands, the US Army Corps of Engineers would be coordinated with for potential permitting. The northeast corner of the pad would be brought in 75 feet, rounded and armored to avoid the drainage. At least one culvert is planned to be installed under the access road where it meets the well pad to maintain natural drainage of the surrounding area. Additional culverts may be placed if determined during site construction. Roadway engineering and the implementation of BMPs to control erosion would

[5] The SDWA does not regulate private wells that serve fewer than 25 individuals

[6] The use of diesel fuel during hydraulic fracturing is still regulated under the SDWA.

mitigate runoff of sediment downhill or downstream. Specific measures to mitigate the impacts to surface waters and to minimize the disruption of drainage patterns were agreed upon by the BIA EA on-site participants and included the use of a semi-closed loop drilling system and the construction of an 18-inch tall berm along the north perimeter of the well pad as an additional containment measure. The proposed project's drilling tracts do not extend under waters of the U.S., therefore, and ENG 4345 permit application would not be completed.

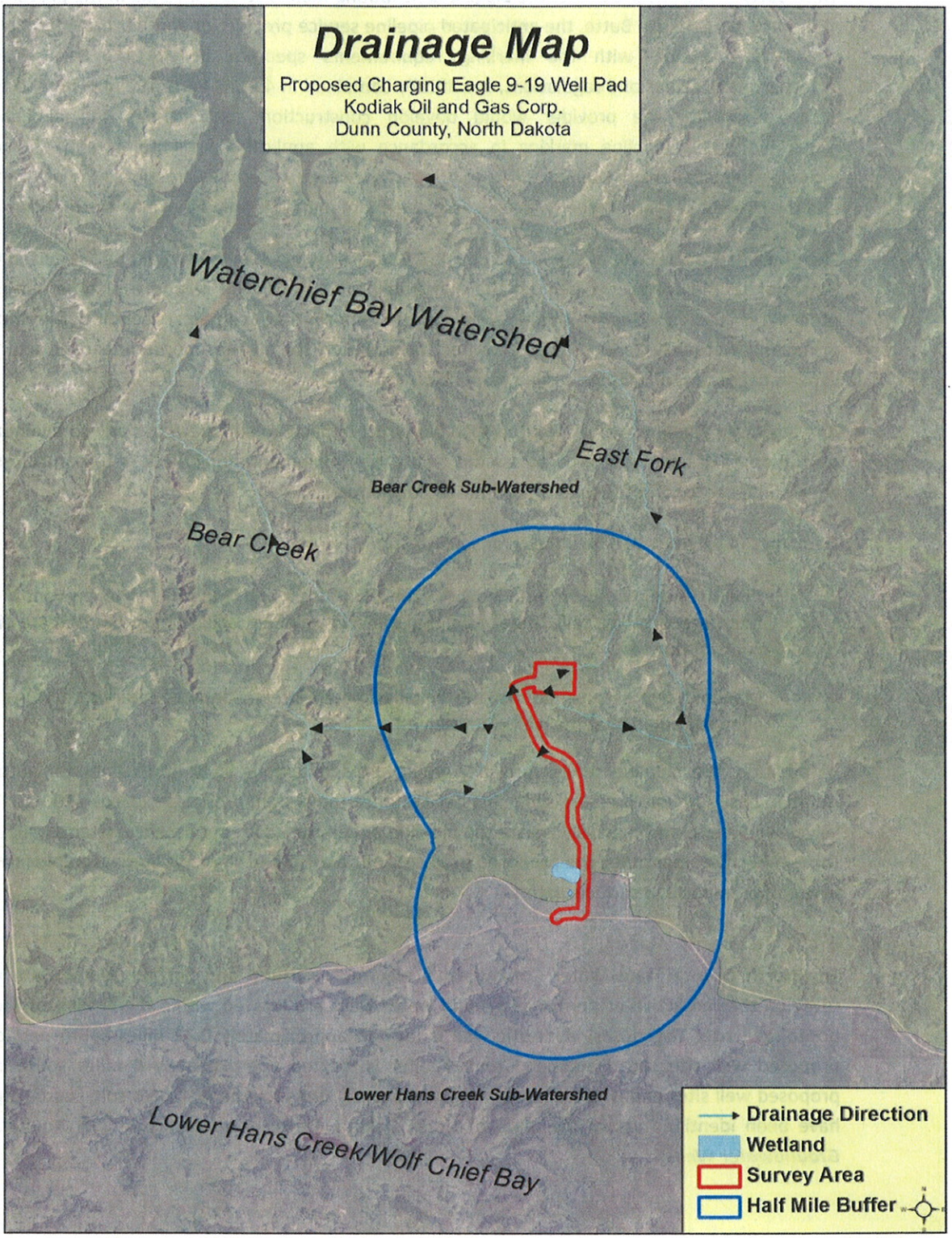


Figure 3.2, Surface Water Resources

Third-party intrusions are one of the biggest contributing factors to spills. To aid in the prevention of such intrusions, Saddle Butte, the anticipated pipeline service provider or another provider if chosen, would fully comply with the marking requirements specified in the US Department of Transportation's rules and regulations, specifically contained in 49 CFR Parts 192 and 195. To ensure such compliance, the provider would develop construction specifications to delineate the requirements for pipeline marking in accordance with applicable laws, rules, and regulations, including the locations of such markings (e.g., road crossings, waterbody crossings, line of sight, etc.) and the manner of marking such pipelines (e.g., height of markings and signage on the markings).

The pipeline provider would commit to develop a spill response plan that would be submitted to the BIA prior to the commencement of the construction activities. The response plan would include procedures that specifically address making the appropriate contacts, isolating the incident, protecting waterways and providing contact information for all the appropriate contractors and experts necessary to facilitate a rapid response.

Any proposed pipelines would be sited to avoid direct impacts to surface water and to minimize the disruption of drainage patterns across the landscape. Implementation of BMPs to control erosion would mitigate runoff of sediment downhill or downstream.

Two types of valves would be utilized for spill isolation:

- Check valves would be installed between trunk lines and lateral lines to prevent a "back feed" scenario to a spill, thereby limiting the volume of any spill to the wells that are directly contributing to it.

- Manual valve sets would also be installed at all intersections of laterals to trunk lines, allowing isolation at the wells themselves.

In addition, the pipeline service provider would provide options in its trunk lines for automatic isolation based on low pressure switching devices once the system pressure exceeds 1400 psi. These valves would also automatically isolate the pipeline under most line rupture circumstances. Based on these mitigation measures, the proposed project is not anticipated to result in measurable increases in runoff or impacts to surface waters.

3.4.2 Ground Water

The North Dakota State Water Commission's electronic Ground and Surface Water Data Query revealed that no active or permitted ground water wells are located within the vicinity of the proposed well site. The closest domestic well is located approximately 0.72 miles south east of the proposed well site. The Goodman Creek Aquifer is located approximately 4 miles south of the proposed well sites and is not located within the spacing units for the wells. No sole source aquifers have been identified within the state of North Dakota. Please refer to ***Figure 3.3, Aquifers and Groundwater Wells.***

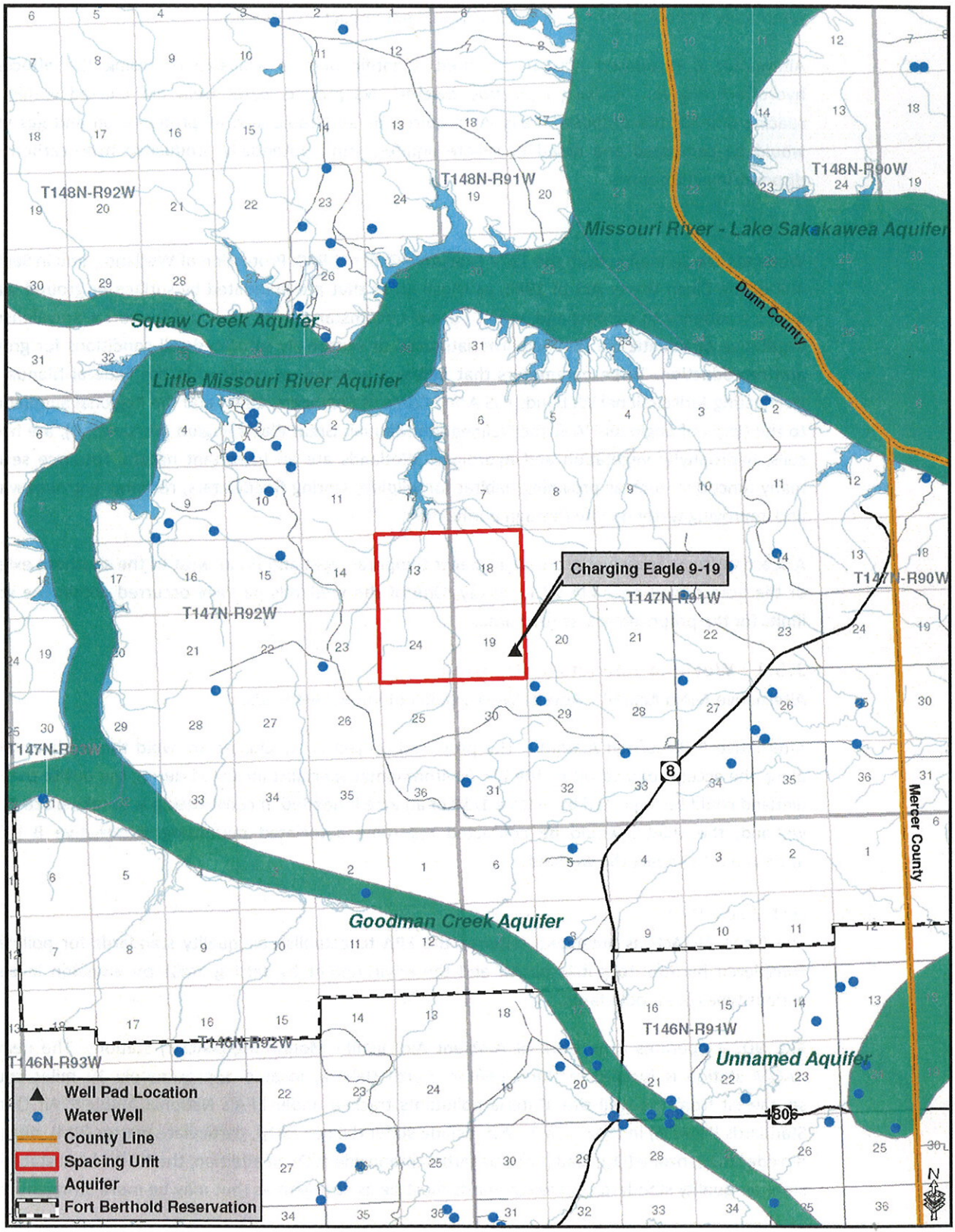


Figure 3.3, Aquifers and Groundwater Wells

3.4.2.1 Ground water Impacts/Mitigation

Alternative A (No-Action) – Alternative A would not impact groundwater.

Alternative B (Proposed Action) - Limited scientific data is available regarding the effects of hydrofracturing (or "fracking") on groundwater[7]. No ground water wells are located within the spacing unit for the proposed wells. As required by applicable law, all proposed oil and gas wells would be cemented and cased to isolate aquifers from potentially productive hydrocarbon and disposal/injection zones.

3.5 Wetlands

Wetlands are defined in both the 1977 Executive Order 11990, Protection of Wetlands, and in Section 404 of the Clean Water Act of 1986, as those areas that are inundated by surface or ground water with a frequency to support and, under normal circumstances, do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Three parameters that define a wetland, as outlined in the Federal Manual for Delineating Jurisdictional Wetlands (US Army Corps of Engineers, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0), are hydric soils, hydrophytic vegetation and hydrology. Wetlands are an important natural resource serving many functions, such as providing habitat for wildlife, storing floodwaters, recharging groundwater, and improving water quality through purification.

A seasonal/temporary wetland and a smaller temporary wetland occur west of the southern extents of the access road near BIA 22 Roadway. One of the wetlands partially occurred within the study limits for the proposed access road area.

3.5.1 Wetland impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact wetlands.

Alternative B (Proposed Action) – The proposed project is anticipated to avoid the wetland found along the access road corridor. The BIA Environmental Specialist indicated during the onsite that the wetland could be impacted by up to a 1/10 of an acre if needed. If construction is to take place in the wetland, the USACE would be contacted regarding associated permitting. Alternative B is not anticipated to impact the wetland.

3.6 Air Quality

The Clean Air Act, as amended, requires the EPA to establish air quality standards for pollutants considered harmful to public health and the environment by setting limits on emission levels of various types of air pollutants.

The NDDH operates a network of Ambient Air Quality Monitoring (AAQM) stations. The nearest AAQM station is located in Dunn Center, North Dakota; located approximately 19 miles south-southwest from the well site. Criteria pollutants tracked under EPA's National Ambient Air Quality Standards (NAAQS) in the Clean Air Act include sulfur dioxide (SO_2), particulate matter (PM), nitrogen dioxide (NO_2), ozone (O_3), lead (Pb) and carbon monoxide (CO). In addition, the NDDH has established state air quality standards. State standards must be as stringent as (but may be more stringent than)

[7] The EPA is currently conducting a study on fracking which will address potential impacts to ground water. The study is anticipated to be completed in 2012.

federal standards. The federal and state air quality standards for these pollutants are summarized in *Table 3.5, Federal and State Air Quality Standards and Reported Data for Dunn Center* (EPA 2006, NDDH 2011, Dunn Center 2010).

Table 3.5, Federal and State Air Quality Standards and Reported Data for Dunn Center

POLLUTANT	AVERAGING PERIOD	EPA AIR QUALITY STANDARD		NDDH AIR QUALITY STANDARD		DUNN CENTER 2010 REPORTED DATA	
		µg/m³	PARTS PER MILLION	µg/m³	PARTS PER MILLION	µg/m³	PARTS PER MILLION
SO_2	24-Hour	365	0.14	260	0.099	—	.0035
	Annual Mean	80	0.030	60	0.023	—	.0007
PM_{10}[8]	24-Hour	150	—	150	—	31	—
	Annual Mean	50	—	50	—	9.7	—
$PM_{2.5}$[9]	24-Hour	35	—	35	—	12.0	—
	Weighted Annual Mean	15	—	15	—	3.9	—
NO_2	Annual Mean	100	0.053	100	0.053	—	0.0014
CO	1-Hour	40,000	35	40,000	35	—	—
	8-Hour	10,000	9	10,000	9	—	—
Pb	3-Month	1.5	—	1.5	—	—	—
O_3	1-Hour	240	0.12	235	0.12	—	0.066
	8-Hour	—	0.08	—	0.08	—	0.061

North Dakota was one of thirteen states in 2010 that met standards for all criteria pollutants. The state also met standards for 2.5 particulates and the eight-hour ozone standards established by the EPA (NDDH, 2010).

Additionally, the Fort Berthold Reservation complies with the North Dakota National Ambient Air Quality Standards and visibility protection. The Clean Air Act affords additional air quality protection near Class I areas. Class I areas include national parks greater than 6,000 acres in size, national monuments, national seashores, and federally designated wilderness areas larger than 5,000 acres designated prior to 1977. There are no Federal Class I areas within the project area[10]. The Theodore Roosevelt National Park is the nearest Class I area, located west of the proposed site, approximately 43 miles. In addition Kodiak would acquire EPA Synthetic Minor Source Permits, as appropriate, prior to construction.

3.6.1 Air Quality Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact air quality.

Alternative B (Proposed Action) - The Fort Berthold Reservation complies with North Dakota National Ambient Air Quality Standards and visibility protection. In addition, the Dunn Center AAQM station

[8] PM_{10} refers to particulates 10 micrometers (µ) or less in size.

[9] $PM_{2.5}$ refers to particulates 2.5 micrometers (µ) or less in size.

[10] Federal Class I areas are generally national parks and wilderness areas.

reported air quality data well below the state and federal standards. Alternative B would not include any major sources of air pollutants. Construction activities would temporarily generate minor amounts of dust and gaseous emissions of PM, SO_2, NO_2, CO and volatile organic compounds. Emissions would be limited to the immediate project areas and are not anticipated to cause or contribute to a violation of NAAQS. No detectable or long-term impacts to air quality or visibility are expected within the airsheds of the Fort Berthold Reservation, state or Theodore Roosevelt National Park. No mitigation or monitoring measures are recommended.

3.7 Threatened, Endangered, and Candidate Species

In accordance with Section 7 of the Endangered Species Act (ESA) of 1973, 50 CFR Part 402, as amended, each federal agency is required to ensure the following two criteria: first, any action funded or carried out by such agency must not be likely to jeopardize the continued existence of any federally-listed endangered or threatened species or species proposed to be listed; second, no such action can result in the destruction or adverse modification of habitat of such species that is determined to be critical by the Secretary. A threatened species is one that is likely to become endangered in the foreseeable future. An endangered species is in danger of extinction throughout all or a significant portion of its range. A candidate species is a plant or animal for which the USFWS has sufficient information on its biological status and threats to propose it as threatened or endangered under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. While candidate species are not legally protected under the ESA, it is within the spirit of the ESA to consider these species as having significant value and worth protecting.

The proposed action area was evaluated to determine the potential for occurrences of federally-listed threatened, endangered and candidate species. The USFWS (February 2012) identified the piping plover as a threatened species for Dunn County. In addition, Dunn County contains designated critical habitat for the piping plover adjacent to Lake Sakakawea. The black-footed ferret, gray wolf, interior least tern, pallid sturgeon, and whooping crane are listed as endangered species that may be found within Dunn County. The Dakota skipper and Sprague's pipit are listed as candidate species. None of these species were observed in the field. Habitat requirements, the potential for suitable habitat within the project areas, and other information regarding listed species for Dunn County are included in the following sections.

3.7.1 Threatened Species

Piping Plover (*Charadrius melodus*)

The piping plover is a small, migratory shorebird. Historically, piping plovers could be found throughout the Atlantic Coast, Northern Great Plains and the Great Lakes. Drastically reduced, sparse populations presently occur throughout this historic range. In North Dakota, breeding and nesting sites can be found along the Missouri River. Preferred habitat for the piping plover includes riverine sandbars, gravel beaches, alkali areas of wetlands and flat, sandy beaches with little vegetation. The USFWS has identified critical habitat for the piping plover on the Missouri River system. Critical habitat includes reservoir reaches composed of sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale and their interface with water bodies.

There is no existing or potential habitat within the project area. According to USFWS data, designated critical habitat occurs throughout the entire shoreline of Lake Sakakawea. Lake Sakakawea is located

approximately 1.75 miles northwest of the proposed site at the nearest point or approximately 2.8 miles following the shortest drainage pattern to the lake.

3.7.1.1 Threatened Species Impacts/Mitigation

Alternative A (No-Action) – Alternative A would have no effect to the piping plover and would not impact designated piping plover critical habitat.

Alternative B (Proposed Action) – Suitable habitat for the piping plover is largely associated with Lake Sakakawea and its shoreline. Potential habitat exists approximately 1.75 miles northwest of the proposed sites at the nearest point, or approximately 2.8 miles following the shortest drainage pattern. The well pad and access road are located on upland areas consisting of rangeland with Lake Sakakawea and its shoreline located approximately 420 feet lower in elevation than the well pad location. The distance from the shoreline and topographic features of the area should assist in providing sight and sound buffers for shoreline-nesting birds such as the piping plover.

The proposed project is located 2.8 miles from Lake Sakakawea (following the shortest drainage pattern), making the likelihood of accidentally released fluids reaching the lake to be minimal based on implementation of the following practices. Storage tanks and the heater/treater would be surrounded by an impermeable berm that would act as secondary containment to guard against accidental release of fluids from the site. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. Kodiak would institute density test of soils at the entire well pad to ensure a requirement of >95% soil compaction for site stabilization. This compaction is to be confirmed by a third party with a standard or modified soil proctor test or both, depending on the moisture content. This stabilizes fill areas for facilities so that there are not weight concerns that would normally occur in "non-engineered" fills. Fill would be placed in 6 to 8 inch lifts with documented density tests on each lift. The test results would be provided to BIA upon request. The cuttings pit would be placed on an area of cut. In addition, solidification of drill cuttings in the pit and the reinforced lining of the cuttings pit would diminish the potential for pit leaching. An 18-inch high berm would be placed on the northern side of the well pad to prevent runoff. The northeast corner of the well pad would be brought in 75-feet and rounded to avoid a wooded drainage. The drainage would be armored with rock riprap to further prevent erosion. A diversion ditch would be placed along the cut sides of the well pad to assist in diverting water around the pad. An impervious lined trench would be installed on the downsloping side of the well pad to catch and hold any storm water runoff from the well pad. Pit and soil stockpiles would be used to divert drainage outside of the fill slopes. Additionally, if electrical lines are installed, the lines would be buried to prevent the potential for bird strikes. Due to the implementation of secondary containment measures and the cuttings pit parameters, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Therefore, the proposed project may affect but is not likely to adversely affect the piping plover. The proposed project is not likely to impact critical habitat for the plover.

3.7.2 Endangered Species

Black-Footed Ferret (*Mustela nigripes*)

The black-footed ferret historically could be found throughout the Rocky Mountains and Great Plains. In North Dakota, the black-footed ferret may potentially be present within prairie dog towns; however, this species has not been confirmed in North Dakota for nearly 30 years and is presumed to

be extirpated. Its preferred habitat includes areas around prairie dog towns, as it relies on prairie dogs for food and lives in prairie dog burrows. Black-footed ferrets require at least an 80-acre prairie dog town to survive.

No prairie dog towns were observed within the proposed well pad or access road corridor to provide suitable black-footed ferret habitat.

Gray Wolf (*Canis lupis*)
The gray wolf is the largest wild canine species in North America. It is found throughout northern Canada, Alaska and the forested areas of Northern Michigan, Minnesota and Wisconsin and has been re-introduced to Yellowstone National Park in Wyoming. While the gray wolf is not common in North Dakota, occasionally individual wolves do pass through the state. Historically, its preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. Gray wolves live in packs of up to 21 members, although some individuals will roam alone.

The project area is located far from other known wolf populations and lacks suitable habitat characteristics.

Interior Least Tern (*Aterna antillarum*)
The interior least tern nests along inland rivers. The interior least tern is found in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande Rivers. In North Dakota, it is sighted along the Missouri River during the summer nesting season. The interior least tern nests in sandbars or barren beaches, preferably in the middle of a river for increased safety while nesting. These birds nest close together, using safety in numbers to scare away predators.

There is no existing or potential habitat within the project area. Potential habitat in the form of sandy/gravely Lake Sakakawea shoreline may exist approximately 1.75 miles northwest of the proposed site at the nearest point or approximately 2.8 miles following the shortest drainage pattern to the lake.

Pallid Sturgeon (*Scaphirhynchus albus*)
The pallid sturgeon is known to exist in the Yellowstone, Missouri, middle and lower Mississippi and Atchafalaya Rivers, and seasonally in some tributaries. In North Dakota, the pallid sturgeon is found principally in the Missouri River and upstream of Lake Sakakawea in the Yellowstone River. Dating to prehistoric times, the pallid sturgeon has become well adapted to living close to the bottom of silty river systems. According to the USFWS, its preferred habitat includes "a diversity of water depths and velocities formed by braided river channels, sand bars, sand flats, and gravel bars" (2010, September 20). Weighing up to 80 pounds, pallid sturgeons are long lived, with individuals possibly reaching 50 years of age.

Suitable habitat for the pallid sturgeon is found within Lake Sakakawea, located about 2.8 miles away following the shortest drainage pattern to the Lake.

Whooping Crane (*Grus Americana*)
The whooping crane is the tallest bird in North America. In the United States, this species ranges through the Midwest and Rocky Mountain regions from North Dakota south to Texas and east into Colorado. Whooping cranes migrate through North Dakota along a band running from the south central to the northwest parts of the state. They use shallow, seasonally and semi-permanently

flooded palustrine (marshy) wetlands for roosting and various cropland and emergent wetlands for feeding. During migration, whooping cranes are often recorded in riverine habitats, including the Missouri River. Currently, three wild populations of whooping cranes exist, yielding a total species population of about 383. Of these flocks, only one is self-sustaining.

According to USFWS data, the proposed well pad is located within the Central Flyway corridor in which 75 percent of confirmed whooping crane sightings have occurred. Whooping cranes traveling through the area may alter their flight and landing patterns to avoid disturbances related to oil and gas developments; however, it is believed there are still large, undisturbed areas on the Fort Berthold Reservation in which whooping cranes could land while migrating. Two small wetlands occur west of the southern extents of the access road near BIA 22 Roadway. These wetlands did not exhibit the presence of water during the survey. The two wetlands appeared to potentially hold water a few weeks out of the year.

3.7.2.1 Endangered Species Impacts/Mitigation

Alternative A (No Action) – Alternative A would have no effect to the gray wolf, black-footed ferret, interior least tern, pallid sturgeon or whooping crane.

Alternative B (Proposed Action) – Due to the lack of preferred habitat characteristics and/or known populations, the proposed project is anticipated to have no effect on the black-footed ferret or the gray wolf.

Suitable habitat for the interior least tern and pallid sturgeon are largely associated with Lake Sakakawea. The lake's shoreline also provides suitable habitat for the interior least tern. Potential habitat for these species exists approximately 1.75 miles northwest of the proposed site at the nearest point or approximately 2.8 miles following the shortest drainage pattern to the lake. The well pad and access road are located on upland areas consisting of rangeland with Lake Sakakawea and its shoreline located approximately 420 feet lower in elevation than the well pad location. The topographic features of the area and distance from the shoreline should assist in providing sight and sound buffers for shoreline-nesting birds.

The proposed project is located 2.8 miles from Lake Sakakawea (following the shortest drainage pattern), making the likelihood of accidentally released fluids reaching the lake to be minimal based on implementation of the following practices. Storage tanks and the heater/treater would be surrounded by an impermeable berm that would act as secondary containment to guard against accidental release of fluids from the site. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. Kodiak would institute density test of soils at the entire well pad to ensure a requirement of >95% soil compaction for site stabilization. This compaction is to be confirmed by a third party with a standard or modified soil proctor test or both, depending on the moisture content. This stabilizes fill areas for facilities so that there are not weight concerns that would normally occur in "non-engineered" fills. Fill would be placed in 6 to 8 inch lifts with documented density tests on each lift. The test results would be provided to BIA upon request. The cuttings pit would be placed on an area of cut. In addition, solidification of drill cuttings in the pit and the reinforced lining of the cuttings pit would diminish the potential for pit leaching. An 18-inch high berm would be placed on the northern side of the well pad to prevent runoff. The northeast corner of the pad would be brought in 75-feet and rounded to avoid a wooded drainage. The drainage would be armored with rock riprap to further prevent erosion. A diversion ditch would be

place along the cut sides of the well pad to assist in diverting water around the pad. An impervious lined trench would be installed on the downsloping side of the well pad to catch and hold any storm water runoff from the well pad. Pit and soil stockpiles would be used to divert drainage outside of the fill slopes. Additionally, if electrical lines are installed, the lines would be buried to prevent the potential for bird strikes. Due to the implementation of secondary containment measures and the cuttings pit parameters, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Therefore, the proposed project may affect, but is not likely to adversely affect, the interior least tern and pallid sturgeon.

The well sites lacked nearby cropland food sources; however, two small wetlands occurred west of the southern extents of the access road near BIA 22 Roadway. These wetlands did not exhibit the presence of water during the survey. The wetlands appeared to potentially hold water a few weeks out of the year. The adjacency to highly trafficked BIA 22 Roadway and limited availability of cropland food sources nearby would deter whooping cranes from using the wetlands. The project site is located within the Central Flyway where 75 percent of confirmed whooping crane sightings have occurred. Whooping cranes traveling through the area may alter their flight and landing patterns to avoid disturbances related to oil and gas development; however, it is believed that there are still large, undeveloped areas on the Fort Berthold Reservation in which migrating cranes would land to rest while migrating. Additionally, if electrical lines are installed, the lines would be buried to prevent the potential for bird strikes. Therefore, it is determined that the proposed project may affect, but is not likely to adversely affect, the whooping crane. Per USFWS recommendations, if a whooping crane is sighted within one mile of a well site or associated facilities while under construction, then all work would cease within one mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.

3.7.3 Candidate Species

Dakota Skipper (*Hesperia dacotae*)

The Dakota skipper is a small butterfly with a 1-inch wing span. These butterflies historically ranged from southern Saskatchewan, across the Dakotas and Minnesota, to Iowa and Illinois. The preferred habitat for the Dakota skipper consists of flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. Dakota skippers are visible in their butterfly stage from mid-June to early July.

Mixed-grass prairie was observed in the study area, which could provide potential Dakota skipper habitat; no Dakota skippers were observed during the field surveys.

Sprague's pipit (*Anthus spragueii*)

The Sprague's pipit is a small songbird found in prairie areas throughout the Northern Great Plains. Preferred habitat includes rolling, upland mixed-grass prairie habitat with high plant species diversity. The Sprague's pipit breeds in habitat with minimal human disturbance.

The proposed project area does consist of upland mixed-grass prairie, which could provide suitable habitat to the Sprague's pipit; however, no Sprague's pipits were observed during the field survey.

3.7.3.1 Candidate Species Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact the Dakota skipper or Sprague's pipit.

Alternative B (Proposed Action) – The proposed well sites may contain suitable habitat for both the Dakota skipper and the Sprague's pipit. Due to the presence of potential habitat for the Dakota skipper and Sprague's pipit within the project areas, the proposed project may impact individuals or habitat through earthwork associated with construction activities, habitat conversion, and/or fragmentation; however, an "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of each species.

3.8 Bald and Golden Eagles

Protection is provided for bald and golden eagles through the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA of 1940, 16 U.S.C. 668–668d, as amended, was written with the intent to protect and preserve bald and golden eagles, both of which are treated as species of concern within the Department of the Interior. The BGEPA prohibits, except under certain specified conditions, the taking, possession or commerce of bald and golden eagles. Under the BGEPA, to "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb, wherein "disturb" means to agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment.

The bald eagle (*Haliaeetus leucocephalus*) is sighted in North Dakota along the Missouri River during spring and fall migration periods and periodically in other places in the state such as the Devils Lake and Red River areas. In 2009, the ND Game and Fish Department estimated that 66 nests were occupied by bald eagles, though not all eagle nests were visited and verified. Preferred habitat for the bald eagle includes open areas, forests, rivers, and large lakes. Bald eagles tend to use the same nest year after year, building atop the previous year's nest. No bald eagles or nests were observed within 0.5 miles of proposed project disturbance areas during the field surveys conducted June 26, 2012.

The golden eagle (*Aquila chrysaetos*) can be spotted in North Dakota throughout the badlands and along the upper reaches of the Missouri River in the western part of the state. Golden eagle pairs maintain territories that can be as large as 60 square miles and nest in high places including cliffs, trees, and human-made structures. They perch on ledges and rocky outcrops and use soaring to search for prey. Golden eagle preferred habitat includes open prairie, plains, and forested areas. No golden eagle nests were observed within 0.5 miles of proposed project disturbance area during the field surveys conducted June 26, 2012.

The USGS Northern Prairie Wildlife Research Center maintains information on bald eagle and golden eagle habitat within the state of North Dakota. According to the USGS data, the 0.5-mile buffered survey area for the proposed well sites do contain recorded habitat for both the bald eagle and the golden eagle. In addition, Dr. Anne Marguerite Coyle of Dickinson State University has completed focused research on golden eagles and maintains a database of golden eagle nest sightings. According to Dr. Coyle's information (last updated in 2010), the closest recorded golden eagle nest is located approximately 3.9 miles north of the proposed well sites. Please refer to ***Figure 3.4, Bald and Golden Eagle Habitat and Nesting Sites.***

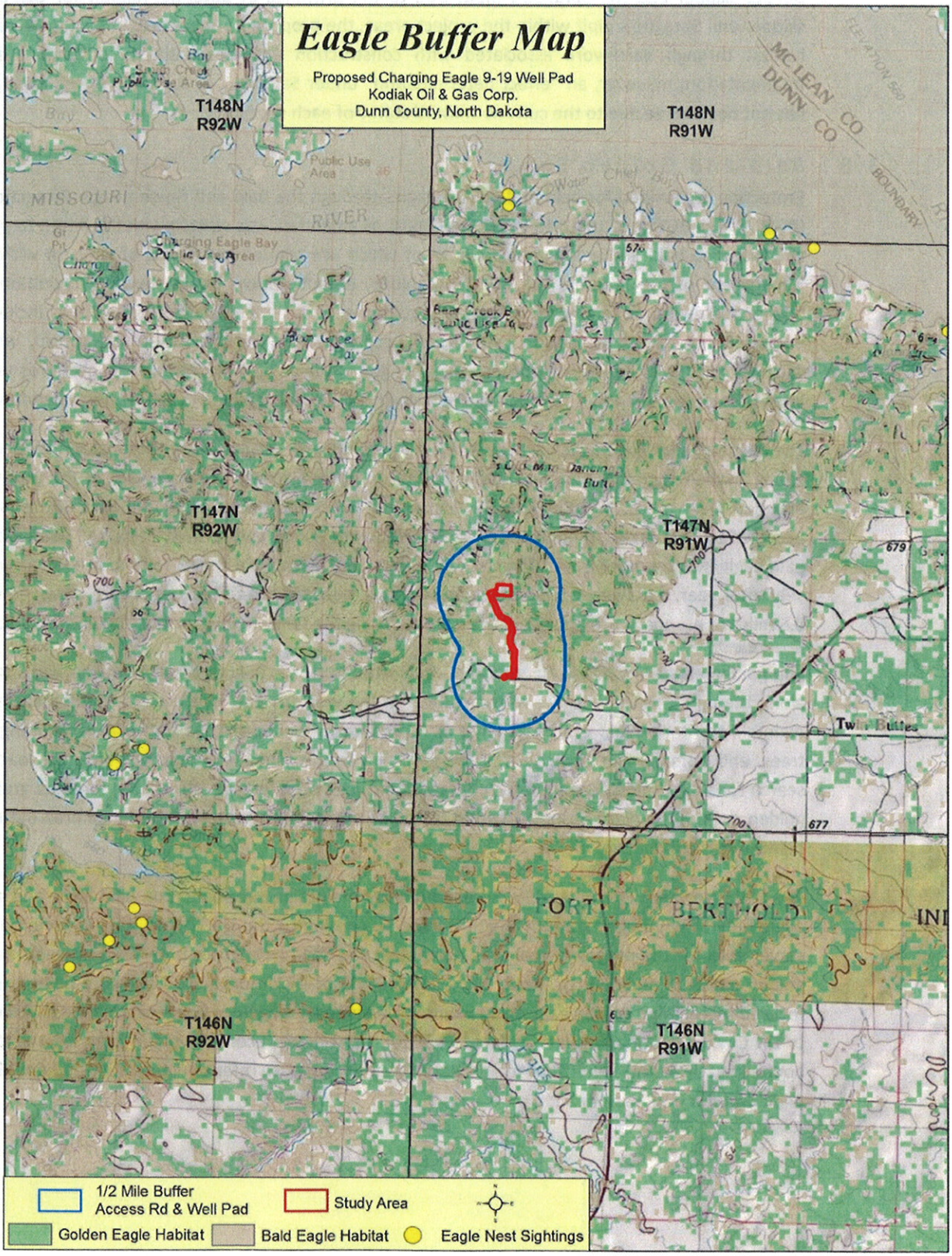


Figure 3.4, Bald and Golden Eagle Habitat and Nesting Sites

3.8.1 Bald and Golden Eagle Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact bald or golden eagles.

Alternative B (Proposed Action)—The proposed project is located within areas of recorded suitable bald eagle and golden eagle habitat. No evidence of eagle nests was found within 0.5 miles of the project area and there are no recorded nests within one mile of the project area. Therefore, no impacts to bald or golden eagles are anticipated to result from the proposed project. If a bald or golden eagle nest is sighted within 0.5 miles of the project construction area, construction activities shall cease and the USFWS shall be notified for advice on how to proceed. Additionally, if electrical lines are installed, the lines would be buried to prevent the potential for the eagles to strike electrical lines.

3.9 Migratory Birds and Other Wildlife

The Migratory Bird Treaty Act (MBTA), 916 U.S.C. 703–711, provides protection for 1,007 migratory bird species, 58 of which are legally hunted. The MBTA regulates impacts to these species such as direct mortality, habitat degradation, and/or displacement of individual birds. The MBTA defines "taking" to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof, except when specifically permitted by regulations.

The proposed project study area lies in the Central Flyway of North America. As such, this area is used as resting grounds for many birds on their spring and fall migrations, as well as nesting and breeding grounds for many waterfowl species. Other non-game bird species are known to fly through and inhabit this region.

In addition, the project areas contain suitable habitat for mule deer (*Odocoileus hemionus*), whitetail deer (*Odocoileus virginianus*), sharp-tailed grouse (*Tympanuchus phasianellus*), ring-necked pheasant (*Phasianus colchicas*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), wild turkey (*Meleagris gallopavo*), song birds, coyote (*Canis latrans*), red fox (*Vulpes vulpes*), Eastern cottontail rabbit (*Sylvilagus floridanus*), jackrabbit (*Lepus townsendii*), North American badger (*Taxidea taxus*) and North American porcupine (*Erethizon dorsatum*).

During the pedestrian field surveys, migratory birds, raptors, big and small game species, non-game species, and potential wildlife habitats were identified, if present. The following migratory birds or other wildlife species were observed during the field surveys: two red-tailed hawks (*Buteo jamaicensis*), one turkey vulture (*Cathartes aura*), five red wing blackbirds (*Agelaius phoeniceus*), six field sparrows (*Spizella pusilla*), four vespar sparrows (*Pooecetes gramineus*), ten cowbirds (*Molothrus ater*), and pocket gopher (*Geomys bursarius*) mounds. Please refer to ***Figure 3.5, Pocket Gopher Mounds*** and ***Figure 3.6, Whitetail Deer Skull.***

Figure 3.5, Pocket Gopher Mounds

Figure 3.6, Whitetail Deer Skull

3.9.1 Migratory Birds and Other Wildlife Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact migratory birds or other wildlife.

Alternative B (Proposed Action)—Due to the presence of suitable habitat at the project site for many wildlife and avian species, ground clearing, drilling, and long-term production activities associated with the proposed project may impact individuals by displacing animals from suitable habitat. While many species of wildlife may continue to use the project areas for breeding and feeding and continue to thrive, the activities associated with oil and gas development may displace animals from otherwise suitable habitats. As a result, wildlife may be forced to utilize marginal habitats or relocate to unaffected habitats where population density and competition increase. Consequences of such displacement and competition may include lower survival, lower reproductive success, lower recruitment, and lower carrying capacity leading ultimately to population-level impacts. Therefore, the proposed project may impact individuals and populations within these wildlife species, but is not likely to result in a trend towards listing of any of the species identified. As no grouse leks were observed in the project areas, additional timing restrictions for construction are not required.

The proposed well pad is located on upland areas that are at a higher elevation (approximately 420 feet) than the Lake Sakakawea shoreline. Additionally, the distance to Lake Sakakawea is approximately 1.75 miles at the nearest point. This distance, along with the topographic features of the area, would assist in providing sight and sound buffers for shoreline-nesting birds.

During drilling activities, the noise, movements, and lights associated with the drilling are expected to deter wildlife from entering the area. In addition, the cuttings pit would be used primarily for solid material storage, and it is expected that very minimal free fluid would be present in the pit. The absence of exposed liquids in the pit would minimize their attractiveness to wildlife. Until final reclamation, the cuttings pit would be netted with State and Federal approved nets. These would remain in place until the closure of the cuttings pit.

In addition, design considerations would be implemented to further protect against potential habitat degradation. The storage tanks and heater/treater would be surrounded by an impermeable berm that would act as secondary containment to guard against possible spills. The berm would be sized to hold 100 percent of the capacity of the largest storage tank plus one full day's production. BMPs to minimize wind and water erosion of soil resources, as well as implementing a semi-closed loop during drilling, would also be employed.

All efforts would be made to complete construction outside the migratory bird nesting season (February 1 through July) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that construction needs to take place during the migratory bird nesting season, a pre-construction survey for migratory bird nests would be conducted by a qualified biologist within five days prior to the initiation of all construction activities or the project areas would be mowed the previous fall and spring to deter birds from nesting in project areas. The findings of these surveys would be reported to BIA.

Additionally, all reasonable, prudent, and effective measures to avoid the taking of migratory bird species would be implemented during the construction and operation phases. If electrical lines are installed, the lines would be buried to prevent the potential for bird strikes. Other measures could include: the use of suitable mufflers on all internal combustion engines; certain compressor

components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining open pits and ponds that are free from oil, and netting cuttings pits with netting that has a maximum mesh size of 1.5 inches.

3.10 Vegetation

Botanical resources were evaluated using visual inspection. The project study area was also investigated for the presence of noxious weed species.

The Charging Eagle #9-19 well pad study area consisted of native and non-native upland grasses and shrubs. Dominant vegetation along the southern portion of the access road/utility corridor consisted of Kentucky bluegrass (*Poa pratensis*) and crested wheatgrass (*Agropyron cristatum*). The northern half of the study area and well pad was dominated by western wheatgrass (*Agropyron smithii*), green needle (*Stipa viridula*), and Kentucky bluegrass (*Poa pratensis*). Patches of Green ash (*Fraxinus pennsylvanica*) and silver buffaloberry (*Shepherdia argentea*) occurred on the well pad and access road as well as in adjacent wooded draws. Burr oak (*Quercus macrocarpa*) also dominated in adjacent wooded draws. Dominant forbes on the oil pad consisted of golden rod (*Solidago mollis*), purple coneflower (*Echinacea angustifolia*), and poison ivy (*Toxicodendron rydbergii*). Two seasonal/temporary wetlands occurred west of the access road near BIA 22 Roadway. Leafy spurge (*Euphorbia esula*) was found in a small patch within the well pad study area.

Please refer to ***Figure 3.7***, which shows the typical vegetation on the well pad; ***Figure 3.8***, which shows the vegetation along the access road north of BIA 22 Roadway and a wetland area (visible on the left side of the photo); and ***Figure 3.9***, which shows the drainage area to the south of the well pad.

Figure 3.7, Well Pad Vegetation

Figure 3.8, Access Road Vegetation North of BIA 22 near Wetland

Figure 3.9, Drainage to the South of Pad

The project area was surveyed for the presence of noxious weeds. Of the 11 species declared noxious under the North Dakota Century Code (Chapter 63-10.1), three are known to occur in Dunn County. In addition, counties and cities have the option to add species to the list to be enforced within their jurisdictions. Dunn County has no additional species listed. There was one noxious weed species observed during the field survey: leafy spurge. The patch was observed south of the well pad and made up approximately ten plants. Please refer to ***Figure 3.10, Noxious Weed Patch,*** and ***Table 3.6, Noxious Weed Species.***

Figure 3.10, Noxious Weed Patch

Table 3.6, Noxious Weed Species

COMMON NAME	SCIENTIFIC NAME	2010 DUNN COUNTY REPORTED ACRES
Absinth wormwood	*Artemesia absinthium L.*	43,800
Canada thistle	*Cirsium arvense (L.) Scop*	39,300
Dalmation toadflax	*Linaria genistifolia ssp. Dalmatica*	—
Diffuse Knapweed	*Centaurea diffusa Lam*	—
Leafy spurge	*Euphorbia esula L.*	6,200
Musk thistle	*Carduus nutans L.*	—
Purple loosestrife	*Lythrum salicaria*	—
Russian knapweed	*Acroptilon repens (L) DC.*	—
Salt cedar (tamarisk)	*Tamarix ramosissima*	—
Spotted knapweed	*Centaurea maculosa Lam.*	—
Yellow toadflax	*Linaria vulgaris*	—

3.10.1 Vegetation Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact vegetation.

Alternative B (Proposed Action)—Ground clearing activities associated with construction of the proposed well pad and access road would result in vegetation disturbance; however, the areas of proposed surface disturbances are minimal in the context of the setting, and these impacts would be further minimized in accord with the BLM Gold Book standards for well reclamation. Disturbance of vegetation in areas of noxious weed infestations may also result in redistribution of invasive grasses within the project areas. Thus, areas not currently dominated by these species would have a high potential to become infested. The spread of invasive grasses can have an adverse effect on multiple aspects of the vegetation resource ranging from the suitability of sensitive plant habitat and maintenance of native biodiversity, to forage production for livestock grazing.

Following construction, interim reclamation measures to be implemented include reduction of cut and fill slopes, redistribution of stockpiled topsoil and re-seeding of disturbed areas with a native grass seed mixture consistent with surrounding vegetation. If commercial production equipment is installed, the well pad would be reduced in size to accommodate the production facilities, while leaving adequate room to conduct normal well maintenance and potential recompletion operations, with the remainder of the well pad reclaimed. Reclamation activities would include leveling, re-contouring, treating, backfilling and re-seeding with a native grass seed mixture from a BIA/BLM-approved source. Erosion control measures including straw wattles, silt fences, straw mulch, and/or hydro seeding would be installed on down sloping sides. Stockpiled topsoil would be redistributed and re-seeded as recommended by the BIA.

If no commercial production is developed from any of the proposed wells, or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. The access road and well pad areas would be re-contoured to match topography of the original landscape as closely as possible and re-seeded with vegetation consistent with surrounding native species to ensure a healthy and diverse mix free of noxious weeds. Seed would be obtained from a BIA/BLM-approved source. Re-vegetation of the site would be consistent with the BLM Gold Book standards. Erosion control measures would be installed as appropriate in a manner that is consistent with the BLM Gold Book standards. Maintenance of the re-vegetated sites would continue until such time that the stands were consistent with the surrounding undisturbed vegetation and the sites free of noxious weeds. The surface management agency would provide final inspection of the sites to deem the reclamation effort complete.

3.11 Cultural Resources

Historic properties, or cultural resources, on federal or tribal lands are protected by many laws, regulations and agreements. The National Historic Preservation Act of 1966 (16 USC 470 et seq.) at Section 106 requires, for any federal, federally assisted or federally licensed undertaking, that the federal agency take into account the effect of that undertaking on any district, site, building, structure or object that is included in the National Register of Historic Places (National Register) before the expenditure of any federal funds or the issuance of any federal license. Cultural resources is a broad term encompassing sites, objects, or practices of archaeological, historical, cultural and religious significance. Eligibility criteria (36 CFR 60.6) include association with important events or people in our history, distinctive construction or artistic characteristics, and either a record of yielding or a potential to yield information important in prehistory or history. In practice, properties are

generally not eligible for listing on the National Register if they lack diagnostic artifacts, subsurface remains or structural features, but those considered eligible are treated as though they were listed on the National Register, even when no formal nomination has been filed. This process of taking into account an undertaking's effect on historic properties is known as "Section 106 review," or more commonly as a cultural resource inventory.

The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery, and preservation of significant scientific, prehistoric, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally licensed, or federally-funded project.

The area of potential effect (APE) of any federal undertaking must also be evaluated for significance to Native Americans from a cultural and religious standpoint. Sites and practices may be eligible for protection under the American Indian Religious Freedom Act of 1978 (42 USC 1996). Sacred sites may be identified by a tribe or an authoritative individual (Executive Order 13007). Special protections are afforded to human remains, funerary objects, and objects of cultural patrimony under the Native American Graves Protection and Repatriation Act (NAGPRA) (NAGPRA, 25 USC 3001 et seq.).

The NAGPRA of 1990 is triggered by the possession of human remains or cultural items by a federally-funded repository or by the discovery of human remains or cultural items on federal or tribal lands and provides for the inventory, protection, and return of cultural items to affiliated Native American groups. Permits are required for intentional excavation and removal of Native American cultural items from federal or tribal lands.

The American Indian Religious Freedom Act of 1978 requires consultation with Native American groups concerning proposed actions on sacred sites on federal land or affecting access to sacred sites. It establishes federal policy to protect and preserve for American Indians, Eskimos, Aleuts and Native Hawaiians the right to free exercise of their religion in the form of site access, use and possession of sacred objects, as well as the freedom to worship through ceremonial and traditional rites. The Act requires federal agencies to consider the impacts of their actions on religious sites and objects important to these peoples, regardless of eligibility for listing on the National Register.

In accordance with 16 U.S.C. 470hh(a), information concerning the nature and location of archaeological resources and traditional cultural properties, and detailed information regarding archaeological and cultural resources, is confidential. Such information is exempt from the Freedom of Information Act and is not included in this EA.

Whatever the nature of the cultural resource addressed by a particular statute or tradition, implementing procedures invariably include consultation requirements at various stages of a federal undertaking. The MHA Nation has designated a Tribal Historic Preservation Officer (THPO) by Tribal Council resolution, whose office and functions are certified by the National Park Service. The THPO operates with the same authority exercised in most of the rest of North Dakota by the State Historic Preservation Officer (SHPO). Thus, BIA consults and corresponds with the THPO regarding cultural resources on all projects proposed within the exterior boundaries of the Fort Berthold Reservation.

A cultural resource inventory of this well pad and access road was conducted by personnel of Juniper, LLC, using an intensive pedestrian methodology. Approximately 21 acres were inventoried on June 4, 2012 (Morrison 2012). One archaeological site was located that may possess the quality of integrity

and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for this undertaking, as the archaeological site will be avoided. This determination was communicated to the THPO on June 27, 2012; however, the THPO did not respond within the allotted 30 day comment period.

3.11.1 Cultural Resources Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact cultural resources.

Alternative B (Proposed Action)—The well pad and access road have been positioned to avoid impacts to cultural resources. As such, cultural resources impacts are not anticipated.

Per BIA and THPO's request, an archaeologist and tribal monitors shall be present during the construction of the Charging Eagle 9-19 well pad and access road. Kodiak has aligned the well location to avoid the identified site by at least 75-feet as requested by THPO. Provided the site is avoided by the proposed undertaking, construction of the well location and access road is monitored; the project is anticipated to have no impact upon cultural resources. If cultural resources are discovered at any site during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA. All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.

3.12 Socioeconomic Conditions

Socioeconomic conditions depend on the character, habits and economic conditions of people living within the proposed project areas. Business, employment, transportation, utilities, etc. are factors that affect the social climate of a community. Other factors that distinguish the social habits of one particular area from another include the geography, geology and climate of the area.

The Fort Berthold Reservation is home to six major communities, consisting of New Town, White Shield, Mandaree, Four Bears, Twin Buttes and Parshall. These communities provide small business amenities such as restaurants, grocery stores and gas stations; however, they lack the shopping centers that are typically found in larger cities of the region, such as Minot and Bismarck. According to 2000 US Census data, educational/health/social services is the largest industry on the reservation, followed by the entertainment/recreation/accommodation/food industry[11]. The Four Bears Casino, Convenience Store and Recreation Park are also major employers with over 320 employees, 90 percent of whom are tribal members. In addition, several industries are located on the reservation, including Northrop Manufacturing, Mandaree Enterprise Corporation and Three Affiliated Tribes Lumber Construction Manufacturing Corporation.

Several paved state highways provide access to the reservation including ND Highways 8, 22, 23 and 1804. These highways provide access to larger communities such as Bismarck, Minot and Williston. Paved and gravel BIA Route roadways serve as primary connector routes within the reservation. In addition, networks of rural gravel roadways are located throughout reservation boundaries providing access to residences, oil and gas developments and agricultural land. Major commercial air service is

[11] Since 2000, there has been an increasing focus on oil and gas development on the Fort Berthold Reservation. As such, it is anticipated that these trends have likely shifted; however, data from the 2010 US Census for these categories has not been released for the Fort Berthold Reservation.

provided out of Bismarck and Minot, with small-scale regional air service provided out of New Town and Williston.

3.12.1 Socioeconomic Impacts/Mitigation

Alternative A (No Action)—Alternative A would not impact the socioeconomic conditions in the project area. However, Alternative A would not allow for the collection of oil and gas resources from the six wells operated by EOG, which could have positive effects on employment and income through the creation of jobs and payment of leases, easement, and/or royalties to Tribal members.

Alternative B (Proposed Action)—Alternative B is not anticipated to substantially impact the socioeconomic conditions in the project areas, but it does have the potential to yield beneficial impacts on Tribal employment and income. Qualified individual tribal members may find employment through oil and gas development and increase their individual incomes. Additionally, the proposed action may result in indirect economic benefits to tribal business owners resulting from construction workers expending money on food, lodging, and other necessities. The increased traffic during construction may create more congested traffic conditions for residents. Kodiak and contractors would follow Dunn County, BIA, and North Dakota Department of Transportation rules and regulations regarding oversize/overweight loads on state and county roads used as haul roads in order to maintain safe driving conditions.

3.13 Environmental Justice

Per Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, measures must be taken to avoid disproportionately high adverse impacts on minority or low-income communities.

Generally, the Three Affiliated Tribes qualify for environmental justice consideration as both a minority and low-income population. The population of North Dakota is predominantly Caucasian. Tribal members compromise 5.4 percent of North Dakota's population and 13.9 percent of the population of Dunn County[12].

According to the 2005–2009 U.S. Census Bureau data, the Fort Berthold Reservation has lower than statewide averages of per capita income and median household income, whereas Dunn County has a higher per capita income and median household income than the statewide average. In addition, Dunn County has slightly lower rates of unemployment than the state average, while Fort Berthold's rate of unemployment was substantially greater[13]. Please refer to ***Table 3.7, Employment and Income.***

[12] Based on 2010 US Census Bureau data

[13] While more current data reflecting income, unemployment, and poverty levels within the Fort Berthold Reservation is not available, it is anticipated that 2010 numbers may show different trends. The exploration and production of oil and gas resources on the Reservation since 2006 have created employment opportunities and have likely affected these economic indicators. However, this assessment uses the best available data.

Table 3.7, Employment and Income

LOCATION	PER CAPITA INCOME	MEDIAN HOUSEHOLD INCOME	UNEMPLOYMENT RATE	INDIVIDUALS LIVING BELOW POVERTY LEVEL
Dunn County	$25,006	$45,270	2.0%	8.9%
Fort Berthold Reservation	$15,945	$40,603	7.8%	25.2%
Statewide	$24,978	$45,140	2.4%	12.3%

Source: U.S. Census Bureau, 2005–2009 American Community Survey

Population decline in rural areas of North Dakota has been a growing trend as individuals move toward metropolitan areas of the state, such as Bismarck and Fargo. While Dunn County's population has been slowly declining, the Fort Berthold Reservation has witnessed a steady increase in population. American Indians are the majority population on the Fort Berthold Reservation but are the minority population in Dunn County and the state of North Dakota. Please refer to ***Table 3.8, Demographic Trends.***

Table 3.8, Demographic Trends

LOCATION	POPULATION IN 2010	% OF STATE POPULATION	% CHANGE 2000–2010	PREDOMINANT RACE	PREDOMINANT MINORITY
Dunn County	3,536	0.53%	-1.8%	White	American Indian (13.9%)
Fort Berthold Reservation	6,341	0.94%	7.2%	American Indian [14]	White (23.8%)
Statewide	672,591	—	4.7%	White	American Indian (5.4%)

Source: U.S. Census Bureau, 2005–2009 American Community Survey

3.13.1 Environmental Justice Impacts/Mitigation

Alternative A (No Action)—Alternative A would not result in disproportionately high adverse impacts to minority or low-income communities.

Alternative B (Proposed Action)—Alternative B would not require relocation of homes or businesses or cause community disruptions. Alternative B would also not cause disproportionately high adverse impacts to members of the Three Affiliated Tribes. The proposed project has not been found to pose impacts to any other critical element (public health and safety, water, wetlands, wildlife, soils or vegetation) within the human environment. The proposed project is also not anticipated to result in disproportionately high adverse impacts to non-Tribal minority or low-income populations.

[14] According to the North Dakota Tourism Division, there are 10,400 enrolled members of the Three Affiliated Tribes.

Oil and gas development of the Bakken Formation is occurring both on and off the Fort Berthold Reservation. Employment opportunities related to oil and gas development may lower the unemployment rate and increase the income levels on the Fort Berthold Reservation. In addition, the Three Affiliated Tribes and allotted owners of mineral interests may receive income from oil and gas development on the Fort Berthold Reservation in the form of royalties, if drilling and production are successful, as well as from Tribal Employee Rights Office taxes on construction of drilling facilities.

3.14 Infrastructure and Utilities

The Fort Berthold Reservation's infrastructure consists of roads, bridges, utilities and facilities for water, wastewater and solid waste.

Known utilities and infrastructure within the vicinity of the proposed project includes paved (ND Highway 8) and gravel (BIA Routes 22) roadways. The proposed access road connects directly to BIA 22 Roadway. No Bureau of Reclamation rural water pipelines are located within 1½ miles of the project site. Consolidated Telecommunications indicated they will be placing fiber optic cables during the 2012 construction season along BIA 22 Roadway in Sections 28, 29, and 30 near where the proposed access road joins BIA 22 Roadway. In addition, an existing overhead power line was identified along the access road that would have to be raised during drilling rig movements..

3.14.1 Infrastructure and Utility Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact infrastructure or utilities.

Alternative B (Proposed Action) – Alternative B would require construction of a new access roadway which would connect to BIA 22 Roadway. Additionally, vehicular traffic associated with construction, operation and maintenance of the proposed action would increase the overall traffic on the local roadway network. To minimize potential impacts to the roadway conditions and traffic patterns in the area, all haul routes used would either be private roads or roads that have been approved for this type of transportation use by the local governing tribal, township, county, and/or state entities. Kodiak would follow Dunn County, BIA and NDDOT rules and regulations regarding rig moves and oversize/overweight loads on state and county roads used as haul roads. All contractors are required to permit their oversize/overweight loads through these entities. Kodiak's contractors would be required to adhere to all local, county, tribal and state regulations regarding rig moves, oversize/overweight loads and frost restrictions. Kodiak would coordinate with Consolidated Telecom, the electric company whose line exists in the project area and other utility providers prior to construction to avoid impacting lines within the project area.

The well site may also require the installation of supporting buried electrical lines. In addition, if commercially recoverable oil and gas are discovered at the well sites, a natural gas gathering system may be required. It is expected that electric lines and other pipelines would be constructed within the 200-foot area surveyed, or additional NEPA analysis and BIA approval would be completed prior to construction of these utilities. Other utility modifications would be identified during design and coordinated with the appropriate utility company.

Drilling operations at the proposed well sites may generate produced water. In accordance with the BLM Gold Book and BLM Onshore Oil and Gas Order Number 7, produced water would be disposed of via subsurface injection, or other appropriate methods that would prevent spills or seepage. Produced water may be trucked to nearby oil fields where injection wells are available.

Safety hazards posed from increased traffic during the drilling phase are anticipated to be short-term and minimal for the proposed site. It is anticipated that approximately 30 to 40 trips, over the course of several days, would be required to transport the drilling rig and associated equipment to the proposed well site. If commercial operations are established at any of the proposed wells following drilling activities, the pump would be checked daily and oil and water hauling activities would commence. Oil would be hauled using a semi tanker trailer, typically capable of hauling 140 barrels of oil per load. Traffic to and from the well site would depend upon the productivity of the well. For example, a 1,000 barrel per day well would require approximately seven tanker visits per day, while a 300 barrel per day well would require approximately two visits per day[15]. Produced water would also be hauled from the site using a tanker, which would typically haul 110 barrels of water per load. The number of visits would be dependent upon daily water production[16]. Established load restrictions for state and BIA roadways would be followed and haul permits would be acquired as appropriate.

3.15 Public Health and Safety

Health and safety concerns include hydrogen sulfide (H_2S) gas, hazardous materials used or generated during well installation or production and traffic hazards associated with heavy drill rigs and tankers[17].

3.15.1 Public Health and Safety Impacts/Mitigation

Alternative A (No Action) – Alternative A would not impact public health and safety.

Alternative B (Proposed Action) – Project design and operational precautions would minimize the likelihood of impacts from H2S gases, hazardous materials, and traffic, as described below.

H_2S Gases — It is unlikely that the proposed action would result in release of H_2S at dangerous concentrations; however, Kodiak would submit H_2S Contingency Plans to the BLM as part of the site APDs. These plans establish safety measures to be implemented throughout the drilling process to prevent accidental release of H_2S into the atmosphere. The Contingency Plans are designed to protect persons living and/or working within 3,000 feet (0.6 miles) of the well location and include emergency response procedures and safety precautions to minimize the potential for an H_2S gas leak during drilling activities. Satellite imagery revealed no residences/buildings within 3,000 feet of the proposed well pad. The closest residence is approximately 4,000 feet southeast of the well pad.

Hazardous Materials — The EPA specifies chemical reporting requirements under the Superfund Amendments and Reauthorization Act of 1986, as amended. No materials used or generated by this project for production, use, storage, transport or disposal are on either the Superfund list or on the EPA's list of extremely hazardous substances in 40 CFR 355.

---

[15] A typical Bakken oil well initially produces at a high rate and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 500 to 1,000 barrels of oil per day (BOPD) could be expected, dropping to 200 to 400 BOPD after several months.

[16] A typical Bakken oil well initially produces water at 200 bbls per day and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 200 barrels of water per day (BWPD) could be expected, dropping to 30 to 70 BWPD after several months.

[17] H_2S is extremely toxic in concentrations above 500 parts per million. H_2S has not been found in measurable quantities in the Bakken Formation. However, before reaching the Bakken, drilling would penetrate the Mission Canyon Formation, which is known to contain varying concentrations of H_2S.

The Spill Prevention, Control, and Countermeasure (SPCC) rule includes EPA requirements for oil spill prevention, preparedness and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans.

3.16 Cumulative Considerations

Cumulative impacts result from the incremental consequences of an action "when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Effects of an action may be minor when evaluated in an individual context, but these effects can add to other disturbances and collectively may lead to a measureable environmental change. By evaluating the impacts of the proposed action with the effects of other actions, the relative contribution of the proposed action to a projected cumulative impact can be estimated.

3.16.1 Past, Present, and Reasonable Foreseeable Actions

Oil and gas development in western North Dakota has occurred with varying intensity for the past 100 years. Gas development began in the area in 1909 and the first recorded oil well was drilled in 1920. North Dakota's oil production has boomed twice prior to the current boom; first in the 1950s, peaking in the 1960s, and again in the 1970s, peaking in the 1980s. North Dakota is currently experiencing its third oil boom, which has already far surpassed the previous booms in magnitude. This oil boom is occurring both within and outside the Fort Berthold Reservation.

According to the NDIC, as of July 18, 2012, there were approximately 862active and/or confidential oil and gas wells within the Fort Berthold Reservation 547 of which were located on tribal trust property under the authority of the BIA. In addition, there were approximately 513 within the 20-mile radius of the proposed well sites. Please refer to ***Figure 3.11, Existing and Proposed Oil and Gas Wells*** and

Table 3.9, Summary of Active and Proposed Wells.

As mentioned previously in this EA, the Bakken Formation covers approximately 25,000 square miles beneath North Dakota, Montana, Saskatchewan and Manitoba, with approximately two-thirds of the acreage beneath North Dakota. The Three Forks Formation lies beneath the Bakken. The North Dakota Department of Mineral Resources estimates that there are approximately 2 billion barrels of recoverable oil in each of these Formations and that there will be 30–40 remaining years of production, or more if technology improves.

Commercial success at any new well can be reasonably expected to result in additional nearby oil/gas exploration proposals; however, it is speculative to anticipate the specific details of such proposals. While such developments remain speculative until APDs have been submitted to the BLM or BIA, it is reasonable to assume based on the estimated availability of the oil and gas resources that further development will continue in the area for the next 30–40 years. It is also reasonable to assume that natural gas and oil gathering and/or transportation systems will be proposed and likely built in the future to facilitate the movement of products to market. Currently, natural gas gathering systems are being proposed and approved on the Fort Berthold Reservation and surrounding area, with some mainlines and smaller systems already existing.

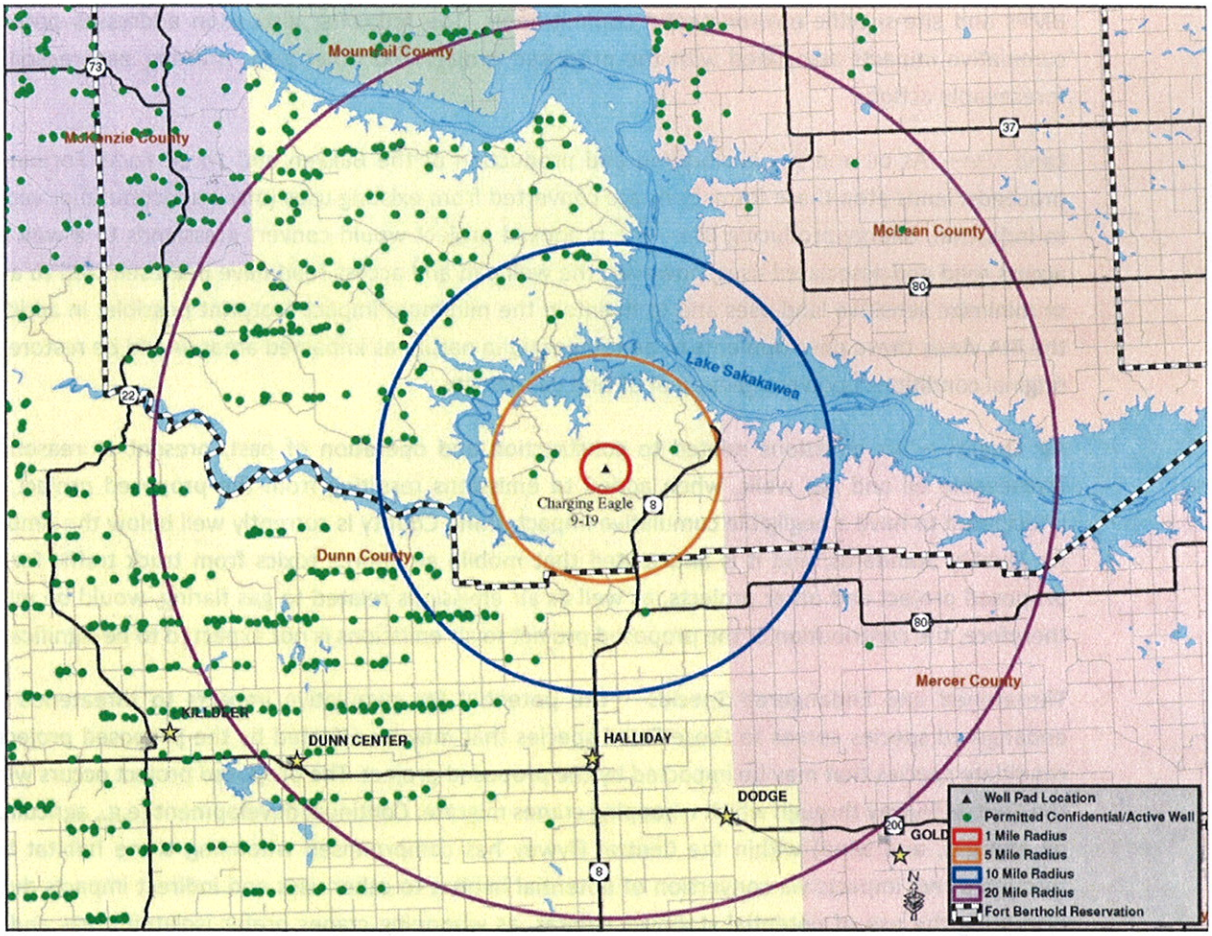


Figure 3.11, Existing and Proposed Oil and Gas Wells

Table 3.9, Summary of Active and Proposed Wells

DISTANCE FROM PROPOSED WELL PAD	NUMBER OF ACTIVE OR PROPOSED WELLS
1 mile radius	0
5 mile radius	7
10 mile radius	90
20 mile radius	513

3.16.2 Cumulative Impact Assessment

The proposed project is not anticipated to directly impact other oil and gas projects. It is a reasonable generalization that, while oil and gas development proposals and projects vary based on the developer, well location, permit conditions, site constraints and other factors, this proposed action is not unique among others of its kind. It is also a reasonable generalization based on regulatory oversight by the BIA, BLM, NDIC and other agencies, as appropriate, that this proposed action is not unique in its attempts to avoid, minimize, or mitigate harm to the environment through the use of

BMPs and site-specific environmental commitments. The following discussion addresses potential cumulative impacts associated with the proposed project and other past, present, and reasonably foreseeable actions.

Land Use— As oil and gas exploration and production of the Bakken and Three Forks Formations proceeds, lands atop these formations are converted from existing uses (often agricultural or vacant) to industrial, energy-producing uses. The proposed project would convert grasslands to a well pad, access road and associated uses; however, the well pad and access road have been selected to avoid or minimize sensitive land uses and to maintain the minimum impact footprint possible. In addition, the BIA views these developments to be temporary in nature as impacted areas would be restored to original conditions upon completion of oil and gas activity.

Air Quality— Air emissions related to construction and operation of past, present or reasonably foreseeable oil and gas wells, when added to emissions resulting from the proposed project, are anticipated to have a negligible cumulative impact. Dunn County is currently well below the Ambient Air Quality Standards, and it is anticipated that mobile air source toxics from truck traffic for the proposed project and other projects, as well as air emissions related to gas flaring, would be minor; therefore, the contribution of the proposed project to air emissions is not expected to be significant.

Threatened and Endangered Species— The potential for cumulative impacts to threatened and endangered species comes to those listed species that may be affected by the proposed project or candidate species that may be impacted by the proposed project. The proposed project occurs within the Central Flyway through which whooping cranes migrate. Continual development (e.g., agriculture, oil and gas, and wind) within the Central Flyway has compromised whooping crane habitat both through direct impacts via conversion of potential habitat to other uses and indirect impacts due to disrupting the use of potential stopover habitat, as whooping cranes prefer isolated areas and are known to avoid large-scale development. However, the proposed action, when added to other development directly and indirectly impacting whooping cranes and their habitat, is not anticipated to significantly contribute to cumulative impacts occurring to the whooping crane population.

As previously stated, habitat for the interior least tern, pallid sturgeon and piping plover is primarily associated with Lake Sakakawea and its shoreline. When added to other past, present and reasonably foreseeable projects, such as oil and gas wells and water intake structures on Lake Sakakawea, the proposed project may have an indirect cumulative impact on potential habitat (Lake Sakakawea and its shoreline) for these species due to potential leaks or spills. However, due to the implementation of BMP's, berm installation, northeast corner shrinking/rounding, secondary containment measures, and cuttings pit parameters for the proposed project, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Furthermore, electrical lines, if installed, would be buried to prevent the potential for electrical line strikes by the interior least tern and piping plover. Therefore, it is unlikely the project would contribute to cumulative impacts to the interior least tern, pallid sturgeon, and piping plover.

Please refer to the discussion below (Wetlands, Eagles, Other Wildlife, and Vegetation) for an analysis of potential cumulative impacts to candidate species (Dakota skipper and Sprague's pipit).

Wetlands, Eagles, Other Wildlife, and Vegetation— The proposed project, when added to previously constructed and reasonably foreseeable oil and gas wells, would contribute to habitat loss and fragmentation associated with construction of a well pad, access road, and associated development.

The North Dakota Parks and Recreation Department notes in its undated publication, "North Dakota Prairie: Our Natural Heritage" that approximately 80 percent of the state's native prairie has been lost to agriculture, with most of the remaining areas found in the arid west; ongoing oil and gas activity has the potential to threaten remaining native prairie resources. While many species of wildlife may continue to use the project areas for breeding and feeding and continue to thrive, the activities associated with oil and gas development may displace animals from otherwise suitable habitats. As a result, wildlife may be forced to utilize marginal habitats or relocate to unaffected habitats where population density and competition increase. Consequences of such displacement and competition may include lower survival, lower reproductive success, lower recruitment, and lower carrying capacity leading ultimately to population-level impacts. In particular, species that rely on native prairie for breeding, feeding, and sheltering, such as the Dakota skipper and Sprague's pipit, may experience population impacts due to the cumulative loss of habitat through conversion and fragmentation. The addition of oil and gas wells and roadways to existing human development may also create an indirect cumulative impact on the Sprague's pipit due to its avoidance of non-prairie features.

However, the proposed action and other similar actions are carefully planned to avoid or minimize these impacts. Multiple components of the process used by the BIA to evaluate and approve such actions, including biological and botanical surveys, on-site assessments with representatives from multiple agencies and entities, public and agency appeal periods on this EA, and the use of BMPs and site-specific environmental commitments are in place to ensure that environmental impacts associated with oil and gas development are minimized. The practice of utilizing existing roadways to the greatest extent practicable further minimizes impacts to wildlife habitats and prairie ecosystems. The proposed wells have been sited to avoid sensitive areas such as surface water, wetlands, and riparian areas. Reclamation activities are anticipated to minimize and mitigate disturbed habitat.

Infrastructure and Utilities— The proposed action, along with other oil and gas wells proposed and drilled in the Bakken and Three Forks Formations, requires infrastructure and utilities to provide needed resource inputs and accommodate outputs such as fresh water, power, site access, transportation for products to market, disposal for produced water and other waste materials. As with the proposed action, many other wells currently being proposed and/or built are positioned to make the best use of existing roads and to minimize the construction of new roads; however, some length of new access roads are commonly associated with new wells. The well pad has been positioned in close proximity to an existing two track to minimize the extent of access road impacts in the immediate area. The contribution of the proposed project and other projects to stress on local roadways used for hauling materials may result in a cumulative impact to local roadways. However, abiding by permitting requirements and roadway restrictions with the jurisdictional entities are anticipated to offset any cumulative impact that may result from the proposed project and other past, present, or future projects. BMPs would be implemented to minimize impacts of the proposed project. The BIA is currently developing a Programmatic EA for oil and gas development on the Fort Berthold Reservation which further analyzes the scale of development within the region.

The proposed action has been planned to avoid impacts to resources such as wetlands, floodplains, surface water, and cultural resources. Unavoidable impacts to these or other resources would be minimized and/or mitigated in accordance with applicable regulations.

3.17 Irreversible and Irretrievable Commitment of Resources

Removal and consumption of oil or gas from the Bakken and Three Forks Formations would be an irreversible and irretrievable commitment of resources. Other potential resource commitments include acreage devoted to disposal of cuttings, soil lost through wind and water erosion, cultural resources inadvertently destroyed, wildlife killed during earth-moving operations or in collisions with vehicles and energy expended during construction and operation.

3.18 Short-term Use of the Environment versus Long-term Productivity

Short-term activities would not significantly detract from long-term productivity of the project areas. The area dedicated to the access road and well pad would be unavailable for livestock grazing, wildlife habitat, or other uses. However, allottees with surface rights would be compensated for loss of productive acreage and project footprints would shrink considerably once the wells were drilled and non-working areas reclaimed and reseeded. Successful and ongoing reclamation of the landscape would reestablish the land's use for wildlife and livestock grazing, stabilize the soil, and reduce the potential for erosion and sedimentation. The primary long-term resource loss would be the extraction of oil and gas resources from the Bakken and Three Forks Formations, which is the purpose of this project.

3.19 Permits

Kodiak will be required to acquire the following permits prior to construction:

- Application for Permit to Drill — Bureau of Land Management
- Application for Permit to Drill —North Dakota Industrial Commission
- Synthetic Minor Source Permit — Environmental Protection Agency

3.20 Environmental Commitments/Mitigation

The following commitments have been made by Kodiak:

- Topsoil would be segregated and stored on-site to be used in the reclamation process. All disturbed areas would be re-contoured to original elevations as close as possible as part of the reclamation process.
- Woody vegetation cleared from the site would be chipped on-site, mixed over the topsoil prior to removal, and therefore incorporated into topsoil stockpile.
- BMPs (may include, but are not limited to, erosion mats and biologs) would be implemented to minimize wind and water erosion of soil resources. Soil stockpiles would be positioned to help divert runoff around the well pad.
- The well pad and access road would avoid surface waters. The proposed project would not alter stream channels or change drainage patterns.
- A semi-closed loop system would be used during drilling. Liquids from drilling would be transported off-site, and dry cuttings would be stabilized in place.
- The drill cuttings pits would have a reinforced synthetic liner to prevent potential leaks. All spills or leaks of chemicals and other pollutants would be reported to the BLM and EPA, as

required. The procedures of the surface management agency shall be followed to contain leaks or spills.

- Kodiak would institute density test of soils at the entire well pad to ensure a requirement of > 95% soil compaction for site stabilization. This compaction is to be confirmed by a third party with a Soil Proctor test. This stabilizes fill areas for facilities so that there are not weight concerns that would normally occur in "non-engineered" fills. Fill would be placed in 6 to 8 inch lifts with documented density tests on each lift. The test results would be provided to BIA upon request. The cuttings pit would be placed on an area of cut. Prior to its use, the cuttings pit would be fenced on the non-working sides. The access side would be fenced and netted at all times until reclamation and completion operations in order to prevent wildlife and livestock from accessing the pit.

- All proposed wells would be cemented and cased to isolate aquifers from potentially productive hydrocarbon and disposal/injection zones.

- Wetlands and riparian areas would be avoided. The wetland occurring in the access road survey area is anticipated to be avoided. If construction is to take place in it, the USACE would be coordinated with for permitting. The BIA Environmental Specialist indicated the wetland could be impacted by up to 1/10 of an acre if needed.

- Disturbed vegetation would be re-seeded in-kind upon completion of the project, and a noxious weed management plan would be implemented. The re-seeded site would be maintained until such time that the vegetation is consistent with surrounding undisturbed areas and the site is free of noxious weeds. Seed would be obtained from a BIA/BLM approved source.

- The well pad and access road would avoid impacts to cultural resources. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA.

- Per the BIA & THPO's request, an archaeologist and tribal monitors shall be present during the construction of the well pad and access road.

- Construction would be located at least 75 feet away from the identified cultural resource located northeast of the well pad. The boundaries of these 75-foot "exclusion zones" would be marked as an extra measure to ensure that inadvertent impacts to cultural resources are avoided.

- All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.

- Kodiak would ensure all contractors working for the company would adhere to all local, county, tribal, and state regulations and ordinances regarding rig moves, oversize/overweight loads, and frost law restrictions.

- Utility modifications would be identified during design and coordinated with the appropriate utility company (Consolidated Telecommunications, electrical provider whose line would be raised, and others in the project area).

- Disposal areas would be properly fenced to prevent human or animal access.

- H_2S Contingency Plans for the well site would be submitted to the BLM as part of the APD.

- Suitable mufflers would be put on all internal combustion engines and certain compressor components to mitigate noise levels.

- The wells and associated facilities would be painted in earth tones, based on standard colors recommended by the BLM, to allow them to better blend in with the natural background color of the surrounding landscape.

- BMPs would be used during construction to ensure contaminants do not migrate off site. An impervious lined trench would be installed on the downsloping side of the well pad to catch and hold any storm water runoff from the well pad. All storage tanks and heater/treaters would be surrounded by an impermeable berm that would act as secondary containment to guard against possible spills. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. An 18-inch high berm would be installed along the north side of the pad to prevent runoff from leaving the pad and entering the adjacent drainage. The northeast corner of the well pad would be brought in 75 feet and rounded to avoid impacting the drainage. This drainage near the northeast corner of the well pad would be armored with rock riprap to prevent erosion and to further stabilize the soil. A diversion ditch would be constructed to divert runoff around from the pad.

- The cuttings pit would be netted while not actively being used.

- All efforts will be made to complete construction outside the migratory bird nesting season (February 1 through July 15) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that a construction activity needs to take place within the migratory bird nesting and breeding season, a pre-construction survey for migratory bird nests would be conducted by a qualified biologist within five days prior to the initiation of all construction activities or the site would be mowed/grubbed the previous fall and spring, and throughout the nesting/breeding season to deter birds from nesting in project areas. The findings of these surveys along with the qualifications of the biologist(s) would be reported to the BIA.

- If a bald or golden eagle nest is sighted within 0.5 miles of the project construction area, construction activities shall cease and the USFWS shall be notified for advice on how to proceed.

- If a whooping crane is sighted within one-mile of a well site or associated facilities while under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.

- Wire mesh or grate covers would be placed over barrels or buckets placed under valves and spigots to collect dripped oil.

- Netting, with a maximum mesh size of 1.5 inches, would be used to keep birds and other small animals out of open pits.

- Re-seeding of native species shall occur as needed on stockpile areas and slope areas during reclamation.

- Facilities on well pad shall be located as close together as possible.

- Interim reclamation would occur as soon as possible after the production phase.

- If electrical lines are installed, the lines would be buried to prevent the potential for bird strikes.
- Topsoil stockpiles would be placed on the north side of the pad to assist in diverting runoff.
- Kodiak would provide dust control on their haul roads and access roads.
- Specialty coatings that are applicable for underground fittings, bore crossings, etc. would be used to provide additional levels of protection in areas that require it. Velocities and pressure drops for the pipeline system would be carefully evaluated and lines are sized so as to prevent erosion velocity. Additionally, lines are designed to be cleaned and inspected via internal tools (e.g., cleaning pigs and smart pigs), which helps in the identification of issues in the pipes.
- Following design and installation, the pipeline service provider would immediately conduct a cathodic survey utilizing test stations, rectifier pads and other means designed by cathodic protection specialists or other tests to identify issues in pipelines.
- The pipeline service provider would fully comply with the marking requirements specified in the US Department of Transportation's rules and regulations, specifically contained in 49 CFR Parts 192 and 195.
- The pipeline provider would commit to developing a spill response plan that would be submitted to the BIA prior to the commencement of the construction activities.
- Any proposed pipelines would be sited to avoid direct impacts to surface water and to minimize the disruption of drainage patterns across the landscape. Implementation of BMPs to control erosion would mitigate runoff of sediment downhill or downstream.

CHAPTER 4 PREPARERS AND AGENCY COORDINATION

4.1 Introduction

This chapter identifies the names and qualifications of the principal people contributing information to this EA. In accordance with Part 1502.6 of the Council on Environmental Quality regulations for implementing NEPA, the efforts of an interdisciplinary team comprising technicians and experts in various fields were required to accomplish this study.

This chapter also provides information about consultation and coordination efforts with agencies and interested parties, which has been ongoing throughout the development of this EA.

4.2 Preparers

KL&J prepared this EA under a contractual agreement between Kodiak and KL&J. A list of individuals with the primary responsibility for conducting this study, preparing the documentation, and providing technical reviews is contained in ***Table 4.1, Preparers.***

Table 4.1, Preparers

AFFILIATION	NAME	TITLE	PROJECT ROLE
Bureau of Indian Affairs	Marilyn Bercier	Regional Environmental Scientist	Review of Draft EA and recommendation to Regional Director regarding FONSI or EIS
	Mark Herman	Environmental Engineer	
Kodiak Oil and Gas (USA), Inc.	Russ Cunningham	Vice President of Exploration	Project development, alternatives, document review
	Chris Woods	Permitting Coordinator	Permitting Coordinator
Kadrmas, Lee & Jackson, Inc.	Steve Czeczok	Environmental Scientist	Field resources surveys, agency/client coordination, Project Manager, Senior review
	Joe Goeden	Environmental Planner	Principal author, impact assessment, Field resources surveys
	Quentin Obrigewitsch	Surveyor	Site Plats
	Mike Huffington	GIS Analyst	Impact assessment, exhibit creation
Juniper Archeology	John Morrison	Archaeologist	Cultural Resources Surveys

4.3 Agency Coordination

To initiate early communication and coordination, an early notification package to tribal, federal, state, and local agencies and other interested parties was distributed on July 18, 2012. This scoping package included a brief description of the proposed project, as well as a location map. Pursuant to Section 102(2) (D) (IV) of NEPA, a solicitation of views was requested to ensure that social, economic, and environmental effects were considered in the development of this project. ***Appendix A*** contains Scoping Materials.

At the conclusion of the 30-day comment period, ten responses were received. Comments from USFWS have been considered in the construction of the proposed project. These comments provide valuable insight into the evaluation of potential environmental impacts. The comments were referenced and incorporated where appropriate within the environmental impact categories addressed in this document. ***Appendix A*** contains Scoping Responses.

4.4 Public Involvement

Provided the BIA approves this document and determines that no significant environmental impacts would result from the proposed action, a Finding of No Significant Impact (FONSI) will be issued. The FONSI is followed by a 30-day public appeal period. BIA will advertise the FONSI and public appeal period by posting notices in public locations throughout the Reservation. No construction activities may commence until the 30-day public appeal period has expired.

CHAPTER 5 REFERENCES

Beitisch, R. (2010, April 30). Three Forks formation to yield lots of oil in North Dakota. The Bismarck Tribune. Retrieved from http://www.bismarcktribune.com/news/state-and-regional/article_368dcb38-53ef-11df-a6c8-001cc4c03286.html.

Coyle, A.M. (2007). Golden eagle nests [Data file]. Retrieved from United States Forest Service — Dakota Prairie Grasslands Region.

Guadalupe-Blanco River Authority. (2009, April 29). Major research gives insight into the needs of whooping cranes. Retrieved from http://www.gbra.org/news/2009/042901.aspx.

Johnson, S. (2010, February). Nesting in numbers: active bald eagles nests up in North Dakota. North Dakota Outdoors, 14–17. Retrieved from http://gf.nd.gov/multimedia/ndoutdoors/issues/2010/feb/docs/nest-numbers.pdf.

Middick, Andy. (2011). Operations monitoring and spill response plan. Blackshare Environmental Solutions. Oklahoma City, Oklahoma.

Morrison, John G.

(2012) Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-24-13-12H and Charging Eagle 9-19-24-13-13H Well Pad and Access Road: Class III Cultural Resource Inventory, Dunn County, North Dakota. Juniper LLC for Kodiak Oil and Gas Corporation, Denver.

National Geographic. (n.d.). Golden eagle. Retrieved September 9, 2011, from http://animals.nationalgeographic.com/animals/birds/golden-eagle.html.

North Dakota Department of Agriculture. (n.d.). Noxious weeds team. Retrieved June 11, 2012, from http://www.agdepartment.com/Programs/Plant/NoxiousWeeds.html.

North Dakota Department of Health. (2011, June). Annual Report: North Dakota Air Quality Monitoring Data Summary 2010. Bismarck, ND: North Dakota Department of Health.

North Dakota Parks and Recreation Department. (n.d.). North Dakota prairie: our natural heritage. North Dakota Parks and Recreation Department, U.S. Department of the Interior, U.S. Fish and Wildlife Service. Jamestown, ND: Northern Prairie Wildlife Research Center Online. Retrieved from http://www.npwrc.usgs.gov/resource/habitat/heritage/index.htm.

North Dakota State Water Commission. (2012). Query water permits [Data file]. Retrieved June 4, 2012 from http://www.swc.state.nd.us/4dlink7/4dcgi/Permitsearchform /Permits.

North Dakota State Water Commission and U.S. Geological Survey. (2010a). USGS digital elevation models for North Dakota [Data file]. Retrieved from http://www.nd.gov/gis/.

North Dakota State Water Commission and U.S. Geological Survey. (2010b) USGS hydrography dataset for North Dakota [Data file]. Retrieved from http://nhd.usgs.gov/.

Three Affiliated Tribes. (2009, August 21). Fort Berthold Reservation: Home of the Three Affiliated Tribes. Fargo Forum. Retrieved from http://legacy.inforum.com/specials/DyingTongues/graphics/demographics.pdf.

United States. (2007, May 30). Whooping crane recovery plan revised. Retrieved from http://www.fws.gov/news/NewsReleases/showNews.cfm?newsId=DD912DFC-CAC2-6024-897401985ACEFFAB.

U.S. Department of Agriculture. (2012). Soil survey for Dunn County, North Dakota. U.S. Department of Agriculture, Soil Conservation Service. U.S. Government Printing Office.

U.S. Department of Agriculture. (2012). Spatial and tabular data of the soil survey for Dunn County, North Dakota. Retrieved from http://soildatamartnrcs.usda.gov/.

U.S. Fish & Wildlife Service. (2012, May). Piping plover fact sheet. Retrieved May 23, 2011, from http://www.fws.gov/midwest/endangered/pipingplover/pipingpl.html.

U.S. Fish & Wildlife Service. (2007, June). Bald eagle fact sheet: Natural history, ecology, and history of recovery. Retrieved September 23, 2011, from http://www.fws.gov/midwest/eagle/recovery/biologue.html.

U.S. Fish & Wildlife Service. (2011, March). Gray Wolf (Canis lupus) Biologue. Retrieved September 23, 2011, from http://www.fws.gov/midwest/wolf/aboutwolves/biologue.htm.

U.S. Fish & Wildlife Service. (2011, March 9). Least tern (Interior Population). Retrieved September 23, 2011, from http://www.fws.gov/midwest/endangered/birds/tern.html.

U.S. Fish and Wildlife Service. (2010, September). Endangered and threatened wildlife and plants; 12-month finding on a petition to list Sprague's pipit as endangered or threatened throughout its range. Federal Register. Vol. 75, No. 178.

U.S. Fish & Wildlife Service. (2011, March 9). Fact sheet: pallid sturgeon (Scaphiryhynchus albus). Retrieved September 23, 2011, from http://www.fws.gov/midwest/Endangered/fishes/palld_fc.html.

U.S. Fish & Wildlife Service. (2012, February). County occurrence of endangered, threatened, and candidate species and designated critical habitat in North Dakota. Retrieved May 15, 2012, from http://www.fws.gov/northdakotafieldoffice/county_list.htm.

U.S. Geological Survey Northern Prairie Wildlife Research Center. (2004, 1 January). North Dakota GAP bird potential habitat maps [Data file]. Retrieved November 30, 2010, from http://www.nd.gov/gis/.

U.S. Geological Survey Northern Prairie Wildlife Research Center. (2006a, 3 August). The cranes status survey and conservation action plan whooping crane (Grus americana). Retrieved September 23, 2011, from http://www.npwrc.usgs.gov/resource/birds/cranes/grusamer.htm.

U.S. Geological Survey Northern Prairie Wildlife Research Center. (2006, 24 August). Ecoregions of North Dakota and South Dakota.

Wyoming Game and Fish Department. (2010, March). Recommendations for development of oil and gas resources within important wildlife habitats. Version 5.0. Retrieved from http://gf.state.wy.us/downloads/pdf/og.pdf.

Appendix A

Agency Scoping Materials

Kadrmas
Lee &
Jackson
Engineers Surveyors
Planners

July 18, 2012

Mr. Weldon Louderemilk
Regional Director
Bureau of Indian Affairs
115 4th Ave. SE
Aberdeen, SD 57401

RE: Kodiak Oil & Gas Corp.
Charging Eagle #9-19 Three Well Pad
Dunn County, ND
Fort Berthold Reservation

Dear Mr. Louderemilk,

On behalf of Kodiak Oil & Gas Corp. (Kodiak), Kadrmas, Lee & Jackson, Inc. is preparing an Environmental Assessment (EA) under the National Environmental Policy Act for the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM for the development of a single well pad, resulting in the drilling and completion of three oil and gas wells on the Fort Berthold Reservation. The proposed well pad is proposed to be positioned in the NE¼SE¼ of Section 19, T147N, R91W, 5th P.M. and contain the following wells:

- Charging Eagle #9-19-24-4H3
- Charging Eagle #9-19-13-13H
- Charging Eagle #9-19-13-12H

Please refer to the enclosed Project Location Map.

The well pad has been positioned to use existing roadways and trails to the greatest extent practicable for access. Construction of the proposed project is anticipated to begin in late 2012/early 2013.

To ensure that social, economic, and environmental effects are analyzed accurately, we solicit your views and comments on the proposed action. We are interested in existing or proposed developments you may have that should be considered in connection with the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee, or otherwise value that might be adversely impacted.

Please provide your comments by **August 18, 2012**. We request your comments by that date to ensure that we will have ample time to review them and incorporate them into the EA.

701 355 8400
128 Soo Line Drive
PO Box 1157
Bismarck, ND 58502-1157
Fax 701 355 8781
kljeng.com

Kodiak Oil & Gas Corp.
Charging Eagle # 9-19 Well Pad
Fort Berthold Reservation

If you would like further information regarding this project, please contact me at (701)355-8452. Thank you for your cooperation.

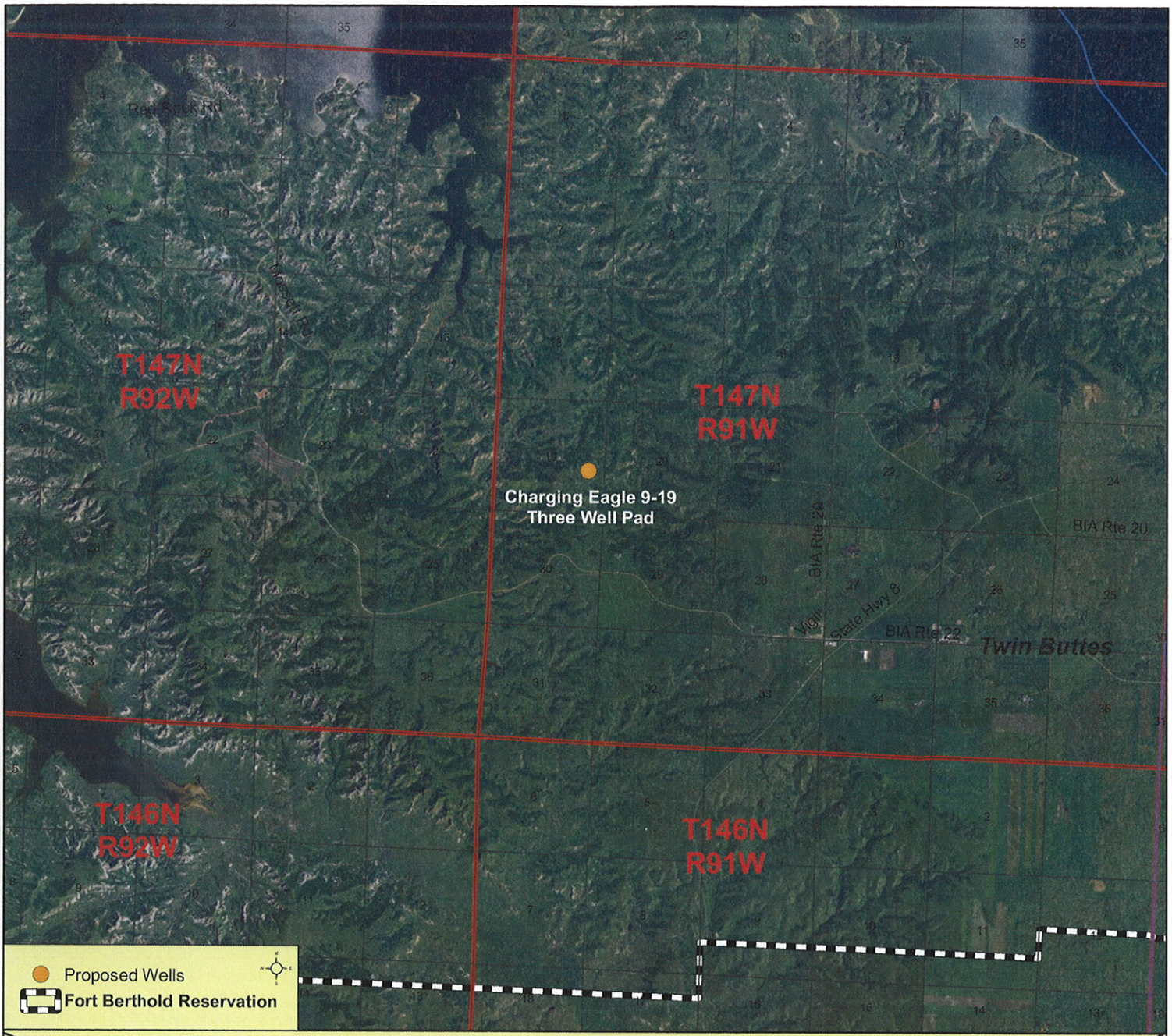
Sincerely,

Kadrmas, Lee & Jackson, Inc.

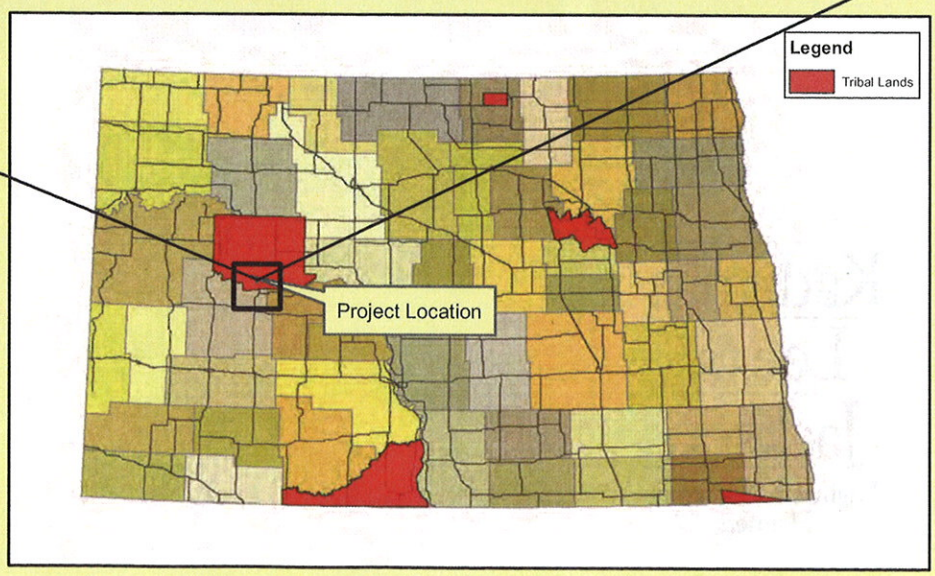
Steven Czeczok

Steve Czeczok
Environmental Planner

Enclosure (Map)



Kodiak Oil & Gas Corp.
Proposed Wells
Dunn County, ND



Charging Eagle 9-19 Well Pad Scoping Mailing List

CTitle	First	Last	Title	Department	Agency	Address	City	State	Zip
Mr.	Weldon	Louderemilk	Regional Director		Bureau of Indian Affairs	115 4th Ave. SE	Aberdeen	SD	57401
Mr.	Jeffrey	Desjarlais	Environmental Protection Specialist		Bureau of Indian Affairs	202 Main Street	New Town	SD	58763
				Environmental Management Division	Bureau of Reclamation	PO Box 1017	Bismarck	ND	58502-1017
Mr.	Thomas	Schauer	Manager	Bismarck Airports District Office	Federal Aviation Administration	2301 University Drive, Bldg 23B	Bismarck	ND	58504
Mr.	Dan	Cimarosti	Manager	ND Regulatory Office	US Army Corps of Engineers	1513 S. 12th St.	Bismarck	ND	58504
Mr.	Charles	Sorensen	Natural Resource Specialist	Riverdale Field Office	US Army Corps of Engineers	PO Box 527	Riverdale	ND	58565
			CENWO-PM-AC	Environmental Resources MRRP Plan Formulation	US Army Corps of Engineers, Omaha District	1616 Capital Avenue	Omaha	NE	68102
Ms.	Mary	Podoll	State Conservationist		Natural Resources Conservation Service	220 East Rosser Avenue	Bismarck	ND	58501
Mr.	Gerald	Paulson	Director, Transmission Linest Substations	ND Maintenance Office	US Department of Energy Western Area Power Admin.	PO Box 1173	Bismarck	ND	58502-1173
Ms.	Suzanne	Bohan	Director	NEPA Program, Region 8	US Environment Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
Mr.	Richard	Clark	Wetlands Coordinator	Region 8, EPR-EP	US Environment Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
Mr.	Jeffrey	Towner	Field Supervisor	ND Field Office	US Fish & Wildlife Service	3425 Miriam Ave.	Bismarck	ND	58501
Mr.	Irwin	Russell	Assistant State Conservationist		US Department of Agriculture	PO Box 1458	Bismarck	ND	58502-1458
Mr.	Scott	Davis	Executive Director		Indian Affairs Commission	600 E. Blvd. Ave. 1st Floor, Judicial Wing, Rm 117	Bismarck	ND	58505-0300
Mr.	Gregg	Wiche	Director	Water Resources Division	US Geological Survey	821 E. Interstate Ave.	Bismarck	ND	58501
Mr.	L. David	Glatt	Chief	Environmental Health Section Gold Seal Center	ND Department of Health	918 E. Divide Ave., 4th floor	Bismarck	ND	58501-1947
Mr.	Steve	Dyke	Conservation Section Supervisor		ND Game & Fish Department	100 Bismarck Expressway	Bismarck	ND	58501-5095
Mr.	Ed	Murphy	State Geologist		ND Geological Survey	600 E. Blvd. Avenue	Bismarck	ND	58505-0840
Mr.	Mark	Zimmerman	Director		ND Parks & Recreation Dept.	1600 E. Century Ave., Suite 3	Bismarck	ND	58503-0649
Mr.	Todd	Sando	State Engineer		ND State Water Commission	900 E. Blvd. Ave.	Bismarck	ND	58505-0850
Mr.	Scott	Hochhalter	Soil Conservation Specialist	NDSU Extension Service	Soil Conservation Committee	2718 Gateway Ave., #104	Bismarck	ND	58503
Mr.	Les	Alpert			Consolidated Telephone Company	PO Box 1408	Dickinson	ND	58602-1408
Mr.	Bill	Boyd	Construction Manager		Midcontinent Cable Company	719 Memorial Hwy	Bismarck	ND	58501
Mr.	Doug	Dixon	General Manager	Badlands Region	Montana Dakota Utilities	PO Box 1406	Williston	ND	58802-1406
					McKenzie Electric Cooperative	PO Box 649	Watford City	ND	58854-0649
				Right of Way Department	Northern Border Pipeline Company	13710 FNB Parkway, Suite 300	Omaha	NE	68154
Ms.	Mary	Massad	Manager/CEO		Southwest Water Authority	4665 2nd St. SW.	Dickinson	ND	58601
Mr.	David C.	Schelkoph	CEO		West Plains Electric Coop., Inc.	PO Box 1038	Dickinson	ND	58602-1038
			Manager		Xcel Energy	PO Box 2747	Fargo	ND	58108-2747
			Manager		Mountrail-Williams Electric Cooperative	355 Main St	New Town	ND	58763
Mr.	Larry	Gangl	District Engineer	Dickinson District	ND Department of Transportation	1700 3rd Avenue West Suite 101	Dickinson	ND	58601
Mr.	Lonny	Bagley	Field Office Manager	North Dakota Field Office	Bureau of Land Management	99 23rd Ave W, Suite A	Dickinson	ND	58601
Mr.	Mike	Nash	Assistant Field Office Manager	Division on Mineral Resources	Bureau of Land Management	99 23rd Ave W, Suite A	Dickinson	ND	58601
Mr.	Michael	Selvage	Tribal Chairman		Sisseton-Wahpeton Sioux Tribe	PO Box 509	Sisseton	SD	57262-0267
Ms.	Myra	Pearson	Tribal Chairman	Ft. Totten Tribal Business Office	Spirit Lake Sioux Tribe	PO Box 359	Ft. Totten	ND	58325
Mr.	Charles	Murphy	Tribal Chairman		Standing Rock Sioux Tribe	PO Box D	Fort Yates	ND	58538
Mr.	Joe	Gillies	Environmental Division Director	Natural Resources Department	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Elgin	Crows Breast	Tribal Historic Preservation Officer		Three Affiliated Tribes	HC3 Box 2	New Town	ND	58763
Mr.	Tex	Hall	Tribal Chairman		Three Affiliated Tribes	HC3 Box 2	New Town	ND	58763
Mr.	Merle	St. Claire	Tribal Chairman		Turtle Mountain Chippewa	PO Box 900	Belcourt	ND	58316-0900
Mr.	Damon	Williams	Tribal Attorney		Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Fred	Fox	Director	Energy Department	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Ms.	V. Judy	Brugh	Representative	Four Bears Segment	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763

Charging Eagle 9-19 Well Pad Scoping Mailing List

CTitle	First	Last	Title	Department	Agency	Address	City	State	Zip
Mr.	Arnold	Strahs	Representative	Mandaree Segment	Three Affiliated Tribes	PO Box 665	Mandaree	ND	58757
Mr.	Scott	Eagle	Representative	Shell Creek Segment	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Mervin	Packineau	Representative	Parshall/Lucky Mound Segment	Three Affiliated Tribes	PO Box 468	Parshall	ND	58770
Mr.	Frank	Whitecalf	Representative	White Shield Segment	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Barry	Benson	Representative	Twin Buttes Segment	Three Affiliated Tribes	70879 E Ave NW	Halliday	ND	58636
Mr.	Fred	Poitra		Game and Fish Department	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Lester	Crowsheart	Director	Fort Berthold Rural Water	Three Affiliated Tribes	308 Four Bears Complex	New Town	ND	58763
Mr.	Brooks	Goodall	Operations Manager		Reservation Telephone Cooperative	PO Box 68	Parshall	ND	58770-0068
Mr.	Reinhard	Hauck	Auditor		Dunn County	PO Box 105	Manning	ND	58642
Mr.	Tim	Steffan	Chairman	Commission	Dunn County	1740 Hwy 22	Manning	ND	58642
Mr.	Christopher	Woods			Kodiak Oil & Gas Corp	1625 Broadway, Suite 250	Denver	CO	80202

Kadrmas
Lee &
Jackson
Engineers Surveyors
Planners

July 17, 2012

Jeffrey Towner
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

Re: Kodiak Oil & Gas Corp.
Charging Eagle #9-19 Three Well Pad
Fort Berthold Reservation
Dunn County, North Dakota

Dear Mr. Towner,

On behalf of Kodiak Oil & Gas Corp. (Kodiak), Kadrmas, Lee & Jackson, Inc. (KL&J) is preparing an EA (Environmental Assessment) under NEPA (the National Environmental Policy Act) for the BIA (Bureau of Indian Affairs) and BLM (Bureau of Land Management). The proposed action includes approval by the BIA and BLM for the development of a single well pad, resulting in the drilling and completion of three oil and gas wells on the Fort Berthold Reservation. The proposed well pad is proposed to be positioned in the NE¼SE¼ of Section 19, T147N, R91W, 5th P.M. and contain the following wells:

- Charging Eagle #9-19-24-4H3
- Charging Eagle #9-19-13-13H
- Charging Eagle #9-19-13-12H

Please refer to the enclosed Project Location Map.

The proposed action would advance the exploration and production of oil from the Bakken and Three Forks Pools. The well pad has been positioned to utilize existing roadways and trails for access to the extent possible. Construction of the proposed well pad and access road is scheduled to begin in late 2012/early 2013.

Intensive pedestrian resource surveys of the proposed well pad and access road were conducted on June 26, 2012 by KL&J. The purpose of these surveys was to gather site-specific data and photos with regard to botanical, biological, threatened and endangered species, eagles, and water resources. A study area of 10 acres centered on the well pad center point and a 200-foot wide access road corridor was evaluated. In addition, a 0.50 mile wide buffer around all areas of project disturbance was used to evaluate the presence of eagles and eagle nests, as survey permission allowed. ***Please refer to the enclosed Study Area Map.*** Resources were evaluated using visual inspection and pedestrian transects across the site.

The BIA-facilitated EA on-site assessment of the well pad and access road was also conducted on June 26, 2012. The BIA Environmental Protection Specialist, as well as representatives from Kodiak, Juniper Archaeology, and KL&J were present. The Tribal Historic Preservation Office (THPO) was notified of the on-site and invited to

701 355 8400
128 Soo Line Drive
PO Box 1157
Bismarck, ND 58502-1157
Fax 701 355 8781
kljeng.com
Kadrmas, Lee & Jackson, Inc.

attend, however no THPO representatives were present at the on-site. During the assessment, construction suitability with respect to topography, stockpiling, drainage, erosion control, and other surface issues were considered. Well pad and access road locations were adjusted, as appropriate; to avoid conflicts with identified environmental and cultural areas of concern. Those present at the on-site assessments agreed that the selected locations, along with the minimization measures Kodiak plans to implement, are positioned in areas which would minimize impacts to sensitive wildlife and botanical resources. Best management practices (BMPs) and other commitments Kodiak has made to avoid, minimize, or mitigate impacts are listed at the end of this letter.

Threatened and Endangered Species:

The proposed well pad occurs in Dunn County, North Dakota. In Dunn County, the interior least tern, whooping crane, black-footed ferret, pallid sturgeon, and gray wolf are all listed as endangered species. The piping plover is listed as a threatened species, and the Dakota skipper and Sprague's pipit are listed as a candidate species. Dunn County also contains designated critical habitat for the piping plover. None of these species were observed during the field surveys or on-site assessments.

Whooping cranes use shallow, seasonally and semi-permanently flooded palustrine (marshy) wetlands for roosting, and various cropland and emergent wetlands for feeding. They typically prefer wetlands that contain shallow open water and areas where their visibility is not impeded by tall vegetation and other obstructions. A seasonal/temporary wetland and a smaller temporary wetland occur west of the southern extents of the access road near BIA 22 Roadway. These wetlands did not exhibit the presence of water during the survey. They did, however, possess preferred habitat characteristics favored by whooping cranes, being seasonal wetlands with short vegetation and good visibility. The proposed project area is located in the Central Flyway for migratory birds. The proposed Charging Eagle #9-19 three well pad is located within the corridor in which 75 percent of confirmed whooping crane sightings have occurred. Whooping cranes traveling through the area may alter their flight and landing patterns to avoid disturbances related to oil and gas developments. However, it is believed that there are still large, undeveloped areas on the Fort Berthold Reservation in which whooping cranes could land to rest while migrating. Therefore, the proposed project may affect but is not likely to adversely affect the whooping crane. The proposed project is not likely to impact potential habitat. Per USFWS recommendations on previous projects of a similar nature, if a whooping crane is sighted within one-mile of the well site or associated facilities while under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.

Suitable habitat for the interior least tern and critical habitat for the piping plover are largely associated with the shoreline of Lake Sakakawea. Potential habitat for these

species exists approximately 1.75 miles northwest of the proposed site at the nearest point, or approximately 2.8 miles following the shortest drainage pattern to the Lake. The well pad and access road are located on upland areas consisting of rangeland with Lake Sakakawea and its shoreline located approximately 420 feet lower in elevation than the well pad location. The distance from the shoreline and topographic features of the area should assist in providing sight and sound buffers for shoreline-nesting birds.

Suitable habitat for the pallid sturgeon is found within Lake Sakakawea, located about 2.8 miles away following the shortest drainage pattern to the Lake.

The proposed project's location in relation to the Lake makes the potential for accidentally released fluids reaching the Lake possible but unlikely. Storage tanks and the heater/treater would be surrounded by an impermeable berm that would act as secondary containment to guard against accidental release of fluids from the site. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. Kodiak would institute a third party density test of soils at the well pad to ensure site stabilization. In addition, solidification of drill cuttings before placement in the pit and the reinforced lining of the cuttings pit would diminish the potential for pit leaching. Where BIA determines necessary, pit spoils and topsoil stockpiles would be used to divert drainage outside of the fill slopes. Due to the implementation of secondary containment measures and the cuttings pit parameters, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Therefore, the proposed project may affect but is not likely to adversely affect the interior least tern, pallid sturgeon, or piping plover. The proposed project is not likely to impact critical habitat for the piping plover.

The black-footed ferret historically could be found throughout the Rocky Mountains and Great Plains. Preferred habitat for the black-footed ferret includes areas around prairie dog towns, as ferrets rely on prairie dogs for food and live in prairie dog burrows. Black-footed ferrets require at least an 80-acre prairie dog town to survive. In North Dakota, the southwestern corner of the state provided suitable habitat and supported the black-footed ferret. However, this species has not been confirmed in North Dakota for over 20 years and is presumed extirpated. The proposed project is not located near any active prairie dog towns. Due to a lack of preferred habitat characteristics, the proposed project is anticipated to have no effect on the black-footed ferret.

Historically, the gray wolf's preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. While the gray wolf is not common in North Dakota, occasionally individual wolves do pass through the state. The project site is located far from other known wolf populations. No wolves or indications of wolves were observed during the field survey. Due to a lack of preferred habitat characteristics and known populations, the proposed project is anticipated to have no effect to the gray wolf.

The preferred habitat for the Dakota skipper consists of undisturbed, flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. The proposed site contained mixed grass prairie that could contain potential Dakota skipper habitat. The field survey did occur when Dakota skippers would be visible in their adult stage. However, no Dakota skippers were observed. Due to the presence of potential habitat for the Dakota skipper within the project area, the proposed action may impact individuals or habitat through earthwork associated with construction activities, habitat conversion, and/or fragmentation. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

The Sprague's pipit is a small songbird found in prairie areas throughout the Northern Great Plains. Preferred habitat includes rolling, upland mixed-grass prairie habitat with high plant species diversity. The Sprague's pipit breeds in habitat with minimal human disturbance. The proposed well pad and access road occur on areas of mixed grass prairie. This area could contain the upland mixed-grass prairie necessary to support the Sprague's pipit. No Sprague's pipit were observed during the field survey. However, due to the presence of potential habitat for the Sprague's pipit within the project area, the proposed action may impact individuals or habitat. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

Botanical Resources:

The Charging Eagle #9-19 well pad and access road study area consisted of native and non-native upland grasses and shrubs. Dominant vegetation along the southern half of access road consisted of Kentucky bluegrass (*Poa pratensis*) and crested wheatgrass (Agropyron cristatum). The northern half of the access road study area and well pad was dominated by western wheatgrass (*Agropyron smithii*), green needle (Stipa viridula), and Kentucky bluegrass (Poa pratensis). Patches of Green ash (*Fraxinus pennsylvanica*) and silver buffaloberry (*Shepherdia argentea*) occurred on the well pad and access road as well as in adjacent wooded draws. Burr oak (Quercus macrocarpa) also dominated in adjacent wooded draws. Dominant forbes on the oil pad consisted of golden rod (*Solidago mollis*), purple coneflower (*Echinacea angustifolia*), and poison ivy (Toxicodendron rydbergii). Leafy spurge (Euphorbia esula) was found in a small patch within the well pad study area. Two seasonal/temporary wetlands occurred west of the access road near BIA 22 Roadway.

Biological Resources:

The well site contained suitable habitat for mule deer (*Odocoileus hemionus*), whitetail deer (*Odocoileus virginianus*), sharp-tailed grouse (*Tympanuchus phasianellus*), ring-necked pheasant (*Phasianus colchicas*), raptors, song birds, coyote (*Canis latrans*), red fox (*Vulpes vulpes*), Eastern cottontail rabbit (*Sylvilagus floridanus*), wild turkey (*Meleagris gallopavo*), jackrabbit (*Lepus townsendii*), and

North American porcupine (*Erethizon dorsatum*). The following wildlife and migratory bird species were observed during the field survey and on-site assessment: two red-tailed hawks (*Buteo jamaicensis*), one turkey vulture (*Cathartes aura*), five red wing blackbirds (*Agelaius phoeniceus*), six field sparrows (*Spizella pusilla*), four vespar sparrows (*Pooecetes gramineus*), ten cowbirds (*Molothrus ater*), and pocket gopher (*Geomys bursarius*) mounds.

During drilling activities, the noise, movements, and lights associated with having a drilling rig on-site are expected to deter wildlife from entering the area. In addition, the cuttings pit would only be used for solid material storage, and it is expected that very minimal free fluid would be present in the pit. The absence of exposed liquids in the pit would minimize its attractiveness to wildlife. Immediately after the drilling rig leaves a location, the cuttings pit would be netted with State and Federal-approved nets. These would remain in place with proper maintenance until the closure of the cuttings pit.

In addition, design considerations would be implemented to further protect against potential habitat degradation. The storage tanks and heater/treater would be surrounded by an impermeable berm that would act as secondary containment to guard against possible spills. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. An 18-inch berm would be constructed along the northern side of the well pad to prevent runoff. The northeast corner of the well pad would be rounded, armored with rock riprap, and brought in 75 feet to further avoid impacts to the drainage near the corner. All electrical lines/utilities would be buried along the access road corridor. Where BIA determines necessary, pit spoil and topsoil stockpiles would be used to divert drainage outside of the fill slopes. Due to the implementation of secondary containment measures and the cuttings pit parameters, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. BMPs to minimize wind and water erosion of soil resources, as well as implementation of a semi-closed loop system during drilling, would also be put into practice.

All efforts would be made to complete construction outside the migratory bird nesting season (February 1 through July 15) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that construction needs to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests would be conducted by a qualified biologist within five days prior to the initiation of all construction activities or the project areas would be mowed/grubbed the previous fall and throughout the nesting/breeding season to deter birds from nesting in project areas. The findings of the pre-construction surveys would be reported to BIA.

Additionally, all reasonable, prudent, and effective measures to avoid the taking of migratory bird species would be implemented during the construction and operation phases. These measures would include: the use of suitable mufflers on all internal

combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining open pits and ponds that are free from oil, and netting cuttings pits with netting that has a maximum mesh size of 1.5 inches.

Eagles:

Dr. Anne Marguerite Coyle of Dickinson State University has completed focused research on golden eagles and maintains a database of golden eagle nest sightings. ***Please refer to enclosed Eagle Habitat and Recorded Nest Map.*** According to Dr. Coyle's information (last updated in 2010), the closest recorded golden eagle nest is located approximately 3.9 miles north of the proposed well site.

During the field surveys, no evidence of eagles or their nests were observed within 0.5 miles of the proposed site. If an eagle nest is sighted within 0.5 miles of the project area during construction, construction activities shall cease and the USFWS shall be notified for advice on how to proceed.

Water Resources:

The Charging Eagle #9-19 well pad is situated on an upland area. The majority of the well pad drains to the northeast into a wooded drainageway. The drainage extends east from the pad site for 0.1 miles, to the northeast for 0.3 miles, then converges with an intermittent stream known as East Fork and meanders north/northwest for 2.1 miles until entering Bear Creek Bay in Lake Sakakawea. The nearest wooded draw is located in the northeast corner the well pad. Culverts would be installed as necessary to maintain natural drainage of the surrounding area. The two identified wetlands were delineated during the onsite survey. It is anticipated that the access road will avoid these wetlands during construction. If work is to take place within the wetlands, the US Army Corps of Engineers will be coordinated with for potential permitting. ***Please refer to the enclosed Drainage Map.***

Best Management Practices:

BMPs for soil and wind erosion would be implemented as needed to include over-seeding of cut areas and spoil piles, silt fences, and/or mats. Any woody vegetation removed during site construction would be chipped and mixed with topsoil prior to removal, and incorporated into topsoil stockpiles. The alteration of drainages near the proposed well pad would be avoided. The north side of the pad would have an 18-inch berm installed to prevent run-off from leaving the pad and, where BIA determines necessary, pit spoil and topsoil stockpiles would be used to divert drainage outside of the fill slopes. The northeast corner will be rounded and brought in approximately 75-feet to avoid the drainage. Rock riprap will also be added to the northeast drainage to prevent soil erosion and further armor the corner providing stability. Culverts to maintain drainage along the access road would also be installed

where needed. Upon well completion, a portion of the well pad would be reclaimed to further avoid environmental areas of concern.

Summary of Commitments to Avoid or Minimize Impacts:

In an effort to minimize the potential environmental effects associated with the proposed project, Kodiak would also implement the following measures into the development of these sites:

- A semi-closed loop system would be used during drilling. Drill cuttings would be solidified before being placed in the reinforced lined cuttings pit. The reinforced lining of the cuttings pit would have a minimum thickness of 20 mils to prevent seepage and contamination of underlying soil. Any minimal fluids remaining in drill cuttings pit would be removed and disposed of in accordance with BLM and North Dakota Industrial Commission (NDIC) rules and regulations. All liquids from drilling would be transported off-site. The drill cuttings pit would be reclaimed to BLM and NDIC standards immediately upon finishing completion operations.
- Prior to its use, the cuttings pit would be fenced on the non-working sides. The access side would be fenced and netted immediately following drilling and completion operations in order to prevent wildlife and livestock from accessing the pit.
- All efforts would be made to complete construction outside the migratory bird nesting season (February 1 through July 15) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that construction needs to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests would be conducted by a qualified biologist within five days prior to the initiation of all construction activities or the project areas would be mowed/grubbed the previous fall and throughout the nesting/breeding season to deter birds from nesting in project areas. The findings of the pre-construction surveys would be reported to BIA.
- Measures implemented during construction to avoid the taking of migratory bird species would include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining open pits and ponds that are free from oil, and netting cuttings pits with netting that has a maximum mesh size of 1.5 inches.
- If a whooping crane is sighted within one-mile of the well site or associated facilities while under construction, all work would cease within one-mile of that part of the project and the USFWS would be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.
- The storage tanks and heater/treater would be surrounded by an impermeable berm that would act as secondary containment to guard against possible spills. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. BMPs would be

implemented to minimize wind and water erosion of soil resources and a semi-closed loop system would be used during drilling.

- Kodiak would institute density test of soils at the well pad to ensure a requirement of > 95% soil compaction for site stabilization. This compaction is to be confirmed by a third party with a Soil Proctor test. This stabilizes fill areas so that there are not weight concerns that would normally occur in "non-engineered" fills.
- An 18-inch high berm would be installed along the northern side of the well pad to prevent runoff from leaving the pad and entering the adjacent drainage. The berm will tie into the cut.
- The northeast corner of the well pad will be brought in 75 feet and rounded to avoid impacting the drainage.
- The drainage near the northeast corner of the well pad would be armored with rock riprap to prevent erosion and stabilize the soil.
- All electrical/utility lines would be buried along the access road corridor.

To ensure that social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed development of this project, pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We ask your assistance in identifying any property or resources that you own, manage, oversee, or otherwise value that might be adversely impacted. We are also interested in existing or proposed developments you may have that should be considered in connection with the proposed project. Any information that might help us in our study would be appreciated.

It is requested that any comments or information be forwarded to our office on or before **August 17, 2012.** We request your comments by that date to ensure that we will have ample time to review them and incorporate them into the necessary environmental documentation.

If you would like further information regarding this project, please contact me at (701) 355-8452. Thank you for your cooperation.

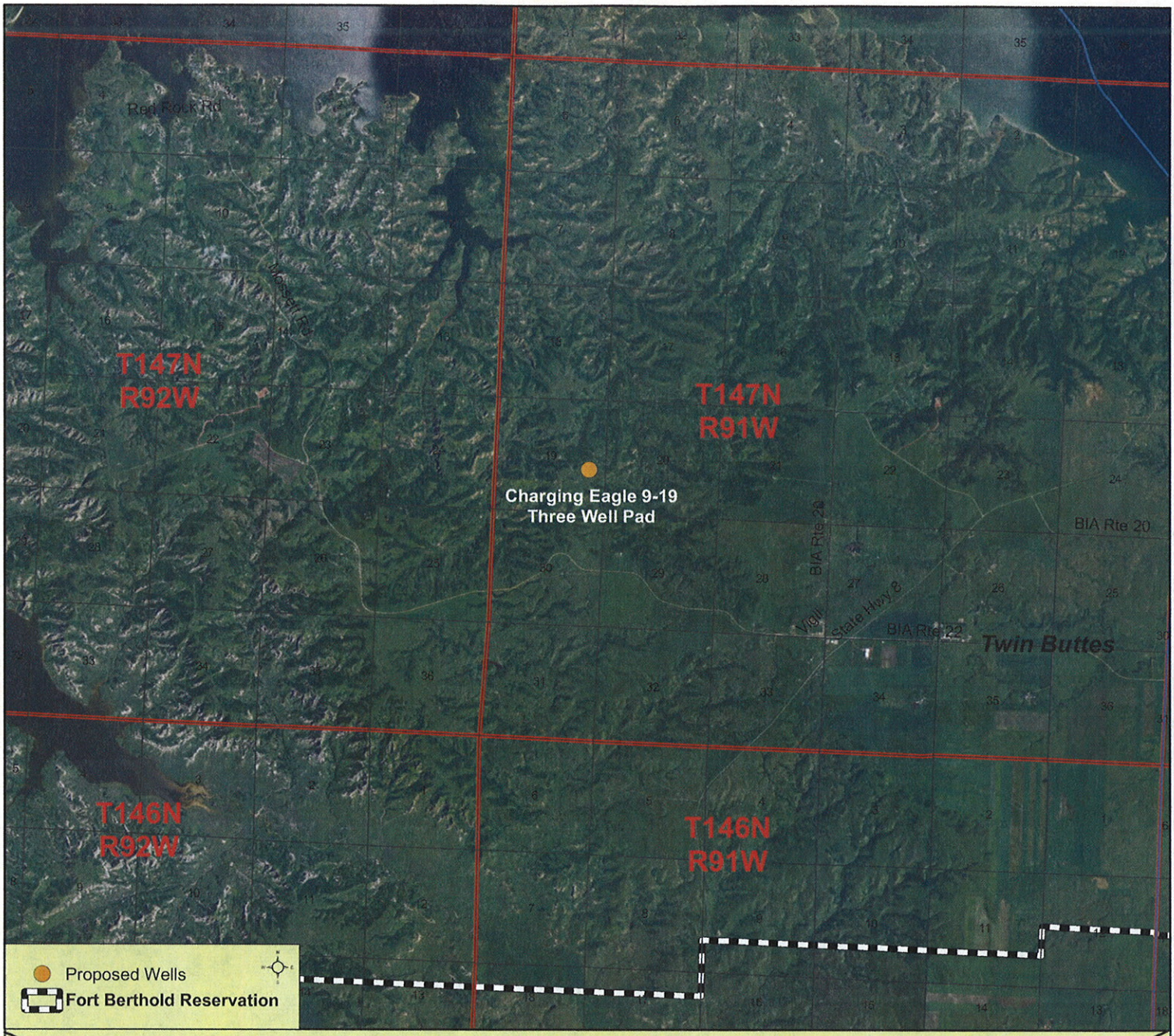
Sincerely,

Kadrmas, Lee & Jackson, Inc.

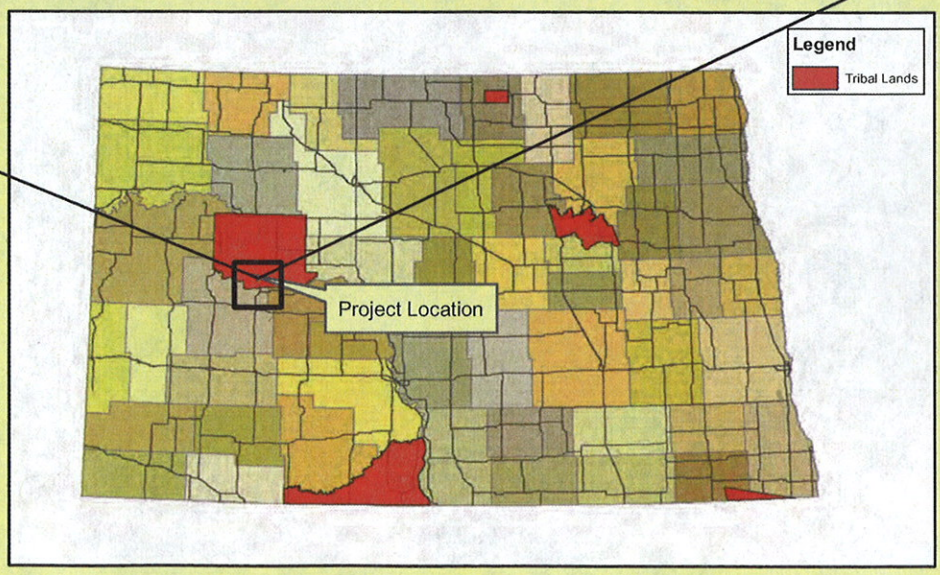
Steve Czeczok
Environmental Planner

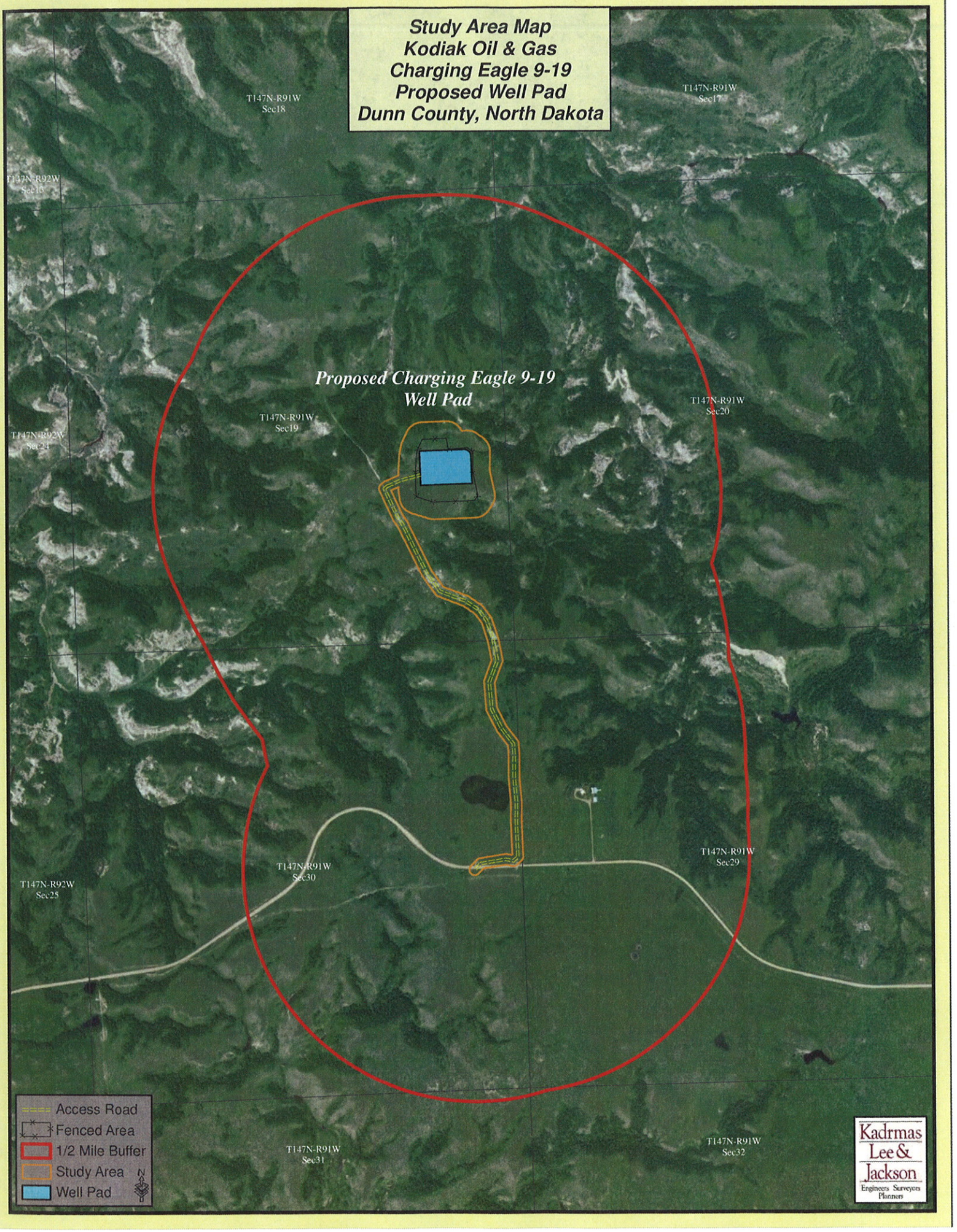
Enclosures (Maps)

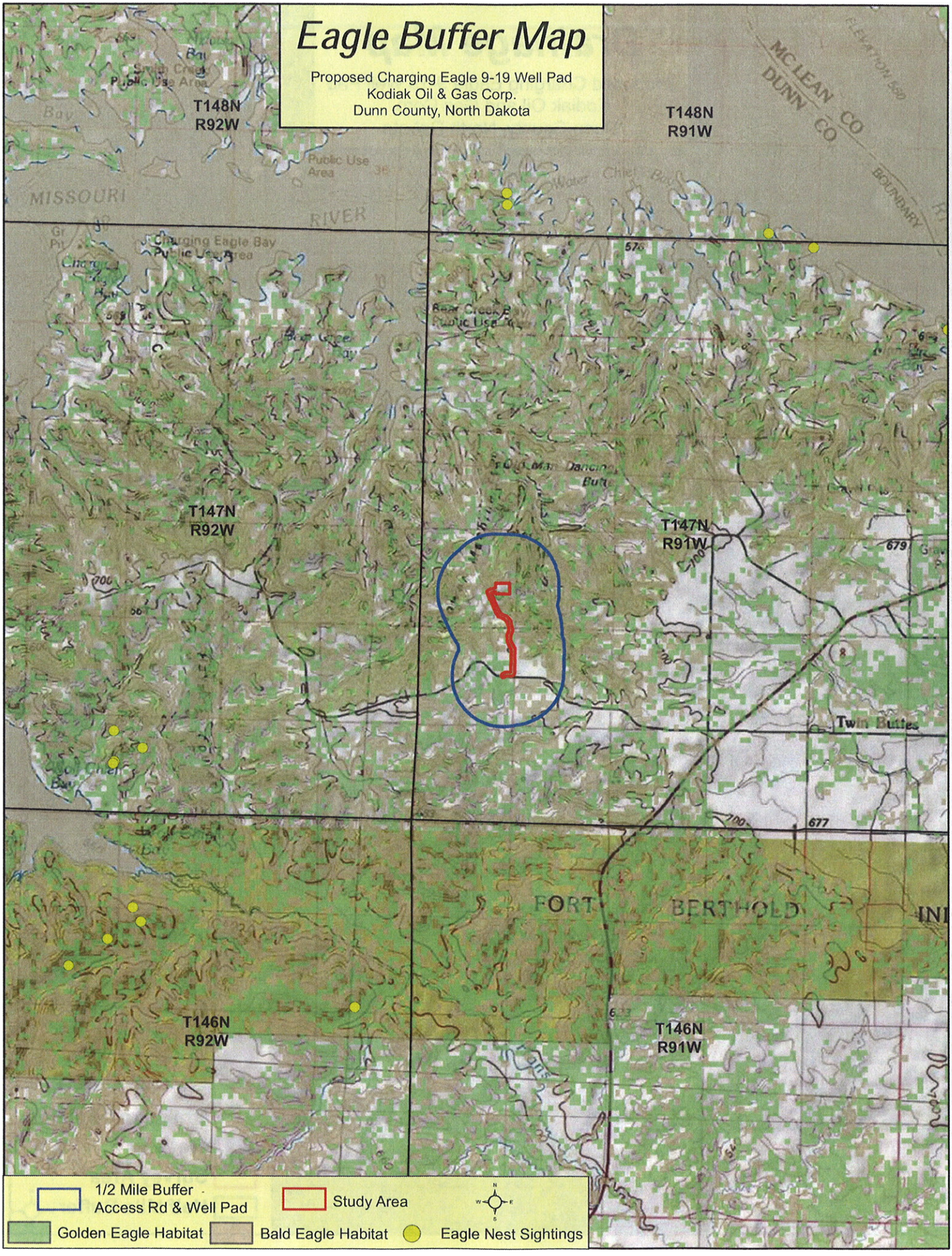
Kadrmas Lee & Jackson
Engineers Surveyors Planners



Kodiak Oil & Gas Corp.
Proposed Wells
Dunn County, ND

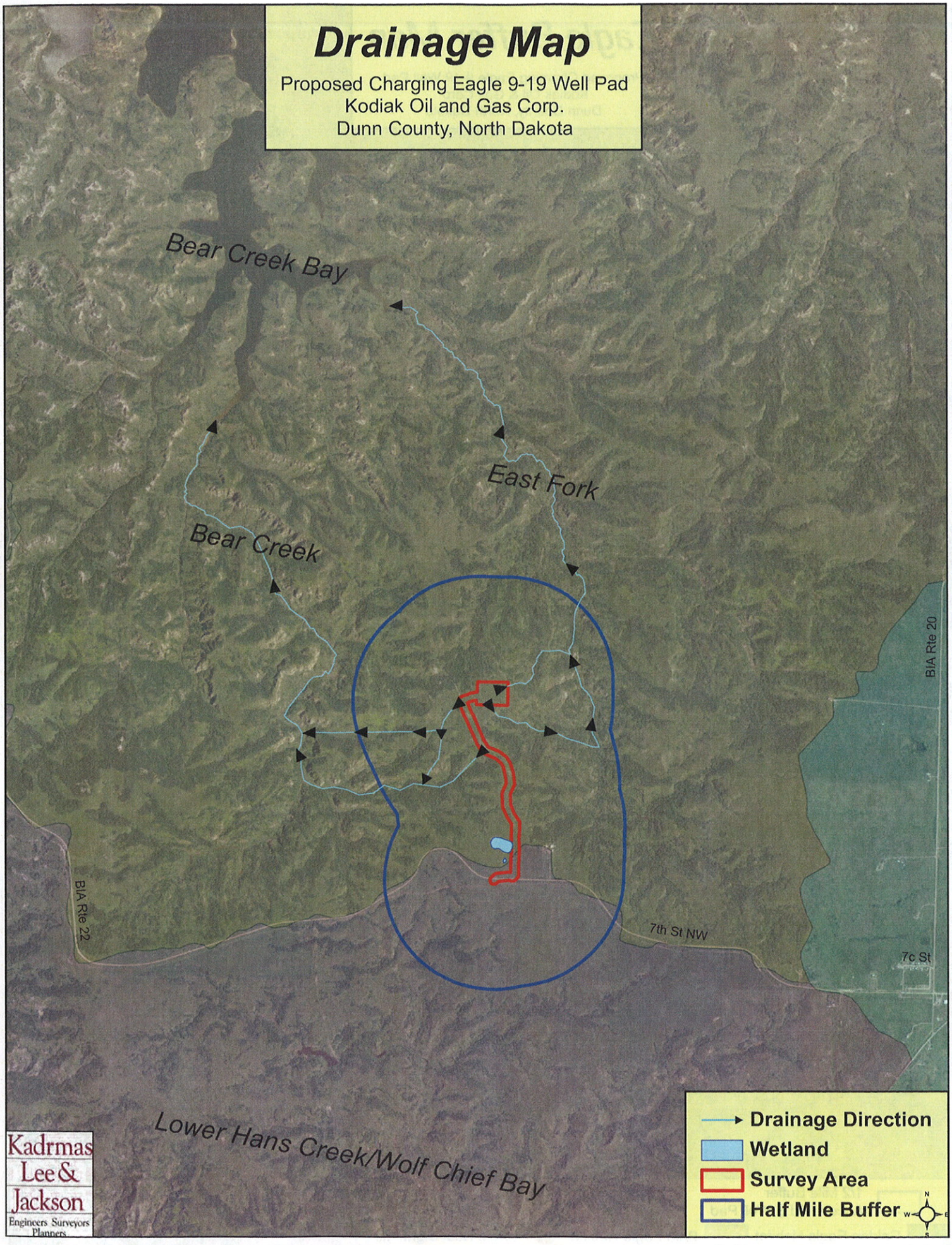



Study Area Map
Kodiak Oil & Gas
Charging Eagle 9-19
Proposed Well Pad
Dunn County, North Dakota
T147N-R91W
Sec18
T147N-R91W
Sec17
T147N-R92W
Sec13
Proposed Charging Eagle 9-19
Well Pad
T147N-R91W
Sec19
T147N-R91W
Sec20
T147N-R92W
Sec24
T147N-R91W
Sec30
T147N-R91W
Sec29
T147N-R92W
Sec25
T147N-R91W
Sec31
T147N-R91W
Sec32
Access Road
Fenced Area
1/2 Mile Buffer
Study Area
Well Pad
N
Kadrmas
Lee &
Jackson
Engineers Surveyors
Planners


Eagle Buffer Map
Proposed Charging Eagle 9-19 Well Pad
Kodiak Oil & Gas Corp.
Dunn County, North Dakota
T148N
R92W
T148N
R91W
T147N
R92W
T147N
R91W
T146N
R92W
T146N
R91W
MISSOURI
RIVER
MCLEAN CO
DUNN CO
Twin Buttes
FORT BERTHOLD
1/2 Mile Buffer
Access Rd & Well Pad
Study Area
Golden Eagle Habitat
Bald Eagle Habitat
Eagle Nest Sightings

Drainage Map

Proposed Charging Eagle 9-19 Well Pad
Kodiak Oil and Gas Corp.
Dunn County, North Dakota



Kadrmas Lee & Jackson
Engineers Surveyors Planners

Appendix B

Agency Scoping Responses

Kodiak Oil and Gas (USA), Inc.

Drilling of Charging Eagle #9-19-24-4H3/Charging Eagle #9-19-13-13H/Charging Eagle #9-19-13-12H
Oil & Gas Wells (Three Wells on a Single Well Pad)
List of Scoping Responses

Federal

U.S. Department of Agriculture – Natural Resources Conservation Service
U.S. Department of the Army – Corps of Engineers, Garrison Dam/Lake Sakakawea Project
U.S. Department of the Army – Corps of Engineers, North Dakota Regulatory Office
U.S. Department of the Army – Corps of Engineers, Omaha District Office
U.S. Department of the Interior – Bureau of Reclamation
U.S. Department of the Interior – Fish and Wildlife Service

State

North Dakota Department of Health
North Dakota Game and Fish Department
North Dakota State Water Commission

Local

Consolidated Telecom

Miscellaneous Correspondence

(Access Road Right-of-Way Inclusion Email) KL&J to U.S. Department of Interior – Bureau of Indian Affairs, Aberdeen Regional Office

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
P.O. Box 1458
Bismarck, ND 58502-1458

August 7, 2012

Grady Wolf
Kadrmas, Lee & Jackson
128 Soo Line Drive
PO Box 1157
Bismarck, ND 58502-1157

RE: Kodiak Oil a7 Gas Corp.
Charging Eagle #9-19 Three Well Pad
Dunn County, ND

Dear Mr. Wolf:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated July 18, 2012, concerning the Charging Eagle #9-19 three wells on one well pad in Dunn County, North Dakota.

Important Farmlands - NRCS has a major responsibility with Farmland Protection Policy Act (FPPA) in documenting conversion of farmland (i.e., prime, statewide, and local importance) to non-agricultural use when the project utilizes federal funds. It appears your proposed project is not supported by federal funding; therefore, FPPA does not apply and no further action is needed.

Wetlands – The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose of, or to have the effect of, making agricultural production possible, loss of USDA benefits could occur. NRCS has developed the following guidelines for the installation of buried utilities. If these guidelines are followed, the impacts to the wetland(s) will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements: 1) Disturbance to the wetland(s) must be temporary, 2) no drainage of the wetland(s) is allowed (temporary or permanent), 3) mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained, 4) temporary side cast material must be placed in such a manner not to be dispersed in the wetland, and 5) all trenches must be backfilled to the original wetland bottom elevation.

NRCS would recommend that impacts to wetlands be avoided. If the alignment of the project requires passage through a wetland, NRCS can complete a certified wetland determination, if requested by the landowner/operator.

If you have additional questions pertaining to FPPA, please contact Steve Sieler, State Soil Liaison, NRCS, Bismarck, North Dakota (701-530-2019).

Sincerely,

WADE D. BOTT
State Soil Scientist

Steve Czeczok

From: Sorensen, Charles G NWO <Charles.G.Sorensen@usace.army.mil>
Sent: Monday, July 30, 2012 2:22 PM
To: Steve Czeczok
Subject: Kodiak Oil and Gas Corp. Charging Eagle well pad location (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Steve

Thank you for letting the U.S. Army Corps of Engineers Garrison Dam/Lake Sakakawea Project comment on Kodiak Oil and Gas Corp. Charging Eagle well pad location within the boundaries of the Fort Berthold Indian Reservation.

At this time, the U.S. Army Corps of Engineers Garrison Dam/Lake Sakakawea Project would request that Kodiak consider and implement the following management practices during the exploration phase of the aforementioned well.

Due to the close proximity of the well location to lands managed by the U.S. Army Corps of Engineers (USACE) there is a high risk that any storm water runoff from the well locations will enter the Missouri River/Lake Sakakawea. As such, the USACE would request that Kodiak construct an impervious lined trench located on the down sloping side of each of the well pads to catch and hold any storm water runoff from the well pads. Fluids that accumulate in the trench should be pumped/removed from the trench and disposed of properly. In addition to the catch trench, the USACE also recommends that the well pad have an impervious type liner placed on the pad location prior to the construction of the pad.

As the proposed well site is adjacent to lands managed by the USACE, there exists a high possibility of contamination to the Missouri River/Lake Sakakawea from both storm water runoff as well as the possibly of oil and or salt water should the well be a producer. The possibility of contamination from both the well pad and a possible producing well on the well pad locations is a great concern to this agency. To aid in the prevention of hazardous wastes from possibly entering the Missouri River/Lake Sakakawea, the USACE would strongly recommend that a Closed Loop Drilling Method be used in the exploration phase of the well to include all drilling fluids and cuttings.

Should living quarters be established onsite it is requested that all sewage collection systems be of a closed design and all holding tanks are to be either double walled or contained in a secondary containment system. All sewage waste removed from the well site location should be disposed of properly.

Should additional fill material required for the construction of the well pad and access road that said material must be obtained from a private supplier, whose material has been certified as being free of all noxious weeds.

Prior to the construction the well pad, all equipment associated in construction of the well pads, must be either pressure washed or air blasted to remove any existing dirt or vegetation from the machinery in an effort to prevent the transportation of noxious or undesirable vegetation onto Tribal lands as well as USACE managed lands. The cleaning of the equipment should be done prior to the equipment entering tribal lands. The same cleaning requirement should be adhered to for equipment associated with the drilling and production phase of the well also.

That no surface occupancy be allowed within ½ mile of any known Threatened or Endangered Species critical habitat.

If possible, all construction activities should occur between August 15 and April 1.

Cumulative impacts are often overlooked, in the completion of NEPA compliance. To adequately assess cumulative impacts, the following activities should consider.

a. Has the project area already been degraded, and if so, to what extent?
b. Are other ongoing activities in the area causing impacts, and if so, to what extent?
c. What is the likelihood that this project will lead to a number of associated projects?
d. What are the trends for activities and impacts in the area?

If you have any questions regarding the above recommendations, please feel free to contact me

Charles Sorensen
Natural Resource Specialist
U.S. Army Corps of Engineers
Garrison Dam/Lake Sakakawea Project
Riverdale, North Dakota Office
(701) 654 7411 ext 232

Classification: UNCLASSIFIED
Caveats: NONE

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

REPLY TO
ATTENTION OF

July 19, 2012

North Dakota Regulatory Office

Kadrmas Lee and Jackson
Attn: Steve Czeczok
128 Soo Line Drive
PO Box 1157
Bismarck, ND 58502-1157

Dear Mr. Czeczok:

This is in response to your letter dated July 18, 2012 on behalf of Kodiak Oil and Gas Corporation, under the National Environmental Policy Act for the Bureau of Indian Affairs and Bureau of Land Management, requesting U.S. Army Corps of Engineers (Corps) comments concerning the development of a single well pad, resulting in the drilling and completion of three oil and gas wells located on the Fort Berthold Reservation in Dunn County, North Dakota.

The Charging Eagle #9-19-24-4H3, 9-19-13-13H, and 9-19-13-12H are proposed to be located in the northeast quarter of the southeast quarter Section 19, Township 147 North, Range 91 West.

Corps Regulatory Offices administer Section 10 of the Rivers and Harbors Act (Section 10) and Section 404 of the Clean Water Act (Section 404). Section 10 regulates work in or affecting navigable waters. This would include work over, through, or under Section 10 waters. Section 10 waters in North Dakota are the Missouri River (including Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of the railroad track in Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. Section 404 regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but is not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

For any proposed well where the well line and/or bottom hole is under or crosses under Lake Sakakawea, regardless of depth, we require that project proponent submit a completed permit application (ENG Form 4345) to the Corps. Include a location map and description of all work associated with the proposal, i.e., well bore, road construction, utility lines, etc. Send the completed application to the U.S. Army Corps of Engineers; North Dakota Regulatory Office; 1513 South 12th Street; Bismarck, North Dakota; 58504.

Printed on Recycled Paper

If we can be of further assistance or should you have any questions regarding our program, please do not hesitate to contact this office by letter of phone at (701) 255-0015.

Sincerely,

Sam Werner
Acting Regulatory Program Manager
North Dakota

Enclosure
ENG Form 4345

CF w/o encl
EPA Denver (Brent Truskowski)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT *(33 CFR 325)*	OMB APPROVAL NO. 0710-0003 EXPIRES: 31 August 2012

Public reporting burden for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME: First - Middle - Last – Company – E-mail Address –	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required) First - Middle - Last – Company – E-mail Address –
6. APPLICANT'S ADDRESS. Address - City – State – Zip – Country –	9. AGENT'S ADDRESS Address - City – State – Zip – Country –
7. APPLICANT'S PHONE NOs. W/AREA CODE. a. Residence b. Business c. Fax	10. AGENT'S PHONE NOs. W/AREA CODE a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____
APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable) Address
15. LOCATION OF PROJECT Latitude: °N Longitude: °W	City - State – Zip -

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality
Section – Township – Range –

17. DIRECTIONS TO THE SITE

18. Nature of Activity (Description of project, include all features)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

Or

Liner Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? Yes ☐ No ☐ IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

Address –

City – State – Zip –

26. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT _____ DATE _____ SIGNATURE OF AGENT _____ DATE _____

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Instructions for Preparing a
Department of the Army Permit Application

Blocks 1 through 4. To be completed by Corps of Engineers.

Block 5. Applicant's Name. Enter the name and the E-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked Block 5.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant Telephone Number(s). Please provide the number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed, if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by applicant, if an agent is to be employed.

Block 12. Proposed Project Name or Title. Please provide name identifying the proposed project, e.g., Landmark Plaza, Burned Hills Subdivision, or Edsall Commercial Center.

Block 13. Name of Waterbody. Please provide the name of any stream, lake, marsh, or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Project Street Address. If the proposed project is located at a site having a street address (not a box number), please enter it here.

Block 15. Location of Proposed Project. Enter the latitude and longitude of where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

Block 16. Other Location Descriptions. If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality that the site is located in.

Block 17. Directions to the Site. Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide description of the proposed project location, such as lot numbers, tract numbers, or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known

Block 18. Nature of Activity. Describe the overall activity or project. Give appropriate dimensions of structures such as wing walls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

Block 19. Proposed Project Purpose. Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

Block 20. Reasons for Discharge. If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

Block 21. Types of Material Being Discharged and the Amount of Each Type in Cubic Yards. Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

Block 22. Surface Areas of Wetlands or Other Waters Filled. Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked Block 22.

Block 23. Description of Avoidance, Minimization, and Compensation. Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Also provide a brief description of how impacts to waters of the United States will be compensated for, or a brief statement explaining why compensatory mitigation should not be required for those impacts.

Block 24. Is Any Portion of the Work Already Complete? Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square feet). If the work was done under an existing Corps permit, identity the authorization, if possible.

Block 25. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site. List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

Information regarding adjacent landowners is usually available through the office of the tax assessor in the county or counties where the project is to be developed.

Block 26. Information about Approvals or Denials by Other Agencies. You may need the approval of other federal, state, or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

Block 27. Signature of Applicant or Agent. The application must be signed by the owner or other authorized party (agent). This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8½ x11 inch plain white paper (electronic media may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.**

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

REPLY TO
ATTENTION OF

July 31, 2012

Planning, Programs, and Project Management Division

Kadrmas Lee & Jackson
Attention: Mr. Steve Czeczok
128 Soo Line Drive
P.O. Box 1157
Bismarck, North Dakota 58502-1157

Dear Mr. Czeczok:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated July 18, 2012, regarding Kodiak Oil & Gas Corp's proposed development, drilling and completion of three oil and gas wells on one well pad on the Fort Berthold Reservation in Dunn County, North Dakota. The Corps offers the following comments:

As a member of the Working Group established by Executive Order (EO) #13605 by President Barack Obama, the Departments of Interior and Defense support the safe discovery and development of domestic natural oil and gas resources and have the right to regulate such activities on public and Indian trusts lands. Potential degradation to natural resources and the impact that this activity may have on humans should be considered in order to responsibly develop our oil and gas resources. The Working Group must address other members concerns, including the Corps, to ensure our natural resources and public health and safety is preserved. The Corps requests that full consideration be given in the Environmental Assessment (EA) to the following comments.

The Corps requests the BIA complete a thorough cumulative impact evaluation this action would have when combined with other past, present and reasonably foreseeable actions regarding oil and gas development on the Fort Berthold Reservation (40 CFR §1508.7). Since August of 2009, the Omaha District has received scoping letters requesting comments on the construction of over 500 wells. Many of these wells are very close to Lake Sakakawea, which is managed by the Corps. From a cumulative impacts perspective, the risk of adverse cumulative impacts to Lake Sakakawea may increase with each well constructed within such a close proximity to the lake. Setting back wells and locating them away from drainages that connect directly to the lake should be considered in the alternative analysis.

The Corps is aware of recent reports that describe environmental impacts associated with the use of open drilling waste pits in North Dakota. These open pits may be susceptible to flooding, which may threaten drinking water supplies, wildlife, soil and other water resources. Due to the proximity of the proposed wells to Lake Sakakawea, a significant drinking water resource, the Corps encourages the applicant to use a complete closed loop drilling system. A complete closed

Printed on Recycled Paper

loop drilling system may reduce or eliminate the discharge of toxic drilling wastes and their potential negative impacts to the environment.

The Corps is also aware that the Bureau of Indian Affairs is currently developing a programmatic EA for oil and gas development on the Fort Berthold Reservation. The Corps requests Kodiak Oil & Gas Corp. include some information about the programmatic evaluation in the site specific EA. It is important for the reader to know that an overarching analysis is currently underway that will address the scale and rapid development of oil and gas wells within this region.

In addition to the comments provided above, it is recommended for Kodiak Oil & Gas Corp. to complete the following actions:

a. Your plans should be coordinated with the state water quality office in which the project is located to ensure compliance with federal and state water quality standards and regulations mandated by the Clean Water Act and administered by the U.S. Environmental Protection Agency (EPA). Please coordinate with the North Dakota Department of Health concerning state water quality programs.

b. Consult with the U.S. Fish and Wildlife Service and the North Dakota Game and Fish Department regarding fish and wildlife resources. In addition, the North Dakota State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

c. Since the proposed project does not appear to be located within Corps owned or operated lands, we are providing no floodplain or flood risk information. To determine if the proposed project may impact areas designated as a Federal Emergency Management Agency special flood hazard area, please consult the following floodplain management office:

North Dakota State Water Commission
Attention: Jeff Klein
900 East Boulevard Avenue
Bismarck, North Dakota 58505-0850
jjkein@nd.gov
Telephone: 701-328-4898
Fax: 701-328-3747

Finally, any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information. Please review the information on the provided website

(http://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm) to determine if this project requires a 404 permit. For a detailed review of permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers
Bismarck Regulatory Office
Attention: CENWO-OD-R-ND/Cimarosti
1513 South 12th Street
Bismarck, North Dakota 58504

I am forwarding a copy of this letter to the Chairman of the Three Affiliated Tribes, Chairman Tex Hall; Three Affiliated Tribes Director of Game and Fish, Mr. Fred Poitra; Three Affiliated Tribes Energy Director, Mr. Fred Fox; Three Affiliated Tribes Natural Resource Director, Ms. Annette Young Bird; Three Affiliated Tribes Tribal Historic Preservation Officer, Mr. Elgin Crows Breast all located at 404 Frontage Road, New Town, North Dakota 58763. If you have any questions, please contact Mr. John Shelman of my staff at (402) 995-2708.

Sincerely,

Brad Thompson
Chief, Environmental Resources and Missouri River Recovery Program Plan Formulation Section

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA, NEBRASKA 68102-4901
PM-AC
OFFICIAL BUSINESS

Kadrmas Lee & Jackson
Attention: Mr. Steve Czeczok
128 Soo Line Drive
P.O. Box 1157
Bismarck, North Dakota 58502-1157

58502115757

United States Department of the Interior

BUREAU OF RECLAMATION
Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502

TAKE PRIDE® IN AMERICA

IN REPLY REFER TO:

DK-5000
ENV-6.00

AUG 6 2012

Steve Czeczok
Environmental Planner
Kadrmas, Lee & Jackson
P.O. Box 1157
Bismarck, ND 58502-1157

Subject: Solicitation for Kodiak Oil & Gas for the Proposed Construction of Three, Oil and Gas Wells on a Single Well Pad on the Fort Berthold Indian Reservation in Dunn County, North Dakota

Dear Mr. Czeczok:

This letter is written to inform you that we received your letter of July 18, 2012, and the information and map of your proposed well pad site has been reviewed by Bureau of Reclamation staff.

The project is proposed for:

NE¼ SE¼ Section 19, T. 147 N., R. 91 W., Hay Flat, ND - Dunn County

There are no Federal Reclamation facilities within 1½ miles of the proposed project (see map). However, please take note that municipal, rural, and industrial water lines commonly follow roads, as in this case.

Should you need to cross a Fort Berthold Rural Water System pipeline while accessing your proposed project or should you need to relocate a Rural Water System pipeline, please contact our engineer Tom Thompson, as Reclamation requests that you provide us an opportunity to review the designs for any relocations or crossings of Federal Fort Berthold Rural Water lines.

Since Reclamation is the lead Federal agency for the Fort Berthold Rural Water System, we request that any work planned on the reservation be coordinated with the Fort Berthold Rural Water Director, Three Affiliated Tribes, 308 4 Bears Complex, New Town, North Dakota 58763. Further, Tom Thompson, will be your Reclamation engineering contact. For your convenience, we have included the specifications sheet for pipeline crossings as an initial example.

Thank you for providing your project information and opportunity to comment on your proposal. If you have any further environmental questions, please contact me at 701-221-1287 or for engineering questions Tom Thompson, Civil Engineer, at 701-221-1260.

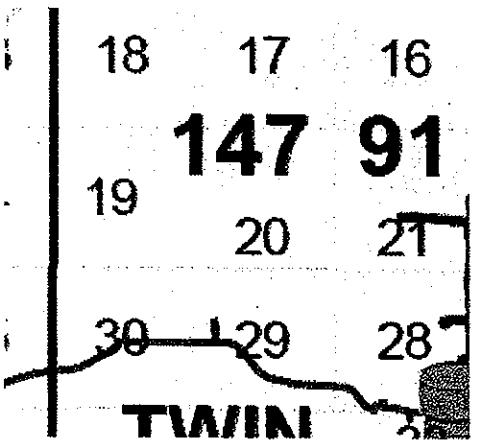
Sincerely,

Kelly B. McPhillips
Environmental Specialist

Enclosure

cc: Bureau of Indian Affairs
Great Plains Regional Office
Ms. Marilyn Bercier
Supervisory Environmental Protection Specialist
115 Fourth Avenue S.E.
Aberdeen, SD 57401

Fort Berthold Rural Water Director
Three Affiliated Tribes
308 4 Bears Complex
New Town, ND 58763
(w/encl)



T147N, R91W Saddle Butte SW, ND - Dunn County

Steve Czeczok

From: Kari_Thorsteinson@fws.gov
Sent: Friday, August 31, 2012 10:37 AM
To: Steve Czeczok
Cc: Karine_Becker@fws.gov
Subject: Charging Eagle Well Pad
Attachments: 0740 Kodiak Oil & Gas, 3 Oil & Gas Wells on 1 pad, Fort Berthold, Charging Eagle -2.pdf

Steve,

Please see attached. Paper copy to follow in the mail.

Kari Thorsteinson
US Fish and Wildlife Service
3425 Miriam Ave
Bismarck, ND 58501
(701) 250-4481
Fax (701) 355-8513

Kadrmas
Lee &
Jackson
Engineers Surveyors
Planners

U.S. FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
ND FIELD OFFICE

Project as described will have no significant impact on fish and wildlife resources. No endangered or threatened species are known to occupy the project area and/or are not likely to be adversely affected. IF PROJECT DESIGN CHANGES ARE MADE, PLEASE SUBMIT PLANS FOR REVIEW.

8-31-12 Jeffrey K. Towner
Date Jeffrey K. Towner
Field Supervisor

July 17, 2012

Jeffrey Towner
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

Re: Kodiak Oil & Gas Corp.
Charging Eagle #9-19 Three Well Pad
Fort Berthold Reservation
Dunn County, North Dakota

Dear Mr. Towner,

On behalf of Kodiak Oil & Gas Corp. (Kodiak), Kadrmas, Lee & Jackson, Inc. (KL&J) is preparing an EA (Environmental Assessment) under NEPA (the National Environmental Policy Act) for the BIA (Bureau of Indian Affairs) and BLM (Bureau of Land Management). The proposed action includes approval by the BIA and BLM for the development of a single well pad, resulting in the drilling and completion of three oil and gas wells on the Fort Berthold Reservation. The proposed well pad is proposed to be positioned in the NE¼SE¼ of Section 19, T147N, R91W, 5th P.M. and contain the following wells:

- Charging Eagle #9-19-24-4H3
- Charging Eagle #9-19-13-13H
- Charging Eagle #9-19-13-12H

Please refer to the enclosed Project Location Map.

The proposed action would advance the exploration and production of oil from the Bakken and Three Forks Pools. The well pad has been positioned to utilize existing roadways and trails for access to the extent possible. Construction of the proposed well pad and access road is scheduled to begin in late 2012/early 2013.

Intensive pedestrian resource surveys of the proposed well pad and access road were conducted on June 26, 2012 by KL&J. The purpose of these surveys was to gather site-specific data and photos with regard to botanical, biological, threatened and endangered species, eagles, and water resources. A study area of 10 acres centered on the well pad center point and a 200-foot wide access road corridor was evaluated. In addition, a 0.50 mile wide buffer around all areas of project disturbance was used to evaluate the presence of eagles and eagle nests, as survey permission allowed. ***Please refer to the enclosed Study Area Map.*** Resources were evaluated using visual inspection and pedestrian transects across the site.

The BIA-facilitated EA on-site assessment of the well pad and access road was also conducted on June 26, 2012. The BIA Environmental Protection Specialist, as well as representatives from Kodiak, Juniper Archaeology, and KL&J were present. The Tribal Historic Preservation Office (THPO) was notified of the on-site and invited to

701 355 8400
128 Soo Line Drive
PO Box 1157
Bismarck, ND 58502-1157
Fax 701 355 8781
kljeng.com
Kadrmas, Lee & Jackson, Inc.

implemented to minimize wind and water erosion of soil resources and a semi-closed loop system would be used during drilling.

- Kodiak would institute density test of soils at the well pad to ensure a requirement of > 95% soil compaction for site stabilization. This compaction is to be confirmed by a third party with a Soil Proctor test. This stabilizes fill areas so that there are not weight concerns that would normally occur in "non-engineered" fills.
- An 18-inch high berm would be installed along the northern side of the well pad to prevent runoff from leaving the pad and entering the adjacent drainage. The berm will tie into the cut.
- The northeast corner of the well pad will be brought in 75 feet and rounded to avoid impacting the drainage.
- The drainage near the northeast corner of the well pad would be armored with rock riprap to prevent erosion and stabilize the soil.
- All electrical/utility lines would be buried along the access road corridor.

To ensure that social, economic, and environmental effects are considered in the development of this project, we are soliciting your views and comments on the proposed development of this project, pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We ask your assistance in identifying any property or resources that you own, manage, oversee, or otherwise value that might be adversely impacted. We are also interested in existing or proposed developments you may have that should be considered in connection with the proposed project. Any information that might help us in our study would be appreciated.

It is requested that any comments or information be forwarded to our office on or before **August 17, 2012.** We request your comments by that date to ensure that we will have ample time to review them and incorporate them into the necessary environmental documentation.

If you would like further information regarding this project, please contact me at (701) 355-8452. Thank you for your cooperation.

Sincerely,

Kadrmas, Lee & Jackson, Inc.

Steve Czeczok
Environmental Planner

Enclosures (Maps)

Kadrmas Lee & Jackson
Engineers Surveyors Planners

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

July 23, 2012

Mr. Steve Czeczok
Environmental Planner
Kadrmas, Lee & Jackson, Inc.
P.O. Box 1157
Bismarck, ND 58502-1157

Re: Charging Eagle #9-19 Three-Well Oil & Gas Well Pad
Fort Berthold Reservation, Dunn County

Dear Mr. Czeczok:

This department has reviewed the information concerning the above-referenced project submitted under date of July 18, 2012, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. Development of the production facilities and any access roads, well pads or pipelines should have a minimal effect on air quality provided measures are taken to minimize fugitive dust. However, operation of the wells has the potential to release air contaminants capable of causing or contributing to air pollution. We encourage the development and operation of the wells in a manner that is consistent with good air pollution control practices for minimizing emissions. Detailed guidance is available at www.ndhealth.gov/AQ/OilAndGasWells.htm.

   Any questions about air pollution control or permitting requirements should be addressed to Ms. Kathleen Paser at the U.S. Environmental Protection Agency, Region 8. She may be reached at (303) 312-6526 or Paser.Kathleen@epa.gov.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Oil and gas related construction activities located within tribal boundaries in North Dakota may be required to obtain a permit to discharge storm water runoff from the U.S. Environmental Protection Agency. Further information on the storm water permit may be obtained from the U.S. EPA's

website or by calling the U.S. EPA – Region 8 at (303) 312-6312. Also, cities or counties may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

4. Projects that involve construction, drilling, completion and/or production of crude oil or natural gas wells should select locations that mininize the potential for environmental damage during development of the well and in the event of a spill, restrict fluids from reaching surface waters. Well placement should avoid close proximity to drainage areas and steep slopes. Environmental damage can be reduced by developing a spill response plan that emphasizes rapid deployment of prepositioned assets necessary to contain spills and subsequent cleanup. Proper surveillance and monitoring of pipelines is necessary for the early detection of leaks.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

August 8, 2012

Steve Czeczok
Environmental Planner
Kadrmas, Lee & Jackson, Inc.
PO Box 1157
Bismarck, ND 58502-1157

Dear Mr. Czeczok:

RE: Charging Eagle #9-19 Three Well Pad

Kodiak Oil & Gas Corp. is proposing three oil and gas wells on one well pad on the Fort Berthold Reservation in Dunn County, North Dakota.

Our primary concern with oil and gas development is the fragmentation and loss of wildlife habitat associated with construction of the well pads and access roads. We recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

We also suggest that botanical surveys be completed during the appropriate season and aerial surveys be conducted for raptor nests before construction begins.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: http://swc.nd.gov

August 15, 2012

Steve Czeczok
Kadrmas, Lee & Jackson
PO Box 1157
Bismarck, ND 58502-1157

Dear Mr. Czeczok:

This is in response to your request for review of environmental impacts associated with the Kodiak Oil & Gas Corp., Charging Eagle #9-19 Three Well Pad located in Dunn County, ND on Fort Berthold Reservation. The proposed well pad is proposed to be positioned in the NE1/4SE1/4 of Section 19, T147N, R91W, 5th P.M. and contain the following wells: Charging Eagle #9-19-24-4H3; Charging Eagle #9-19-13-13H; Charging Eagle #9-19-13-12H.

The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- There are no floodplains identified and/or mapped where this proposed project is to take place. The project takes place in an unmapped county. No floodplain permits are necessary from Dunn County relative to the National Flood Insurance Program.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

- No sole-source aquifers have been designated in ND.

There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 701-328-4967.

Sincerely,

Linda Weispfenning
Water Resource Planner

LW:dp/1570

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
SECRETARY AND STATE ENGINEER

507 South Main
Dickinson, ND 58601
701-483-4000
Fax 701-483-0001
1-888-225-5282
www.ctctel.com

Consolidated
Reach the World, from here.

July 26, 2012

Mr. Steve Czeczok
Kadrmas Lee & Jackson
128 Soo Line Drive
PO Box 1157
Bismarck, ND 58502

RE: Kodiak Oil & Gas Corp
Charging Eagle #9-19 Three Well Pad
Dunn County, ND
Fort Berthold Reservation

Dear Mr. Czeczok,

Consolidated Telcom does not have any buried telecommunications cables in the area of the above mentioned project, and have no plans to place any. We do have buried telecommunications cable along BIA Route 22 in sections 28, 29 and 30 Township 147N-Range 91W. In additions to this cable, we will be placing fiber optic cables along this route during the 2012 construction season.

If you have any question or need more information, please feel free to call or send me an e-mail.

Sincerely,

Les Alpert

Les Alpert
Field Services/Safety Supervisor
701-483-7362
les@consolidatedtelcom.com

Consolidated Telcom

Consolidated Enterprises, Inc.

Consolidated Communications Corporation

Consolidated Cable Vision, Inc.

Consolidated Communications Networks, Inc.

Steve Czeczok

From: Steve Czeczok
Sent: Wednesday, June 27, 2012 1:32 PM
To: Herman, Mark
Cc: Desjarlais, Jeffrey <Jeffrey.Desjarlais@bia.gov> (Jeffrey.Desjarlais@bia.gov)
Subject: Kodiak Charging Eagle 9-19 Location Near Twin Buttes
Attachments: CE 9-19 Wells Prelim.pdf

Mark,

We had an onsite yesterday for the proposed Charging Eagle 9-19 well pad near Twin Buttes. See attached pg 3 of plat showing location. The proposed access road was going to come off of a previously approved road which Kodiak received approved ROW for already back in 2008; the previously approved access road has not yet been constructed. The previously approved ROW was for 50-feet which Kodiak will now need 125 feet to cover construction and utilities and pipelines. Jeff Dejarlais recommended that we survey the old and new access road and include the both legs of the route in the EA to cover everything. Jeff and KL&J had no issues with the route as laid out. Let me know if there are an issues with including the previously approved portion in the EA. Thanks

Steve Czeczok
Environmental Scientist
Kadrmas, Lee & Jackson, Inc.
Direct: 701-355-8452
Cell: 701-202-0588
128 Soo Line Drive
Bismarck, ND 58501

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E., Suite 400
Aberdeen, South Dakota 57401

IN REPLY REFER TO:
DESCRM
MC-208

JUN 27 2012

Elgin Crows Breast, THPO
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town, North Dakota 58763

Dear Mr. Crows Breast:

We have considered the potential effects on cultural resources of two triple oil well pad projects in Dunn County, North Dakota. Approximately 48.3 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the areas depicted in the enclosed reports. Two archaeological sites (32DU1719, 32DU1725) were located that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.4) for inclusion on the National Register of Historic Places. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (42 USC 1996).

As the surface management agency, and as provided for in 36 CFR 800.5, we have reached a determination of **no historic properties affected** for these undertakings, as the archaeological sites will be avoided. Catalogued as **BIA Case Number AAO-3001/FB/12**, the proposed undertakings, locations, and project dimensions are described in the following reports:

Morrison, John G.

(2012a) Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-24-13-12H and Charging Eagle 9-19-24-13-13H Well Pad and Access Road: Class III Cultural Resource Inventory, Dunn County, North Dakota. Juniper LLC for Kodiak Oil and Gas Corporation, Denver.

(2012b) Moccasin Creek 14-11-2-3H3, Moccasin Creek 14-11-2-3H and Moccasin Creek 14-11-2-4H3 Well Pad and Access Road: Class III Cultural Resource Inventory, Dunn County, North Dakota. Juniper LLC for Kodiak Oil and Gas Corporation, Denver.

If your office concurs with this determination, consultation will be completed under the National Historic Preservation Act and its implementing regulations. We will adhere to the Standard Conditions of Compliance.

If you have any questions, please contact Dr. Carson N. Murdy, Regional Archaeologist, at (605) 226-7656.

Sincerely,

Tim LaPointe

ACTING Regional Director

Enclosures

cc: Chairman, Three Affiliated Tribes
Superintendent, Fort Berthold Agency

Appendix C

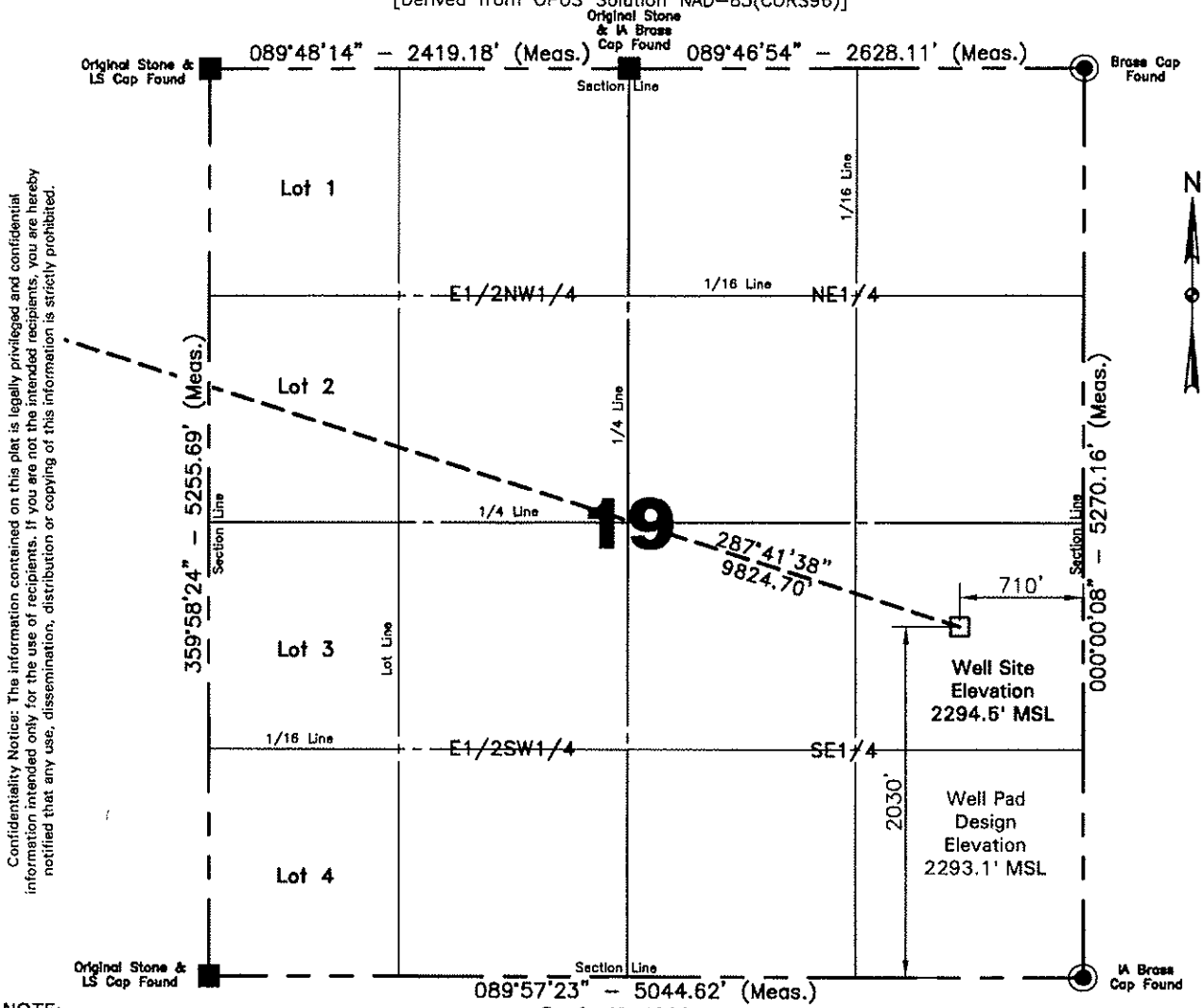
Plats

WELL LOCATION PLAT

Kodiak Oil & Gas Corp.
1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-24-4H3

2030 feet from the south line and 710 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
250 feet from the north line and 250 feet from the west line (bottom location)
Section 24, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994
Latitude 47°32'09.809" North; Longitude 102°18'55.159" West (surface location)
Latitude 47°32'39.250" North; Longitude 102°21'11.575" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-24-4H3 oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

Scale 1"=1000'

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

Nicholas Jensen 06/26/2012
Surveyed By Date Revised:7/25/2012

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Vertical Control Datum Used
North American Vertical Datum 1988 (NAVD 88)
Based on elevation derived from OPUS Solution on GPS°30-147-91 (iron rebar) Located a distance of 3100.80' on an azimuth of 228°07'47" from the SE corner of Section 19, T.147N., R.91W., 5th P.M. being at 2301.16' Elevation MSL.

Project No. 3712587
Book OW-296 Pg. 13-18 Staking

Professional Consulting Engineers and Surveyors
Registered in
North Dakota, South Dakota
Montana, Wyoming & Minnesota
Tele-Fax No. 701-483-2795
Bus. Phone No. 701-483-1284
P.O. Box 290
677 27th Ave. East
Dickinson, North Dakota 58602
Certificate of Authorization #C-061

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

HORIZONTAL SECTION PLAT

Kodiak Oil & Gas Corp.

1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-24-4H3

2030 feet from the south line and 710 feet from the east line (surface location)

Section 19, T. 147 N., R. 91 W., 5th P.M.

250 feet from the north line and 250 feet from the west line (bottom location)

Section 24, T. 147 N., R. 92 W., 5th P.M.

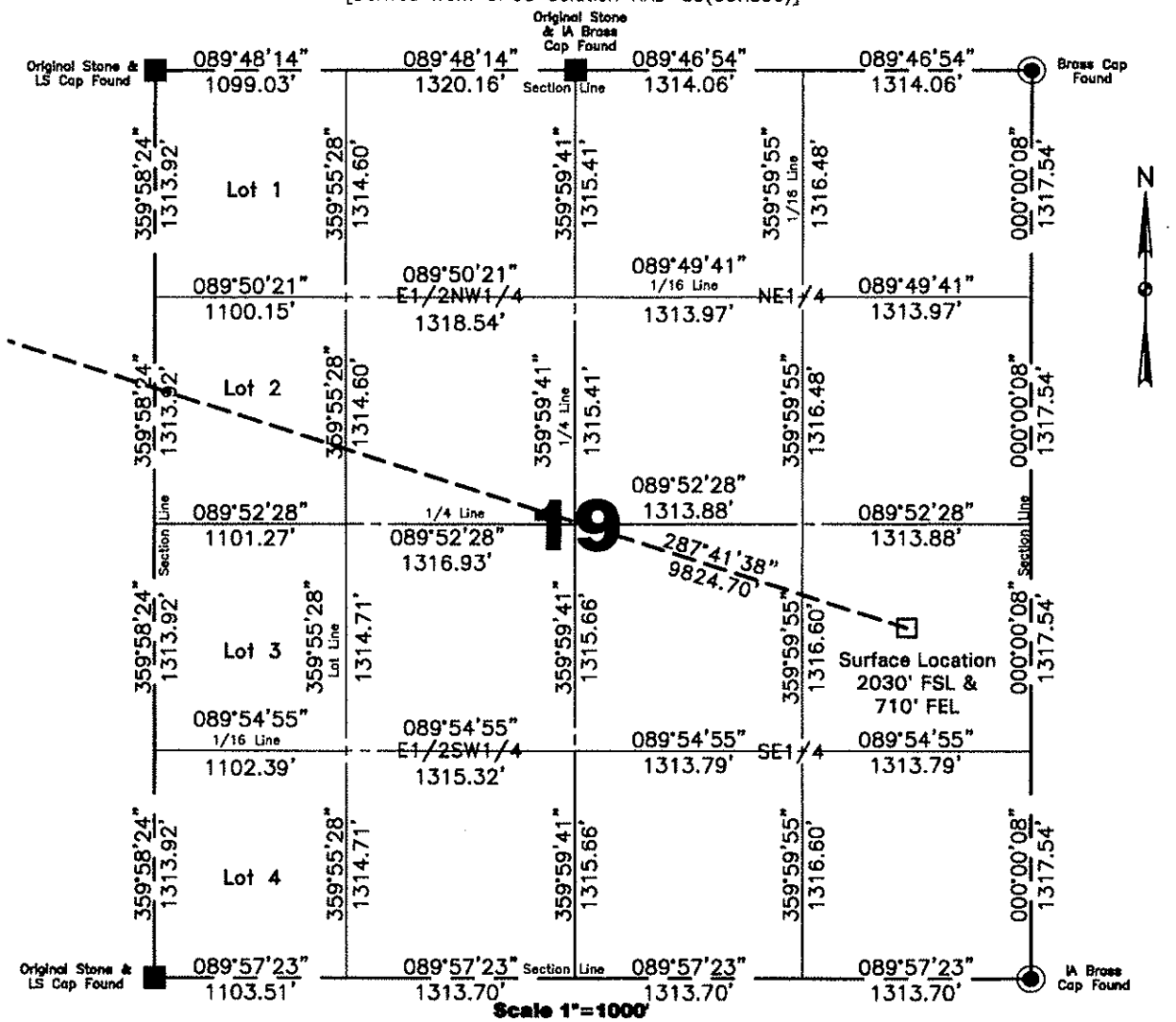
Dunn County, North Dakota

Surface owner @ well site – 1994

Latitude 47°32'09.809" North; Longitude 102°18'55.159" West (surface location)

Latitude 47°32'39.250" North; Longitude 102°21'11.575" West (bottom location)

[Derived from OPUS Solution NAD–83(CORS96)]



Scale 1"=1000'

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-24-4H3 oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Surveyed By	Field Book
N. Jensen	OW–296
Computed & Drawn By	Project No.
A.R./J.K.	3712587

Revised: 7/25/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:27pm – J:\oilfield\Kodiak\3712587\CADD\3712587BAS01.dwg

© Kadrmas, Lee & Jackson 2012

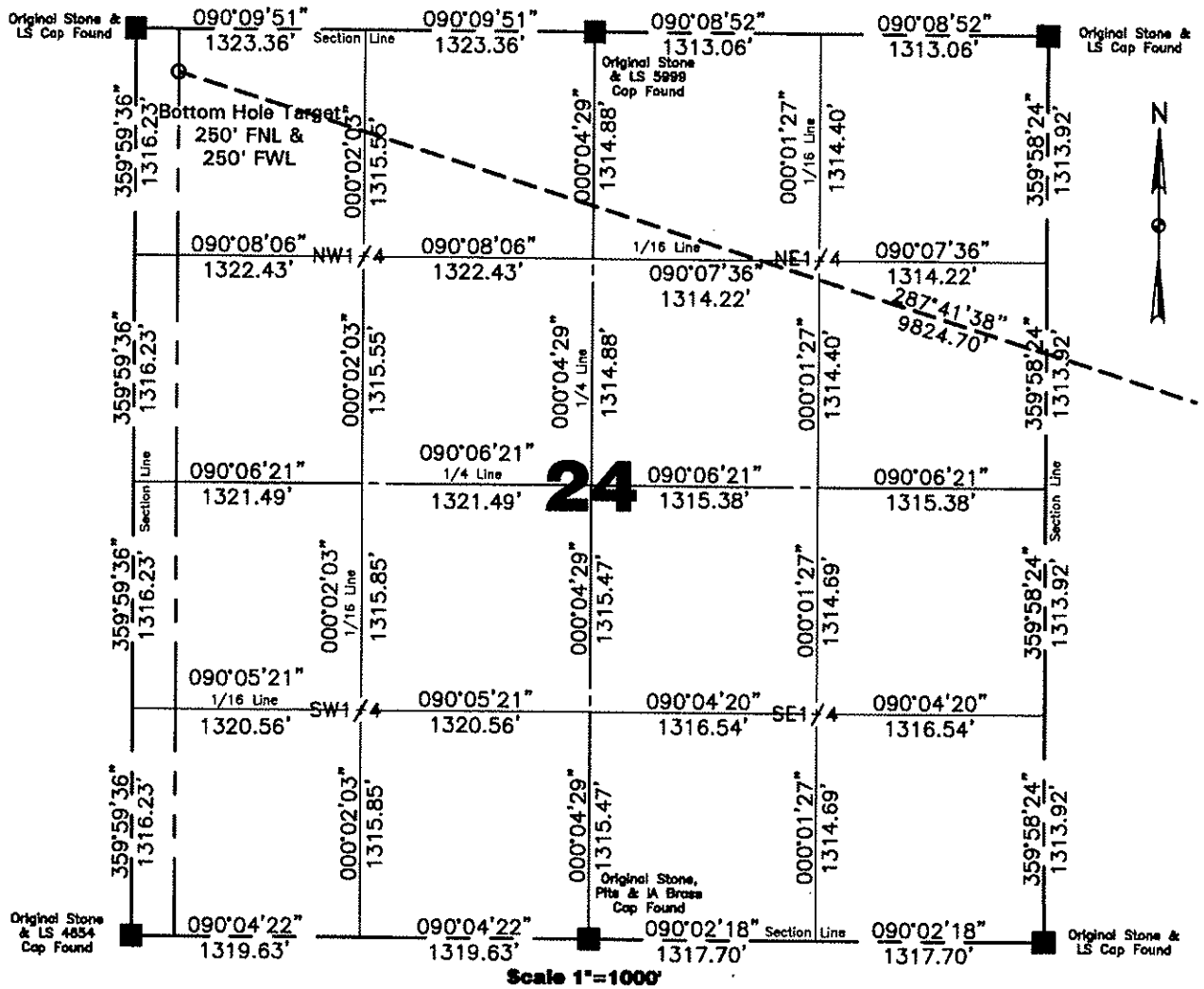
HORIZONTAL SECTION PLAT

Kodiak Oil & Gas Corp.

1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-24-4H3

2030 feet from the south line and 710 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
250 feet from the north line and 250 feet from the west line (bottom location)
Section 24, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994
Latitude 47°32'09.809" North; Longitude 102°18'55.159" West (surface location)
Latitude 47°32'39.250" North; Longitude 102°21'11.575" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



Scale 1"=1000'

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-24-4H3 oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Surveyed By	Field Book
N. Jensen	OW-296
Computed & Drawn By	Project No.
A.R./J.K.	3712587

Revised: 7/25/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:28pm – J:\oilfield\Kodiak\3712587\CADD\3712587BAS01.dwg

© Kadrmas, Lee & Jackson 2012

BOTTOM HOLE LOCATION PLAT

Kodiak Oil & Gas Corp.

1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-24-4H3

2030 feet from the south line and 710 feet from the east line (surface location)

Section 19, T. 147 N., R. 91 W., 5th P.M.

250 feet from the north line and 250 feet from the west line (bottom location)

Section 24, T. 147 N., R. 92 W., 5th P.M.

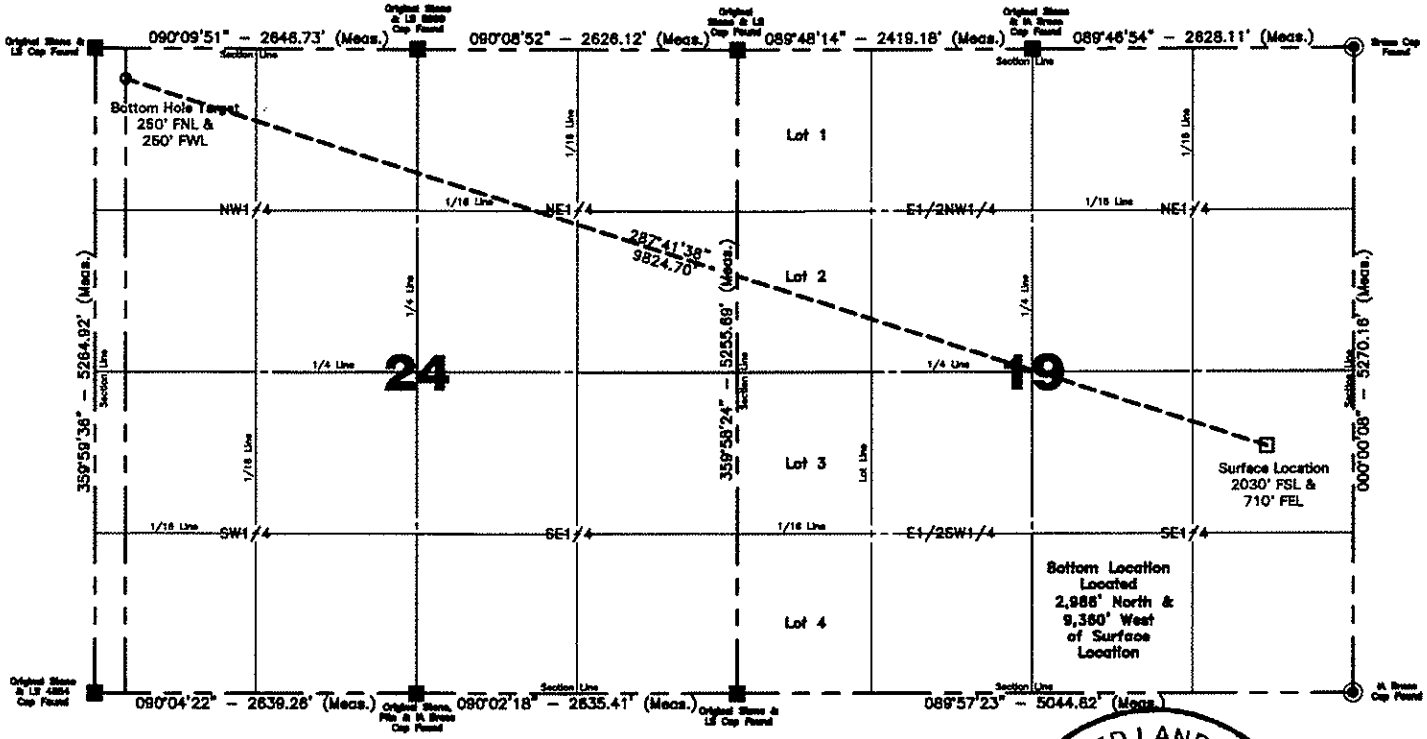
Dunn County, North Dakota

Surface owner @ well site – 1994

Latitude 47°32'09.809" North; Longitude 102°18'55.159" West (surface location)

Latitude 47°32'39.250" North; Longitude 102°21'11.575" West (bottom location)

[Derived from OPUS Solution NAD-83(CORS96)]



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:

All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-24-4H3 oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Computed & Drawn By	Surveyed By	Approved By	Scale	Date
A.R./J.K.	N. Jensen	Q. Obrigewitsch	1"=1500'	06/28/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	B.H. Layout	7/25/2012	3712587	4

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:29pm – J:\oilfield\Kodiak\3712587\CADD\3712587BAS01.dwg

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Section 19, T 147 N, R 91 W, 5th P.M.
Dunn County, North Dakota

Charging Eagle 9-19-24-4H3 Elevation	2294.5' MSL
Charging Eagle 9-19-13-13H Elevation	2294.0' MSL
Charging Eagle 9-19-13-12H Elevation	2293.9' MSL
Well Pad Design Elevation	**2293.1' MSL**

Excavation	38,660 C.Y.
Plus Cuttings Pit	4,030 C.Y.
	42,690 C.Y.
Embankment	6,040 C.Y.
Plus Shrinkage (+30%)	1,815 C.Y.
	7,855 C.Y.
Stockpile Cuttings Pit	4,030 C.Y.
Stockpile Top Soil (6")	5,175 C.Y.
Production Rehabilitation	0 C.Y.
Road Embankment & Stockpile from Pad	25,630 C.Y.
Disturbed Area From Pad	6.42 Acres
Area Inside Barbed Wire Fence	10.30 Acres

NOTE :
All cut end slopes are designed at 3:1 slopes &
All fill end slopes are designed at 3:1 slopes

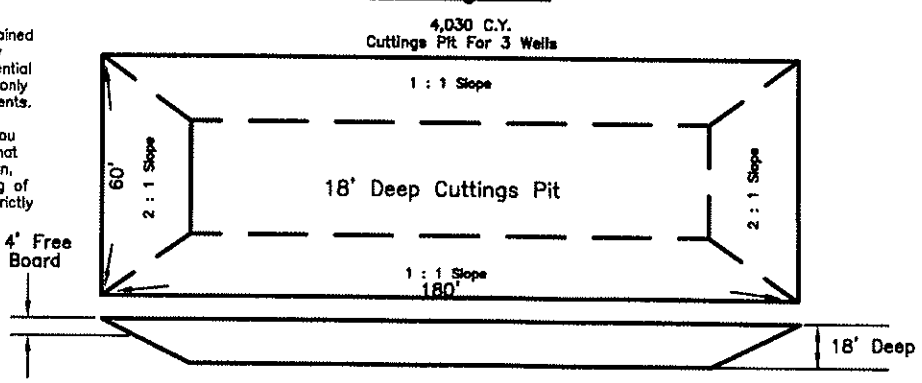
Charging Eagle 9-19-24-4H3
Well Site Location
2030' FSL
710' FEL

Charging Eagle 9-19-13-13H
Well Site Location
2030' FSL
680' FEL

Charging Eagle 9-19-13-12H
Well Site Location
2030' FSL
650' FEL

Cuttings Pit

Confidentiality Notice:
The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



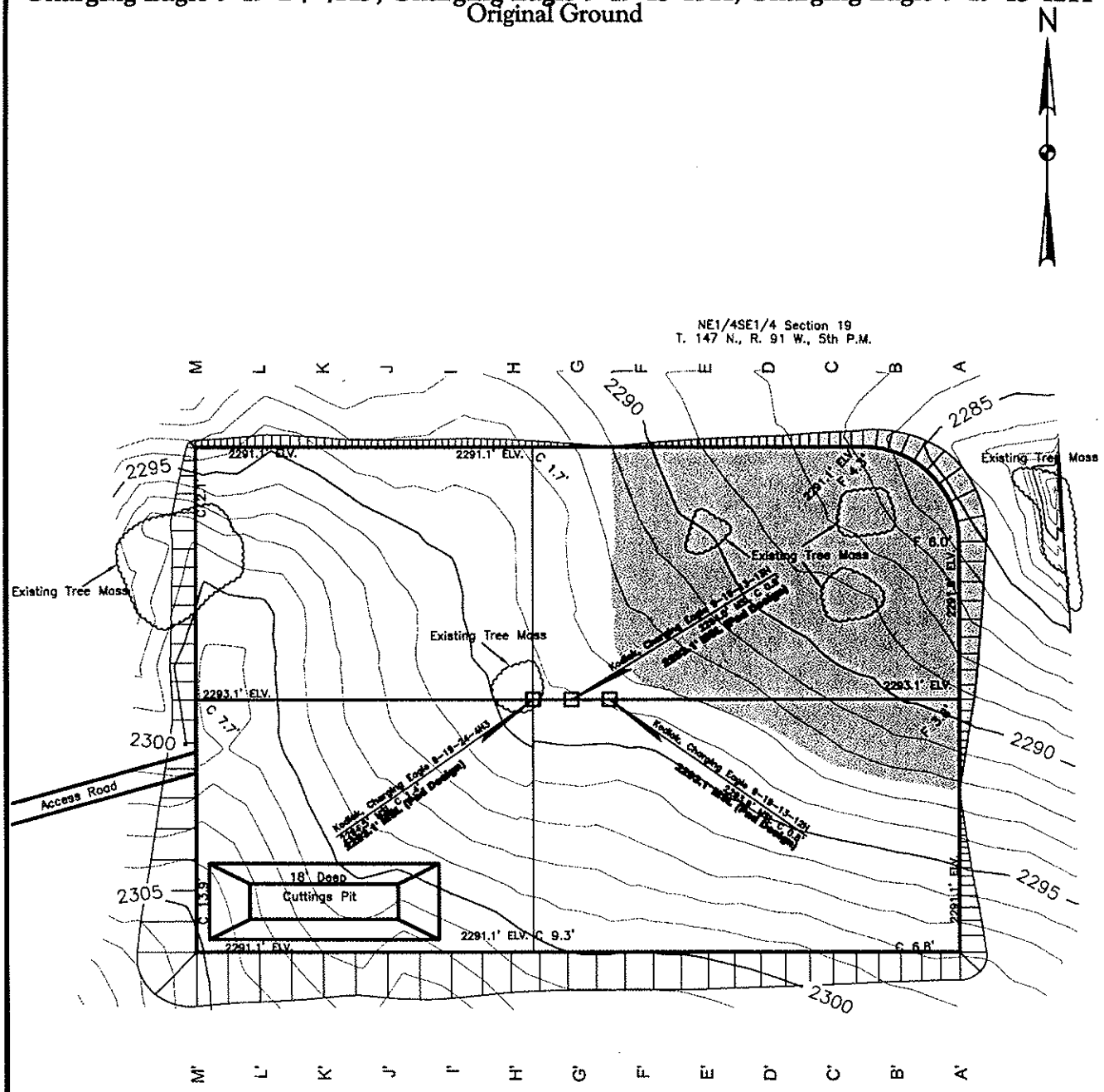
Drawn By: J. Kress	Surveyed By: N. Jensen	Approved By: Q. Obrigewitsch	Scale: None	Date: 7/03/2012
Field Book: OW-296	Material: Quantities	Revised: –	Project No.: 3712585-3712587	Drawing No.: 5

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 03, 2012 – 10:50am – J:\oilfield\Kodiak\3712587\CADD\3712587BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Original Ground



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

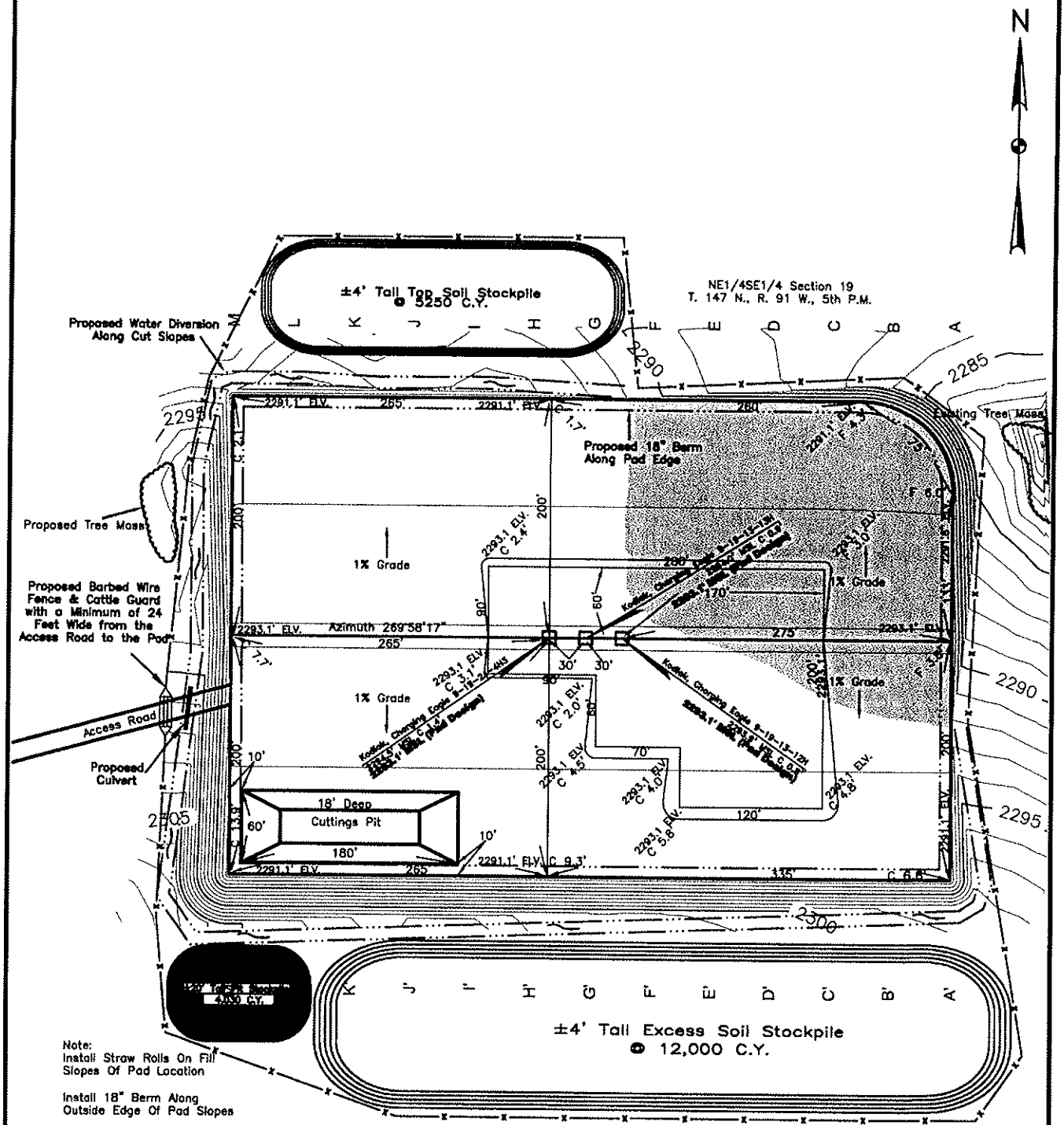
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Original Ground	-	3712585-3712587	6

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Pad Layout



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used In construction of Access Road

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

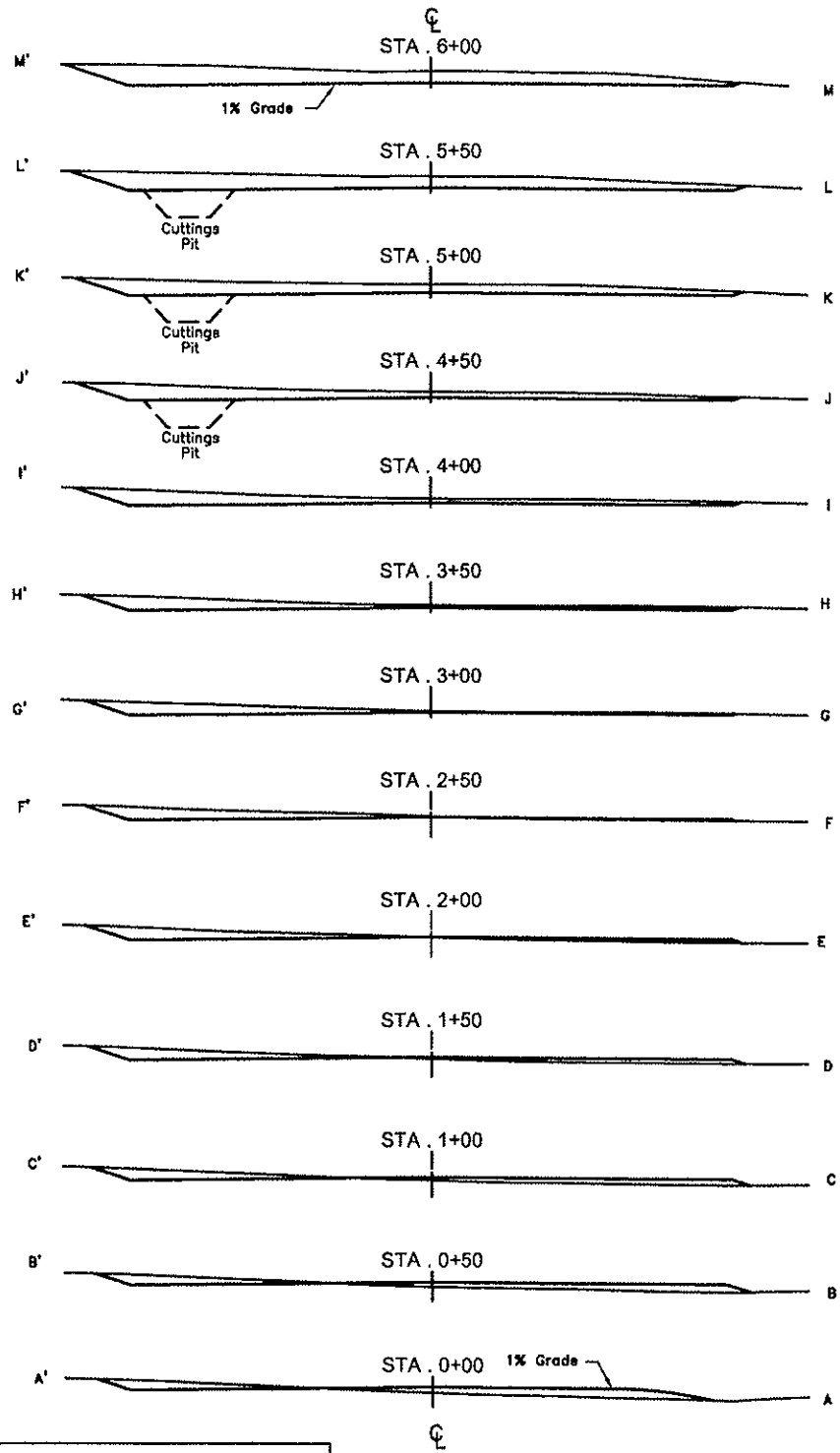
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Pad Layout	–	3712585-3712587	7

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 – 4:02pm – J:\oilfield\Kodiak\3712587\CADD\3712587BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Cross Sections



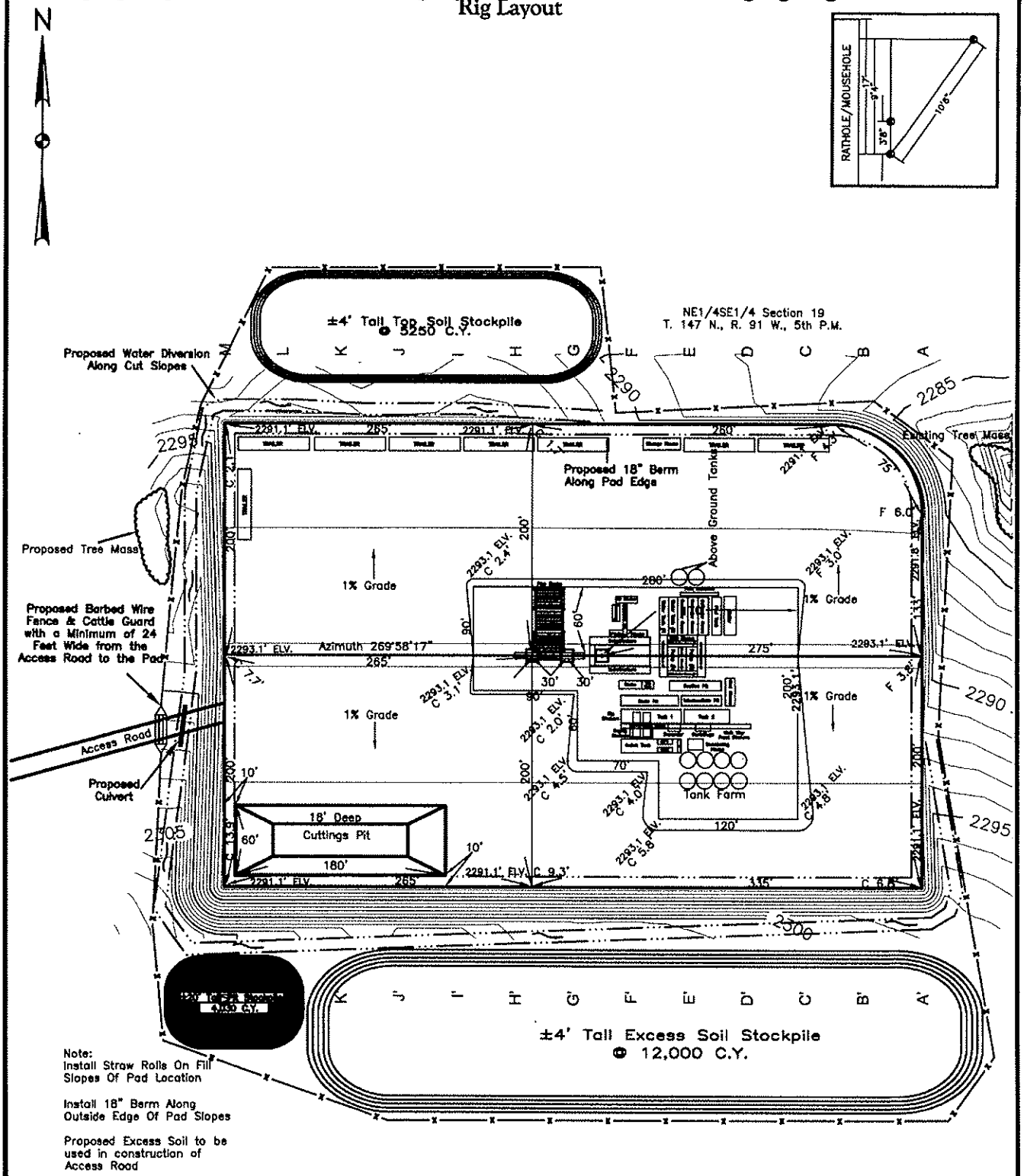
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Cross Sections	–	3712585-3712587	8

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Rig Layout



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

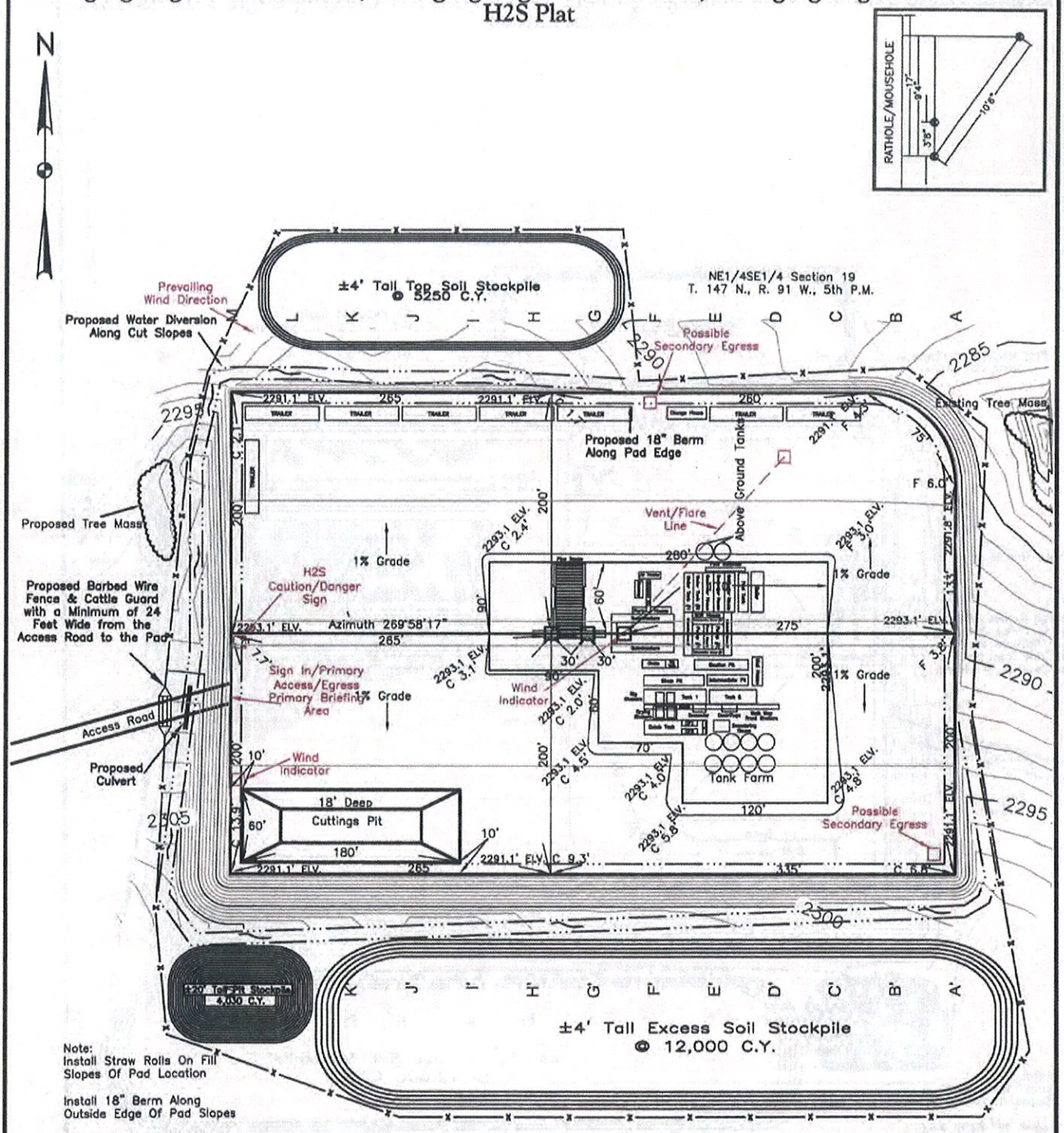
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Rig Layout	—	3712585-3712587	9

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
H2S Plat



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

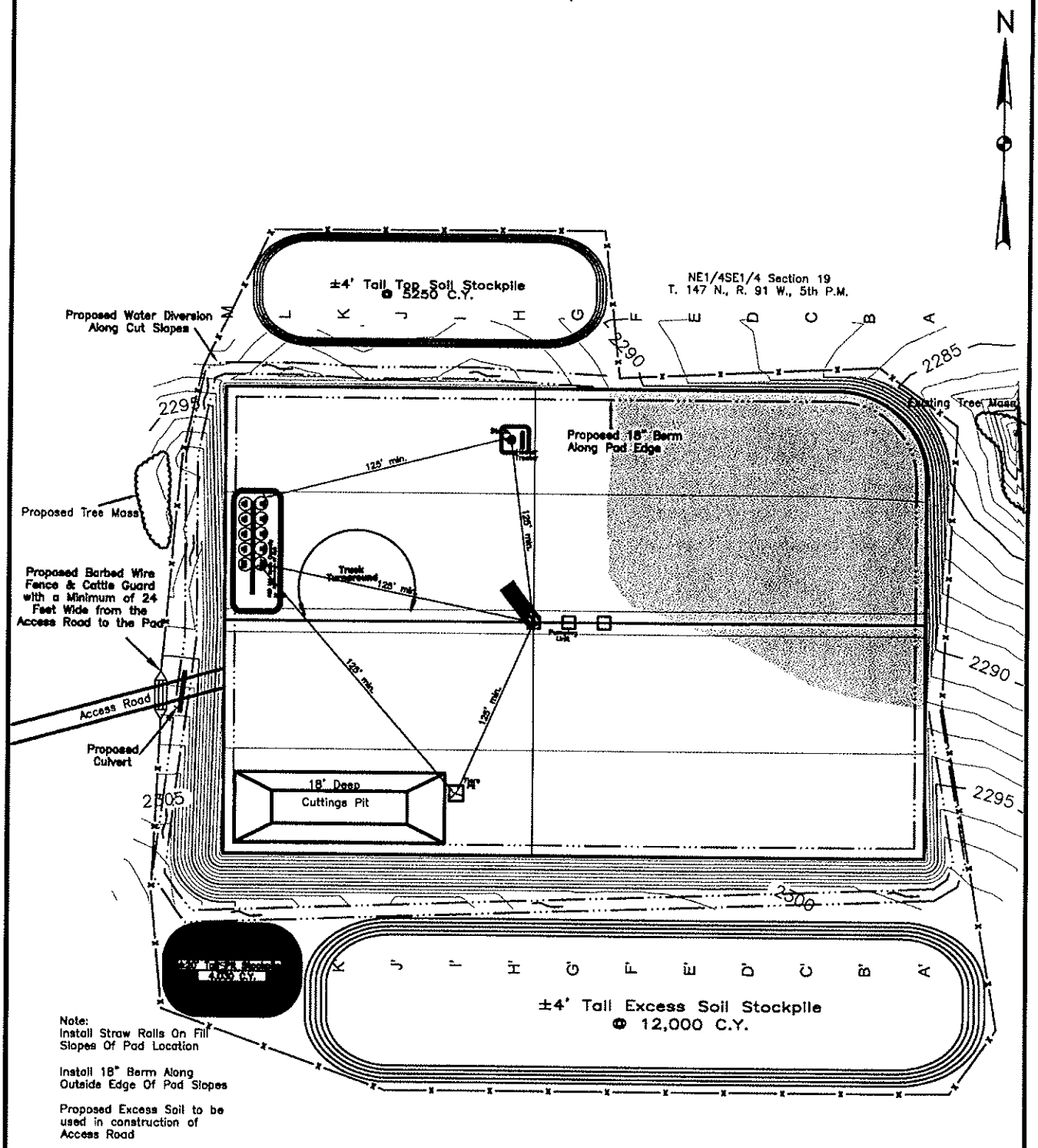
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	H2S Plat	-	3712585-3712587	9A

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 4:12pm - J:\oilfield\Kodiak\3712587\CADD\3712587BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Production Layout



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

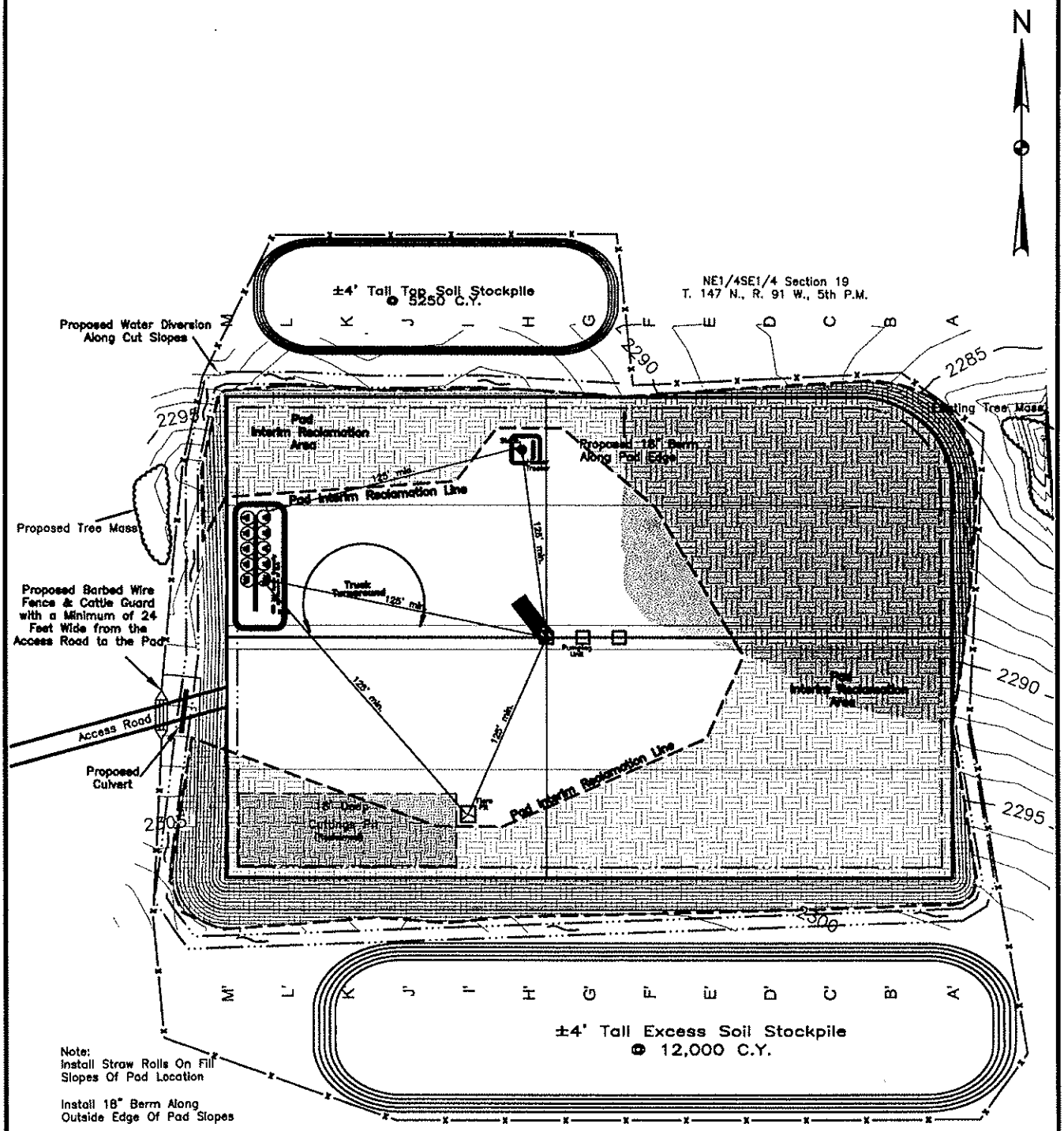
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Prod Layout	–	3712585-3712587	10

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 – 5:30pm – J:\oilfield\Kodiak\3712587\CADD\3712587BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Interim Reclamation Layout



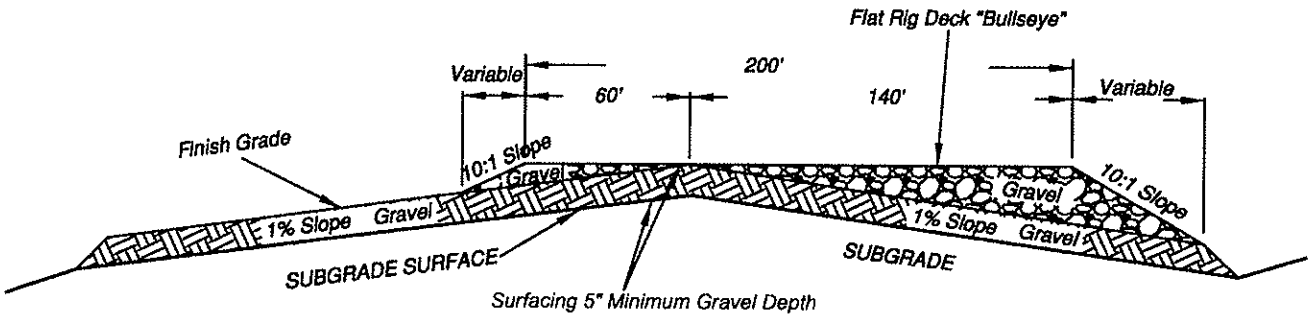
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Interim Layout	—	3712585-3712587	11

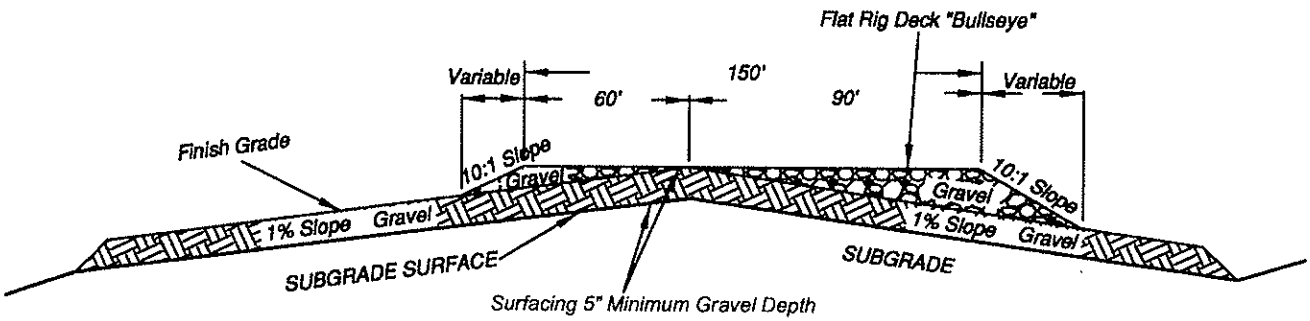
Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

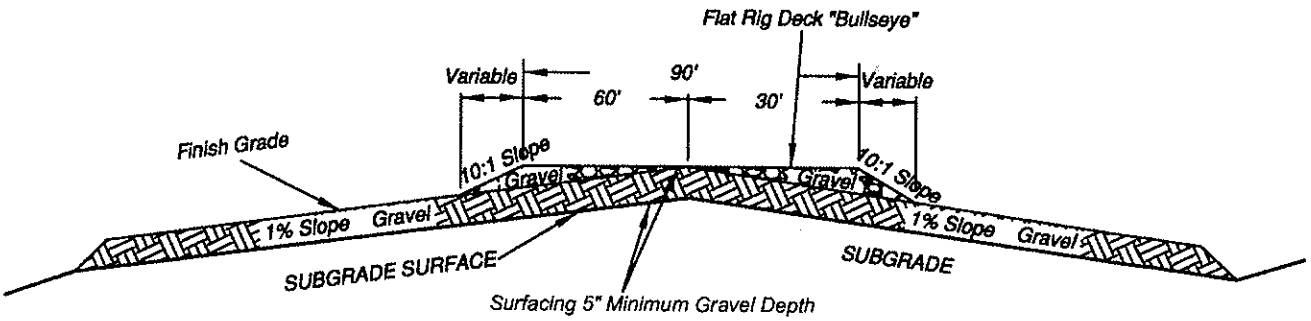
Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Well Pad Surfacing



TYPICAL BACK SECTION
No Scale



TYPICAL MID SECTION
No Scale



TYPICAL A HEAD SECTION
No Scale

1% Grade Pad Surfacing (5")	3,685 C.Y.
Flat Rig Deck Construction W/ 10:1 Slopes	840 C.Y.

Confidentiality Notice:
The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

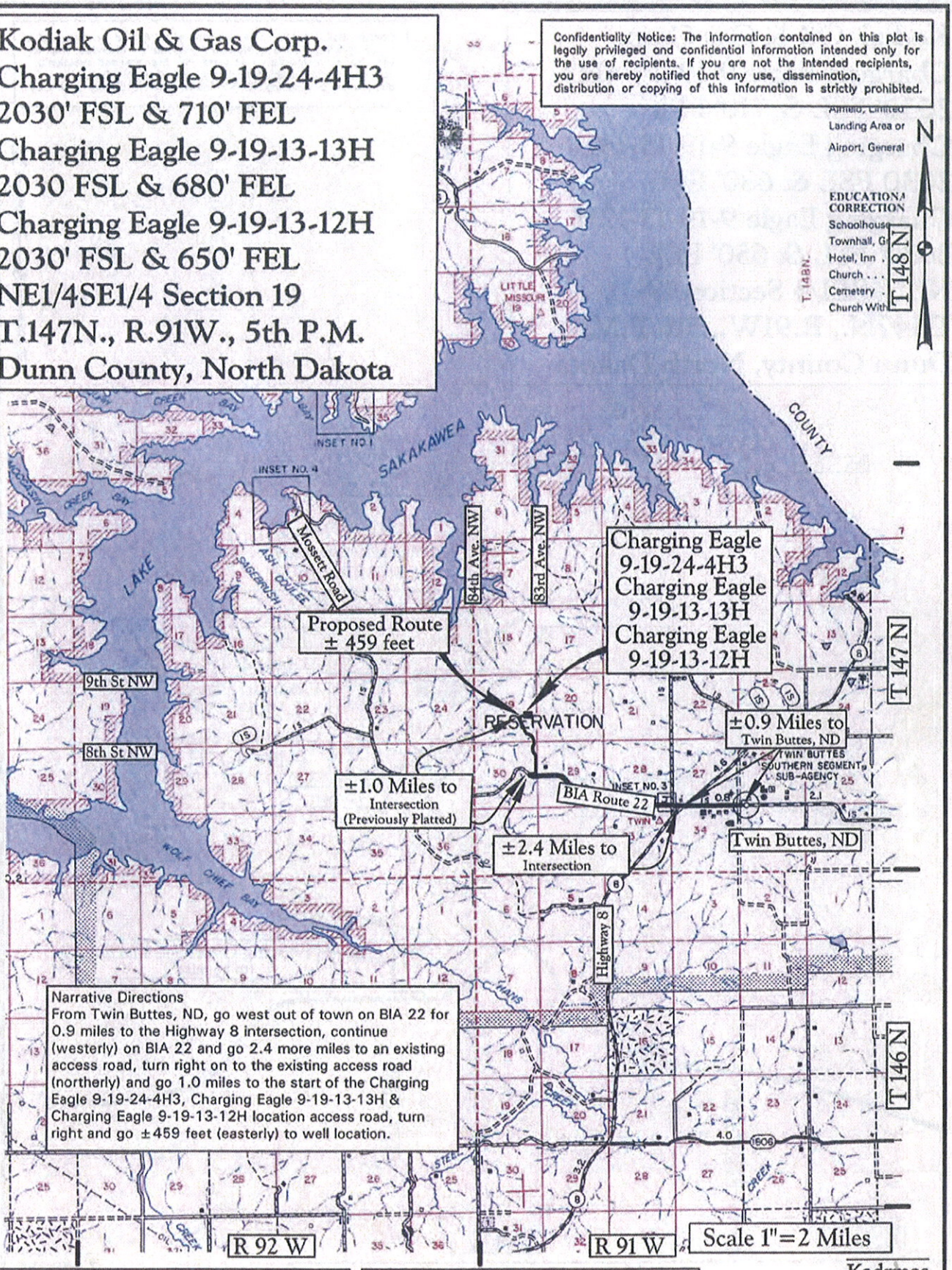
Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	N. Jensen	Q. Obrigewitsch	None	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Comp. Surface	–	3712585-3712587	12

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3
2030' FSL & 710' FEL
Charging Eagle 9-19-13-13H
2030 FSL & 680' FEL
Charging Eagle 9-19-13-12H
2030' FSL & 650' FEL
NE1/4SE1/4 Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



Narrative Directions
From Twin Buttes, ND, go west out of town on BIA 22 for 0.9 miles to the Highway 8 intersection, continue (westerly) on BIA 22 and go 2.4 more miles to an existing access road, turn right on to the existing access road (northerly) and go 1.0 miles to the start of the Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H & Charging Eagle 9-19-13-12H location access road, turn right and go ±459 feet (easterly) to well location.

Map "A"
County Access Route

Legend
Existing Roads
Proposed Roads

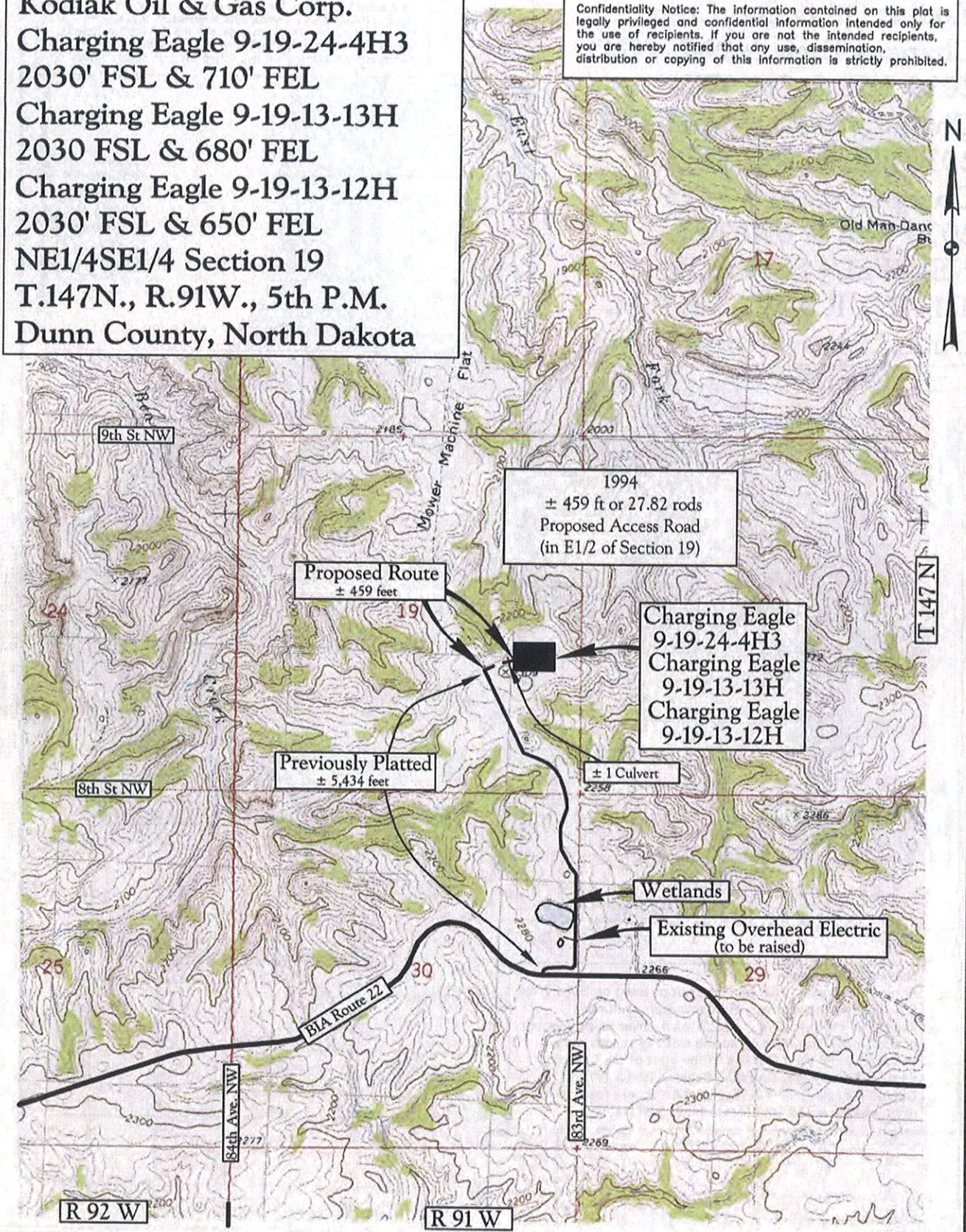
Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jun 29, 2012 – 2:30pm – J:\oilfield\Kodiak\3712585\CADD\3712585LOC01.dwg

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3
2030' FSL & 710' FEL
Charging Eagle 9-19-13-13H
2030 FSL & 680' FEL
Charging Eagle 9-19-13-12H
2030' FSL & 650' FEL
NE1/4SE1/4 Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



Map "B"
Quad Access Route

Legend
Existing Roads
Proposed Roads

Scale 1"=2000'

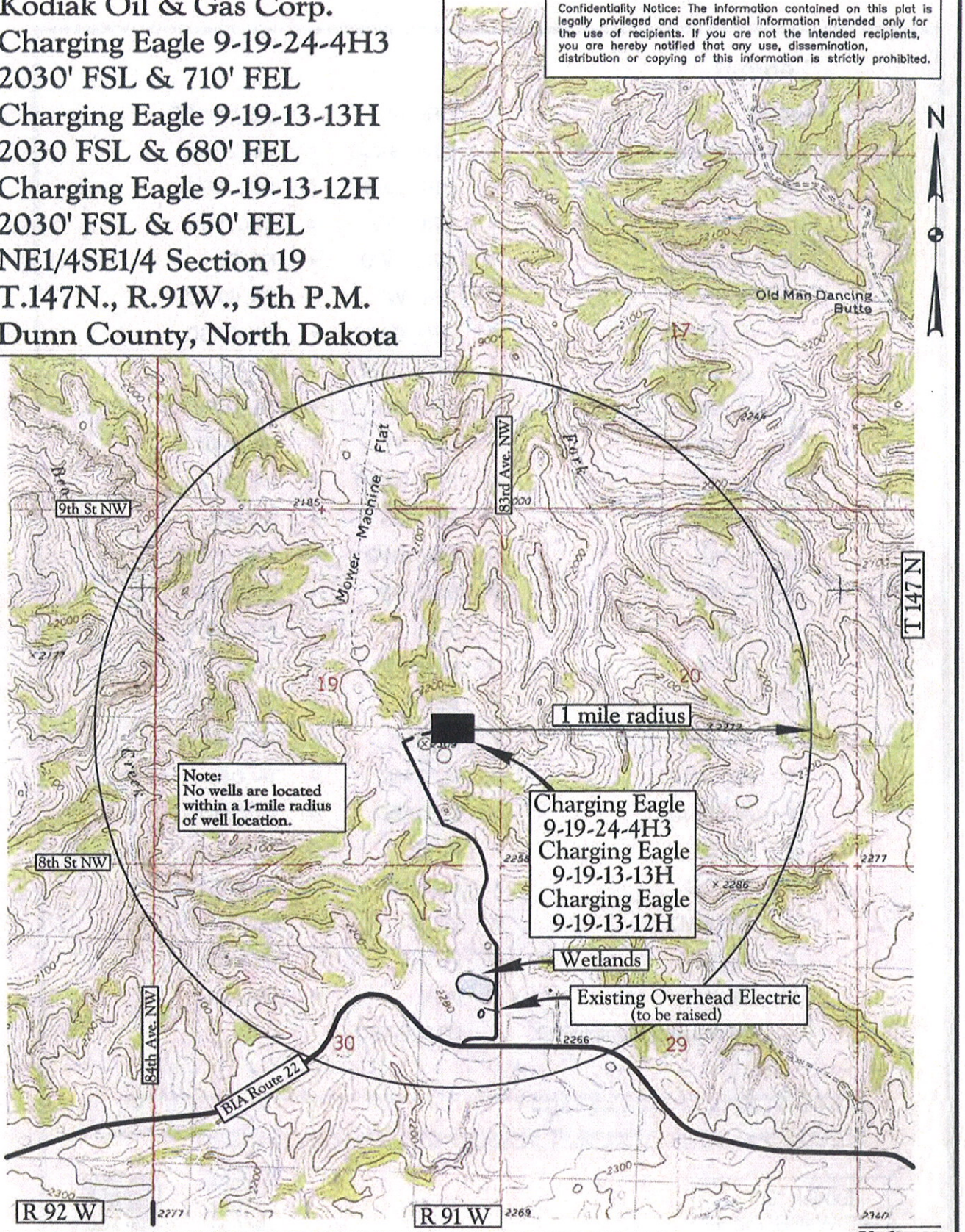
Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 4:17pm - J:\oilfield\Kodiak\3712587\CADD\3712587LOC01.dwg

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3
2030' FSL & 710' FEL
Charging Eagle 9-19-13-13H
2030 FSL & 680' FEL
Charging Eagle 9-19-13-12H
2030' FSL & 650' FEL
NE1/4SE1/4 Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



Map "C"
One Mile Radius Map

Legend
Existing Roads
Proposed Roads

Scale 1"=2000'

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 03, 2012 - 7:50am - J:\oilfield\Kodiak\3712585\CADD\3712585LOC01.dwg

© Kadrmas, Lee & Jackson 2012

Legend

wells

STATUS, WELL_TYPE

- A, AGD
- A, AI
- A, CBM
- A, DF
- A, DFP
- A, GASC
- A, GASD
- A, GASN
- A, OG
- A, SWD
- A, WI
- A, WS
- A,AI
- AB, AI
- AB, DF
- AB, DFP
- AB, GASC
- AB, GASD
- AB, GI
- AB, OG
- AB, SWD
- AB, WI
- AB, WS
- Confidential, Confidential
- DRL, AI
- DRL, GASC
- DRL, GASD
- DRL, OG
- DRL, SWD
- DRL, WI
- DRY, GASC
- DRY, GASD
- DRY, OG
- DRY, ST
- EXP, GASD
- EXP, OG
- EXP, SWD
- EXP, WS
- IA, AI
- IA, CBM
- IA, DF
- IA, DFP
- IA, GASC
- IA, GASD
- IA, OG
- IA, SWD
- IA, WI
- IA, WS
- IA,AI
- LOC, GASC
- LOC, GASD
- LOC, OG
- LOC, SWD
- LOC, WI
- PA, DF
- PA, GASC
- PA, GASD
- PA, GS
- PA, OG
- PA, SWD
- PA, WI
- PA, WS
- PNC, GASD
- PNC, OG
- PNC, SWD
- TA, AI
- TA, GASC
- TA, GASD
- TA, OG
- TA, SWD
- TA, WI
- TA, WS
- TAO, GI
- TAO, OG
- TAO, WI

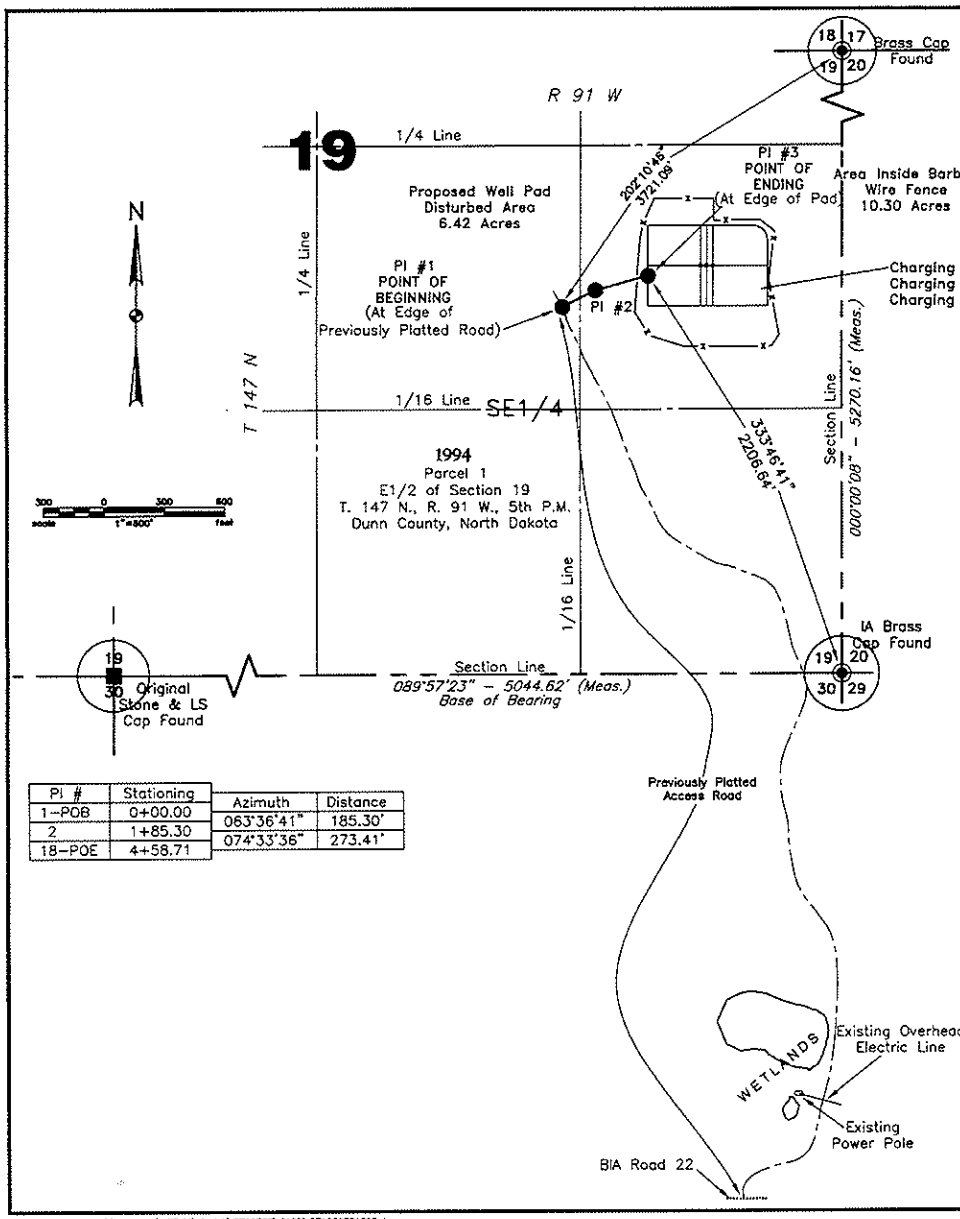
A = Active, AB = Abandoned, DRL = Drilling, Dry = Dry, EXP = Expired, IA = Inactive, LOC = Location, PA = Producer Abandoned, PNC = Permit Now Cancelled
TA = Temporarily Abandoned, TAO = Temporarily Abandoned Observation.

AGD = Acid Gas Disposal, AI = Air Injection, DF = Dump Flood, DFP = Dump Flood Producing, GASN = Nitrogen Gas Well, GASC = Gas Condensate, GASD = Gas Dry, GI = Gas Injection, GS = Gas Storage, OG = Oil or Gas Well, SWD = Salt Water Disposal, WI = Water Injection, WS = Water Supply, ST = Strat Test

Exhibit "D"
GIS Well Symbols

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Prepared by NDIC Oil and Gas Division



PI #	Stationing
1-POB	0+00.00
2	1+85.30
18-POE	4+58.71

Azimuth	Distance
063°36'41"	185.30'
074°33'36"	273.41'

Road Right-of-Way Description

A tract of land located in the North Half of the Southeast Quarter (N1/2SE1/4) of Section 19, Township 147 North, Range 91 West of the 5th Principal Meridian, Dunn County, State of North Dakota, being more specifically described as a strip of land one hundred and twenty-five (125) feet in width, lying sixty-two and a half (62 1/2) feet on each side of the following described road centerline:

Commencing at the northeast corner of said Section 19; thence on an azimuth of 202°10'46", a distance of 3721.09 feet to a point on a previously platted access road and the POINT OF BEGINNING; thence on an azimuth of 063°36'41", a distance of 185.30 feet; thence on an azimuth of 074°33'36", a distance of 273.41 feet to the edge of pad and the POINT OF ENDING; said ending point being located on an azimuth of 333°46'41", a distance of 2206.64 feet from the southeast corner of said Section 19.

Said tract contains 458.71 feet or 27.80 rods (1.32 acres).

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

Quentin Obrigewitsch, Professional Land Surveyor N.D. No. 5999

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/10/12
NORTH DAKOTA

Parcel	Land Owner	Linear Feet	Linear Rods	Pad Fence Acreage	Right-of-Way Acreage
1	1994	458.71'	27.80 Rods	10.30 Acres	1.32 Acres

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Rev'd. 7/02/2012 QW-296/13-18

Charging Eagle 9-19-24-4H3
Kodiak Oil & Gas Corp.
1625 Broadway, Suite 250, Denver, Colorado 80202

SHEET no. 1

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Access Road Right-Of-Way
N1/2SE1/4, Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

DESIGN BY AR/JJK | DRAFT BY G.O. | PROJECT NO. 3712587 | DATE 06/28/2012

J:\oilfield\Kodiak\3712587\CADD\37125878AS03.dwg 11x17

Kadrmas, Lee & Jackson 2012

Jul 09, 2012 - 4:28pm - J:\oilfield\Kodiak\3712587\CADD\37125878AS03.dwg

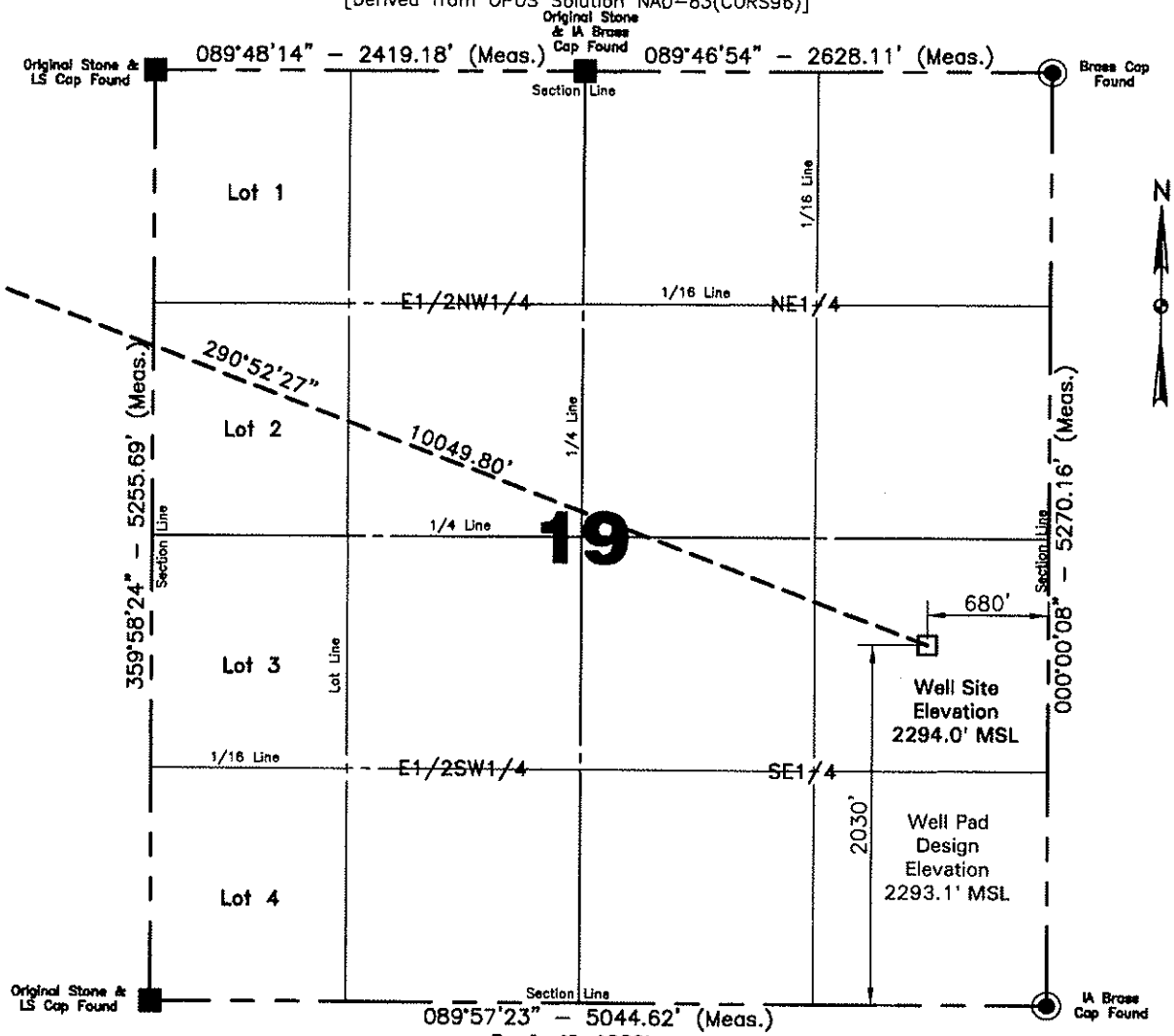
WELL LOCATION PLAT

Kodiak Oil & Gas Corp.

1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-13H

2030 feet from the south line and 680 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
345 feet from the south line and 250 feet from the west line (bottom location)
Section 13, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994
Latitude 47°32'09.810" North; Longitude 102°18'54.722" West (surface location)
Latitude 47°32'45.121" North; Longitude 102°21'11.584" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Scale 1"=1000'

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-13H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

Nicholas Jensen 06/26/2012
Surveyed By Date Revised: 7/25/2012

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Vertical Control Datum Used
North American Vertical Datum 1988 (NAVD 88)
Based on elevation derived from OPUS Solution on GPS*30-147-91 (iron rebar) Located a distance of 3100.80' on an azimuth of 228°07'47" from the SE corner of Section 19, T.147N., R.91W., 5th P.M. being at 2301.16' Elevation MSL.

Project No. 3712586
Book OW-296 Pg. 13-18 Staking

Professional Consulting Engineers and Surveyors
Registered in
North Dakota, South Dakota
Montana, Wyoming & Minnesota
Tele-Fax No. 701-483-2795
Bus. Phone No. 701-483-1284
P.O. Box 290
677 27th Ave. East
Dickinson, North Dakota 58602
Certificate of Authorization #C-061

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

HORIZONTAL SECTION PLAT

Kodiak Oil & Gas Corp.

1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-13H

2030 feet from the south line and 680 feet from the east line (surface location)

Section 19, T. 147 N., R. 91 W., 5th P.M.

345 feet from the south line and 250 feet from the west line (bottom location)

Section 13, T. 147 N., R. 92 W., 5th P.M.

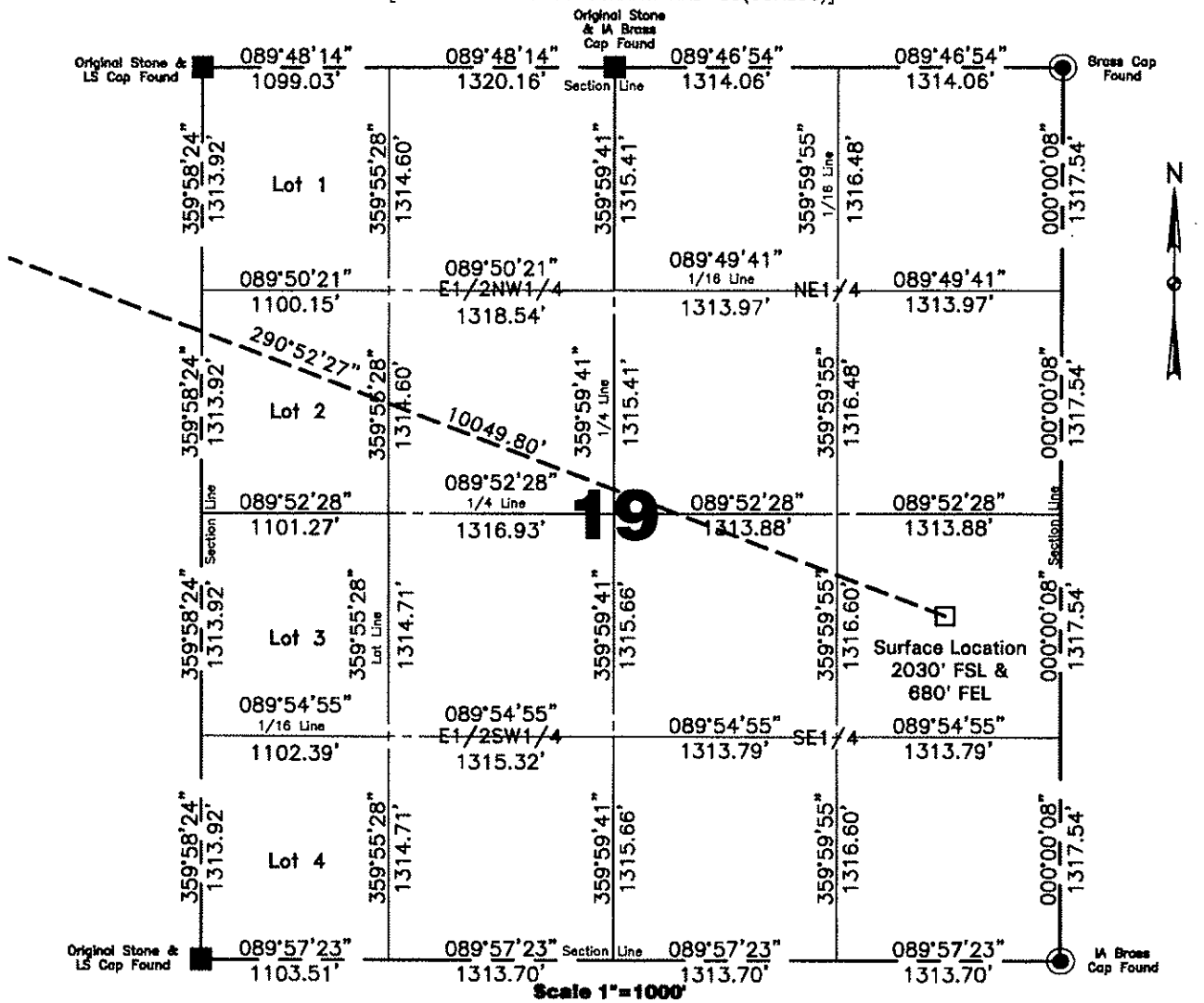
Dunn County, North Dakota

Surface owner @ well site – 1994

Latitude 47°32'09.810" North; Longitude 102°18'54.722" West (surface location)

Latitude 47°32'45.121" North; Longitude 102°21'11.584" West (bottom location)

[Derived from OPUS Solution NAD–83(CORS96)]



Scale 1"=1000'

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-13H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Surveyed By	Field Book
N. Jensen	OW–296
Computed & Drawn By	Project No.
A.R./J.K.	3712586

Revised: 7/25/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:30pm – J:\oilfield\Kodiak\3712586\CADD\3712586BAS01.dwg

© Kadrmas, Lee & Jackson 2012

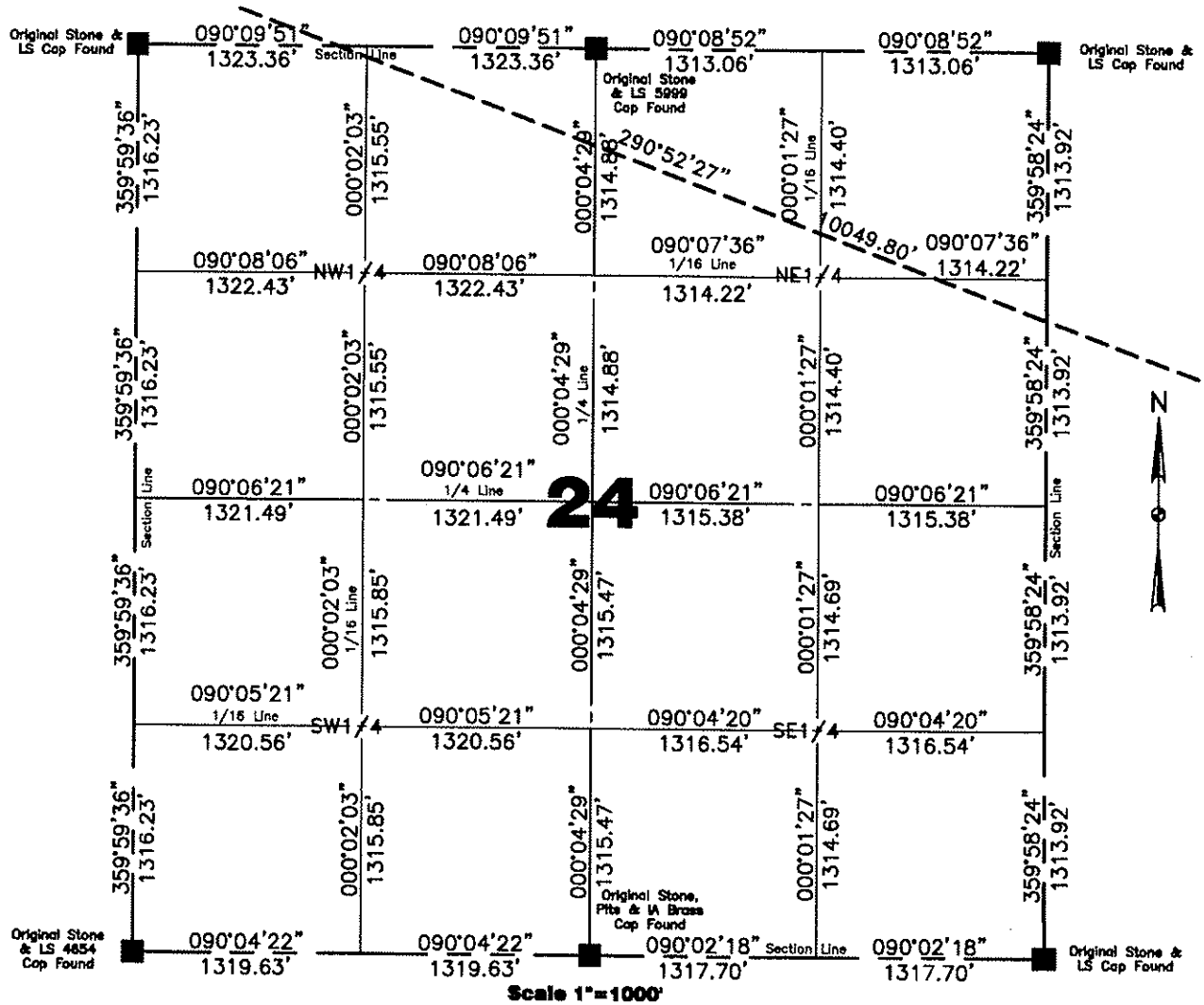
HORIZONTAL SECTION PLAT

Kodiak Oil & Gas Corp.

1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-13H

2030 feet from the south line and 680 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
345 feet from the south line and 250 feet from the west line (bottom location)
Section 13, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994
Latitude 47°32'09.810" North; Longitude 102°18'54.722" West (surface location)
Latitude 47°32'45.121" North; Longitude 102°21'11.584" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



Scale 1"=1000'

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-13H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon Geodetic North derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Surveyed By	Field Book
N. Jensen	OW-296
Computed & Drawn By	Project No.
A.R./J.K.	3712586

Revised: 7/25/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:31pm – J:\oilfield\Kodiak\3712586\CADD\3712586BAS01.dwg

© Kadrmas, Lee & Jackson 2012

HORIZONTAL SECTION PLAT

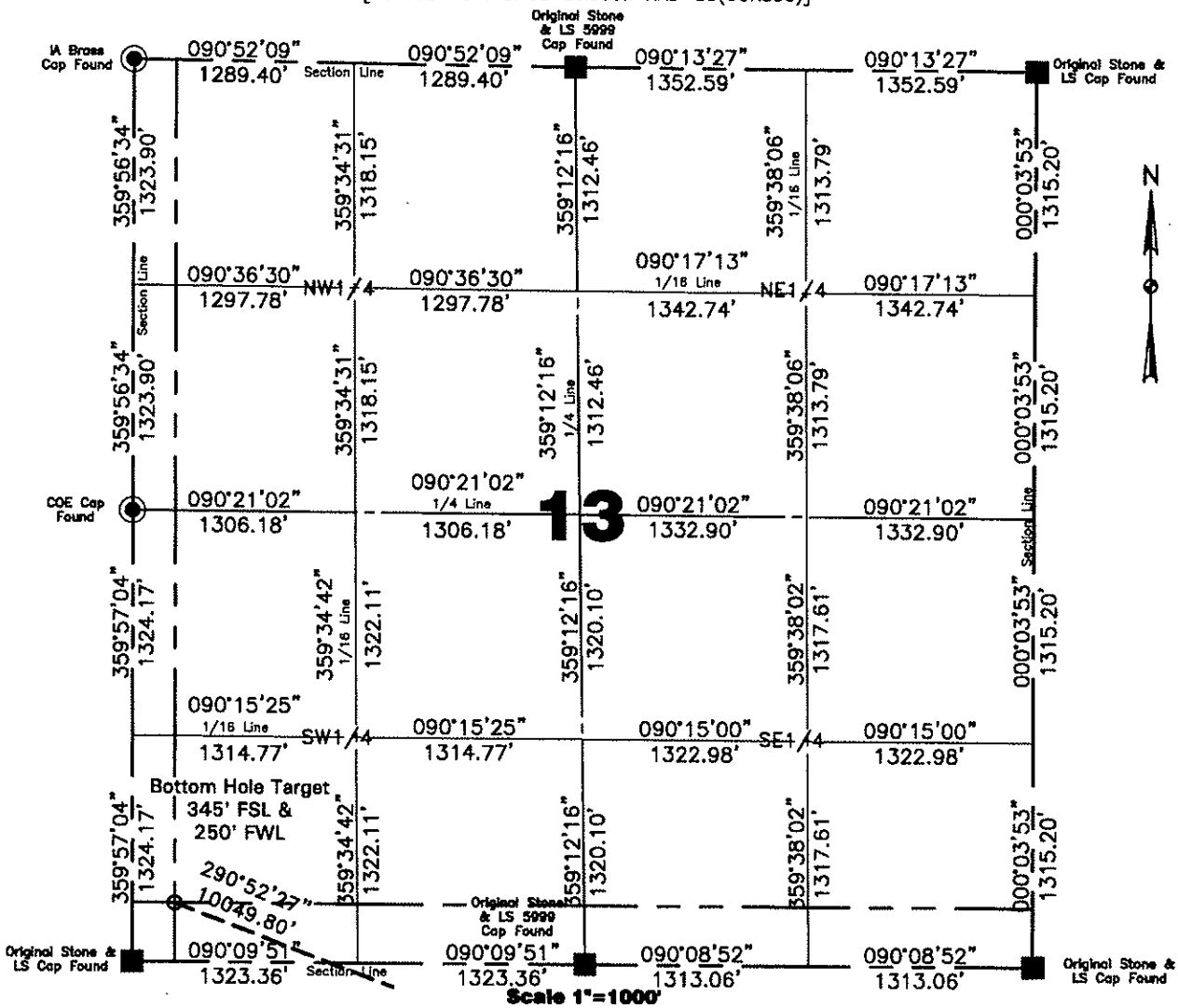
Kodiak Oil & Gas Corp.

1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-13H

2030 feet from the south line and 680 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
345 feet from the south line and 250 feet from the west line (bottom location)
Section 13, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994

Latitude 47°32'09.810" North; Longitude 102°18'54.722" West (surface location)
Latitude 47°32'45.121" North; Longitude 102°21'11.584" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



Scale 1"=1000'

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-13H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Surveyed By	Field Book
N. Jensen	OW-296
Computed & Drawn By	Project No.
A.R./J.K.	3712586

Revised: 7/25/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:31pm – J:\oilfield\Kodiak\3712586\CADD\3712586BAS01.dwg

© Kadrmas, Lee & Jackson 2012

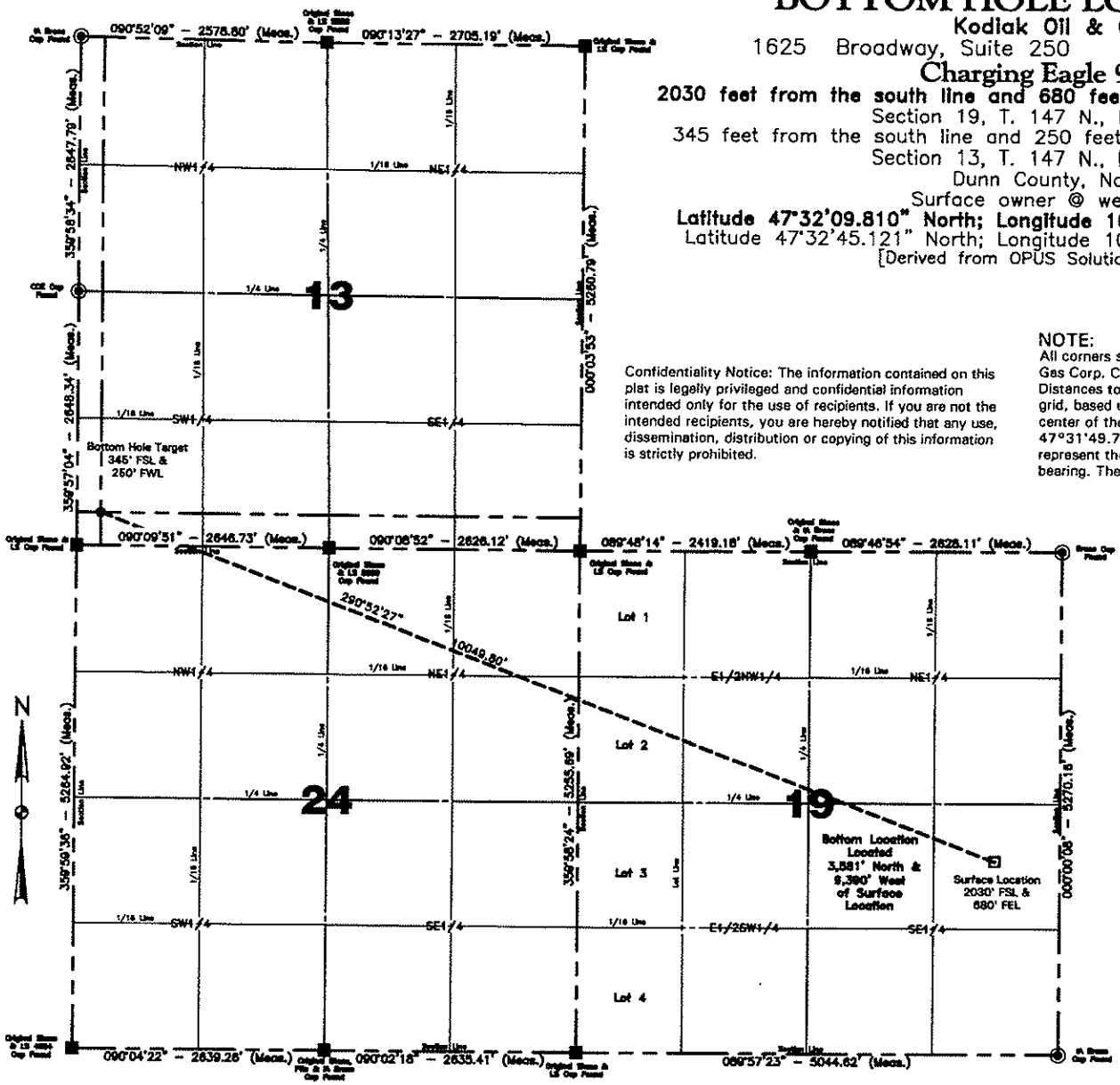
BOTTOM HOLE LOCATION PLAT

Kodiak Oil & Gas Corp.
1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-13H

2030 feet from the south line and 680 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
345 feet from the south line and 250 feet from the west line (bottom location)
Section 13, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994

Latitude 47°32'09.810" North; Longitude 102°18'54.722" West (surface location)
Latitude 47°32'45.121" North; Longitude 102°21'11.584" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-13H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Computed & Drawn By	Surveyed By	Approved By	Scale	Date
A.R./J.K.	N. Jensen	Q. Obrigewitsch	1"=1700'	06/28/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	B.H. Layout	7/25/2012	3712586	5

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:32pm – J:\oilfield\Kodiak\3712586\CADD\3712586BAS01.dwg

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Section 19, T 147 N, R 91 W, 5th P.M.
Dunn County, North Dakota

Charging Eagle 9-19-24-4H3 Elevation	2294.5' MSL
Charging Eagle 9-19-13-13H Elevation	2294.0' MSL
Charging Eagle 9-19-13-12H Elevation	2293.9' MSL
Well Pad Design Elevation	**2293.1' MSL**

Excavation	38,660 C.Y.
Plus Cuttings Pit	4,030 C.Y.
	42,690 C.Y.
Embankment	6,040 C.Y.
Plus Shrinkage (+30%)	1,815 C.Y.
	7,855 C.Y.
Stockpile Cuttings Pit	4,030 C.Y.
Stockpile Top Soil (6")	5,175 C.Y.
Production Rehabilitation	0 C.Y.
Road Embankment & Stockpile from Pad	25,630 C.Y.
Disturbed Area From Pad	6.42 Acres
Area Inside Barbed Wire Fence	10.30 Acres

NOTE :
All cut end slopes are designed at 3:1 slopes &
All fill end slopes are designed at 3:1 slopes

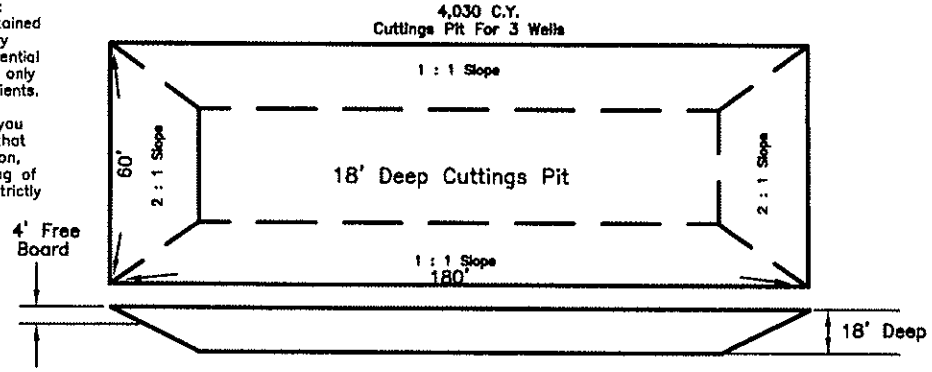
Charging Eagle 9-19-24-4H3
Well Site Location
2030' FSL
710' FEL

Charging Eagle 9-19-13-13H
Well Site Location
2030' FSL
680' FEL

Charging Eagle 9-19-13-12H
Well Site Location
2030' FSL
650' FEL

Cuttings Pit

Confidentiality Notice:
The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

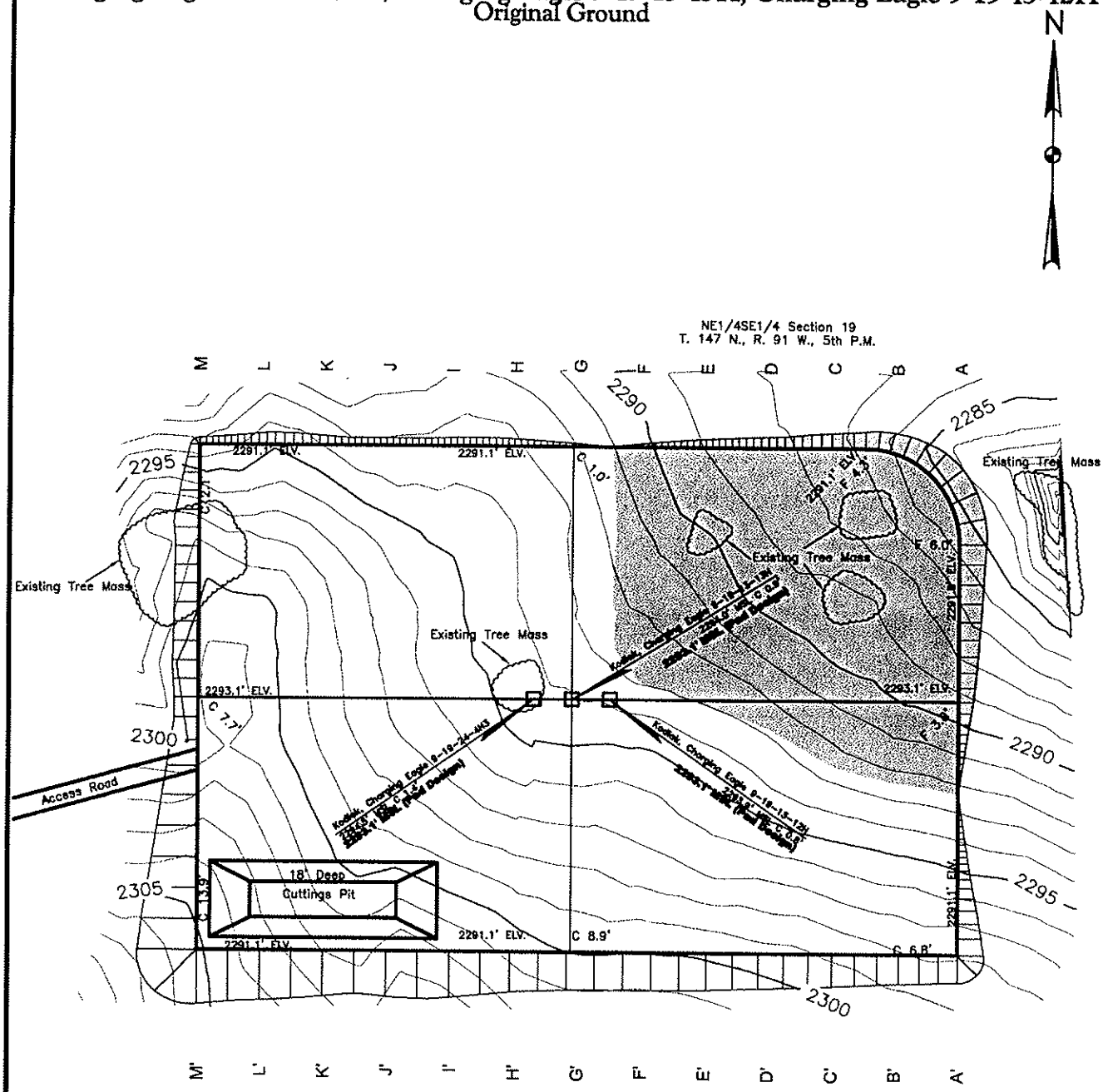


Drawn By: J. Kress	Surveyed By: N. Jensen	Approved By: Q. Obrigewitsch	Scale: None	Date: 7/03/2012
Field Book: OW-296	Material: Quantities	Revised: —	Project No.: 3712585-3712587	Drawing No.: 6

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Original Ground



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

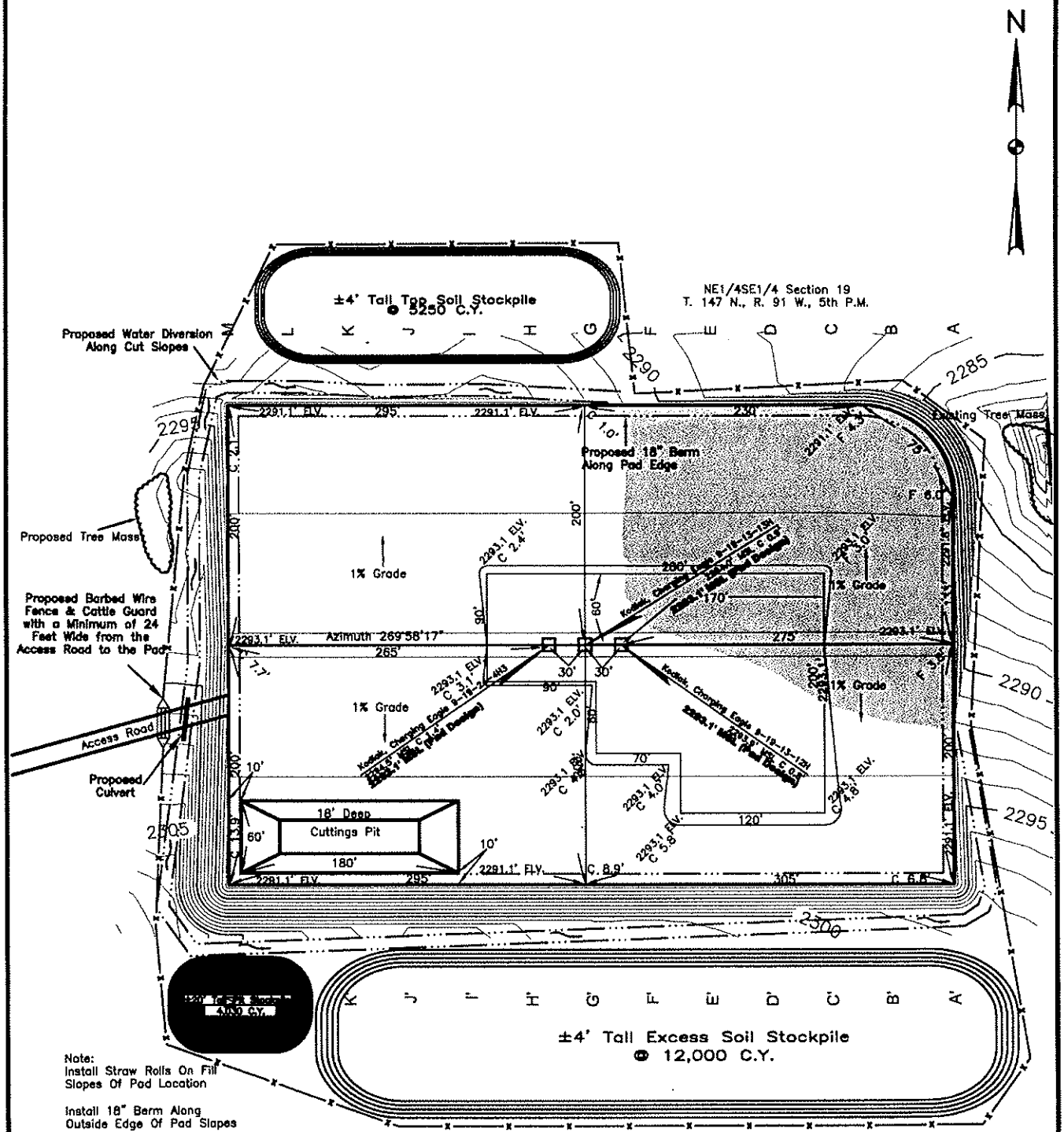
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Original Ground	–	3712585-3712587	7

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 – 5:09pm – J:\oilfield\Kodiak\3712586\CADD\3712586BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Pad Layout



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

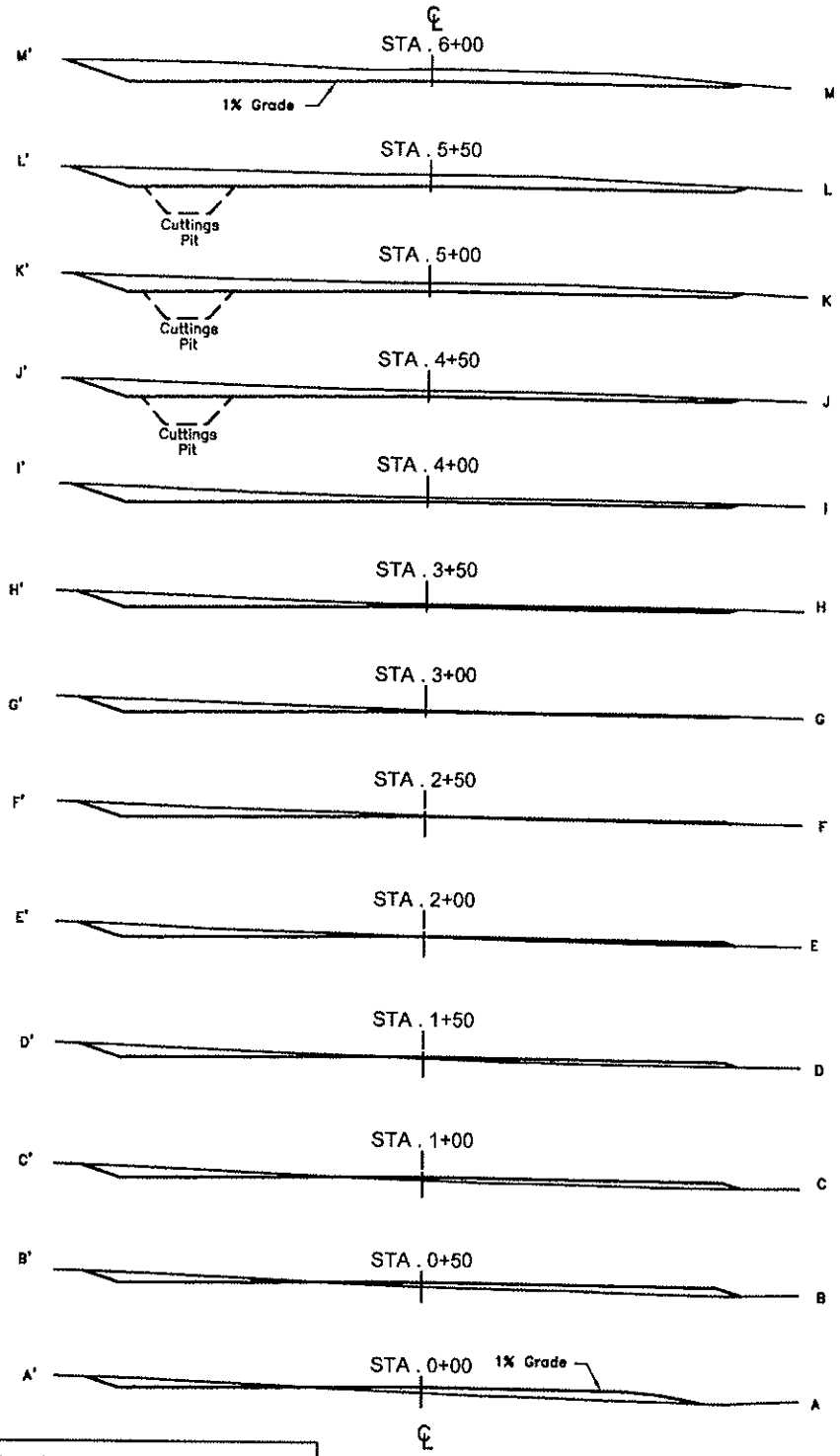
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Pad Layout	—	3712585-3712587	8

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Cross Sections



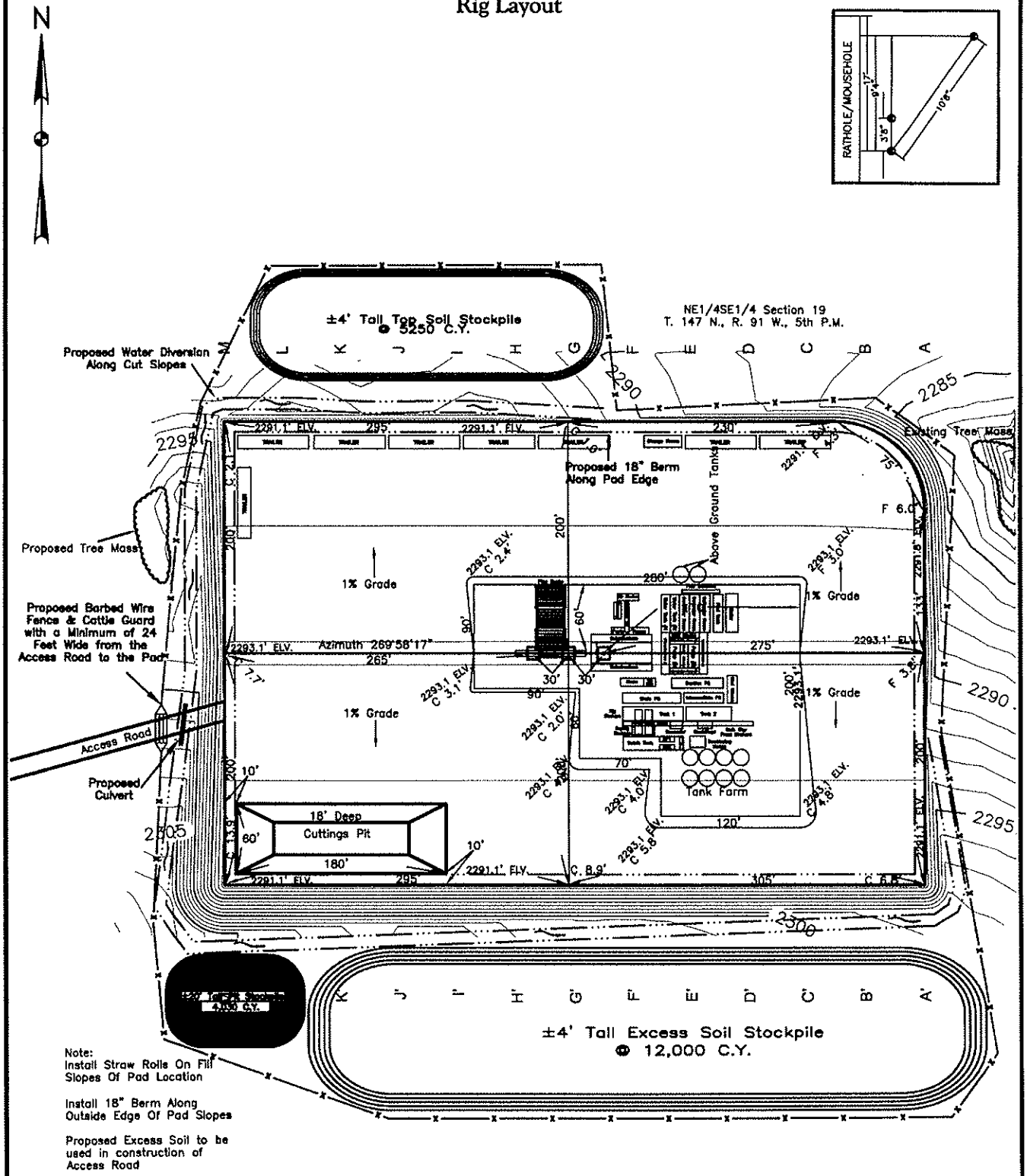
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Cross Sections	–	3712585-3712587	9

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Rig Layout



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

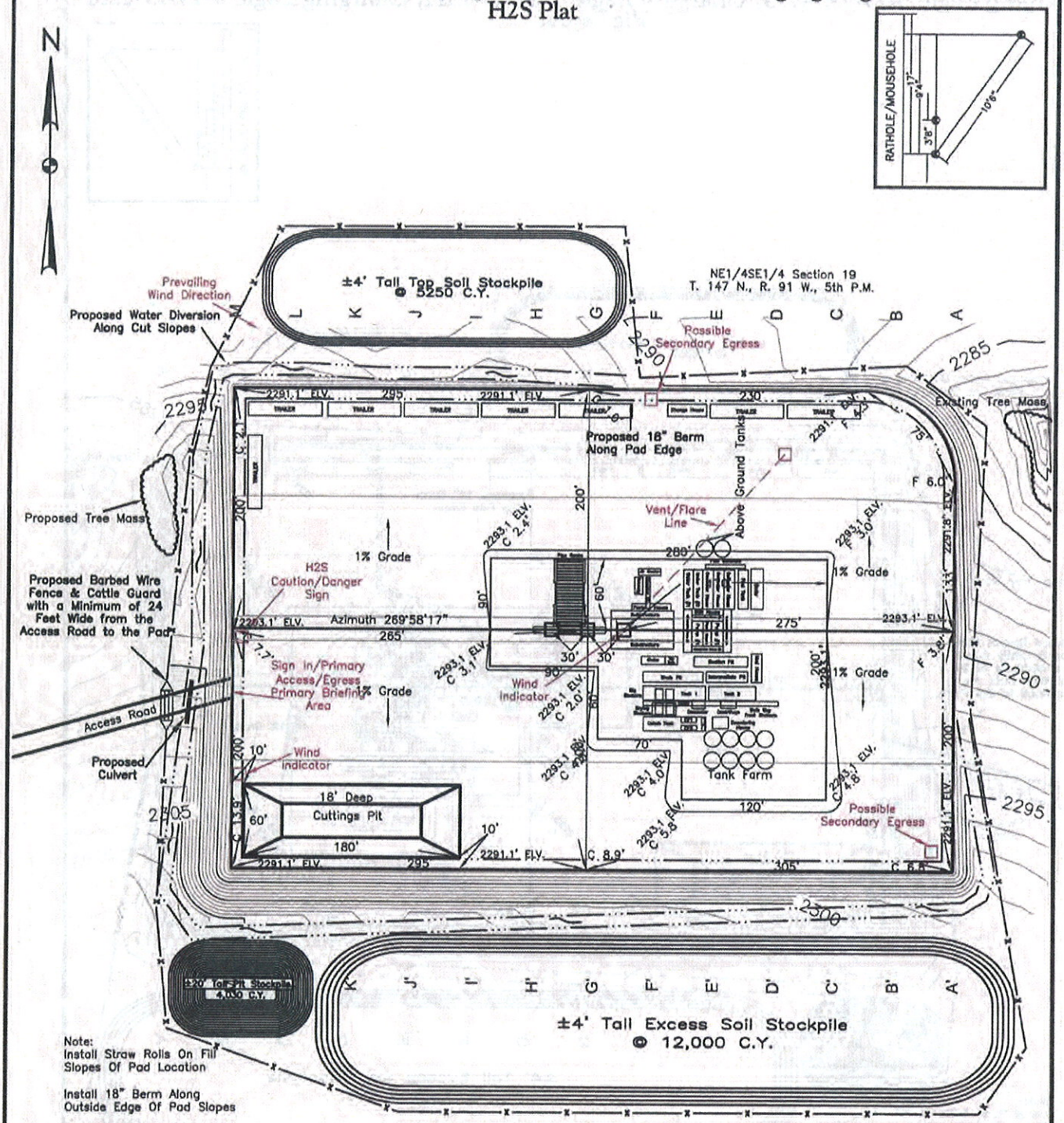
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Rig Layout	-	3712585-3712587	10

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
H2S Plat



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

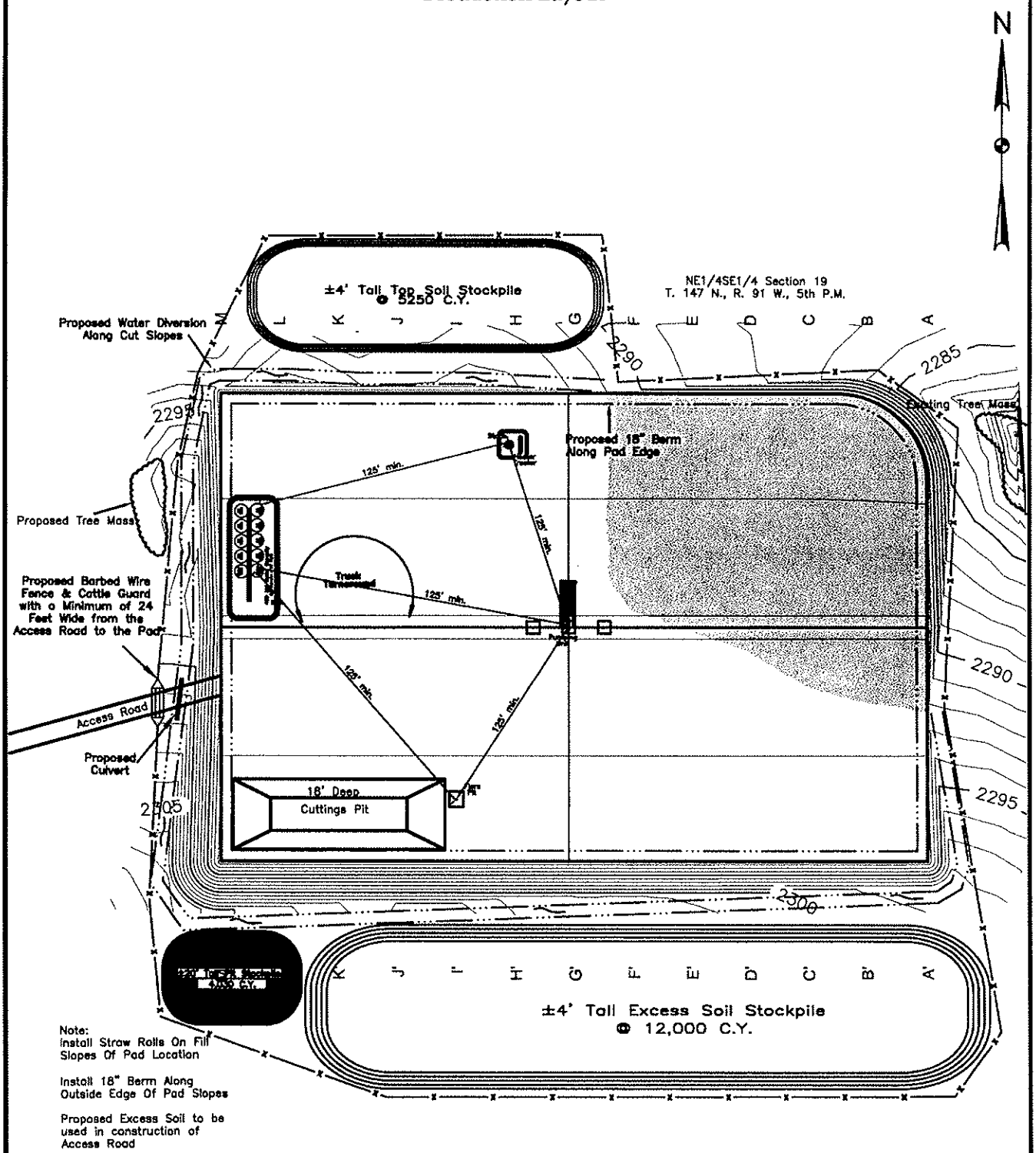
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	H2S Plat	-	3712585-3712587	10A

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 5:10pm - J:\oilfield\Kodiak\3712586\CADD\3712586BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Production Layout



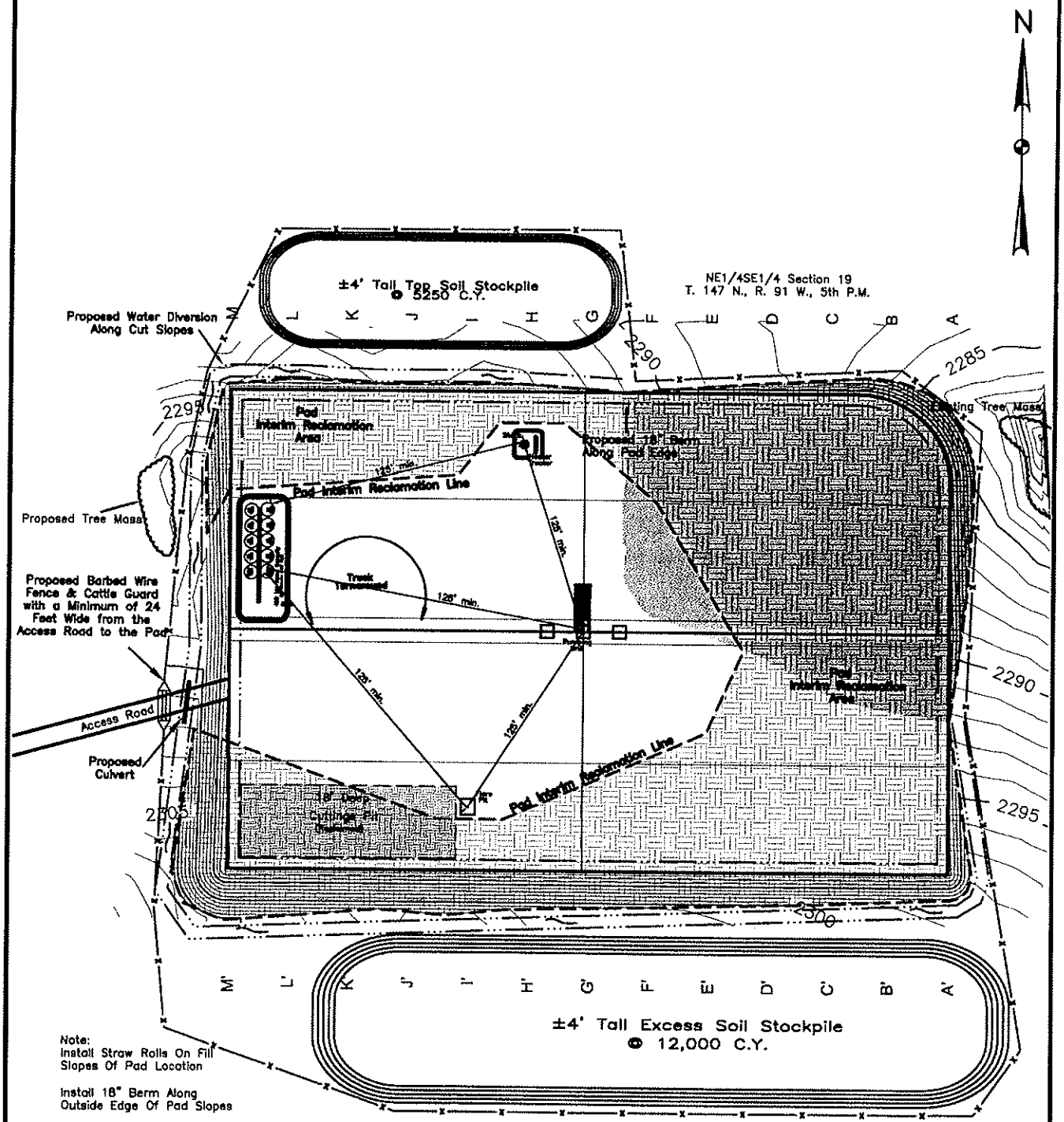
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Prod Layout	-	3712585-3712587	11

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Interim Reclamation Layout



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

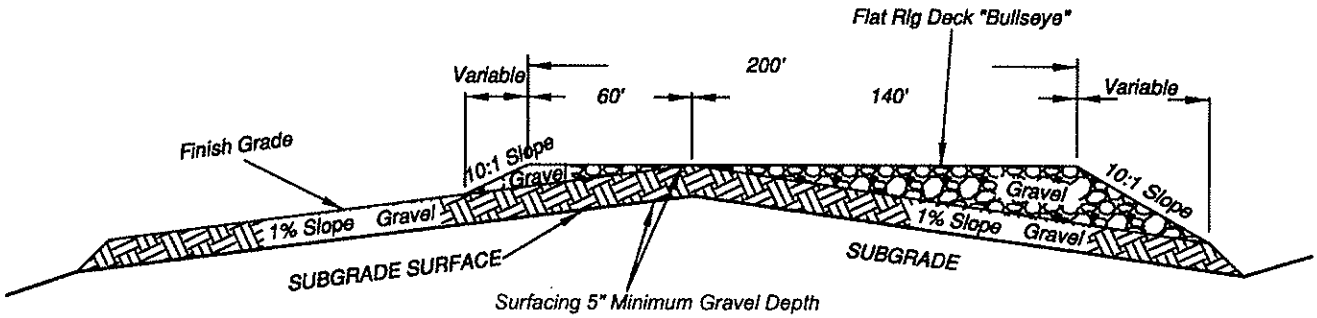
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Interim Layout	-	3712585-3712587	12

Kadrmas Lee & Jackson
Engineers Surveyors Planners

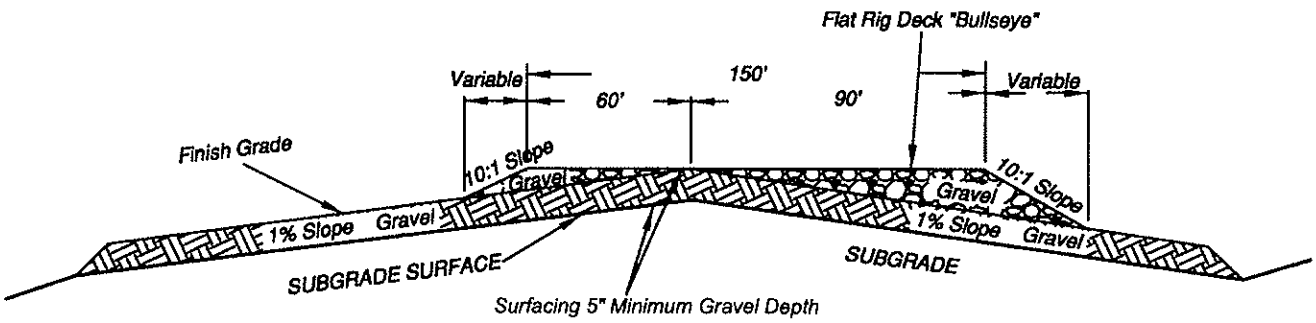
Jul 09, 2012 - 5:10pm - J:\oilfield\Kodiak\3712586\CADD\3712586AS02.dwg

© Kadrmas, Lee & Jackson 2012

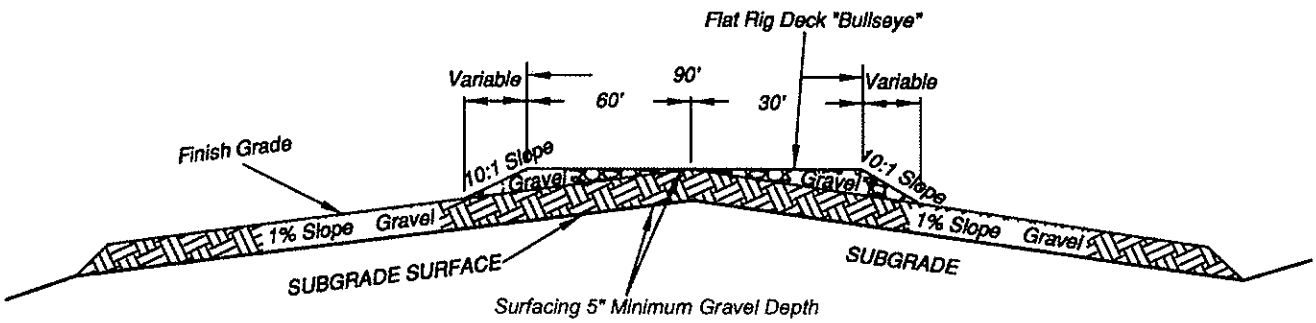
Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Well Pad Surfacing



TYPICAL BACK SECTION
No Scale



TYPICAL MID SECTION
No Scale



TYPICAL A HEAD SECTION
No Scale

1% Grade Pad Surfacing (5")	3,685 C.Y.
Flat Rig Deck Construction W/ 10:1 Slopes	840 C.Y.

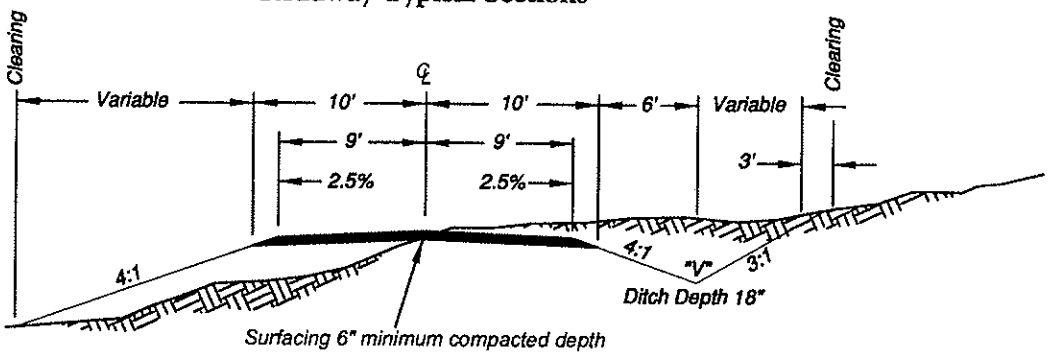
Confidentiality Notice:
The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	N. Jensen	Q. Obrigewitsch	None	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW--296	Comp. Surface	–	3712585--3712587	13

Kadrmas Lee & Jackson
Engineers Surveyors Planners

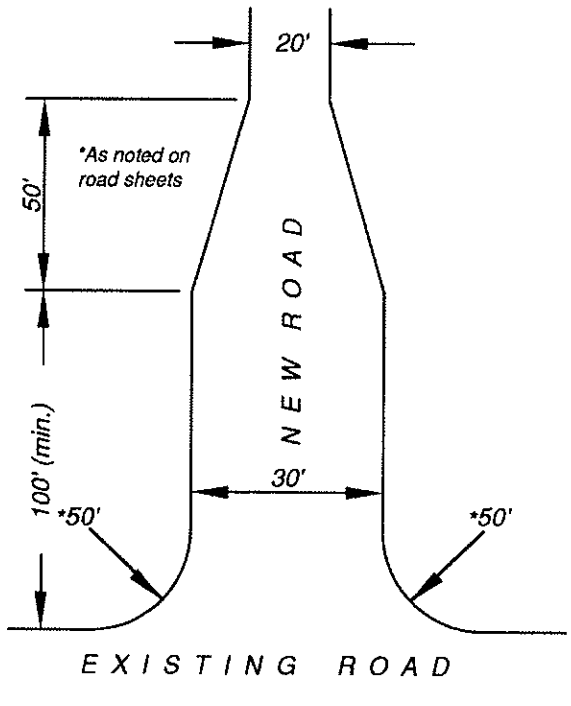
© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Roadway Typical Sections

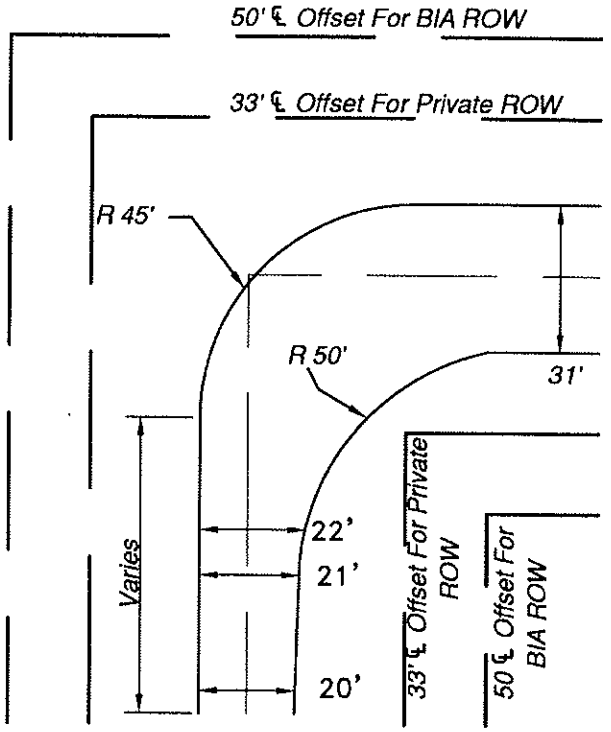


TYPICAL SECTION "V" DITCH ROAD
No Scale

Approach road grade 2% maximum for 100ft.
Install cross drain pipe where needed.



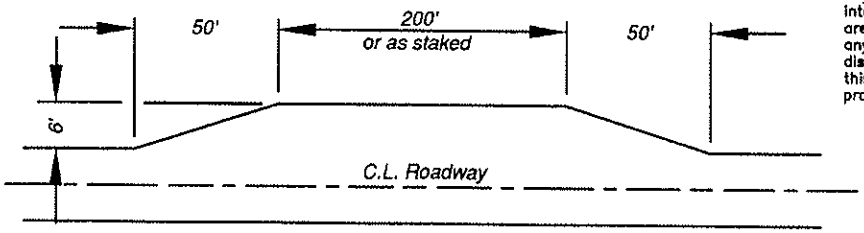
TYPICAL APPROACH ROAD CONNECTION
(DOUBLE LANE)
No Scale



TYPICAL 90 DEGREE ROAD TURN
(DOUBLE LANE)
No Scale

Note: State or County road approach fill slopes shall be constructed to applicable State/County standard.

Confidentiality Notice:
The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



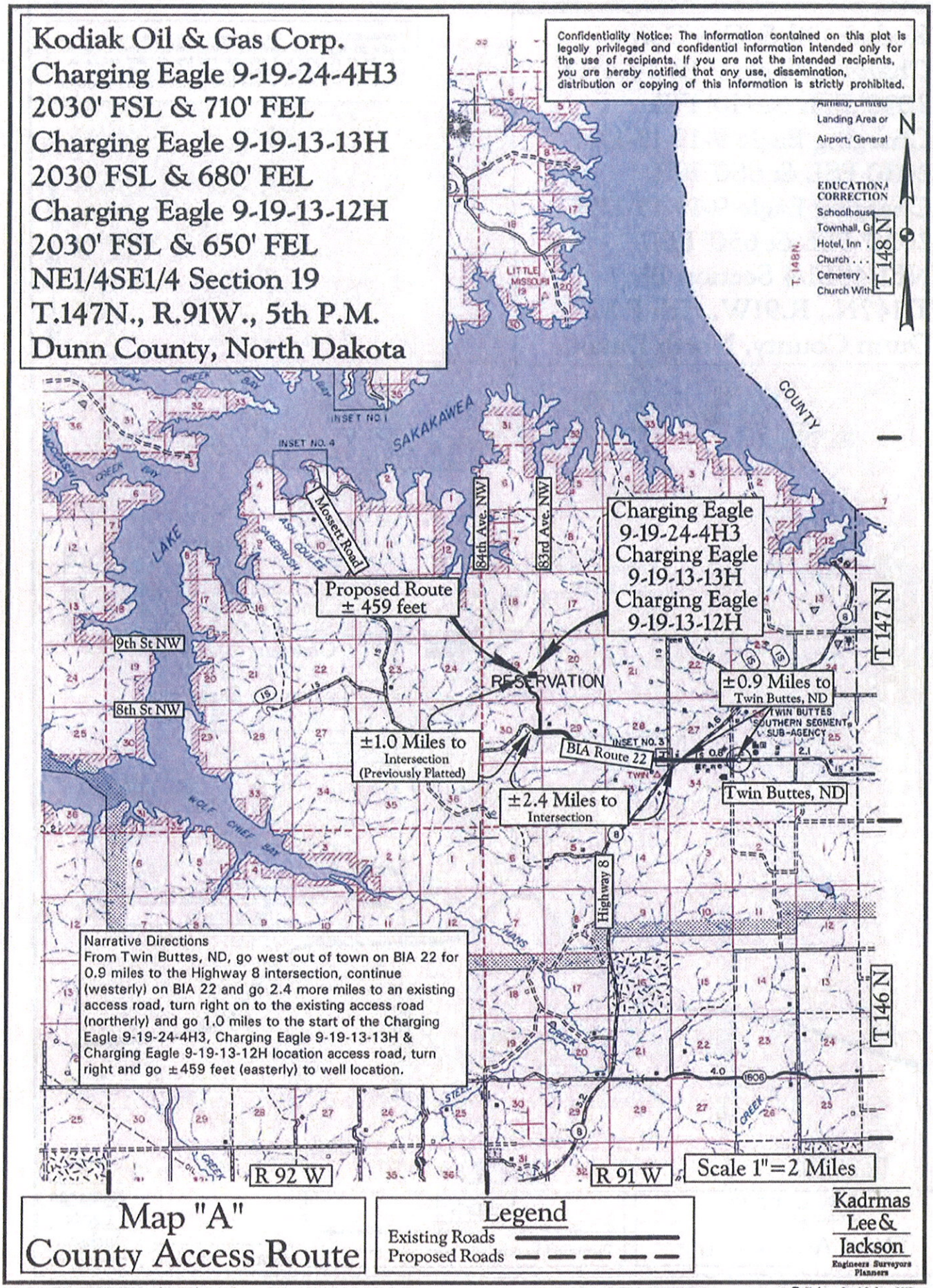
TYPICAL TURNOUT PLAN VIEW
No Scale
Construct turnouts as directed by Kodiak representative

Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	N. Jensen	Q. Obrigewitsch	None	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Road Typical	–	3712585-3712587	14

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 03, 2012 - 7:33am - J:\oilfield\Kodiak\3712588\CADD\3712586BAS02.dwg

© Kadrmas, Lee & Jackson 2012

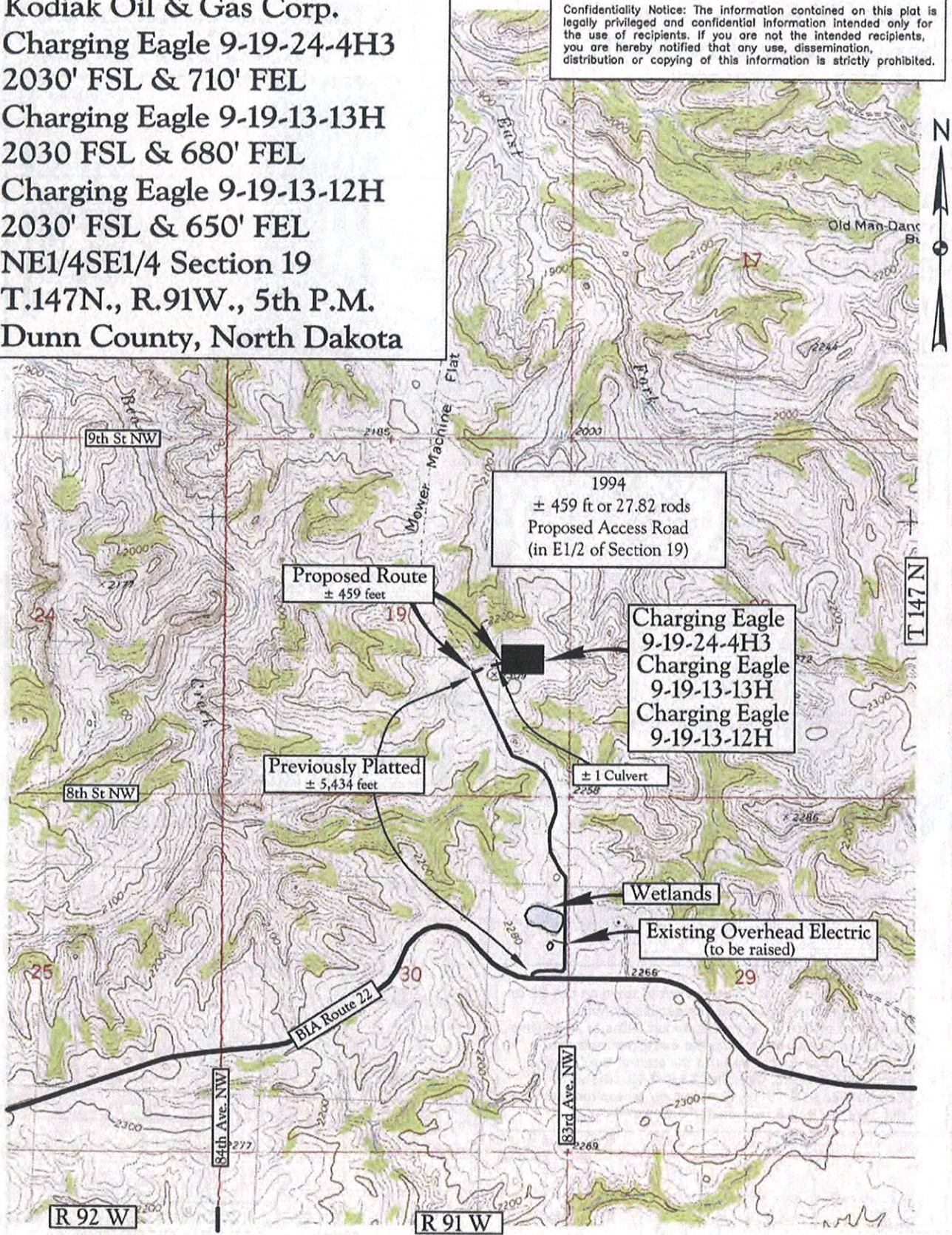


Jun 29, 2012 – 2:30pm – J:\oilfield\Kodiak\3712585\CADD\3712585LOC01.dwg

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3
2030' FSL & 710' FEL
Charging Eagle 9-19-13-13H
2030 FSL & 680' FEL
Charging Eagle 9-19-13-12H
2030' FSL & 650' FEL
NE1/4SE1/4 Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



Map "B"
Quad Access Route

Legend
Existing Roads
Proposed Roads

Scale 1"=2000'

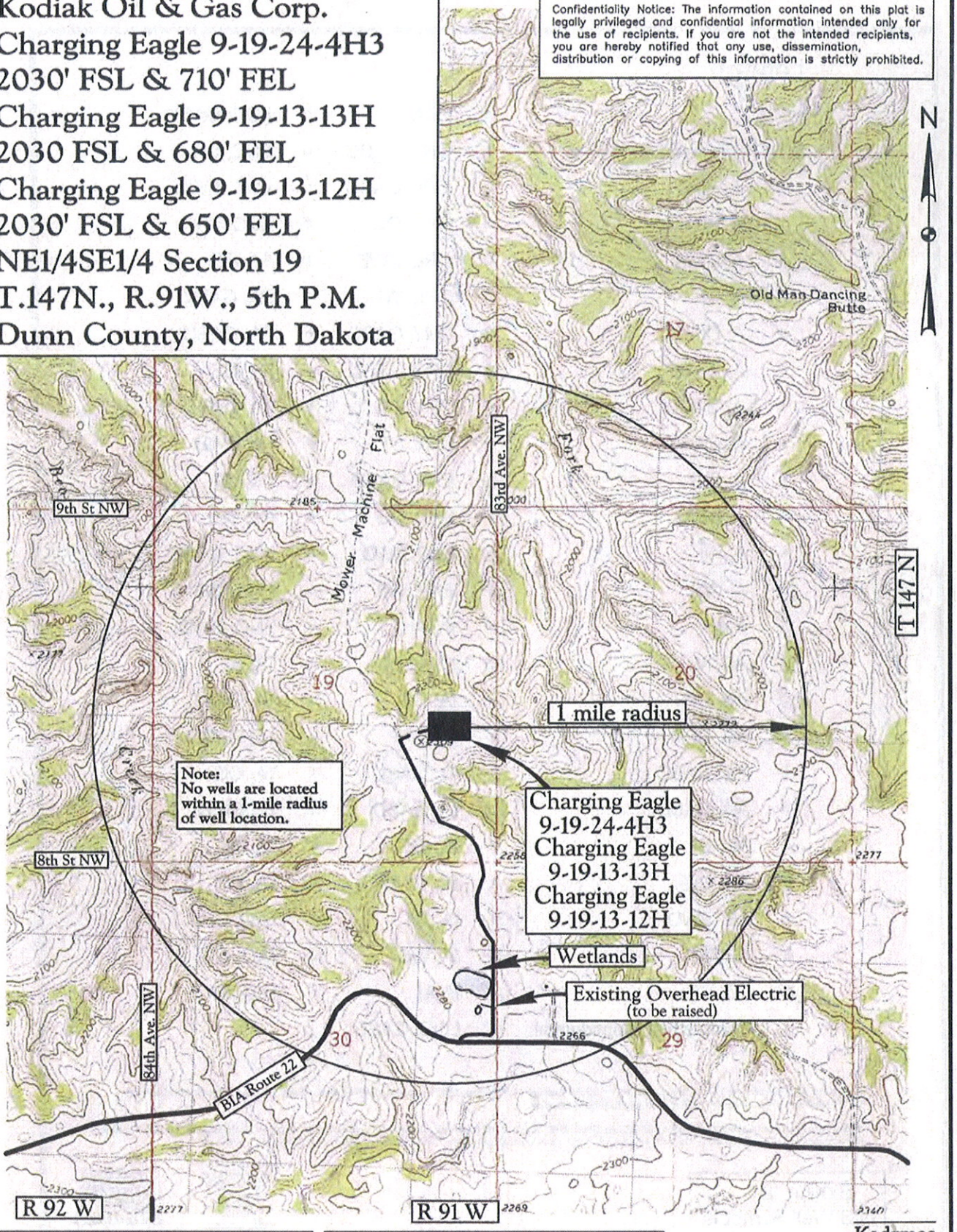
Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 5:13pm - J:\oilfield\Kodiak\3712586\CADD\3712586LOC01.dwg

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3
2030' FSL & 710' FEL
Charging Eagle 9-19-13-13H
2030 FSL & 680' FEL
Charging Eagle 9-19-13-12H
2030' FSL & 650' FEL
NE1/4SE1/4 Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



Map "C"
One Mile Radius Map

Legend
Existing Roads
Proposed Roads

Scale 1"=2000'

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 03, 2012 - 7:50am - J:\oilfield\Kodiak\3712585\CADD\3712585LOC01.dwg

© Kadrmas, Lee & Jackson 2012

Legend

wells

STATUS, WELL_TYPE

- A, AGD
- A, AI
- A, CBM
- A, DF
- A, DFP
- A, GASC
- A, GASD
- A, GASN
- A, OG
- A, SWD
- A, WI
- A, WS
- A,AI
- AB, AI
- AB, DF
- AB, DFP
- AB, GASC
- AB, GASD
- AB, GI
- AB, OG
- AB, SWD
- AB, WI
- AB, WS
- Confidential, Confidential
- DRL, AI
- DRL, GASC
- DRL, GASD
- DRL, OG
- DRL, SWD
- DRL, WI
- DRY, GASC
- DRY, GASD
- DRY, OG
- DRY, ST
- EXP, GASD
- EXP, OG
- EXP, SWD
- EXP, WS
- IA, AI
- IA, CBM
- IA, DF
- IA, DFP
- IA, GASC
- IA, GASD
- IA, OG
- IA, SWD
- IA, WI
- IA, WS
- IA,AI
- LOC, GASC
- LOC, GASD
- LOC, OG
- LOC, SWD
- LOC, WI
- PA, DF
- PA, GASC
- PA, GASD
- PA, GS
- PA, OG
- PA, SWD
- PA, WI
- PA, WS
- PNC, GASD
- PNC, OG
- PNC, SWD
- TA, AI
- TA, GASC
- TA, GASD
- TA, OG
- TA, SWD
- TA, WI
- TA, WS
- TAO, GI
- TAO, OG
- TAO, WI

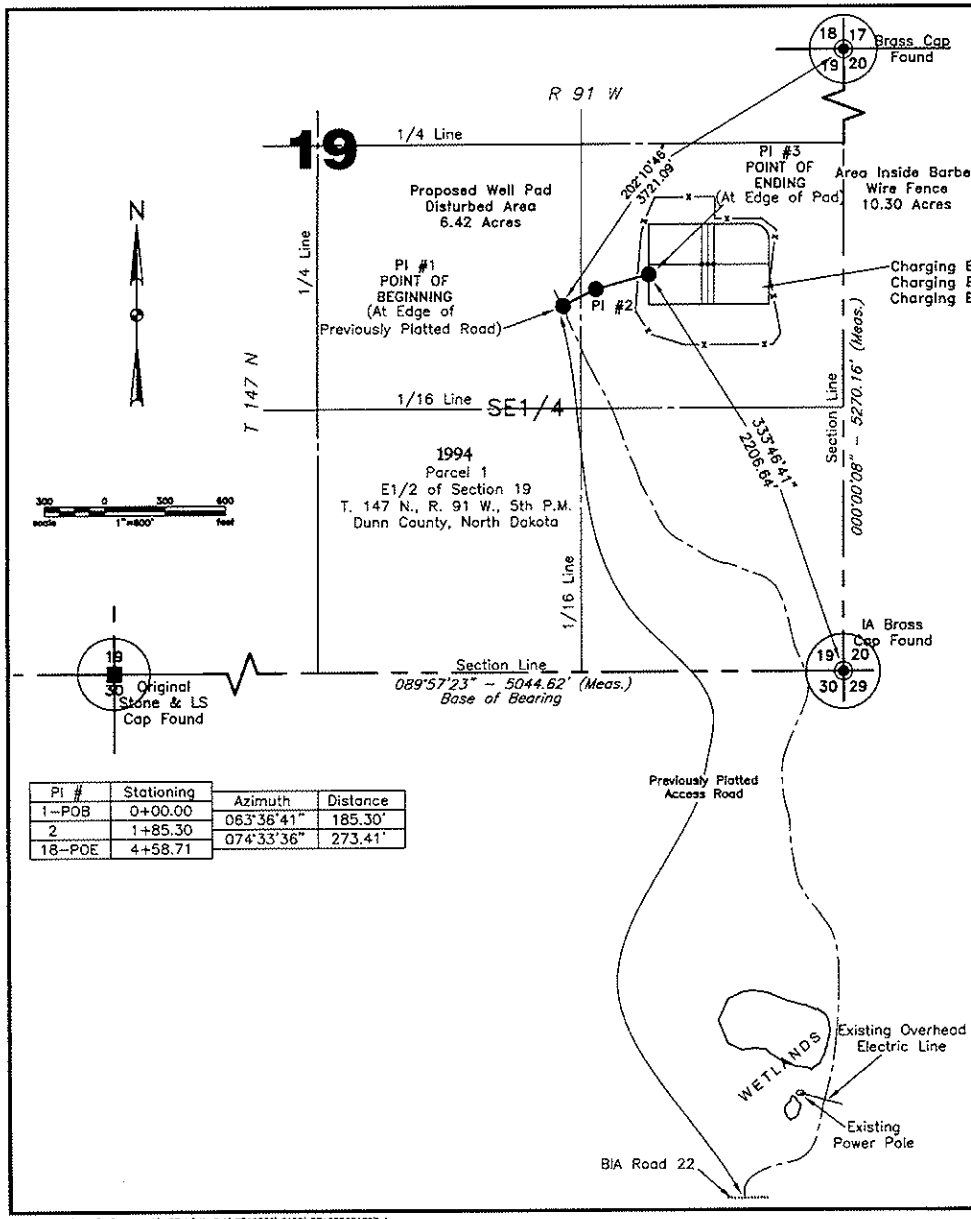
A = Active, AB = Abandoned, DRL = Drilling, Dry = Dry, EXP = Expired, IA = Inactive, LOC = Location, PA = Producer Abandoned, PNC = Permit Now Cancelled
TA = Temporarily Abandoned, TAO = Temporarily Abandoned Observation.

AGD = Acid Gas Disposal, AI = Air Injection, DF = Dump Flood, DFP = Dump Flood Producing, GASN = Nitrogen Gas Well, GASC = Gas Condensate, GASD = Gas Dry, GI = Gas Injection, GS = Gas Storage, OG = Oil or Gas Well, SWD = Salt Water Disposal, WI = Water Injection, WS = Water Supply, ST = Strat Test

Exhibit "D"
GIS Well Symbols

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Prepared by NDIC Oil and Gas Division



PI #	Stationing	Azimuth	Distance
1--POB	0+00.00	063°36'41"	185.30'
2	1+85.30	074°33'36"	273.41'
18--POE	4+58.71		

Road Right-of-Way Description

A tract of land located in the North Half of the Southeast Quarter (N1/2SE1/4) of Section 19, Township 147 North, Range 91 West of the 5th Principal Meridian, Dunn County, State of North Dakota, being more specifically described as a strip of land one hundred and twenty-five (125) feet in width, lying sixty-two and a half (62 1/2) feet on each side of the following described road centerline:

Commencing at the northeast corner of said Section 19; thence on an azimuth of 202°10'46", a distance of 3721.09 feet to a point on a previously platted access road and the POINT OF BEGINNING; thence on an azimuth of 063°36'41", a distance of 185.30 feet; thence on an azimuth of 074°33'36", a distance of 273.41 feet to the edge of pad and the POINT OF ENDING; said ending point being located on an azimuth of 333°46'41", a distance of 2206.64 feet from the southeast corner of said Section 19.

Said tract contains 458.71 feet or 27.80 rods (1.32 acres).

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

Quentin Obrigewitsch, Professional Land Surveyor N.D. No. 5999

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/10/12
NORTH DAKOTA

Parcel	Land Owner	Linear Feet	Linear Rods	Pad Fence Acreage	Right-of-Way Acreage
1	1994	458.71'	27.80 Rods	10.30 Acres	1.32 Acres

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Rev'd. 7/03/2012 OW-296/13-18

Charging Eagle 9-19-13-13H
Kodiak Oil & Gas Corp.
1625 Broadway, Suite 250, Denver, Colorado 80202

SHEET NO. 1

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Access Road Right-Of-Way
N1/2SE1/4, Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

DRWG. BY AJL/AK. CHK'D BY Q.O. PROJECT NO. 3712586 DATE 06/29/2012

J:\oilfield\Kodiak\3712586\CADD\37125868AS03.dwg 11x17

© Kadrmas, Lee & Jackson 2012

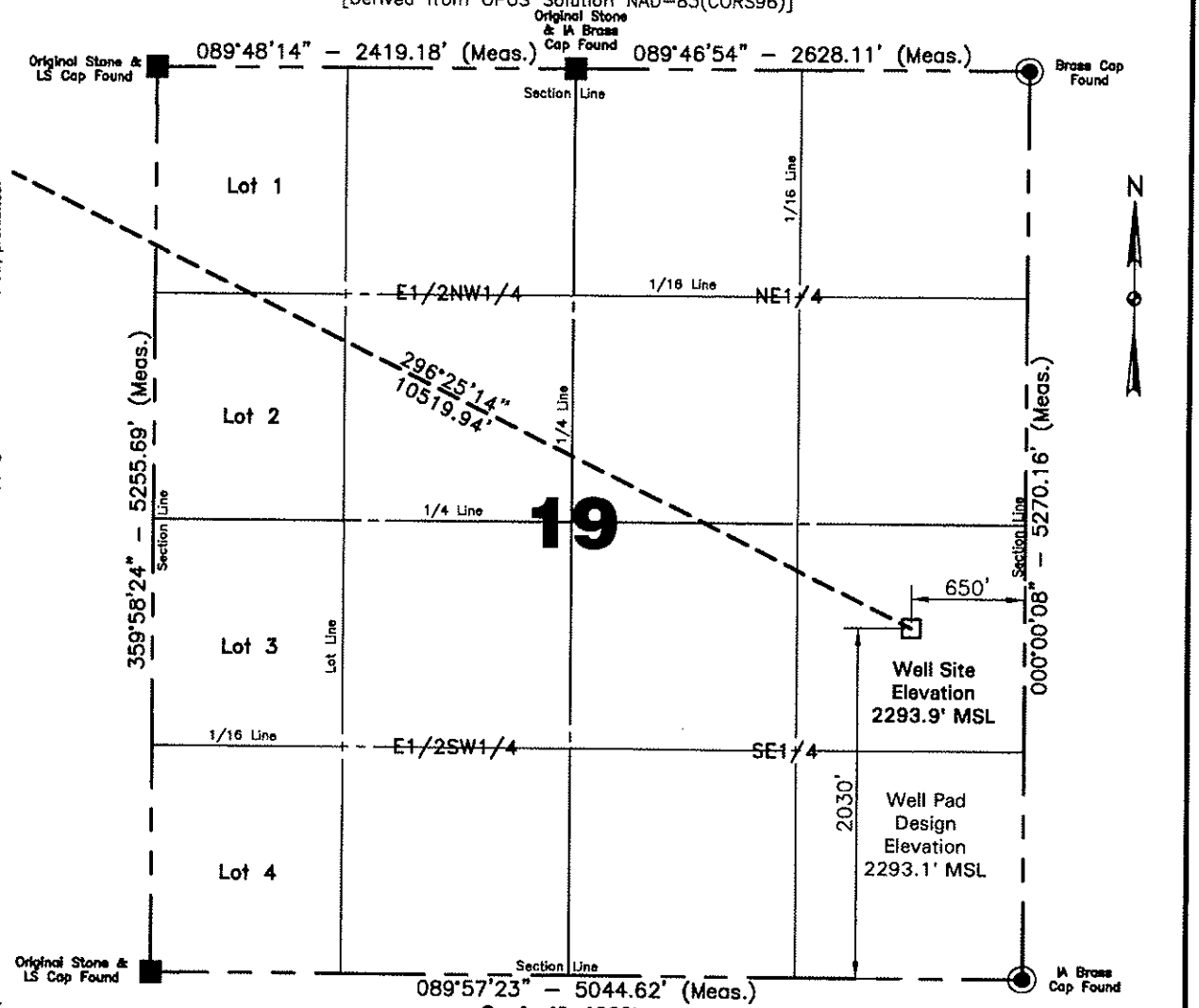
Jul 09, 2012 - 5:15pm - d:\oilfield\Kodiak\3712586\CADD\37125868AS03.dwg

WELL LOCATION PLAT

Kodiak Oil & Gas Corp.
1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-12H

2030 feet from the south line and 650 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
1445 feet from the south line and 250 feet from the west line (bottom location)
Section 13, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994
Latitude 47°32'09.810" North; Longitude 102°18'54.284" West (surface location)
Latitude 47°32'55.976" North; Longitude 102°21'11.607" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-12H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

Scale 1"=1000'

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

Nicholas Jensen 06/26/2012
Surveyed By Date

Revised: 7/25/2012

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Vertical Control Datum Used
North American Vertical Datum 1988 (NAVD 88)
Based on elevation derived from OPUS Solution on GPS*30-147-91 (iron rebar) Located a distance of 3100.80' on an azimuth of 228°07'47" from the SE corner of Section 19, T.147N., R.91W., 5th P.M. being at 2301.16' Elevation MSL.

Project No. 3712585
Book OW-296 Pg. 13-18 Staking

Professional Consulting Engineers and Surveyors
Registered in
North Dakota, South Dakota
Montana, Wyoming & Minnesota
Tele-Fax No. 701-483-2795
Bus. Phone No. 701-483-1284
P.O. Box 290
677 27th Ave. East
Dickinson, North Dakota 58602
Certificate of Authorization #C-061

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:32pm – J:\oilfield\Kodiak\3712585\CADD\3712585BAS01.dwg

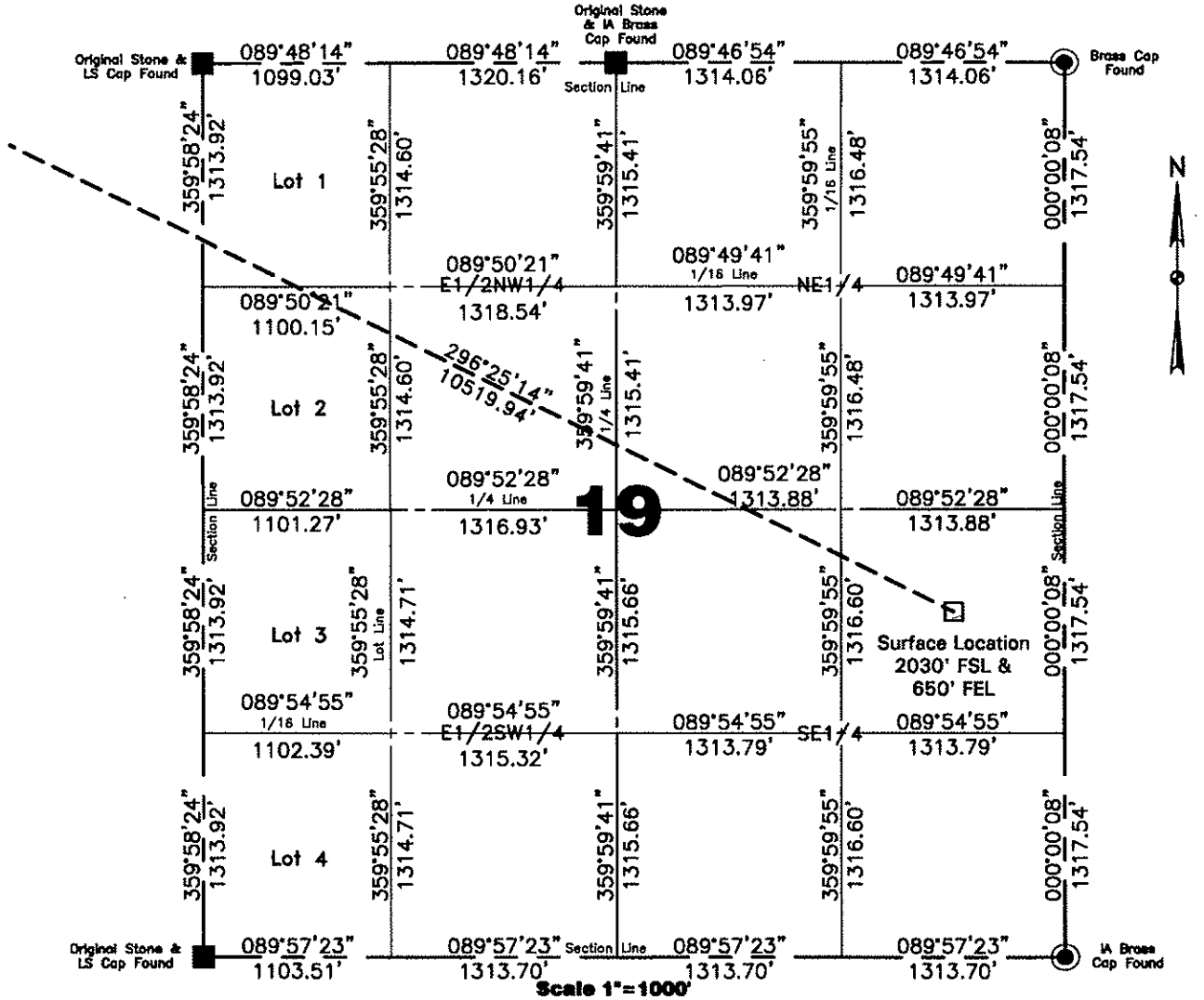
© Kadrmas, Lee & Jackson 2012

HORIZONTAL SECTION PLAT

Kodiak Oil & Gas Corp.
1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-12H

2030 feet from the south line and 650 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
1445 feet from the south line and 250 feet from the west line (bottom location)
Section 13, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994
Latitude 47°32'09.810" North; Longitude 102°18'54.284" West (surface location)
Latitude 47°32'55.976" North; Longitude 102°21'11.607" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



Scale 1"=1000'

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-12H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

Surveyed By	Field Book
N. Jensen	OW-296
Computed & Drawn By	Project No.
A.R./J.K.	3712585

Revised: 7/25/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:33pm – J:\oilfield\Kodiak\3712585\CADD\3712585BAS01.dwg

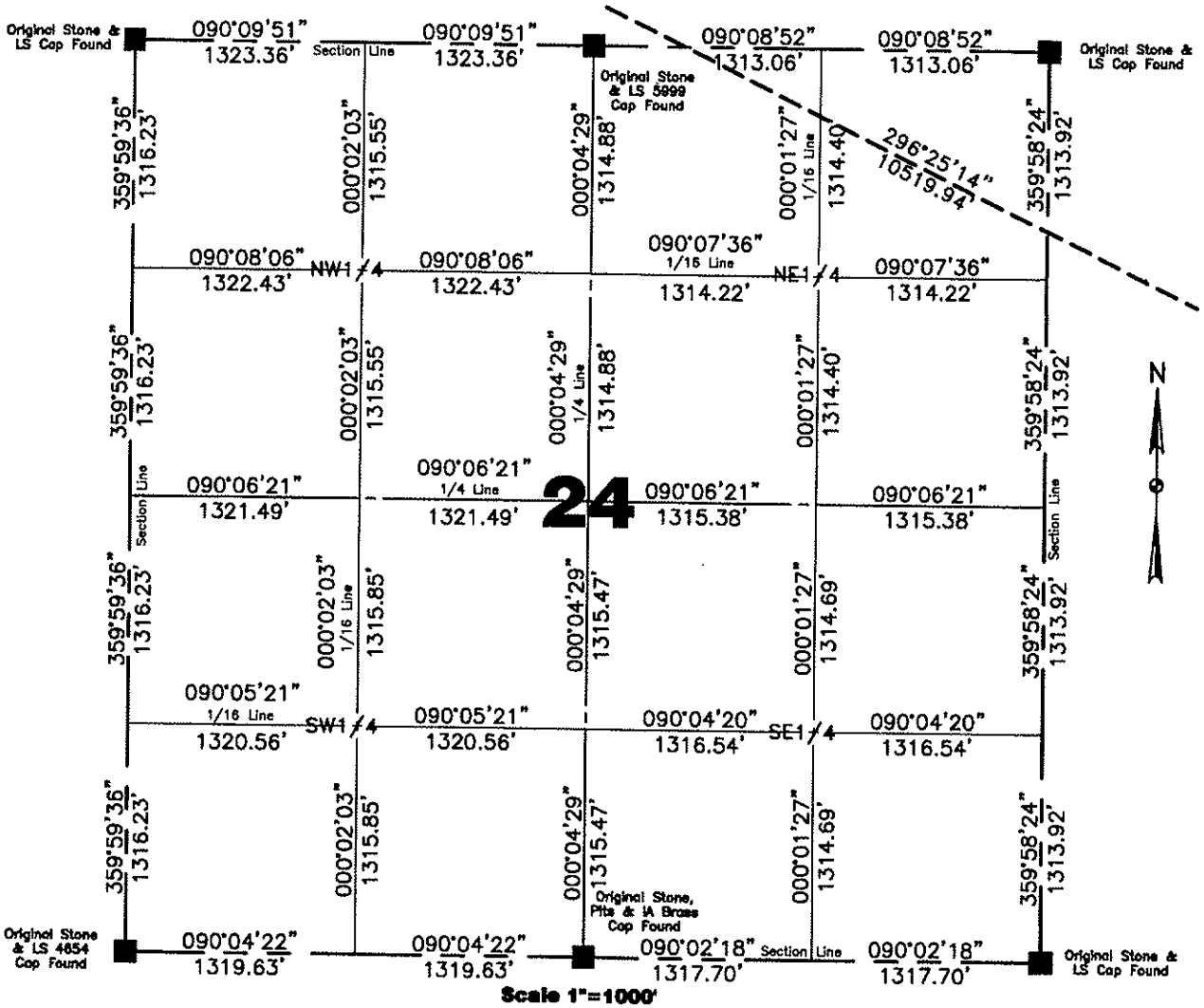
© Kadrmas, Lee & Jackson 2012

HORIZONTAL SECTION PLAT

Kodiak Oil & Gas Corp.
1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-12H

2030 feet from the south line and 650 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
1445 feet from the south line and 250 feet from the west line (bottom location)
Section 13, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994
Latitude 47°32'09.810" North; Longitude 102°18'54.284" West (surface location)
Latitude 47°32'55.976" North; Longitude 102°21'11.607" West (bottom location)
[Derived from OPUS Solution NAD–83(CORS96)]



Scale 1"=1000'

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-12H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Surveyed By	Field Book
N. Jensen	OW–296
Computed & Drawn By	Project No.
A.R./J.K.	3712585

Revised: 7/25/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:34pm – J:\oilfield\Kodiak\3712585\CADD\3712585BAS01.dwg

© Kadrmas, Lee & Jackson 2012

HORIZONTAL SECTION PLAT

Kodiak Oil & Gas Corp.

1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-12H

2030 feet from the south line and 650 feet from the east line (surface location)

Section 19, T. 147 N., R. 91 W., 5th P.M.

1445 feet from the south line and 250 feet from the west line (bottom location)

Section 13, T. 147 N., R. 92 W., 5th P.M.

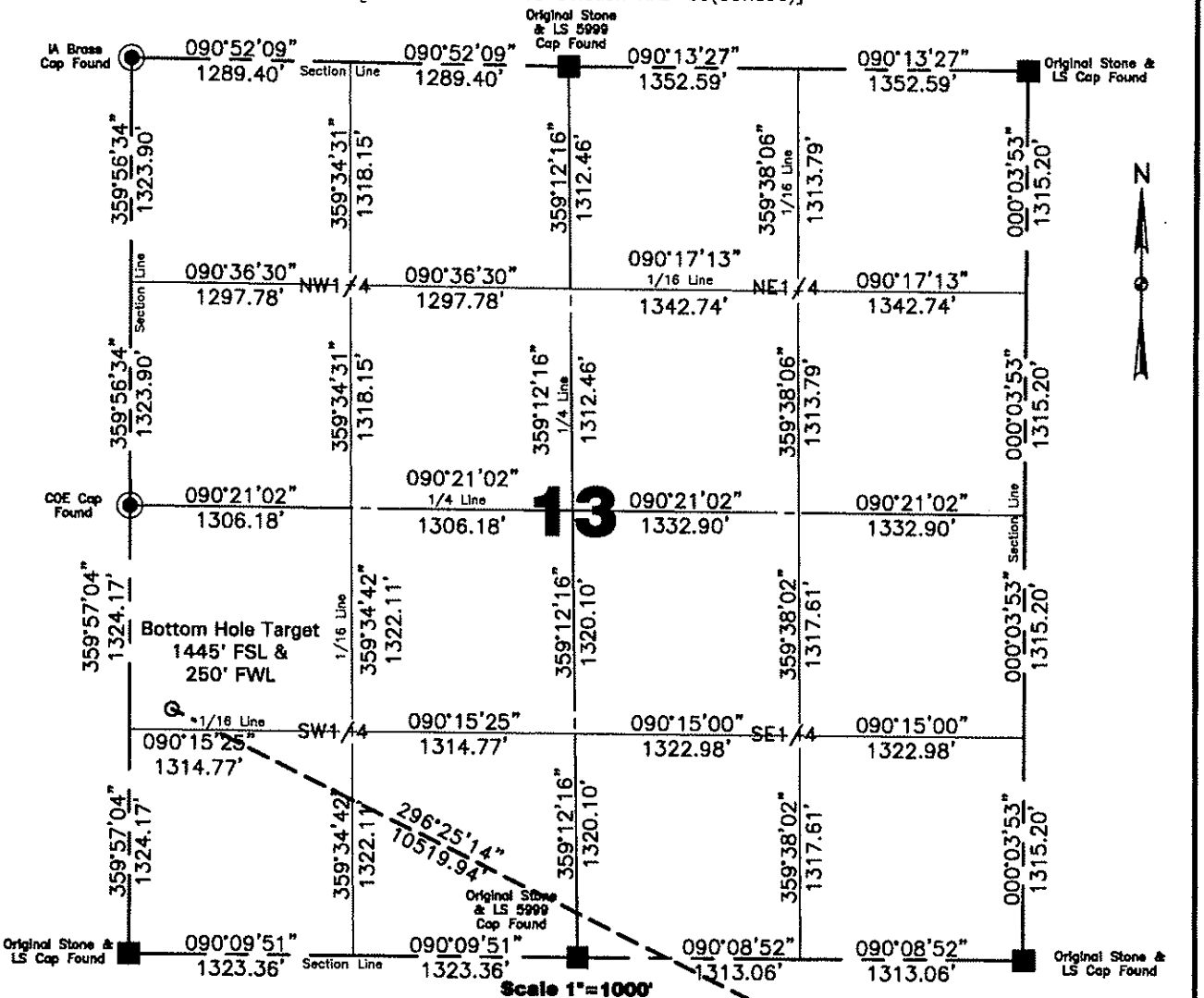
Dunn County, North Dakota

Surface owner @ well site – 1994

Latitude 47°32'09.810" North; Longitude 102°18'54.284" West (surface location)

Latitude 47°32'55.976" North; Longitude 102°21'11.607" West (bottom location)

[Derived from OPUS Solution NAD-83(CORS96)]



Scale 1"=1000'

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

NOTE:

All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-12H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

Surveyed By	Field Book
N. Jensen	OW-296
Computed & Drawn By	Project No.
A.R./J.K.	3712585

Revised: 7/25/2012

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:34pm – J:\oilfield\Kodiak\3712585\CADD\3712585BAS01.dwg

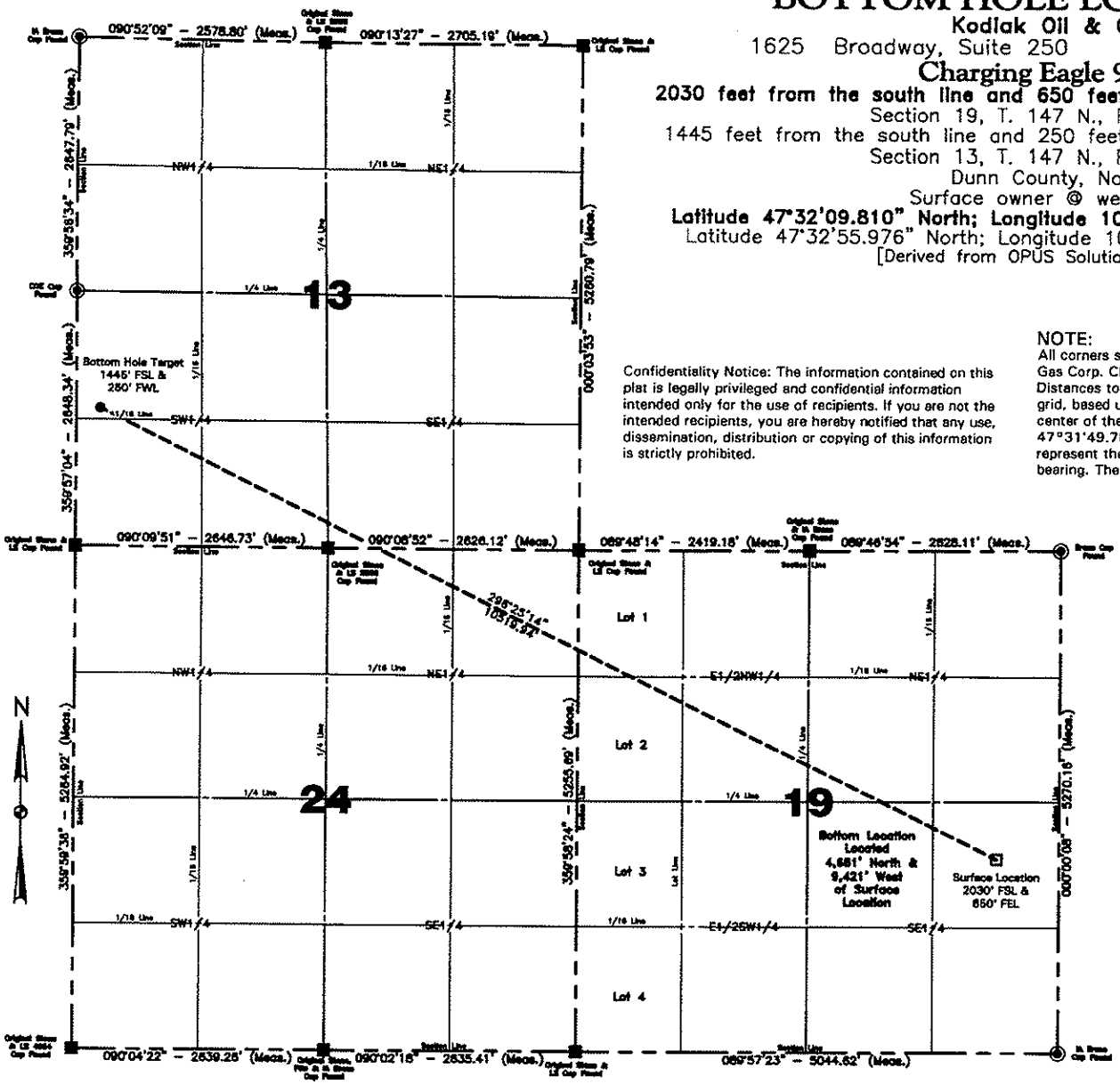
© Kadrmas, Lee & Jackson 2012

BOTTOM HOLE LOCATION PLAT

Kodiak Oil & Gas Corp.
1625 Broadway, Suite 250 Denver, Colorado 80202

Charging Eagle 9-19-13-12H

2030 feet from the south line and 650 feet from the east line (surface location)
Section 19, T. 147 N., R. 91 W., 5th P.M.
1445 feet from the south line and 250 feet from the west line (bottom location)
Section 13, T. 147 N., R. 92 W., 5th P.M.
Dunn County, North Dakota
Surface owner @ well site – 1994
Latitude 47°32'09.810" North; Longitude 102°18'54.284" West (surface location)
Latitude 47°32'55.976" North; Longitude 102°21'11.607" West (bottom location)
[Derived from OPUS Solution NAD-83(CORS96)]



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

NOTE:
All corners shown on this plat were found in the field during Kodiak Oil & Gas Corp. Charging Eagle 9-19-13-12H oil well survey on May 2, 2012. Distances to all others are calculated. The azimuths shown on this plat are grid, based upon **Geodetic North** derived from GPS measurements at the center of the project origin located at the SE corner of Section 19, Latitude 47°31'49.781" North; Longitude 102°18'44.813" West. Azimuths represent the calculated value from the central meridian using the forward bearing. The well location shown hereon is not an as-built location.

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/25/12
NORTH DAKOTA

Computed & Drawn By	Surveyed By	Approved By	Scale	Date
A.R./J.K.	N. Jensen	Q. Obrigewitsch	1"=1700'	06/28/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	B.H. Layout	7/25/2012	3712585	5

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 25, 2012 – 3:34pm – J:\oilfield\Kodiak\3712585\CADD\3712585BAS01.dwg

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Section 19, T 147 N, R 91 W, 5th P.M.
Dunn County, North Dakota

Charging Eagle 9-19-24-4H3 Elevation 2294.5' MSL
Charging Eagle 9-19-13-13H Elevation 2294.0' MSL
Charging Eagle 9-19-13-12H Elevation 2293.9' MSL

Well Pad Design Elevation 2293.1' MSL

Excavation	38,660 C.Y.
Plus Cuttings Pit	4,030 C.Y.
	42,690 C.Y.
Embankment	6,040 C.Y.
Plus Shrinkage (+30%)	1,815 C.Y.
	7,855 C.Y.
Stockpile Cuttings Pit	4,030 C.Y.
Stockpile Top Soil (6")	5,175 C.Y.
Production Rehabilitation	0 C.Y.
Road Embankment & Stockpile from Pad	25,630 C.Y.
Disturbed Area From Pad	6.42 Acres
Area Inside Barbed Wire Fence	10.30 Acres

NOTE :
All cut end slopes are designed at 3:1 slopes &
All fill end slopes are designed at 3:1 slopes

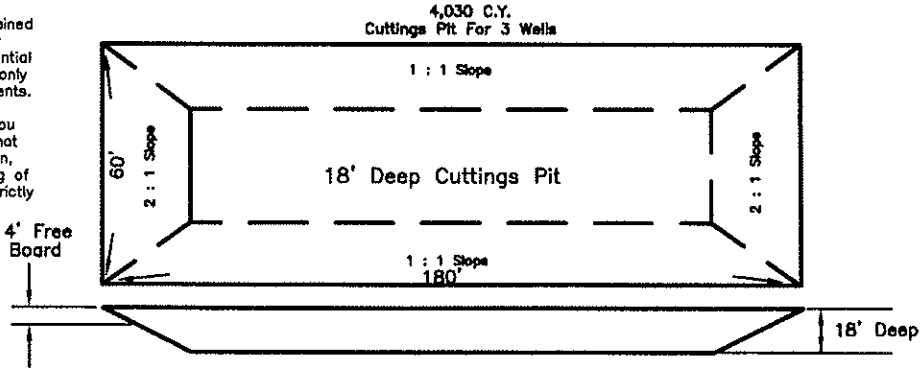
Charging Eagle 9-19-24-4H3
Well Site Location
2030' FSL
710' FEL

Charging Eagle 9-19-13-13H
Well Site Location
2030' FSL
680' FEL

Charging Eagle 9-19-13-12H
Well Site Location
2030' FSL
650' FEL

Cuttings Pit

Confidentiality Notice:
The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	None	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Quantities	-	3712585-3712587	6

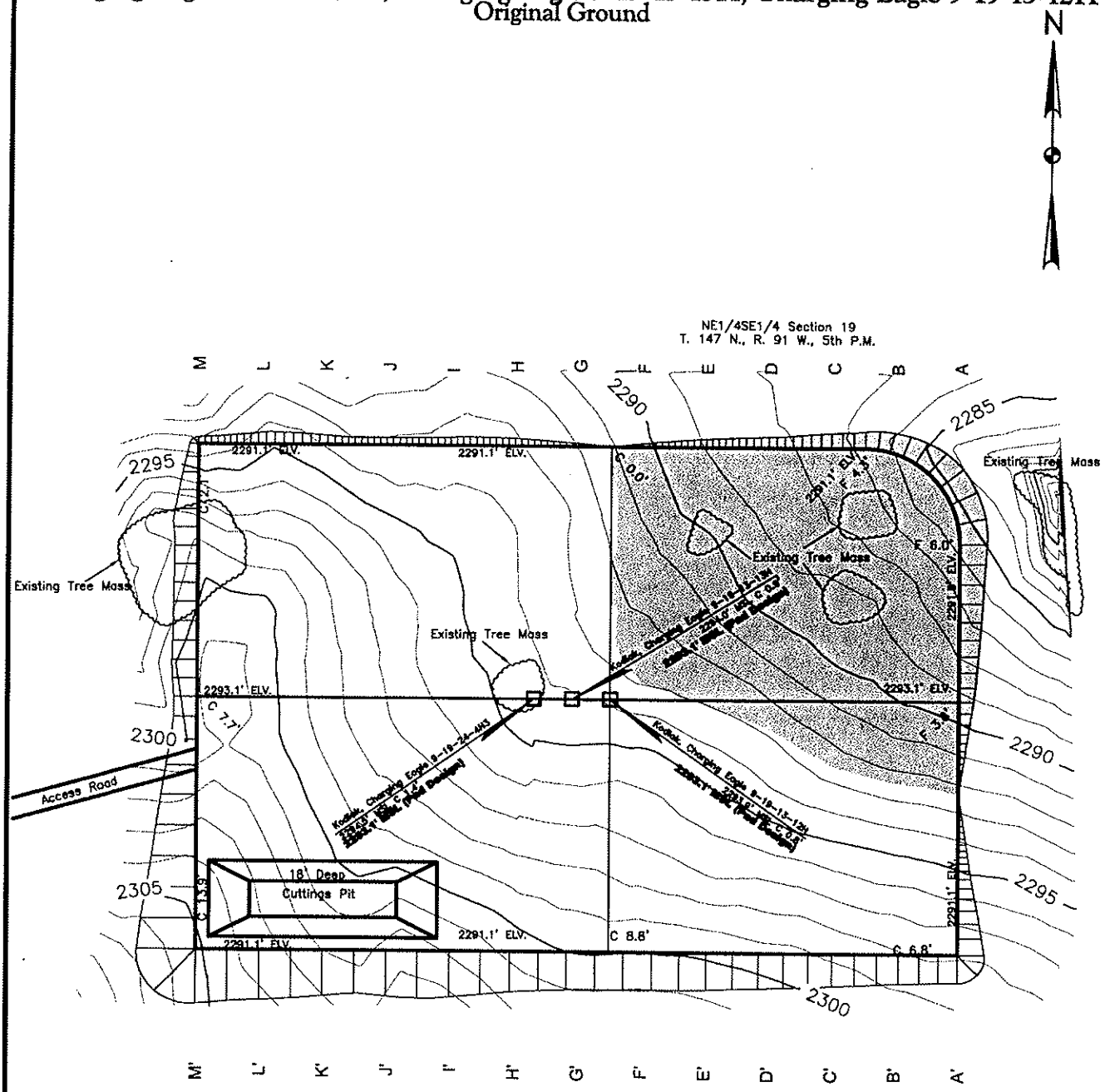
Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 4:43pm - J:\oilfield\Kodiak\3712585\CADD\3712585BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H

Original Ground



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Original Ground	-	3712585-3712587	7

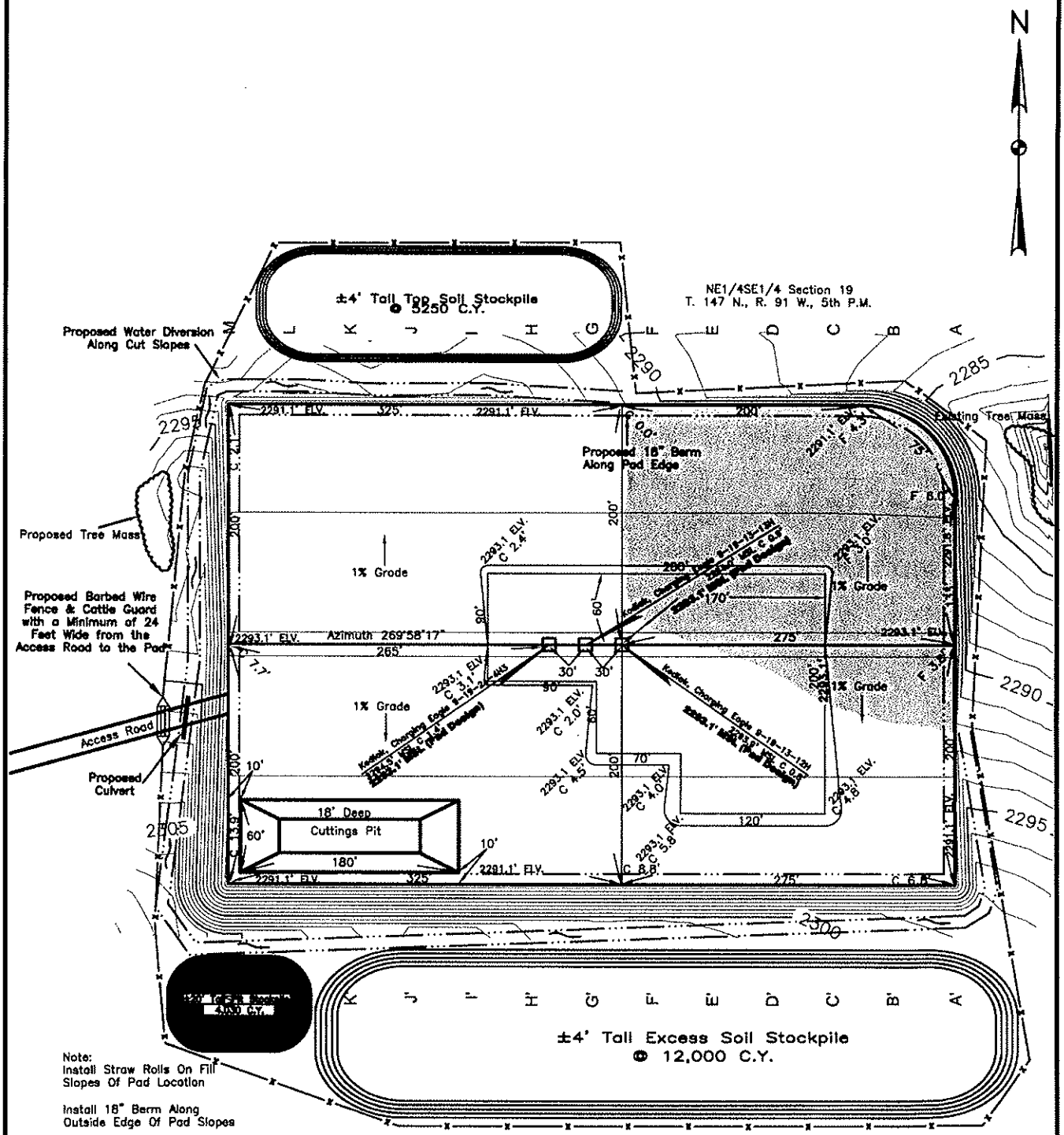
Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 4:43pm - J:\oilfield\Kodiak\3712585\CADD\3712585BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H

Pad Layout



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 16" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

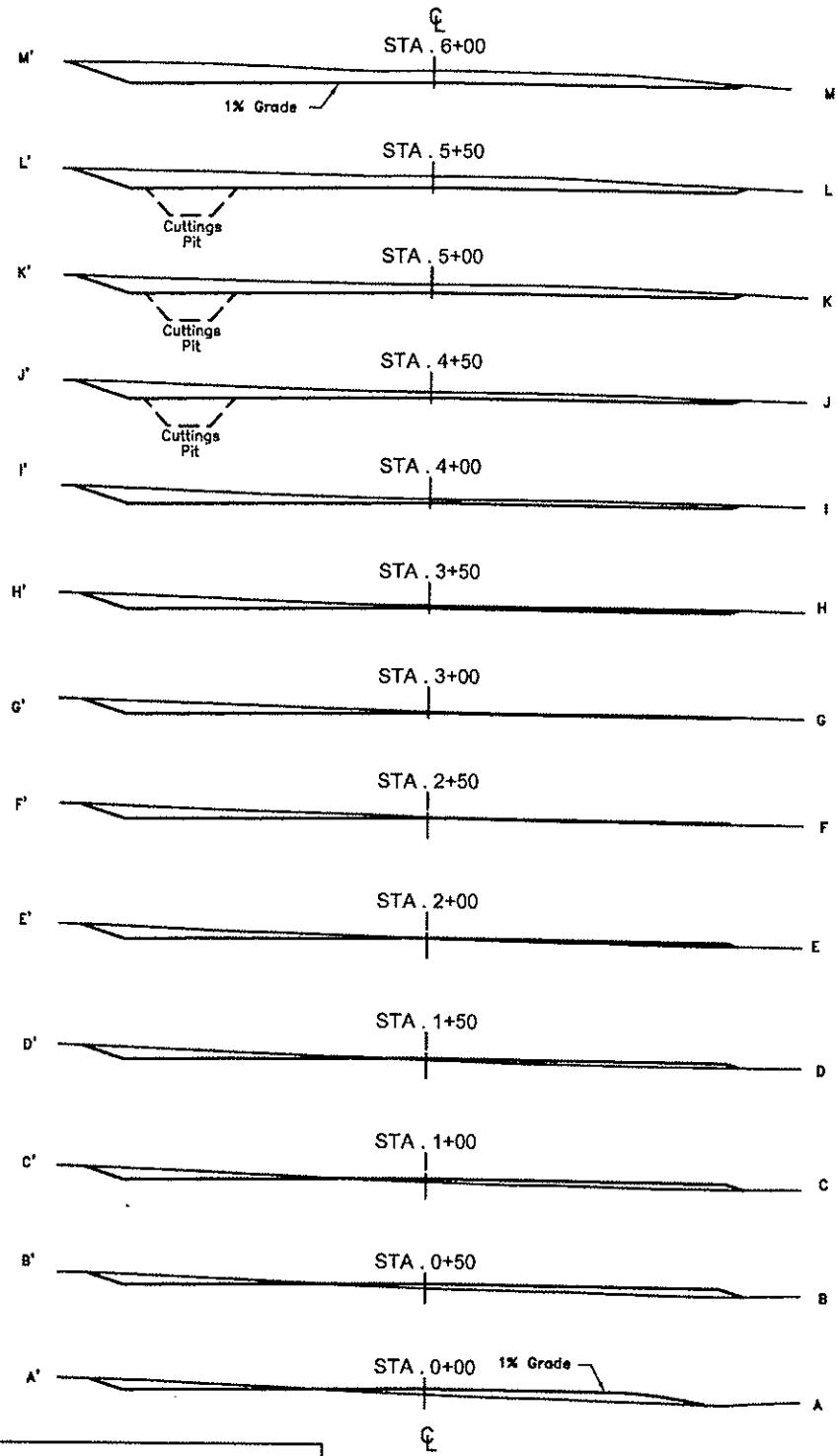
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Pad Layout	-	3712585-3712587	8

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 4:43pm - J:\oilfield\Kodiak\3712585\CADD\3712585BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Cross Sections



Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

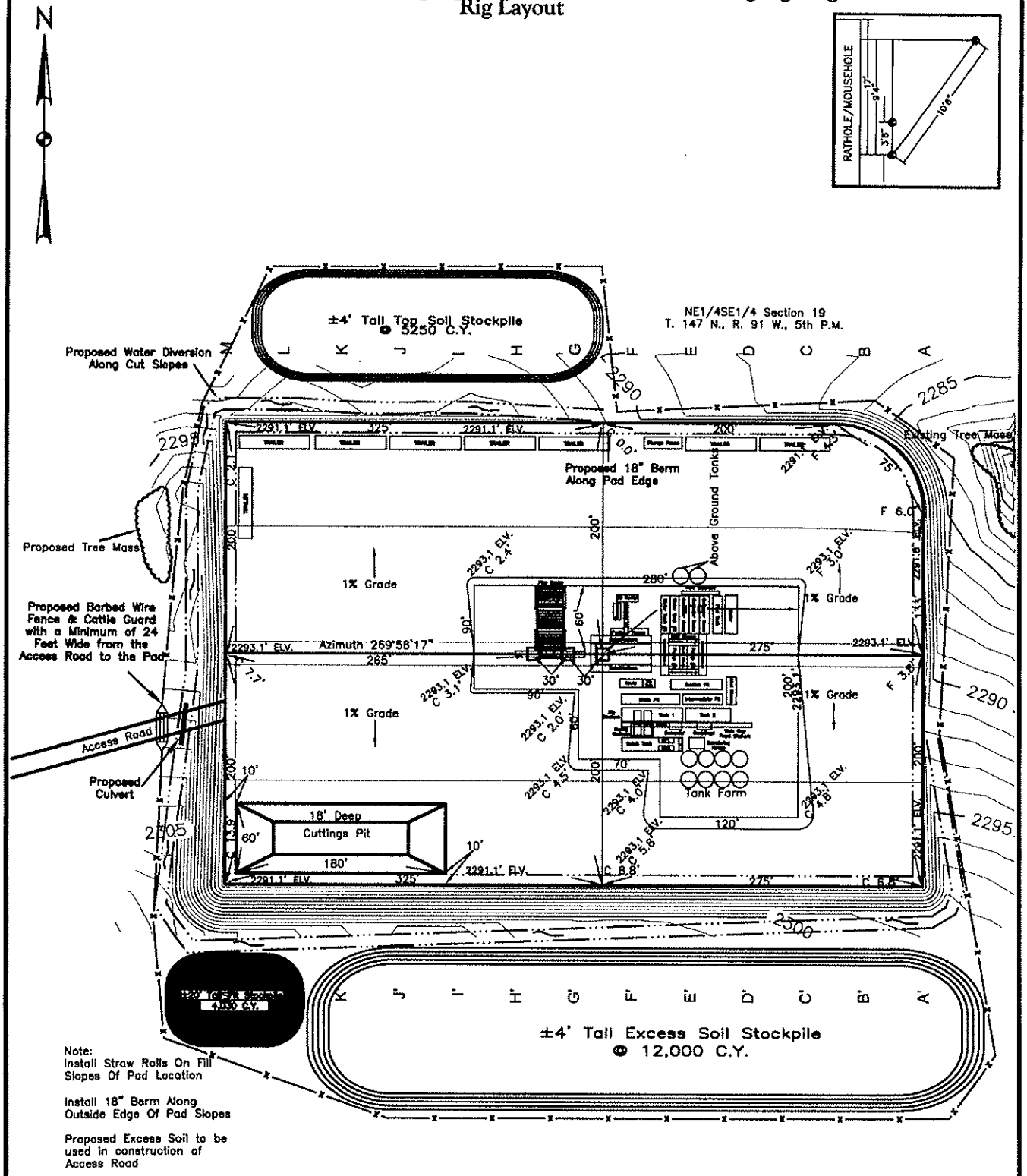
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Cross Sections	–	3712585-3712587	9

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 4:44pm - J:\oilfield\Kodiak\3712585\CADD\3712585BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Rig Layout



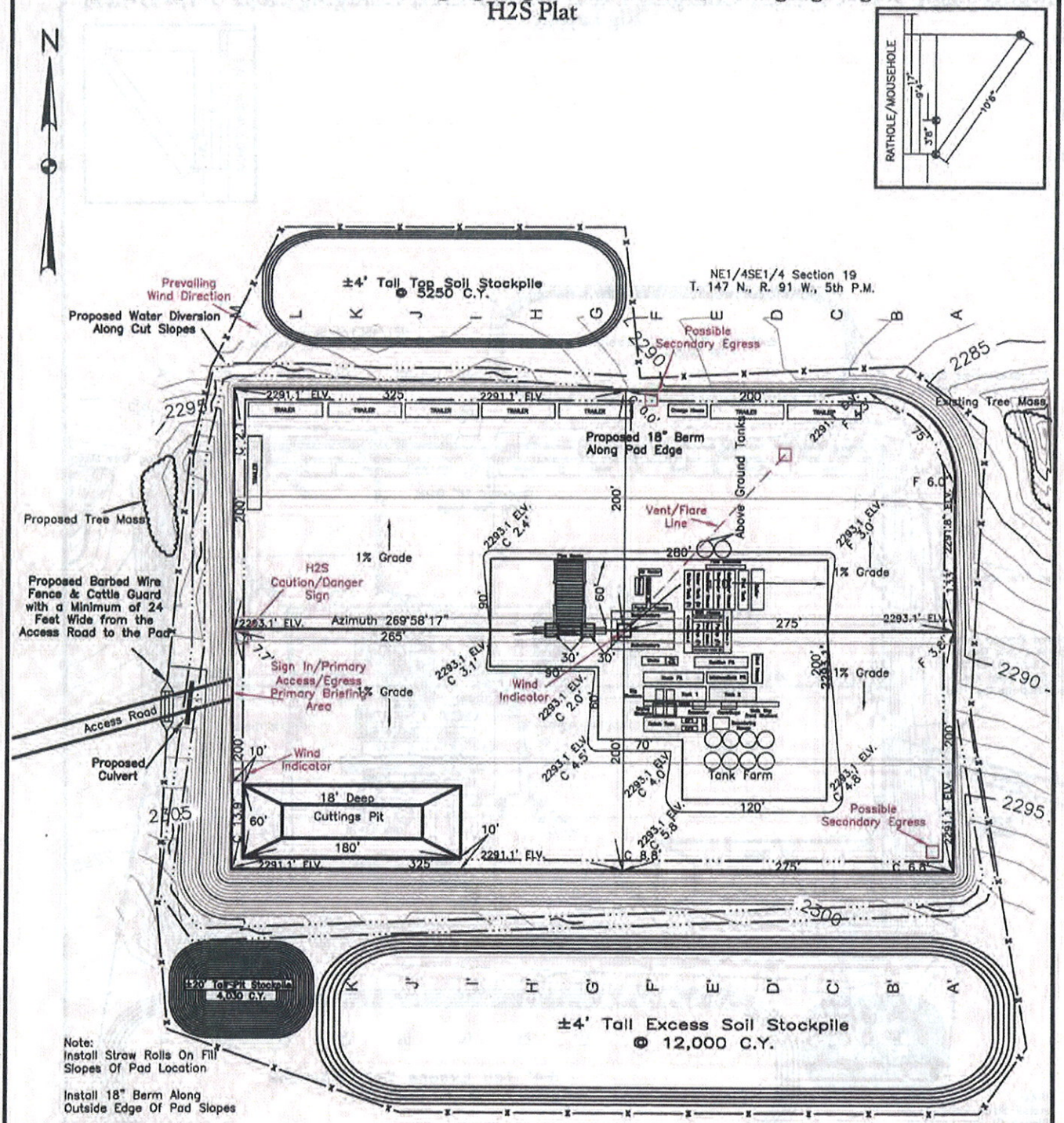
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Rig Layout	—	3712585-3712587	10

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
H2S Plat



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

NOTE: SECONDARY EGRESS DEPENDENT ON SITE CONDITIONS AND WIND DIRECTION. DISCUSSED @ BEGINNING OF EVERY SHIFT CHANGE OR CHANGE IN CONDITIONS.

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

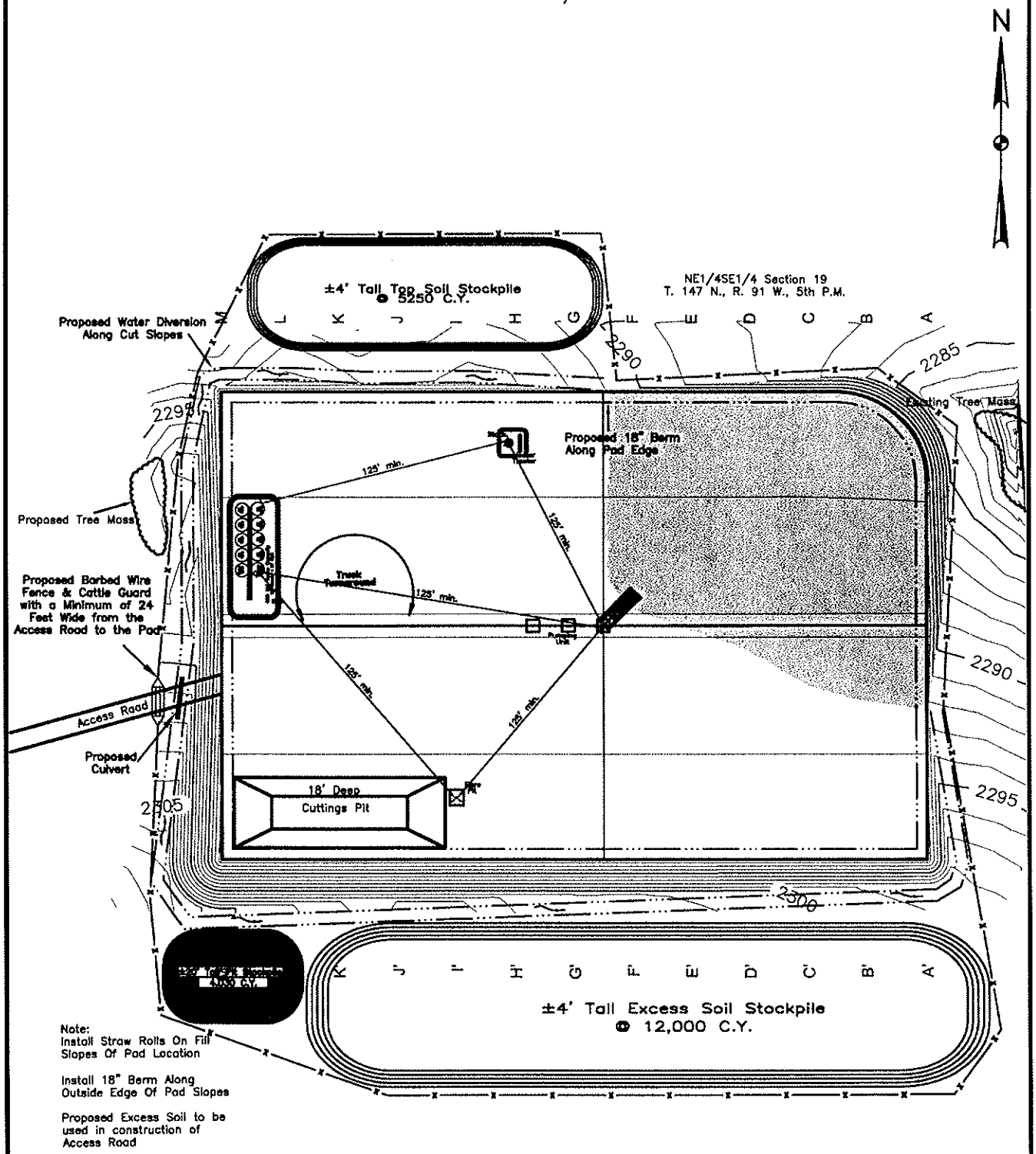
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	H2S Plat	-	3712585-3712587	10A

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 4:44pm - J:\oilfield\Kodiak\3712585\CADD\3712585BAS02.dwg

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Production Layout



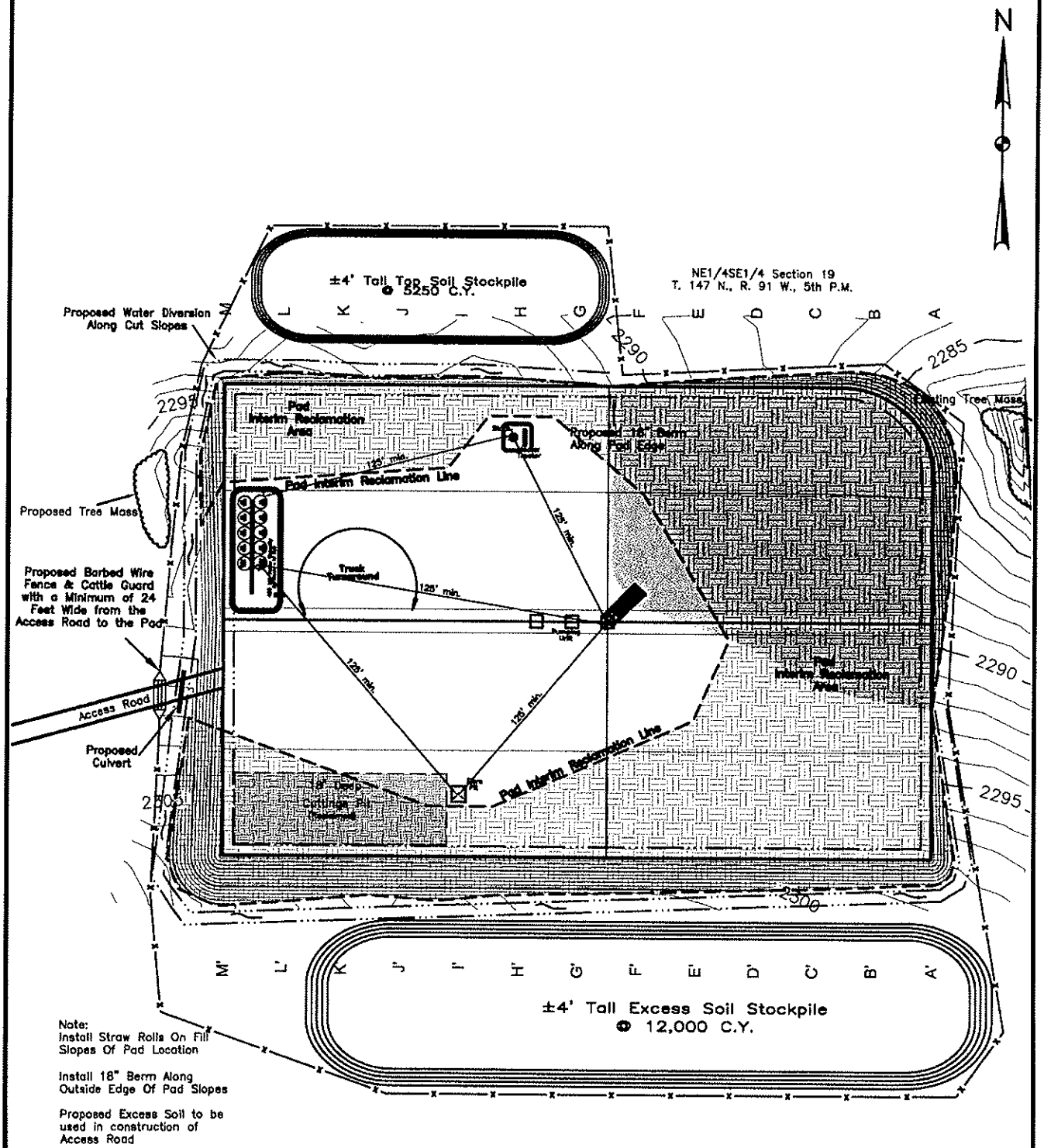
Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Prod Layout	–	3712585-3712587	11

Kadrmas Lee & Jackson
Engineers Surveyors Planners

© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Interim Reclamation Layout



Note:
Install Straw Rolls On Fill Slopes Of Pad Location

Install 18" Berm Along Outside Edge Of Pad Slopes

Proposed Excess Soil to be used in construction of Access Road

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

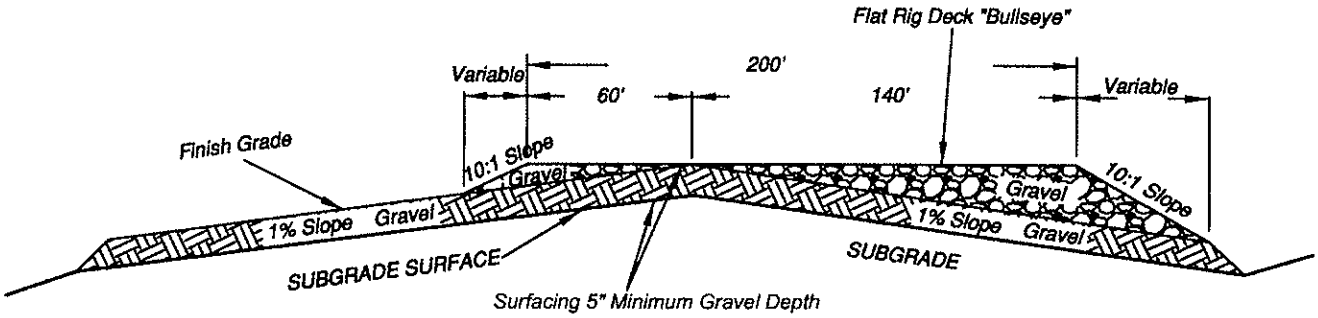
Drawn By	Surveyed By	Approved By	Scale	Date
J. Kress	N. Jensen	Q. Obrigewitsch	1"=120'	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Interim Layout	–	3712585-3712587	12

Kadrmas Lee & Jackson
Engineers Surveyors Planners

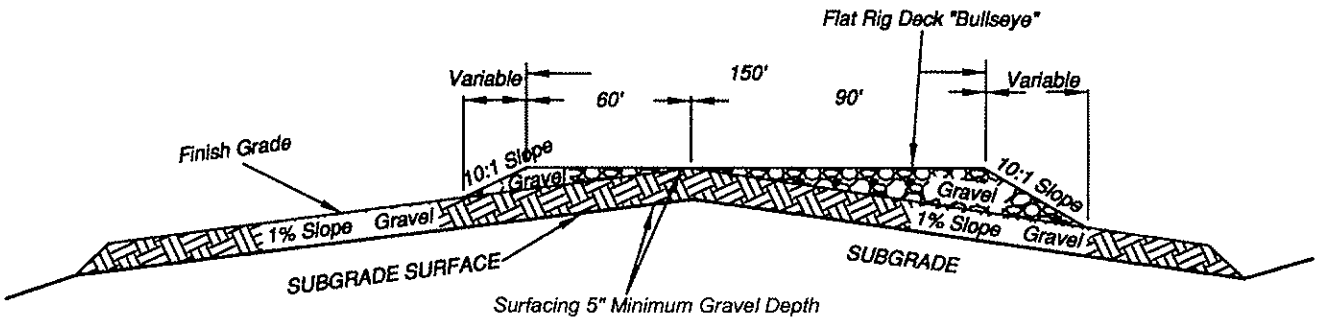
Jul 09, 2012 – 4:44pm – J:\oilfield\Kodiak\3712585\CADD\3712585BAS02.dwg

© Kadrmas, Lee & Jackson 2012

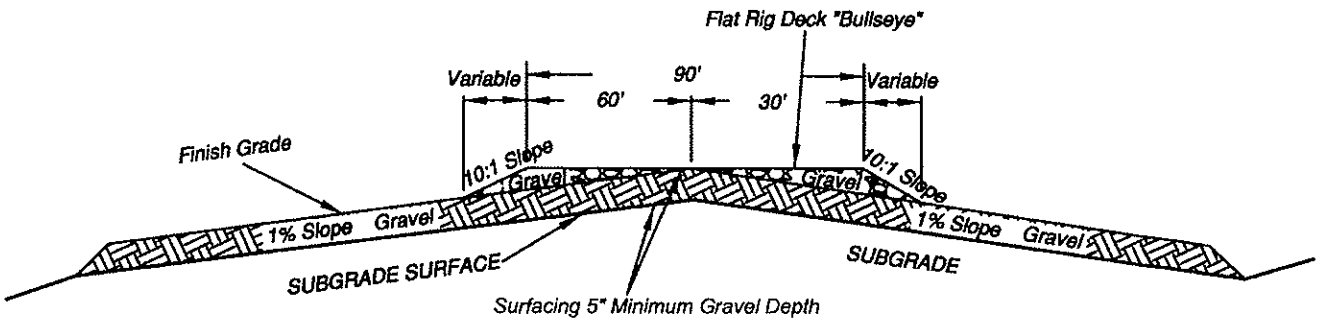
Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Well Pad Surfacing



TYPICAL BACK SECTION
No Scale



TYPICAL MID SECTION
No Scale



TYPICAL A HEAD SECTION
No Scale

1% Grade Pad Surfacing (5")	3,685 C.Y.
Flat Rig Deck Construction W/ 10:1 Slopes	840 C.Y.

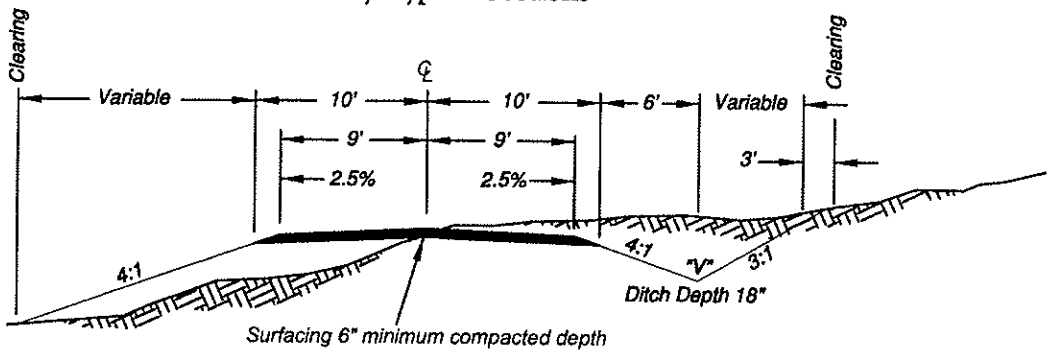
Confidentiality Notice:
The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	N. Jensen	Q. Obrigewitsch	None	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Comp. Surface	–	3712585-3712587	13

Kadrmas Lee & Jackson
Engineers Surveyors Planners

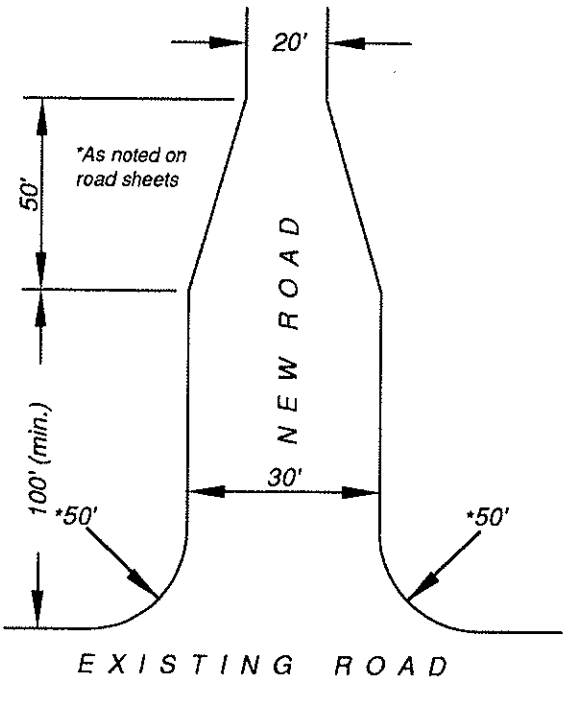
© Kadrmas, Lee & Jackson 2012

Charging Eagle 9-19-24-4H3, Charging Eagle 9-19-13-13H, Charging Eagle 9-19-13-12H
Roadway Typical Sections

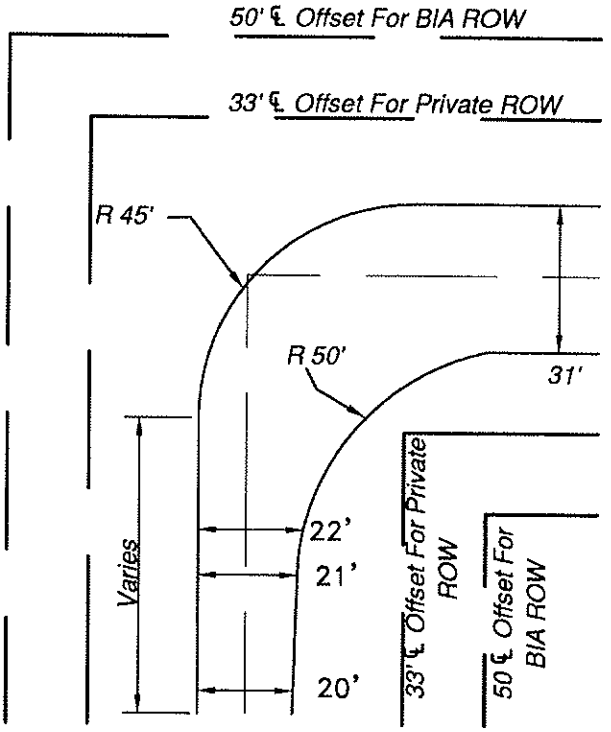


TYPICAL SECTION "V" DITCH ROAD
No Scale

Approach road grade 2% maximum for 100ft.
Install cross drain pipe where needed.



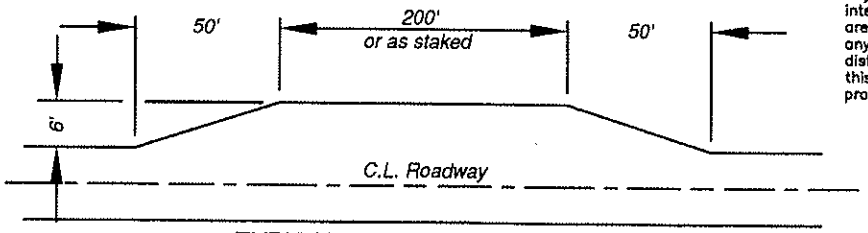
TYPICAL APPROACH ROAD CONNECTION
(DOUBLE LANE)
No Scale



TYPICAL 90 DEGREE ROAD TURN
(DOUBLE LANE)
No Scale

Note: State or County road approach fill slopes shall be constructed to applicable State/County standard.

Confidentiality Notice:
The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



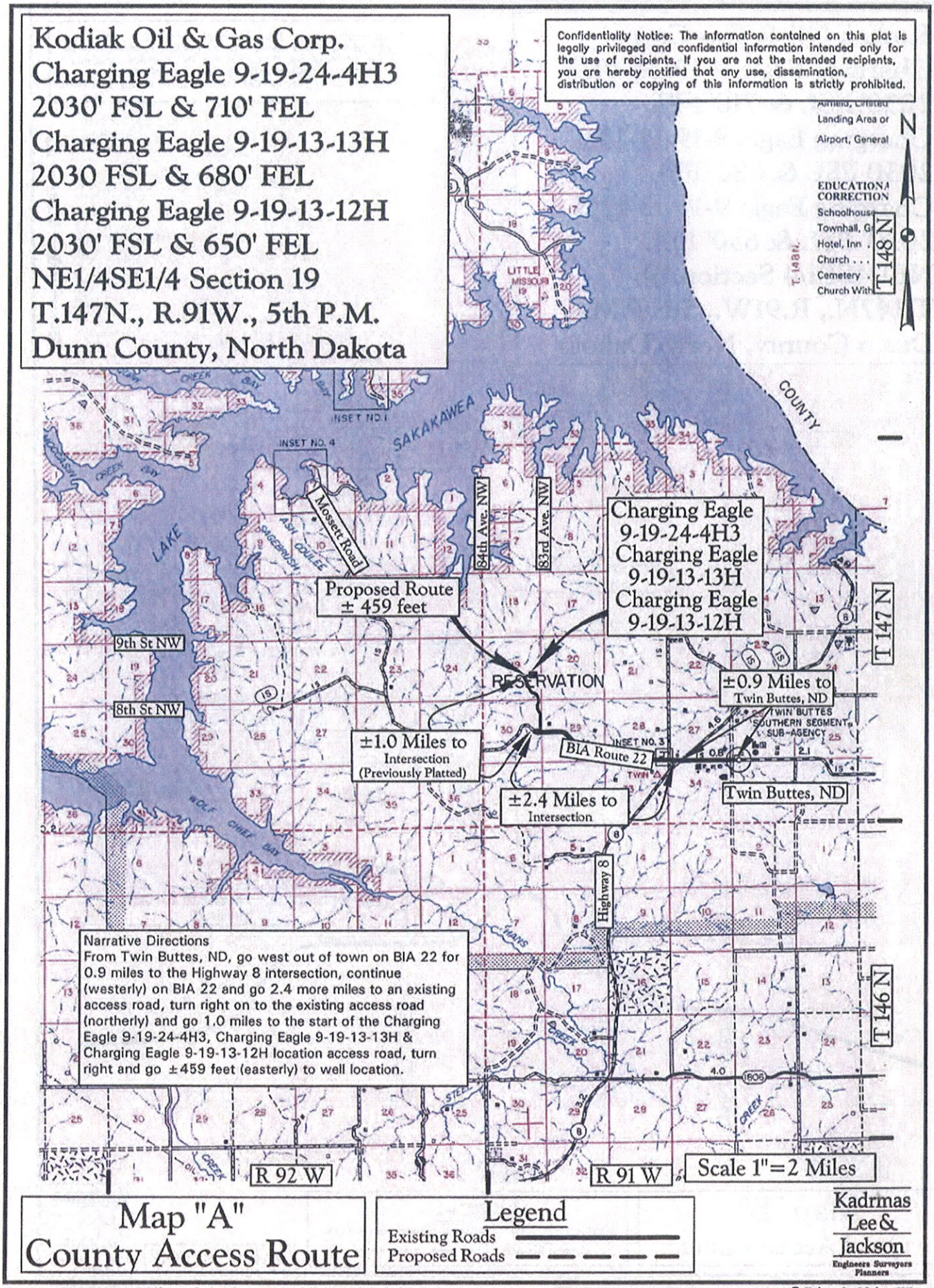
TYPICAL TURNOUT PLAN VIEW
No Scale
Construct turnouts as directed by Kodiak representative

Drawn By	Surveyed By	Approved By	Scale	Date
A. Romann	N. Jensen	Q. Obrigewitsch	None	7/03/2012
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-296	Road Typical	-	3712585-3712587	14

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 4:45pm - J:\oilfield\Kodiak\3712585\CADD\3712585BAS02.dwg

© Kadrmas, Lee & Jackson 2012

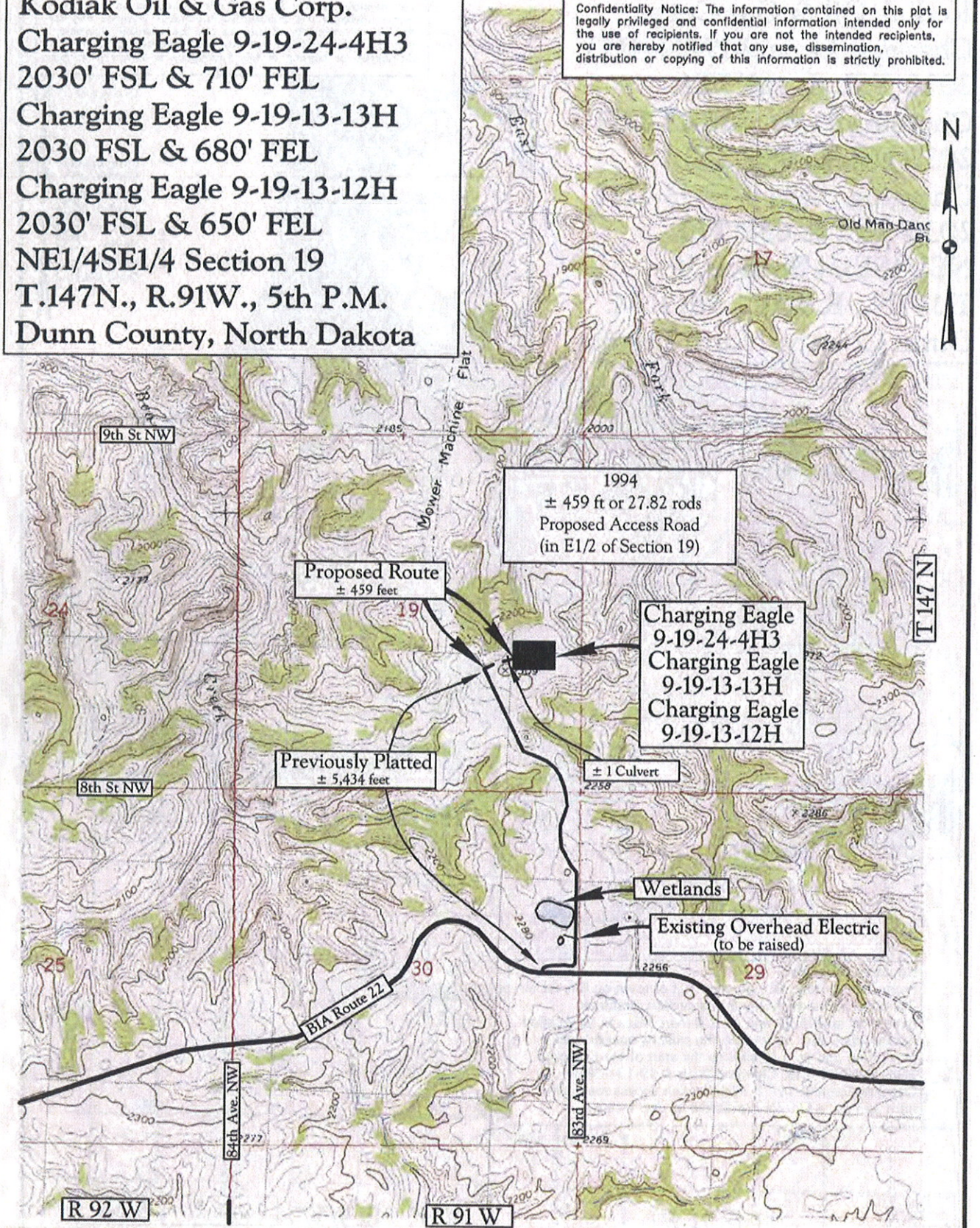


Jun 29, 2012 – 2:30pm – J:\oilfield\Kodiak\3712585\CADD\3712585LOC01.dwg

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3
2030' FSL & 710' FEL
Charging Eagle 9-19-13-13H
2030 FSL & 680' FEL
Charging Eagle 9-19-13-12H
2030' FSL & 650' FEL
NE1/4SE1/4 Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



Map "B"
Quad Access Route

Legend
Existing Roads
Proposed Roads

Scale 1"=2000'

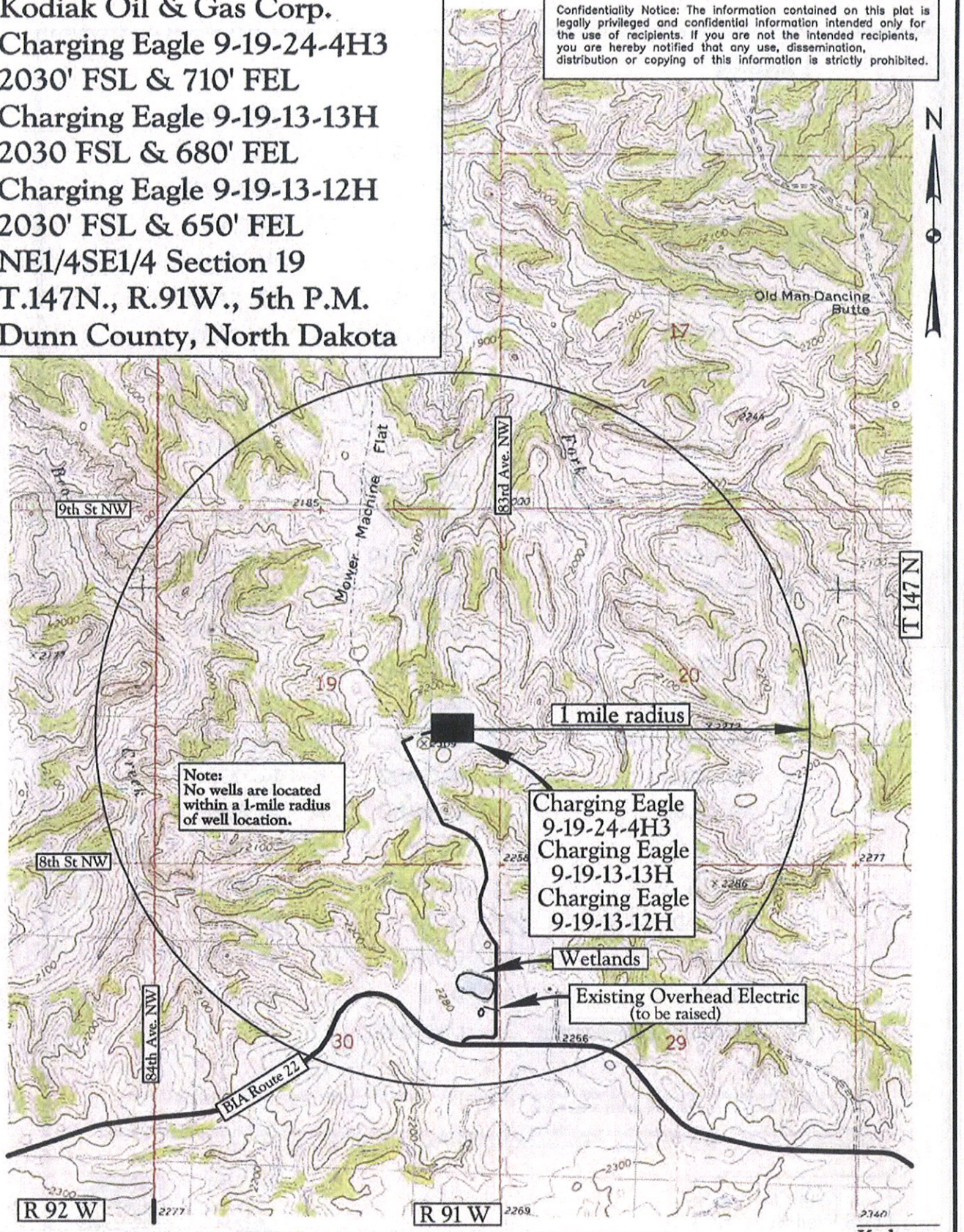
Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 09, 2012 - 4:47pm - J:\oilfield\Kodiak\3712585\CADD\3712585LOC01.dwg

© Kadrmas, Lee & Jackson 2012

Kodiak Oil & Gas Corp.
Charging Eagle 9-19-24-4H3
2030' FSL & 710' FEL
Charging Eagle 9-19-13-13H
2030 FSL & 680' FEL
Charging Eagle 9-19-13-12H
2030' FSL & 650' FEL
NE1/4SE1/4 Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.



Map "C"
One Mile Radius Map

Legend
Existing Roads
Proposed Roads

Scale 1"=2000'

Kadrmas Lee & Jackson
Engineers Surveyors Planners

Jul 03, 2012 - 7:50am - J:\oilfield\Kodiak\3712585\CADD\3712585LOC01.dwg

© Kadrmas, Lee & Jackson 2012

Legend

wells

STATUS, WELL_TYPE

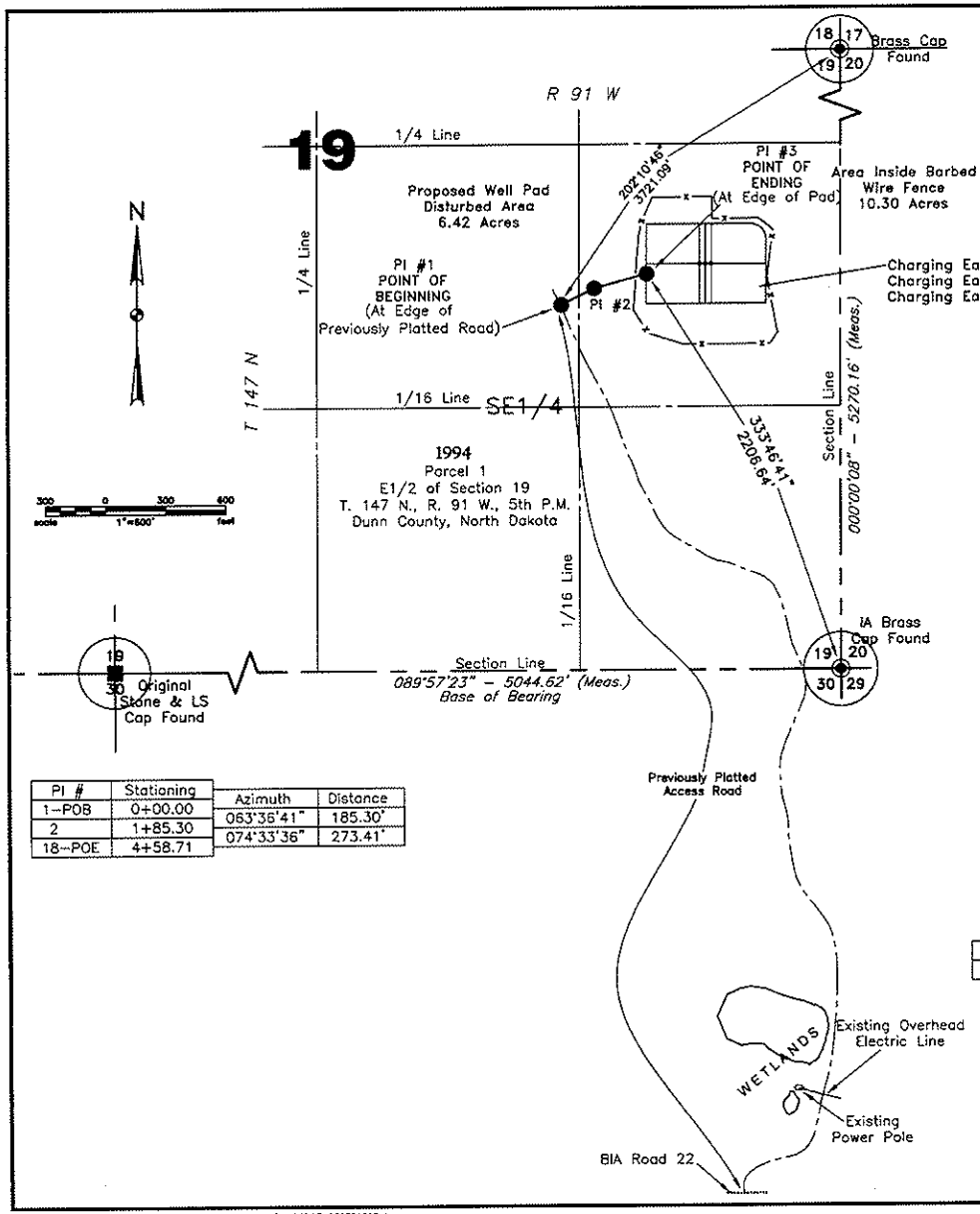
- A, AGD
- A, AI
- A, CBM
- A, DF
- A, DFP
- A, GASC
- A, GASD
- A, GASN
- A, OG
- A, SWD
- A, WI
- A, WS
- A,AI
- AB, AI
- AB, DF
- AB, DFP
- AB, GASC
- AB, GASD
- AB, GI
- AB, OG
- AB, SWD
- AB, WI
- AB, WS
- Confidential, Confidential
- DRL, AI
- DRL, GASC
- DRL, GASD
- DRL, OG
- DRL, SWD
- DRL, WI
- DRY, GASC
- DRY, GASD
- DRY, OG
- DRY, ST
- EXP, GASD
- EXP, OG
- EXP, SWD
- EXP, WS
- IA, AI
- IA, CBM
- IA, DF
- IA, DFP
- IA, GASC
- IA, GASD
- IA, OG
- IA, SWD
- IA, WI
- IA, WS
- IA,AI
- LOC, GASC
- LOC, GASD
- LOC, OG
- LOC, SWD
- LOC, WI
- PA, DF
- PA, GASC
- PA, GASD
- PA, GS
- PA, OG
- PA, SWD
- PA, WI
- PA, WS
- PNC, GASD
- PNC, OG
- PNC, SWD
- TA, AI
- TA, GASC
- TA, GASD
- TA, OG
- TA, SWD
- TA, WI
- TA, WS
- TAO, GI
- TAO, OG
- TAO, WI

A = Active, AB = Abandoned, DRL = Drilling, Dry = Dry, EXP = Expired, IA = Inactive, LOC = Location, PA = Producer Abandoned, PNC = Permit Now Cancelled
TA = Temporarily Abandoned, TAO = Temporarily Abandoned Observation.

AGD = Acid Gas Disposal, AI = Air Injection, DF = Dump Flood, DFP = Dump Flood Producing, GASN = Nitrogen Gas Well, GASC = Gas Condensate, GASD = Gas Dry, GI = Gas Injection, GS = Gas Storage, OG = Oil or Gas Well, SWD = Salt Water Disposal, WI = Water Injection, WS = Water Supply, ST = Strat Test

Exhibit "D"
GIS Well Symbols

Kadrmas Lee & Jackson
Engineers Surveyors Planners



PI #	Stationing	Azimuth	Distance
1--POB	0+00.00	063°36'41"	185.30'
2	1+85.30	074°33'36"	273.41'
18--POE	4+58.71		

Road Right-of-Way Description

A tract of land located in the North Half of the Southeast Quarter (N1/2SE1/4) of Section 19, Township 147 North, Range 91 West of the 5th Principal Meridian, Dunn County, State of North Dakota, being more specifically described as a strip of land one hundred and twenty-five (125) feet in width, lying sixty-two and a half (62 1/2) feet on each side of the following described road centerline:

Commencing at the northeast corner of said Section 19; thence on an azimuth of 202°10'46", a distance of 3721.09 feet to a point on a previously platted access road and the POINT OF BEGINNING; thence on an azimuth of 063°36'41", a distance of 185.30 feet; thence on an azimuth of 074°33'36", a distance of 273.41 feet to the edge of pad and the POINT OF ENDING; said ending point being located on an azimuth of 333°46'41", a distance of 2206.64 feet from the southeast corner of said Section 19.

Said tract contains 458.71 feet or 27.80 rods (1.32 acres).

I, Quentin Obrigewitsch, Professional Land Surveyor, N.D. No. 5999, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

Quentin Obrigewitsch, Professional Land Surveyor N.D. No. 5999

REGISTERED LAND SURVEYOR
QUENTIN OBRIGEWITSCH
LS-5999
DATE 7/10/12
NORTH DAKOTA

Parcel	Land Owner	Linear Feet	Linear Rods	Pad Fence Acreage	Right-of-Way Acreage
1	1994	458.71'	27.80 Rods	10.30 Acres	1.32 Acres

Confidentiality Notice: The information contained on this plat is legally privileged and confidential information intended only for the use of recipients. If you are not the intended recipients, you are hereby notified that any use, dissemination, distribution or copying of this information is strictly prohibited.

Rev'd. 7/02/2012 — QW-296/13-18

Charging Eagle 9-19-13-12H
Kodiak Oil & Gas Corp.
1625 Broadway, Suite 250, Denver, Colorado 80202

Sheet No. 1

Kadrmas Lee & Jackson
Registered Surveyors Engineers

Access Road Right-Of-Way
N1/2SE1/4, Section 19
T.147N., R.91W., 5th P.M.
Dunn County, North Dakota

Mike W. A.R./J.K. | Date W. Q.O. | Project No. 3712585 | Date 06/29/2012

J:\pifield\Kodiak\3712585\CADD\3712585BAS03.dwg 11x17

© Kadrmas, Lee & Jackson 2012

Notice of Availability and Appeal Rights

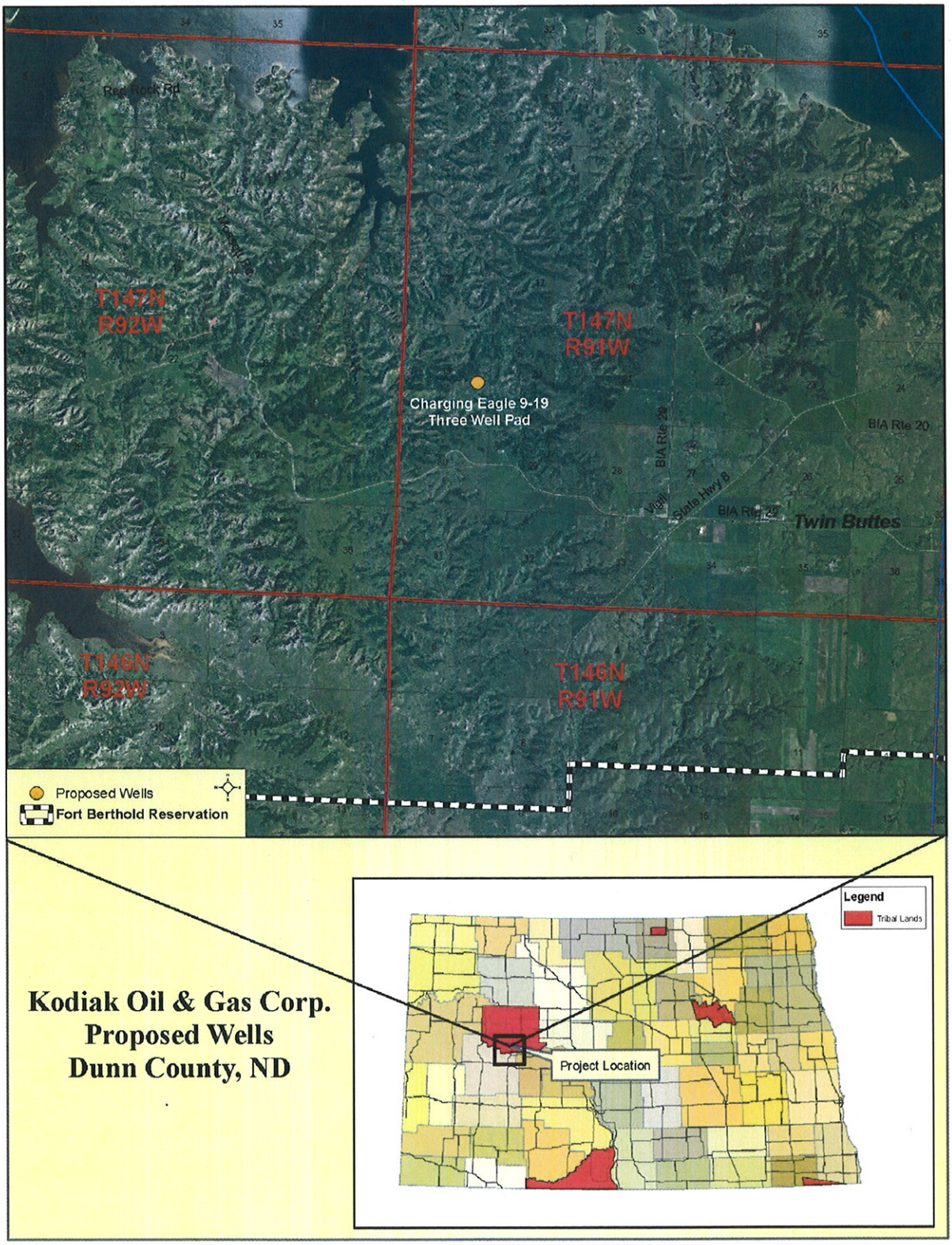
Kodiak Oil and Gas (USA), Inc.: Drilling of Charging Eagle #9-19-24-4H3/Charging Eagle #9-19-13-13H/Charging Eagle #9-19-13-12H Oil & Gas Wells (Three Well Pad)

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to Three Bakken Oil and Gas Wells atop one well pad on the Berthold Reservation as shown on the attached map. Construction by Kodiak Oil is expected to begin in 2012.

An environmental assessment (EA) determined that proposed activities will not cause significant impacts to the human environment. An environmental impact statement is not required. Contact Earl Silk, Superintendent at 701-627-6570 for more information and/or copies of the EA and the Finding of No Significant Impact (FONSI).

The FONSI is only a finding on environmental impacts – it is not a decision to proceed with an action and *cannot* be appealed. BIA's decision to proceed with administrative actions *can* be appealed until October 5, 2012, by contacting:

United States Department of the Interior
Office of Hearings and Appeals
Interior Board of Indian Appeals
801 N. Quincy Street, Suite 300, Arlington, Va 22203.

Procedural details are available from the BIA Fort Berthold Agency at 701-627-6570.

Project locations.