EnCana Oil & Gas (USA) Inc.

EnCana Oil & Gas (USA) Inc.
2717 CR 215, Suite 100
Parachute, CO 81635

970-285-2608 direct
970-309-8106 cell
970-285-0691 fax

February 5, 2007

Fred Jarman
Director
Garfield County Building and Planning Department
108 8th Street, Suite 401
Glenwood Springs, CO 81601

Re: Special Use Permit for Staging Area / Storage of Natural Gas Equipment in the RL Zone District for the **Parachute Staging Yard**

Dear Fred:

On Monday, October 9, 2006, the Board of County Commissioners approved the request for a Special Use Permit for Stating Area / Storage of Natural Gas Equipment in the RL Zone District based on compliance with certain conditions. EnCana Oil & Gas (USA) Inc. (EnCana) is providing this letter and attached documentation as proof of compliance. For your reference, the BOCC conditions appear in *italicized* font and the EnCana response occurs in normal font.

1. *That all representations of the Applicant, either within the application or stated at the hearing before the Board of County Commissioners, shall be considered conditions of approval unless explicitly altered by the Board.*

   EnCana will comply with all representations within the application and stated at the hearing before the Board of County Commissioners.

2. *That the operation of the facility be done in accordance with all applicable federal, state, and local regulations governing the operation of this type of facility.*

   EnCana will operate the staging area in accordance with all applicable federal, state, and local regulations governing the operation of this facility.

3. *That this facility is for the sole use of the Applicant/Operator. If any other entities are to be added as users, then they would be subject to an additional SUP as well as rules and regulations as administered by the COGCC.*

The staging area is for the sole use of EnCana and its drilling subcontractors. If other entities are added as users, EnCana will submit a new SUP.

4. *The applicant shall comply with all standards as set forth in § 5.03.08 "Industrial Performance Standards" of the Garfield County Zoning Resolution of 1978 as amended and included here as follows:*

    a. *Volume of sound generated shall comply with the standards set forth in the Colorado Revised Statutes.*

        EnCana will conduct operations at the staging area in such a manner as to comply with the standards set forth in the Colorado Revised Statutes.

    b. *Every use shall be so operated that the ground vibration inherently and recurrently generated is not perceptible, without instruments, at any point of any boundary line of the property on which the use is located.*

        EnCana will conduct operations at the staging area in such a manner as to not create vibrations that would be perceptible at the property line.

    c. *Emissions of smoke and particulate matter: every use shall be operated so as to comply with all Federal, State and County air quality laws, regulations and standards.*

        No smoke emissions will occur at the staging area. Particulate matter may occur in the form of fugitive dust emissions and EnCana will comply with all Federal, State and County air quality laws, regulations, and standards.

    d. *Every use shall be so operated that it does not emit heat, glare, radiation or fumes which substantially interfere with the existing use of adjoining property or which constitutes a public nuisance or hazard. Flaring of gases, aircraft warning signals, reflective painting of storage tanks, or other such operations which may be required by law as safety or air pollution control measures shall be exempted from this provision.*

        The staging area will be operated so that it does not emit heat, glare, radiation or fumes which substantially interfere with the existing use of adjoining property or which constitutes a public nuisance or hazard.

    e. *Storage of flammable or explosive solids or gases shall be in accordance with accepted standards and laws and shall comply with the national, state and local fire codes and written recommendations/comments from the appropriate local protection district regarding compliance with the appropriate codes.*

        No flammable or explosive solids or gases will be stored at the staging area.

f. *No materials or wastes shall be deposited upon a property in such a form or manner that they may be transferred off the property by any reasonably foreseeable natural causes or forces.*

No materials or wastes will be stored on the staging area in such a form or manner that would allow off-site transport by any reasonable foreseeable natural causes or forces.

g. *All equipment storage will be enclosed in an area with screening at least eight (8) feet in height and obscured from view at the same elevation or lower by use of a sight obscuring fence as proposed in the application.*

EnCana will install the screening fence as proposed in the application. Refer to Attachment 1 for location of the proposed fence.

h. *Any repair and maintenance activity requiring the use of equipment that will generate noise, odors or glare beyond the property boundaries will be conducted within a building or outdoors during the house of 8 AM to 6 PM, Monday through Friday.*

Operation of the staging area is not expected to generate odors or glare beyond the property boundaries. Any repair and/or maintenance activities that generate noise beyond the property boundaries will be conducted outdoors between the hours of 8AM to 6PM Monday through Friday or in a building between the hours of 6PM to 8AM.

i. *Loading and unloading of vehicles shall be conducted on private property and may not be conducted on any public right-of-way.*

Loading and unloading of vehicles will not be conducted on any public right-of-way.

j. *Any storage area for uses not associated with natural resources shall not exceed then (10) acres in size.*

The staging area is 7.2 acres.

k. *Any lighting of storage area shall be pointed downward and inward to the property center and shaded to prevent direct reflection on adjacent property.*

EnCana does not plan to install lighting at this time. If lighting is added in the future, lighting will be pointed downward and inward to the property center and shaded to prevent direct reflection on adjacent property.

5. *The Applicant shall provide a "Landscaping and Reclamation Plan" that has been approved by the County Vegetation Department prior to the issuance of a Special Use Permit.*

Refer to Attachment 1 for a copy of the Supplemental Impact Statement which includes a discussion on landscaping and reclamation. An email from the Vegetation Department approving the plan is included.

6. *The Applicant shall meet with a representative of the Division of Wildlife on the property in order to prepare a wildlife mitigation plan for the property such that it addresses any impacts on wildlife through the creation of hazardous attractions, alteration of existing native vegetation, blockade of migration routes, use patterns or other disruptions. This plan shall be submitted to the County for approval prior to issuance of the Special Use Permit.*

   Refer to Attachment 2 for a copy of the Wildlife Assessment and Mitigation Plan for the staging area. This plan was prepared by independent, qualified wildlife biologists. EnCana submitted a copy of the plan to the Division of Wildlife for CDOW approval. A copy of the CDOW approval letter is also included in Attachment 2.

7. *The Applicant shall file a Spill Prevention Control and Countermeasure (SPCC) plan with the County and have a copy on site for spills that may occur from vehicles / machinery in the area.*

   Refer to Attachment 3 for a copy of the SPCC plan. EnCana will keep a copy on-site at the staging area.

8. *The Applicant shall obtain a driveway access permit from the County Road and Bridge Department and shall adhere to conditions specific to the driveway access permit. A stop sign will be required (if not already installed) at the entrance to CR 215. The stop sign and installation shall be as required by the Manual on Uniform Traffic Control devices (MUTCD).*

   Refer to Attachment 4 for a copy of the driveway access permit from the County Road and Bridge Department. EnCana will install a stop sign at the entrance of CR 215 in accordance with the MUTCD.

9. *Should dust become an issue from the staging area, a dust control agent shall be applied to the staging area by the Applicant at the request of the County.*

   EnCana will apply a dust control agent to the staging area at the request of the County.

10. *No development activity shall occur at this property until all of these conditions have been met and a Special Use Permit has been issued by Garfield County Board of County Commissioners.*

    EnCana has not initiated any development activity at the staging area and will not initiate any development activity until the Special Use Permit has been issued. Once EnCana receives the Special Use Permit, EnCana will install the stop sign at the entrance to CR 215 and begin construction activities. Construction activities will last approximately three weeks.

11. *That the conditions, terms and recommendations provided for in Exhibit "I" to the Application specifically contained in the following documents be required as conditions of approval:*

    a. *Applicant provide a reclamation / revegetation security to the County in a form acceptable to the County Attorney's Office in the amount of $28,800.00;*

       Refer to Attachment 5 for a copy of the revegetation security in the amount of $28,800.00. The original is on file with the County Vegetation Department.

    b. *The Applicant shall follow the recommendations provided for in the Integrated Vegetation & Noxious Weed Management Plan;*

       EnCana will adhere to the recommendations provided in the Integrated Vegetation and Noxious Weed Management Plan, which is included as Attachment 5..

    c. *The Applicant shall follow the recommendations provided for in the Wildlife Assessment & Mitigation Plan; and*

       EnCana will adhere to the recommendations provided in the Wildlife Assessment and Mitigation Plan which is included as Attachment 2.

    d. *The Applicant shall follow the recommendations provided for in the Integrated Vegetation & Noxious Weed Management Plan;*

       EnCana will adhere to the recommendations provided in the Integrated Vegetation and Noxious Weed Management Plan which is included as Attachment 5.

12. *That the Applicant provide a drainage analysis stamped by an engineer licensed to practice the state of Colorado which analysis shall be reviewed and approved by the County prior to the issuance of the Special Use Permit.*

    EnCana submitted updated site plans depicting a drainage analysis stamped by an engineer licensed to practice in the state of Colorado on October 12. Refer to Attachment 6 for an additional copy. Additional full-size copies are available at your request.

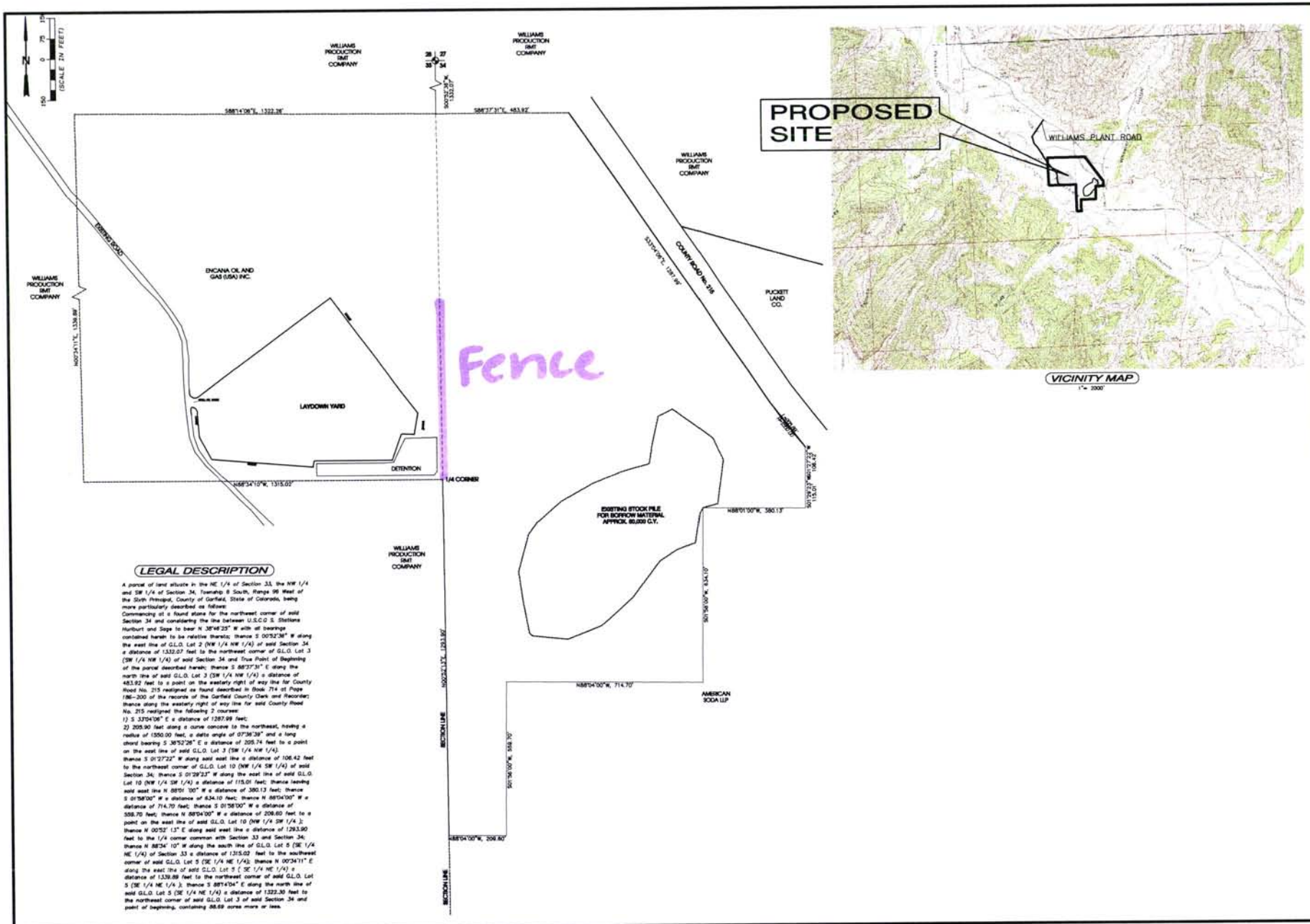
If you are satisfied that EnCana has met the conditions of approval, please issue the Special Use Permit for this facility. If you need additional information or have any questions, please do not hesitate to contact me.

Very truly yours,

Brenda Linster Herndon

Brenda Linster Herndon
Lead Permit and ROW Coordinator, Piceance Basin

ATTACHMENT 1



VICINITY MAP
1" = 2000'

LEGAL DESCRIPTION

A parcel of land situate in the NE 1/4 of Section 33, the NW 1/4 and SW 1/4 of Section 34, Township 6 South, Range 96 West of the Sixth Principal, County of Garfield, State of Colorado, being more particularly described as follows:
Commencing at a found stone for the northwest corner of said Section 34 and considering the line between U.S.C.G.S. Stations Hurlburt and Sage to bear N 38°48'25" W with all bearings contained herein to be relative thereto; thence S 00°52'26" E along the west line of G.L.O. Lot 2 (NW 1/4 NW 1/4) of said Section 34 a distance of 1332.07 feet to the northwest corner of G.L.O. Lot 3 (SW 1/4 NW 1/4) of said Section 34 and True Point of Beginning of the parcel described herein; thence S 88°37'31" E along the north line of said G.L.O. Lot 3 (SW 1/4 NW 1/4) a distance of 483.92 feet to a point on the westerly right of way line for County Road No. 215 realigned as found described in Book 714 at Page 186-200 of the records of the Garfield County Clerk and Recorder; thence along the westerly right of way line for said County Road No. 215 realigned the following 2 courses:
1) S 33°04'06" E a distance of 1287.99 feet;
2) 205.90 feet along a curve concave to the northeast, having a radius of 1550.00 feet, a delta angle of 07°36'39" and a long chord bearing S 36°52'26" E a distance of 205.74 feet to a point on the east line of said G.L.O. Lot 3 (SW 1/4 NW 1/4);
thence S 01°27'22" W along said east line a distance of 106.42 feet to the northeast corner of G.L.O. Lot 10 (NW 1/4 SW 1/4) of said Section 34; thence S 01°29'23" W along the east line of said G.L.O. Lot 10 (NW 1/4 SW 1/4) a distance of 115.01 feet; thence leaving said east line N 88°01'50" W a distance of 380.13 feet; thence S 01°58'00" W a distance of 634.10 feet; thence N 88°04'00" W a distance of 714.70 feet; thence S 01°58'00" W a distance of 558.70 feet; thence N 88°04'00" W a distance of 206.80 feet to a point on the west line of said G.L.O. Lot 10 (NW 1/4 SW 1/4.);
thence N 00°52'13" E along said west line a distance of 1293.90 feet to the 1/4 corner common with Section 33 and Section 34;
thence N 88°34'10" W along the south line of G.L.O. Lot 5 (SE 1/4 NE 1/4) of Section 33 a distance of 1315.02 feet to the southeast corner of said G.L.O. Lot 5 (SE 1/4 NE 1/4);
thence N 00°34'11" E along the east line of said G.L.O. Lot 5 (SE 1/4 NE 1/4) a distance of 1338.89 feet to the northeast corner of said G.L.O. Lot 5 (SE 1/4 NE 1/4);
thence S 88°14'06" E along the north line of said G.L.O. Lot 5 (SE 1/4 NE 1/4) a distance of 1322.30 feet to the northeast corner of said G.L.O. Lot 3 of said Section 34 and point of beginning, containing 88.68 acres more or less.

2252 STOCKTON HILL ROAD
KINGMAN, ARIZONA 86401
(928) -753-3627
MOHAVE ENGINEERING & ASSOCIATES, INC.

SHEET TITLE
ENCANA OIL & GAS (USA) INC.
PROPOSED LAYDOWN YARD SITEPLAN

PROJECT
LOCATED IN THE NE1/4 OF SECTION 33 AND THE NW 1/4 AND SW 1/4 OF SECTION 34 T6S, R96W, 6TH P.M., GARFIELD COUNTY, COLORADO

PROJECT NUMBER	06-062
DATE	02/23/06
DESIGNED BY	T. Martinez
DRAWN BY	T. Martinez
CHECKED BY	B. Moore
DRAWING NUMBER	1 of 2

ENCANA OIL & GAS (USA) INC.

PARACHUTE STAGING AREA

Supplemental Impact Statement

A Section 5.03 Review Standards

2) **Street improvements adequate to accommodate traffic volume generated by the proposed use and to provide safe access to the use shall either be in place or shall be constructed in conjunction with the proposed use;**

EnCana has determined and agreed to limit the proposed use of the staging area to the North Parachute Operations only. The site will not be utilized to store or maintain rigs associated with drilling operations within the South Parachute Operations Area. As a result, rig and associated equipment moves from EnCana operations to the north will only impact the length of County Road 215 from the access into the proposed site and to the point where County Road 215 terminates at EnCana Property to the north. No truck traffic, associated with the proposed site, will need to travel along the section of County Road 215 south of the access to the site, nor will rig haul traffic from the north continue to impact the Town of Parachute or Interstate 70.

During maintenance of the drilling rigs and equipment, while stored in the proposed staging area, service vehicles will need to access the site. These service vehicles will range in description and size from 1 ton pickups to 2 ½ ton trucks. It is anticipated that one each of this type of vehicles will need to access the site on a daily basis and will be limited to the duration of which the rig and equipment is being stored on site.

B. Section 5.03.07 Industrial Operations

1) **a) Existing lawful use of water through depletion or pollution of surface run-off, stream flow or ground water;**

EnCana has contracted Hawworth-Pawlak Geotechnical to calculate the drainage requirement for the site. The actual size of the proposed retention pond exceeds the calculated area required. See attached Mohave Engineering Associates drawings which depict the proposed drainage plan.

See attached Spill Prevention Control and Countermeasure (SPCC) plan

b) Impacts on adjacent land from the generation of vapor, dust, smoke, noise, glare or vibration, or other emanations;

During maintenance operations on the rigs and equipment, EnCana anticipates an average of one 1 ton pickup and one 2 ½ ton truck with an average crew size

of 6 personnel will be required to access the staging area on a daily basis. The duration of the visits will be determined by the extent and nature of the repairs and maintenance required. Once repairs and maintenance are completed, these vehicles will no longer access the site.

c) **Impacts on wildlife and domestic animals through the creation of hazardous attractions, alteration of existing native vegetation, blockade of migration routes, use patterns or other disruptions;**

See attached Westwater Engineering Plan

d) **Affirmatively show the impacts of truck and automobile traffic to and from such uses and their impacts to areas in the County;**

As Mentioned above, EnCana has determined and agreed to limit the proposed use of the staging area to the North Parachute Operations only. The site will not be utilized to store or maintain rigs associated with drilling operations within the South Parachute Operations Area. As a result, rig and associated equipment moves from EnCana operations to the north will only impact the length of County Road 215 from the access into the proposed site and to the point where County Road 215 terminates at EnCana Property to the north. No truck traffic, associated with the proposed site, will need to travel along the section of County Road 215 south of the access to the site, nor will rig haul traffic from the north continue to impact the Town of Parachute or Interstate 70.

During maintenance of the drilling rigs and equipment, while stored in the proposed staging area, service vehicles will need to access the site. These service vehicles will range in description and size from 1 ton pickups to 2 ½ ton trucks. It is anticipated that one each of this type of vehicles will need to access the site on a daily basis and will be limited to the duration of which the rig and equipment is being stored on site.

Landscaping Plan

Due to the location of the proposed site, within sight distance of a public road, EnCana proposes to construct an 8 ft high chain-link fence equipped with privacy slats on the upper tier of the property along the east side of the site. The proposed staging area is to be located at a lower elevation as compared to the easterly portion of the property. With the construction of the privacy fence on the higher elevation, visual impacts due to the site will be substantially minimized or eliminated for local traffic along County Road 215. Privacy fencing or additional landscaping along the north, west and south boundaries should not be required due to the industrial nature of the adjacent properties.

Reclamation Plan

The expected life of the Parachute Staging Area will be the same as the duration of EnCana Oil & Gas operations in the North Parachute area. Reclamation will consist of the following:

- Immediate re-seeding of all disturbed areas outside of the fenced site caused by construction of the site.
- Removal of all fencing
- Removal of surface pipe racks and equipment
- Removal of rock and gravel materials
- Restoration and re-contouring of grade to approximately original condition
- Replacement of stockpiled topsoil
- Reseeding with certified, weed-free seed mixtures to match surrounding vegetation (see Westwater proposed seed mix)
- Continued monitoring of re-vegetation growth. Re-application of seed as required.
- Compliance with all prevailing Garfield County regulations and conditions governing final reclamation

Prior to abandonment of the staging area, EnCana would contact the Garfield County Planning Director to arrange for a meeting and joint inspection of the site. This meeting and inspection would take place a minimum of 30 days prior to abandonment and would be held so that an agreement on an acceptable abandonment plan can be reached An Abandonment and Reclamation Plan would be developed to address the bullet points listed above:.

Linster Herndon, Brenda

From: Steve Anthony [santhony@garfield-county.com]
Sent: Tuesday, November 28, 2006 2:14 PM
To: Fred Jarman; jwsmith1951@aol.com; Linster Herndon, Brenda
Subject: MemoEncanaSUPParachuteStagingAreaPart2.doc

MEMORANDUM

To: **Fred Jarman**

From: **Steve Anthony**

Re: **Clarification of Comments on the Encana SUP for Parachute Staging Area**

Date: **November 28, 2006**

My earlier comments (October 6, 2006) to you are in italics below:

The Integrated Vegetation and Noxious Weed Management Plan is acceptable.

Because of the unknown timetable of final reclamation it is recommended that the per acre rate of revegetation security be $4000 per acre. The project encompasses 7.2 acres; this would be a total security of $28,800.

For further clarification, the seed mix included on page 5 of the Integrated Vegetation and Noxious Weed Management Plan is acceptable.

The Landscaping Plan on page 2 of the Supplemental Impact Statement is also acceptable.

ATTACHMENT 2

STATE OF COLORADO

Bill Owens, Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
AN EQUAL OPPORTUNITY EMPLOYER

Bruce McCloskey, Director
6060 Broadway
Denver, Colorado 80216
Telephone: (303) 297-1192
wildlife.state.co.us

For Wildlife-
For People

November 30, 2006

Fred Jarman
Planning Director, Garfield County
108 8th Street, suite 401
Glenwood Springs, CO. 81601

Mr. Jarman,

Re: Encana Parachute Laydown Yard

We have met with Encana regarding the open space wildlife movement corridor on Parachute Creek. Encana has committed to maintaining that space, while enhancing the area for wildlife, specifically mule deer. Encana has also contracted with a consulting firm and surveyed the area to address enhancement terms and criteria. The Division of Wildlife feels that this project has been initiated to better the migratory chances of wildlife in the Parachute Creek drainage. We also would like to see a type of easement for the property to protect the challenging work being done in perpetuity.

The neighboring laydown yard will have limited effects on the open space corridor, especially if vegetative qualities and enhancements are met in the near future. The Division of wildlife looks forward to working with Encana and the County as we move towards further development in these particularly critical wildlife areas.

If you or any of your staff have further questions or comments please feel free to contact JT Romatzke, District Wildlife Manager, at (970)255-6124.

Thank you,

Dean Riggs – Area Wildlife Manager

cc. Velarde, Toolen, Romatzke

EnCana Parachute Laydown Yard

Wildlife Assessment and Mitigation Plan

Garfield County, Colorado

Prepared for:

EnCana Oil & Gas (USA), Inc.
2717 County Road 215
Parachute, CO 81635
Attn: Brenda Herndon
970-285-2600

Prepared by:

WestWater Engineering
2516 Foresight Circle #1
Grand Junction, CO 81505
970-241-7076

October 1, 2006

EnCana Parachute Laydown Yard

Wildlife Assessment and Mitigation Plan
Garfield County Special Use Permit Application

Introduction

On September 27, 2006, WestWater biologists performed a site inspection of the EnCana Oil & Gas, Inc. (USA) (EnCana) Parachute Laydown Yard (PLY). The site is located west of County Road 215, Parachute Creek Road at Wheeler Gulch Road (see Figure 1). The inspections was conducted for the purpose of a wildlife assessment and management plan. Factors considered include existing land management practices, absence or presence of suitable wildlife habitat, direct or indirect evidence of wildlife use, and existing and potential natural vegetation community.

Landscape Setting

The PLY is on the first terrace above the floodplain of Parachute Creek. It is east of Parachute Creek in an industrial setting situated between Williams, Inc. compressor plant and American Soda. Terrain is gently sloping to nearly flat at the entrance to the yard. The property has a westerly aspect.

The Colorado Division of Wildlife (DOW) requested approximately 80 acres of vacant land adjacent to the PLY be set aside as wildlife habitat. EnCana and Williams, Inc. voluntarily agreed and contributed approximately 40 acres each. The purpose of the set aside is to provide a corridor for wildlife movement between Wheeler Gulch to the east and Riley Gulch to the west across the Parachute Creek Valley. According to District Wildlife Manager JT Romatzke (2006), the corridor would be more effective if the vegetation community had more structure or layers than merely the surface herbaceous layer and a few decadent shrubs currently present.

Potential Wildlife Occurrence

Due to the relation to the current built environment and poor vegetation component, a low diversity of wildlife is expected to be observed passing over, nearby, or through the site seasonally. The wildlife set aside corridor is not as effective as it could be due to extreme sight distances between between shrub copses.

Species or sign of their presence observed directly on the site are shown in bold type in Table 1. The other species shown in Table 1 reasonably could be expected to be observed at some time during the year from on or near the site. The adjacency of the PLY to Parachute Creek and riparian vegetation community increases the diversity of potential wildlife use. Few of the listed species are observed year round, i.e. presence is seasonal.

Table 1. Wildlife Species Likely Found in Pipe Laydown Yard Vicinity[1]

CommonName	Scientific Name	Occurrence[2]	Abundance[2]
Amphibians			
Bullfrog	Rana catesbeiana	Known to occur	Locally Common
Great Basin Spadefoot	Spea intermontana	Known to occur	Uncommon
Western Chorus Frog	Pseudacris triseriata	Known to occur	Fairly Common
Woodhouse's Toad	Bufo woodhousii	Known to occur	Common
Birds			
American Crow	Corvus brachyrhynchos	Known to occur	Fairly Common
American Kestrel	Falco sparverius	Known to occur	Fairly Common
American Peregrine Falcon	Falco peregrinus anatum	Known to occur	Rare
American Robin	Turdus migratorius	Known to occur	Common
Black-billed Magpie	Pica pica	Known to occur	Common
Brewer's Blackbird	Euphagus cyanocephalus	Known to occur	Common
Brown-headed Cowbird	Molothrus ater	Known to occur	Common
Bushtit	Psaltriparus minimus	Known to occur	Uncommon
Cassin's Finch	Carpodacus cassinii	Known to occur	Fairly Common
Common Raven	Corvus corax	Known to occur	Fairly Common
European Starling	Sturnus vulgaris	Known to occur	Abundant
Field Sparrow	Spizella pusilla	Known to occur	Unknown
Golden Eagle	Aquila chrysaetos	Known to occur	Uncommon
Gray Flycatcher	Empidonax wrightii	Known to occur	Fairly Common
Great Blue Heron	**Ardea herodias**	**Known to occur**	**Common**
Horned Lark	Eremophila alpestris	Known to occur	Fairly Common
House Finch	Carpodacus mexicanus	Known to occur	Common
House Sparrow	**Passer domesticus**	**Known to occur**	**Common**
House Wren	Troglodytes aedon	Known to occur	Common
Killdeer	Charadrius vociferus	Known to occur	Fairly Common
Loggerhead Shrike	Lanius ludovicianus	Known to occur	Uncommon
Mountain Bluebird	**Sialia currucoides**	**Known to occur**	**Fairly Common**
Mourning Dove	Zenaida macroura	Known to occur	Common
Red-tailed Hawk	Buteo jamaicensis	Known to occur	Uncommon
Red-winged Blackbird	Agelaius phoeniceus	Known to occur	Abundant
Rock Dove	Columba livia	Known to occur	Common
Spotted Towhee	Pipilo maculatus	Known to occur	Common
Turkey Vulture	Cathartes aura	Known to occur	Fairly Common
Western Bluebird	**Sialia mexicana**	**Known to occur**	**Rare**
Western Kingbird	**Tyrannus verticalis**	**Known to occur**	**Fairly Common**
Western Meadowlark	Sturnella neglecta	Known to occur	Common
White-crowned Sparrow	**Zonotrichia leucophrys**	**Known to occur**	**Fairly Common**
Wild Turkey	**Meleagris gallopavo**	**Known to occur**	**Uncommon**
Yellow-rumped Warbler	Dendroica coronata	Known to occur	Common
Mammals			
Coyote	Canis latrans	Known to occur	Abundant
Deer Mouse	Peromyscus maniculatus	Known to occur	Abundant
Desert Cottontail	Sylvilagus audubonii	Known to occur	Common
House Mouse	Mus musculus	Known to occur	Abundant
Mule Deer	**Odocoileus hemionus**	**Known to occur**	**Abundant**
Raccoon	Procyon lotor	Known to occur	Abundant
Red Fox	Vulpes vulpes	Known to occur	Uncommon
Striped Skunk	Mephitis mephitis	Known to occur	Abundant
White-tailed Jackrabbit	Lepus townsendii	Known to occur	Common
Reptiles			
Fence Lizard	Sceloporus undulatus	Known to occur	Common
Racer	Coluber constrictor	Known to occur	Uncommon
Western Terrestrial Garter Snake	Thamnophis elegans	Known to occur	Fairly Common

[1]DOW, 2005, edited by WestWater Engineering for the PLY. [2]When found in Garfield County in similar vegetation communities with normal structural diversity.

Discussion

Importance of vegetative structure was evident at the time of inspection. The neo-tropical birds observed as noted in bold in Table 1 were all using greasewood. The site is poor wildlife habitat due to lack of vegetation community structure, past soils disturbances, high levels of human activity in combination with sight distances of 400 meters or more, and domestic livestock grazing.

To be more effective for wildlife, the corridor would benefit from establishment of vegetation communities with multiple structural levels. According to the Natural Resources Conservation Service, U.S. Dept. of Agriculture, 2006, potential natural vegetation for Arvada loam soil on the east, north and south side of the PLY include alkalai sacaton (*Sporobolus airoides*), inland saltgrass (*Distichlis spicata*), western wheatgrass (*Pascopyrum smithii*), bottlebrush squirreltail (*Sitanion hystrix*), Gardner's saltbush (*Atriplex gardneri*), greasewood (*Sarcobatus vermiculatus*), and winterfat (*Krascheninnikovia lanata*). A vegetation community composed of these species would contain multiple structural layers resulting in a complex more suitable to providing multiple life stage functions for resident wildlife.

Actual vegetation complexes observed include a few greasewood, 0.5-1.5 m. in height, robust, desert seep willow (*Saueda moquinii*), Russian thistle (*Salsola tragus*), and pepperweed (*Lepidium spp.*) which dominate the alkaline halaquepts soil. Vegetation present on the majority of the site includes alkalai sacaton, bottlebrush squirreltail, a few rabbitbrush (*Ericameria spp.*) and a wheatgrass, probably tall wheatgrass (*Elymus elongatus*). Cheatgrass (*Bromus tectorum*) and halogeton (*Halogeton glomeratus*) are also present but in relatively low density. Within 250 meters was a copse of rabbitbrush more suitable to providing the type of cover providing more function of greater value than that currently available.

Vegetation conformation, hoof prints, and fecal remains exhibited evidence of heavy grazing pressure from cattle with less than 25% annual growth remaining on most plants in the study area. Native vegetation canopy varied between 1-15% where it was found.

Wildlife Mitigation

Improvement of undisturbed adjacent land to encourage vegetative type conversion to shrublands would greatly increase the function and value of the set aside. Greater than 90% of the surrounding land possesses only the herbaceous layer of vegetation. Methods to improve the vegetation community include:

- removing or reductin domestic livestock grazing,
- controlling and eliminating noxious and invasive vegetation, planting aggressive, native grasses,
- creating shrub copses by seeding or planting live plant materials in locations to reduce sight distances between copses and other cover,
- selectively locating future berms or soil stockpiles to decrease sight distances,
- removing all unnecessary fences,
- and ensuring necessary fences are wildlife friendly.

This list is not meant to be exhaustive. Other options to improve wildlife value may emerge. Those listed above are the most obvious for direct improvement of wildlife function and value.

Best Management Practices

Minimize the footprint of temporary disturbances and reduce to the minimum level possible all soil disturbing activities. Construction vehicles and staging should be done in a manner to reduce the footprint of new disturbance during construction.

Re-seeding

Temporary disturbances on EnCana property should be re-seeded with the seed recipe in the PLY Integrated Vegetation and Noxious Weed Management Plan.

Fence Removal

Some wildlife un-friendly fences are located near the PLY. Removal of all unnecessary fencing in the vicinity will improve the over all value to wildlife as the vegetation community develops more functions and greater values with subsequent increases in levels of wildlife use and diversity.

References

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Romatzke, JT, 2006. Personal communication. District Wildlife Manager, Dept. Nat. Res., Div. of Wildlife, Parachute, CO.

NRCS, 2006. Web Soil Survey, US Dept. of Agriculture. URL: http://websoilsurvey.nrcs.usda.gov

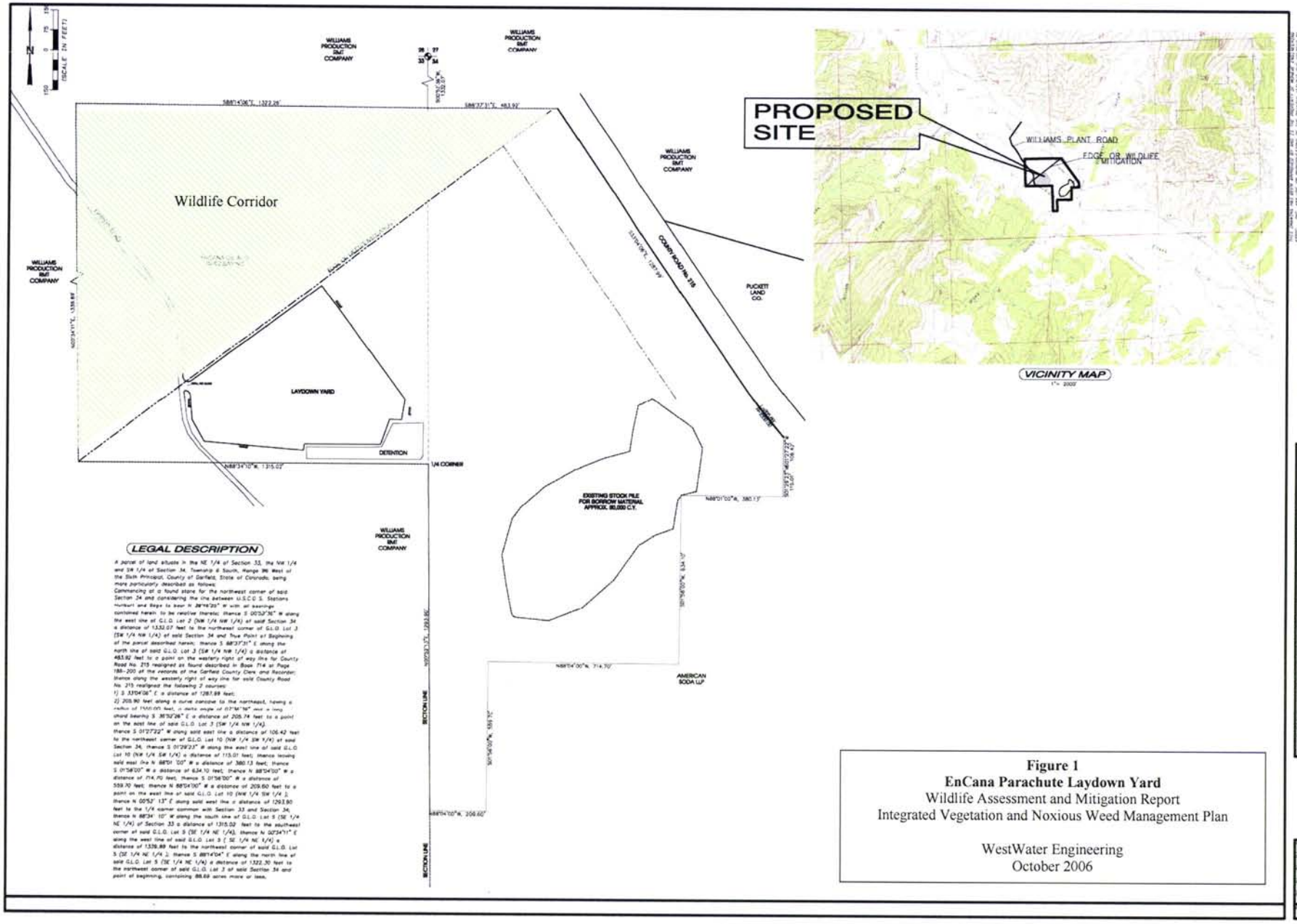

Figure 1
EnCana Parachute Laydown Yard
Wildlife Assessment and Mitigation Report
Integrated Vegetation and Noxious Weed Management Plan

WestWater Engineering
October 2006

2352 STOCKTON HILL ROAD
KINGMAN, ARIZONA 86401
(928) - 753-2627
MOHAVE ENGINEERING ASSOCIATES, INC.

ENCANA OIL & GAS (USA) INC.
PROPOSED LAYDOWN YARD SITEPLAN
LOCATED IN THE NE¼ OF SECTION 33
AND THE NW¼ AND SW¼ OF SECTION 34
T6S, R96W, 6TH P.M., GARFIELD COUNTY, COLORADO

PROJECT NUMBER 06-082
DATE 02/23/06
DRAWN BY T. Martinez
CHECKED BY B. Moore
SHEET NUMBER 1 of 2

ATTACHMENT 3

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

November 2006

EnCana Oil & Gas (USA) Inc.
Parachute Staging Area Garfield County, Colorado

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1.0 GENERAL INFORMATION

1.1 Facility and Operator General Information

1. Name of Facility: **Parachute Staging Area**

2. Type of Facility: **Drilling/Completion/Work-over Rigs and Associated Equipment Storage/Staging Area**

3. Facility Location: **NE ¼ Section 33 and NW ¼ & SW ¼ Section 34, Township 6S, Range 96W of the 6th P.M., Garfield County, Colorado generally described as a tract of land 3.5 mile north of the town of Parachute, Colorado off of County Road 215 (7.21 acres to be utilized of an 88 acre site).**

4. Name and Address of Owner or Operator

Name: **EnCana Oil & Gas (USA) Inc.**
Address: **2717 County Road 215 Ste: 100**
Parachute, CO 81635

1.2 Designated Person Accountable for Oil Spill Prevention (40 CFR 112.7 (f) (2))

The following person reports to management and is accountable for discharge prevention at the subject facility.

Name: **David Peters**
Title: **EHS Consultant**

1.3 Management Approval (40 CFR 112.7)

EnCana Oil & Gas (USA) Inc. is committed to the prevention of discharges of oil to the environment, including navigable waters, and maintains the highest standards for spill prevention control through regular review, updating and implementation of this SPCC plan. With the signature below, I certify that this Spill Prevention, Control and Countermeasures plan will be implemented as herein described.

Signature: _____ Date:_____
Name: Terry C. Gosney, P.E., CET
Title: Regional Environmental Coordinator

1.4 Plan Implementation (40 CFR 112.7)

Any additional facilities, procedures, methods, or equipment not yet fully operational are discussed below with the details of the installation and start-up.

Inspection and testing procedures specified in Section 3.0 (where applicable) are to be implemented as soon as practical, but no later than six months following the date of this plan.

Secondary containment structure (facility perimeter dike) for containers and equipment are to be constructed and maintained as indicated on the facility diagram. However, portable containers and equipment temporarily placed in the staging area may utilize secondary containment as a part of the original manufacturing or after market installation. The containment structures are to be constructed or improved as soon as practical, but no later than six months following Garfield County approval of the Special Use Permit..

1.5 Professional Engineer Certification (40 CFR 112.3 (d))

By means of this Professional Engineer Certification, I hereby attest that:

1) I am familiar with the provisions of 40 CFR Part 112;
2) I, or my agent, have visited and examined facilities;
3) This SPCC Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 CFR 112;
4) Procedures for required inspections and testing have been established, and
5) This plan is adequate for the subject facility.

_____
Printed Name of the Registered Professional Engineer

Date: _____

_____
Signature of the Registered Professional Engineer

Registration No. _____ State: _____

1.6 Plan History

This plan supercedes all plans listed in the following table:

Plan Name	Date Created
1.	
2.	
3.	
4.	

1.7 Plan Review and Amendments (40 CFR 112.5)

In accordance with 40 CFR 112.5(b), a review and evaluation of this SPCC plan is conducted at least once every five years. As a result of this review and evaluation, EnCana Oil & Gas (USA) Inc. will amend the plan to include more effective spill prevention and control technology if:

1) Such technology will significantly reduce the likelihood of a spill event from the facilities, and
2) If such technology has been field-proven at the time of the review.

Technical amendments to this SPCC plan shall be certified by a Registered Professional Engineer within six months if modifications to the facility significantly affect the potential for discharges of oil into or upon navigable waters.

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Administrative or non-technical amendments do not require the certification of a Registered Professional Engineer. Examples of administrative changes include, but are not limited to, telephone number changes, name changes, or any non-technical text revisions.

1.7.1 Review Summary

Original Date of Plan: November 6, 2006

By my signature below, I attest that I have completed a review and evaluation of this SPCC plan for the Parachute Staging Area.

Review	Date	Signature	Printed Name	Title Plan Amended (Yes/No)
1.				
2.				
3.				
4.				

1.7.2 Amendment Summary

Amendments to this plan are required whenever there is a technical change in facility design, construction, operation or maintenance which significantly affects the facility's potential for the discharge of oil into or upon navigable waters of the United States. Such amendments shall be implemented as soon as possible, but no later than six months after such changes occur. This SPCC plan for the Parachute Staging Area has been amended as follows:

Amendment Date	Purpose and Description of Amendment	Amendment Type (Administrative or Technical)	Amendment Certified by P.E. (Yes/No)
1.			
2.			
3.			
4.			

Note: P. E. certification is not required for administrative amendments.

1.7.3 Amendment Certification (40 CFR 112.5 (c))

Technical Amendment Certification

I hereby attest that:

1) I am familiar with the provisions of 40 CFR Part 112;
2) I, or my agent, have visited and examined the facilities;
3) This SPCC Plan has been amended in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 CFR 112;
4) Procedures for required inspections and testing have been established, and
5) This plan is adequate for the subject facility.

_____
Printed Name of Registered Professional Engineer

Date: _____

_____
Signature of Registered Professional Engineer

Registration No.:_____ State: _____

2.0 SPILL PREVENTION AND CONTROL

2.1 Facility Conformance (40 CFR 112.7(a)(1) and (2))

The subject facility is in conformance with 40 CFR 112 with the following exceptions noted below. The reason for any nonconformance and the provided equivalent environmental protection measures are also noted.

Conformance, Deviation, Reason for Nonconformance and Equivalent Environmental Protection Measures

Fencing is not provided as specified in 112.7(g). Fencing would restrict emergency egress from the facility. The operator has implemented an oil spill contingency plan and a written commitment of manpower for emergency purposes. Security for the facility is provided through a manned (by company personnel) security gate located at the entrance to North Parachute Ranch field. Spills or accidental releases of oil are promptly cleaned up by the operator. The staging facility is un-manned; however, can be accessed 24 hours/day 7 days a week.

Portable equipment is not provided with a means of secondary containment as specified by 112.8; however, the facility perimeter berm/dike provides secondary containment as described in 112.8(b)(11) for portable equipment. The operator has implemented an oil spill contingency plan and a written commitment of man-power. The facility is visited on a frequent basis and any spills or accidental releases of oil are promptly cleaned up by the operator.

2.2 Facility Physical Layout (40 CFR 112.7 (a)(3))

The subject property is a facility designed to temporarily stage drilling, completion, work-over rigs and associated containers and equipment (includes portable tanks) on an intermittent and temporary basis. A diagram of the facility is located in Appendix G.

Given the facility temporarily stages mobile/portable equipment and containers, the following details and location information, as applicable, may be included on the diagram:
1) Containers and their contents;
2) Drum and portable container storage areas.

2.3 Drainage Pathways and Distances to Navigable Waters

Drainage pathways proximate to the subject facilities and USGS topographic maps for the area are identified in Appendix F.

2.4 Applicable Industry Standards (40 CFR 112.3)

The design, construction, operation and maintenance of an on-shore facility must be conducted in conformance with the industrial standards as applicable. Even though EnCana Oil & Gas (USA) facilities are considered to be on-shore facilities, the Parachute Staging Area does not operate stationary equipment typical to an active on-shore facility. Given the aforementioned, industry standards described in the following may not be applicable.

Industry Standards
Secondary Containment:

- **API Standard 2610** - Design, Construction, Operation, Maintenance and Inspection of ***Terminal and Tank Facilities***.
- **API Recommended Practice 51** - Onshore Oil and Gas Production Practices for Protection of the Environment.
- **NFPA 30** - Flammable and Combustible Liquids Code
- **BOCA** - National Fire Prevention Code Loading and Unloading Areas
- **API Standard 2610** - Design, Construction, Operation, Maintenance and Inspection of Terminal and Tank Facilities.
- **NFPA 30** - Flammable and Combustible Liquids Code Diked Area Drainage
- **API Standard 2610** - Design, Construction, Operation, Maintenance and Inspection of Terminal and Tank Facilities.
- **API Recommended Practice 51** - Onshore Oil and Gas Production Practices for Protection of the Environment.
- **NFPA 30** - Flammable and Combustible Liquids Code Storage Tank Construction and Materials
- **API Standard 620** - Design and Construction of Large Welded Low Pressure Storage Tanks. API Standard 650 - Welded Steel Tanks for Oil Storage.
- **STI F911** - Standard for Diked Aboveground Steel Tanks
- **STI Publication R931** - Double Wall Aboveground Storage Tank Installation and Testing Instructions.
- **UL Standard 142** - Steel Aboveground Tanks for Flammable and Combustible Liquids.
- **UL Standard 1316** - Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products.
- **PEI Recommended Practice 200** - Recommended Practices for Installation of Aboveground Storage Systems for Motor Vehicle Fueling Facility Equipment
- **API Specification 12 B** - Bolted Tanks for Storage of Production Liquids
- **API Specification 12 D** - Field Welded Tanks for Storage of Production Liquids
- **API Specification 12 F** - Shop Welded Tanks for Storage of Production Liquids
- **API Specification 12 J** - Oil Gas Separators
- **API Specification 12 K** - Indirect-Type Oil Field Heaters
- **API Specification 12 L** - Vertical and Horizontal Emulsion Treaters Corrosion Protection for Buried Piping
- **NACE Recommended Practice 0169** - Control of External Corrosion on Underground or Submerged Metallic Piping Systems.
- **STI Recommended Practice 892** - Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems.

Facility Component Applicable Industry Standards
Inspection Procedures

- **API Recommended Practice 12R1** - Recommended Practice for Setting, Maintenance, Inspection, Operation, and Repair of Tanks in Productions Service.
- **API Recommended Practice 510** - Alternative Rules for Exploration and Production Pressure Vessels.
- **API Standard 574** - Inspection Practices for Piping Systems.
- **API Standard 653** - Tank Inspection, Repair, Alteration, and Reconstruction.

Inspection and Testing of Piping and Valves

- **API Standard 570** - Piping Inspection Code.
- **API Recommended Practice 574** - Inspection Practices for Piping System Components.
- **ASME B31.3** - Process Piping
- **ASME 31.4** - Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols.

Secondary Containment for Drilling and Work-over Operations

- **API Recommended Practice 52** - Land Drilling Practices for Protection of the Environment.
- **NFPA 30** - Flammable and Combustible Liquids Code
- **BOCA** - National Fire Prevention Code

Integrity Testing

- **API Standard 653** - Tank Inspection, Repair, Alteration, and Reconstruction.
- **API Recommended Practice 575** - Inspection of Atmospheric and Low-Pressure Tanks.
- **API Standard 570** - Piping Inspection Code
- **ASME B31.3** - Process Piping
- **ASME 31.4** - Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols.
- **STI Standard SP001-00** - Standard for Inspection of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids
- **UL Standard 142** - Steel Aboveground Tanks for Flammable and Combustible Liquids.

Brittle Fracture Evaluation

- **API Standard 653** - Tank Inspection, Repair , Alteration, and reconstruction.
- **API Recommended Practice 920** - Prevention of Brittle Fracture of Pressure Vessels.

Note: API - American Petroleum Institute

ASME - American Society of Mechanical Engineers
BOCA - Building Officials and Code Administrators International
NACE - National Association of Corrosion Engineers
NFPA - National Fire Protection Association
PEI - Petroleum Equipment Institute
STI - Steel Tank Institute
UL - Underwriters Laboratories

2.5 Contact List and Phone Numbers (112.7 (a)(3-5))

Lists of contact names and phone numbers for EnCana Oil & Gas (USA) Inc. personnel, company approved cleanup contractors, and federal and state agencies are contained in Appendix A. Also included in Appendix A are forms to be used for organizing release notification information and the submission of required information to the EPA Regional Administrator for qualified discharges.

2.6 Spill Prediction and Control (40 CFR 112.7 (a) and (b))

Equipment temporarily staged in the Parachute Staging Area that may have the potential to accidentally release oil are addressed in Appendix F. However, purpose of the staging facility is to temporarily stage drilling, completion, work-over rigs and associated containers and equipment, which will result in equipment moving in and out of the facility. Given this activity, the list of staged equipment that may have potential to accidentally release oil for a specific point in time (date of this plan) may not be complete.

The reasonably expected modes of major failure or accident for which oil could be released from an active on-shore facility are as follows:

A. Bulk Storage Tank Leak or Failure

I. Failure Modes:

Corrosion, vandalism, lightening strikes, valve or piping failure, overfilling (i.e., human error).

II. Rate of Flow:

Variable, depending upon the type, size and location of the tank failure. The ambient temperature at the time of the release may affect the viscosity of the oil and thereby impact the rate of release. Flow rates for corrosion failure are typically low. Lightning strikes may result in a release that is essentially instantaneous.

III. Discharge Quantity:

Total quantity discharged would not exceed the working capacity of the largest tank (estimated 500 bbls)

IV. Preventative Measures:

Storage tanks are generally constructed in accordance with API industry standards. Materials used in constructing the tanks are compatible with the substances stored. Where practicable, earthen berms/dikes or other diversionary structures are utilized to control any released fluids. Tanks are appropriately sized to minimize the risk of overfilling.

B. Tanker Truck Loading and Unloading Operations

I. Failure Modes:

Piping or valve failure, tank failure, overflow, and human error.

II. Rate of Flow:

Variable depending upon the type, size and exact location of the failure, and the amount of oil in the tanker truck and storage tank. The ambient temperature at the time of the release may affect the viscosity of the oil and thereby impact the rate of flow. Flow rates resulting from piping and

valve failures can range from 1 gallon per hour up to 400 barrels per hour. The flow rate for tank truck overflows typically will not exceed 5 to 10 barrels per minute. Tank failures may result in releases that are essentially instantaneous.

III. Discharge Quantity:

Potential discharge quantity is variable depending upon the type and location of the failure. The total quantity discharged would not exceed the working capacity of the largest tank (estimated 500 bbls).

IV. Preventative Measures:

Tanker truck loading and unloading operations are conducted in accordance with United States Department of Transportation regulations (49 CFR 177). All loading operations are attended by the truck driver. No smoking or open flames are allowed in the vicinity of the storage tanks and loading area. Wheel chocks are placed at the wheel nearest the truck loading connection to reduce the risk of the truck movement during loading operations. Following the completion of loading operations, the transfer line is disconnected and all valves and outlets on the tanker truck and the storage tank are visually inspected for leakage prior to vehicle departure.

C. Piping Failure

I. Failure Modes:

Both aboveground and buried pipelines may rupture or corrode and leak. Associated flanges, screwed connections, valves and gauges are also subject to corrosion and may fail or leak.

II. Rate of Flow:

Variable, depending on the size and location of the piping related failure. The maximum potential rate of flow is not expected to exceed the oil process rates as listed in Appendix F.

III. Discharge Quantity:

Potential discharge quantity is variable depending upon the type and extent of the failure and the length of time that the failure went undetected.

IV. Prevention Measures:

Personnel routinely perform visual inspections of aboveground piping and buried flowline right-of-ways to detect failures. As warranted by soil conditions, corrosion protection is provided for buried pipelines.

2.7 Oil Spill Contingency Plan and Commitment of Manpower (40 CFR112.7 (d)(1) & (2))

EnCana Oil & Gas (USA) Inc. maintains a strong contingency plan for oil spills and a written commitment of manpower follows. EnCana Oil & Gas (USA) Inc. is committed to a strong antipollution and spill prevention program. We are committed to designing and operating our facilities in a manner that will minimize the size and occurrence of spills. We are committed to a strong, pro-active training and inspection program that will insure that our facilities are operated and maintained in a manner that will prevent or minimize the occurrence of spills. In the event of a spill, EnCana Oil & Gas (USA) Inc. will commit the manpower, equipment and materials necessary to ensure that the clean up occurs in the shortest practical time while minimizing environmental damage and maximizing product recovery.

2.8 Discharge Countermeasures and Methods of Disposal (40 CFR 112.7 (a)(3)(iv)&(v))

In the event of an accidental release, EnCana Oil & Gas (USA) Inc. personnel will promptly initiate recovery actions as appropriate.

Levels of Response

Major Releases:

Major releases are defined as: 1) Spills of crude oil, condensate, or saltwater greater than 5 bbls, or 2) Spills of refined crude oil products, including but not limited to, gasoline, diesel fuel, aviation fuel, asphalt, road oil, kerosene, fuel oil, and derivative of mineral, animal or vegetable oils, or 3) Any volume of oil which results in a fire, will reach a water course, or may with reasonable probability endanger public health or result in substantial damage to property or the environment. Major releases will be handled under the direction of EnCana Oil & Gas (USA) Inc. personnel. Response contractors listed in Appendix A will be utilized as necessary to complete the clean up. If oil should threaten surface waters, the company contingency plan will be implemented. Containment structures would be constructed and booms would be deployed as needed to protect waterways.

Minor Releases: Releases not classified as major shall be reported internally to the appropriate supervisor on an incident report.

Product Recovery and Handling Spills onto Soil

Mobile oil spills should be contained as soon as possible by the construction of earthen dams or by the placement of mechanical barriers. Free oil may be removed from the ground by the use of a vacuum truck. Sumps or trenches may be dug to intercept or drain free oil. Remaining free oil may be removed from the ground by the use of oil-absorbent materials. When all free oil has been removed, the affected soil containing over 1.0% total petroleum hydrocarbon (TPH) by weight should be delineated, both vertically and horizontally. All soil containing over 1.0% TPH should then be excavated by backhoe or similar appropriate equipment for remediation or disposal. To prevent storm water contamination, all impacted soils containing in excess of 1.0% TPH should placed in an approved disposal site or in a secure interim storage location for future remediation or disposal, unless more immediate on-site techniques and be implemented. Placing the impacted soil on a sheet of visquene (plastic) and providing appropriate cover, diking, or storm water diversions, is acceptable. A final cleanup level of 1.0% TPH should be achieved as soon as practicable. Several methods are acceptable for the cleanup of oil contaminated soil; regulatory agencies may specify which methods are appropriate.

Spills onto Water

Oil spills onto surface waters must be cleaned up to the satisfaction of the landowners and regulatory agencies. The spill should be contained as soon as possible by the use of floating booms or other mechanical barriers. Free oil may be removed from the water by the use of a vacuum truck or by oil-skimming equipment. Remaining free oil may be removed from the water by the use of oil-absorbent materials such as spray-sorb. Oil-absorbent materials may also be used to remove oil that has accumulated on shoreline soils, rocks and vegetation. Oil

contaminated shoreline materials may require removal to a suitable treatment site for cleanup as described above.

2.10 Regulatory Conformance

The subject property is not subject to any state regulated discharge prevention and containment requirements beyond those specified by federal regulation.

2.11 Regulatory Exclusions

The subject property is classified as onshore non-production facility. Furthermore, the property is not expected to cause substantial harm to the environment as demonstrated by the completed Certification of Substantial Harm Determination form contained in Appendix E. As such, the subject properties are excluded from the following regulations:

Subpart B - Requirements for Petroleum Oils and Non-Petroleum Oils except Animal Fats...

40 CFR 112.9 SPCC plan requirements for onshore oil production facilities
40 CFR 112.10 SPCC plan requirements for onshore drilling & work-over facilities
40 CFR 112.11 SPCC plan requirements for offshore oil facilities

Subpart C - Requirements for Animal Fats and Oils, Greases, Fish and Marine Oils...

40 CFR 112.12 SPCC plan requirements for onshore facilities (excluding production)
40 CFR 112.13 SPCC plan requirements for onshore oil production facilities
40 CFR 112.14 SPCC plan requirements for onshore oil drilling facilities
40 CFR 112.15 SPCC plan requirements for offshore oil drilling facilities

Subpart D - Response Requirements

40 CFR 112.20 Facility response plans
40 CFR 112.21 Facility response training and drills/exercises

3.0 INSPECTIONS, TESTING AND TRAINING

3.1 Inspections and Testing (40 CFR 112.7 (e))

Parachute Staging Area will temporarily stage portable containers and equipment when not in use. Given that the containers and equipment are essentially in a phase of transit when staged and not stationary, integrity testing procedures are not applicable.

When EnCana Oil & Gas (USA), Inc. is the owner of specific stationary equipment, written procedures will be made available and will be utilized when performing prescribed inspections and testing. Records of inspections and tests are to be signed by the appropriate supervisor/inspector and maintained at the local office. A record of inspection is to be kept with the SPCC Plan for at least 3 years. A copy of the inspection form is included in Appendix B.

3.1.1 Scheduled Examinations

When portable containers and equipment are placed into the staging area the following may be visually examined to minimize oil discharges from occurring: tanks for leaks and corrosion, process units for leaks and corrosion, sight glasses for leaks, pumps for leakage around packing glands and piping for leaks. If problems are identified, prompt action is taken for repairs. The equipment operators, in the course of their normal routine, are responsible for examining the facilities covered by this SPCC Plan. This periodical review is to ensure that the facility is operated minimizing oil discharges. In addition to periodical observations made by operator

personnel in their routine activities, a formal documented examination of the facility will be conducted and documented on an annual basis to ensure that the facilities are in compliance with the SPCC Plan. Following are general procedures for conducting the formal examinations. There may be specific items covered in the Plan that are specific to a facility and may not be covered by these general guidelines. Conversely, certain items covered by these procedures may not apply to every facility. The Facility Examination Form contained in Appendix B is to be used to document the periodic examinations.

THE FOLLOWING ITEMS (if present) MUST BE EXAMINED:

- **Ditches and Waterways**

Drainage ditches in and around the facility and within the field, roadside ditches, water courses, ponds, etc. will be inspected for oil accumulations and/or evidence of saltwater spills.

- **Above Ground Piping**

Piping associated with portable containers and equipment staged in this facility utilized to convey oil will be examined for leaks, evidence of leaks, and evidence of potential leaks.

- **Tanks**

All portable liquid storage tanks, except fresh water tanks, (including crude oil, saltwater, glycol, methanol, fuel, treatment chemicals, lube oil, etc.) and associated piping will be visually examined for leaks, overflows, and signs of potential problems. Special emphasis will be placed on the inspection of foundations, bottom seams, patches, flanges, piping connections, sight-glasses, and other openings. Valves should be in their proper position and locked or sealed, if required.

- **Berms/Dikes**

Earthen berms and dikes will be inspected for adequate capacity, erosion and leaks. Rainwater will be allowed to evaporate from any facility storm water retention pond.

- **Pits**

Pits must be empty except when in use and must be kept free from oil. Any accumulation of rainwater or produced fluids must be removed from the pit and properly disposed.

- **Drains**

Drains should be inspected for blockage and accumulation of debris that would impede the free flow of liquids.

- **Chemical Storage Tanks, Pumps and Piping**

Chemical injection systems should be inspected for leaks, especially around storage tanks, pumps and fittings on tubing or piping.

- **Lube Oil Systems**

Lube oil storage tanks and the piping systems should be inspected, especially around tanks, pumps and fittings on the piping or tubing.

- **Drain Pans or Drip Pans**

The liquid level in drip or drain pans should be checked and emptied as necessary.

- **Rainwater Discharge from Berms/Dikes**
- All discharges of rainwater from berms to drainage **MUST BE VISUALLY INSPECTED AND RECORDED (Appendix C)**. Prior to discharge, the water must be

visually inspected for the presence of oil. If present, the water cannot be discharged and must be disposed of in a permitted disposal system or other acceptable manner.

3.1.2 Inspections

Parachute Staging Area will temporarily stage portable containers and equipment when not in use. Given that the containers and equipment are essentially in a phase of transit when staged and not stationary, inspection procedures are not applicable.

When EnCana Oil & Gas (USA), Inc. is the owner of specific stationary equipment, comprehensive inspections of oil containing equipment may be performed as opportunities allow or when indicated during the completion of a scheduled examination. These inspections should be conducted by a qualified inspector in accordance with the standards listed below. The inspections are to be documented using the checklists contained in Appendix B and the records maintained at the appropriate field office. If problems are identified, appropriate corrective actions are to be implemented and noted on the inspection form.

Equipment Inspection Standard

- Bulk Storage Tanks API RP 12R1 - Recommended Practice for Setting, Maintenance, Inspection, Operation, and Repair of Tanks In Production
- Service Piping API 574 - Inspection Practices for Piping System Component.

3.1.3 Integrity Testing Procedures (40 CFR 112.7 (d))

Parachute Staging Area will temporarily stage portable containers and equipment when not in use. Given that the containers and equipment are essentially in a phase of transit when staged and not stationary, integrity testing procedures are not applicable.

When EnCana Oil & Gas (USA), Inc. is the owner of specific stationary equipment and when conditions make it impracticable to provide secondary containment, periodic integrity testing will be conducted for affected storage containers, separation equipment and associated valves and piping. The following industrial standards for conducting integrity tests will be utilized as appropriate.

Industrial Testing Standard Title

- API Standard 653 Tank Inspection, Repair, Alteration, and Reconstruction
- API Recommended Practice 575 Inspection of Atmospheric and Low-Pressure Tanks
- API Standard 570 Piping Inspection Code
- API RP 510 Production Pressure Vessels
- ASME B31.3 Process Piping
- ASME 31.4 Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols
- Steel Tank Institute Standard SP001-00
- Standard for Inspection of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids
- UL Standard 142 Steel Aboveground Tanks for Flammable and Combustible Liquids

3.1.4 Brittle Fracture Evaluation (40 CFR 112.7(i))

Parachute Staging Area will temporarily stage portable containers and equipment when not in use. Given that the containers and equipment are essentially in a phase of transit when staged and not stationary, brittle fraction evaluation procedures are not applicable.

When EnCana Oil & Gas (USA), Inc. is the owner of specific stationary equipment, all field constructed aboveground tanks and process equipment are to be evaluated for the risk of failure due to brittle fracture whenever:
1) The equipment undergoes repair, alteration, reconstruction, or a change in service that may affect the risk of a discharge or failure due to brittle fracture, or
2) The equipment has discharged oil or failed due to brittle fracture failure or other catastrophe.

The brittle fracture risk evaluation is to be conducted in accordance with the following industrial standards as appropriate.

- API Standard 653 - Tank Inspection, Repair , Alteration, and Reconstruction.
- API Recommended Practice 920 - Prevention of Brittle Fracture of Pressure Vessels.

3.2 Personnel Training and Discharge Prevention Procedures (40 CFR 112.7 (f))

Personnel training and discharge prevention procedures are described in the following:

1) Personnel are properly instructed in the following:
   a) Proper operation and maintenance of equipment to prevent oil discharges,
   b) Discharge procedure protocols,
   c) Applicable oil spill prevention laws, rules and regulations,
   d) General facility operations, and
   e) The contents of facility SPCC plan and applicable pollution control laws, rules, and regulations.

Company and contract personnel attend in-house compliance awareness programs on a periodic basis. Compliance awareness briefings are conducted at least once per year to assure continued understanding of the applicable SPCC plans. In addition, spill related topics are discussed at safety meetings. Safety meeting topics include: spill control equipment; equipment operation and maintenance; inspection of containment structures, vessels, tanks and piping; spill response, containment and clean up; company policies on reporting and responding to spills; and specific SPCC Plans.

2) For the subject facilities, the designated person accountable for oil discharge prevention is:
   Name: **David Peters**
   Title: **EHS Consultant**

3) Scheduled prevention briefings for the operating personnel are conducted on a periodic basis to assure adequate understanding of the SPCC Plan. The briefing program is as follows: A SPCC compliance awareness program is presented on an annual basis. The program includes a review

of specific SPCC Plans, updates on state and federal regulations, company policy and procedures, and spill reporting. Additional short briefing sessions are held as needed before and during certain jobs to review spill potential, necessary precautions and appropriate responses. Also, included in the briefing is a review of known spill events or failures, malfunctioning components and recently developed precautionary measures. A copy of the Training Record Form is attached in Appendix D.

4) Contractors working at the facilities are instructed as follows:

a) Pollution control will be maintained at all times in connection with all operations by the contractor. EnCana Oil & Gas (USA) Inc. personnel will be notified immediately of any emitting, spilling, venting, discharging, disposal or loss of any hazardous or harmful substances, air contaminants and/or pollutants of any nature (referred to as discharges).

b) If any discharges occur as a result of the performance of work by the contractor, its agents, employees and subcontractors, or other persons for whom the contractor is responsible, the contractor will immediately proceed to stop or abate such discharges.

c) The contractor will comply with any and all local, state and federal laws, regulations, standards and orders applicable to the controlling and prevention of discharges.

d) Contractors will install and maintain adequate discharge control equipment on or about their plant, rig or other equipment to prevent discharges in violation of any local, state and federal laws, regulations, standards and orders.

4.0 FACILITY SECURITY

4.1 Facility Security (40 CFR 112.7(g))

Fencing is not provided as specified in 112.7(g). Fencing would restrict emergency egress from the facility. Security for the facility is provided through a manned (by company personnel) security gate located at the entrance to North Parachute Ranch field. Spills or accidental releases of oil are promptly cleaned up by the operator. The staging facility is un-manned; however, can be accessed 24 hours/day 7 days a week. Where practicable, lighting is provided commensurate with the type and location of the facility.

5.0 PROCESS OPERATIONS

5.1 Transfer, Pumping and Operational Procedures

Where applicable to the staging facility, piping at non-production facilities shall be constructed and maintained in order to prevent releases of oil. Specifically:

1) Buried piping installed or replaced on or after August 16, 2002 is provided with protective wrapping and coating and cathodically protected to prevent corrosion;

2) If a section of buried piping is exposed, it is carefully inspected for corrosion. If corrosion is detected, additional examinations and corrective actions are undertaken as appropriate;

3) Loading lines are capped or blanked-flanged when not in service;

4) All aboveground piping is provided with properly designed supports to minimize abrasion and corrosion while allowing for thermal expansion and contraction;

5) All aboveground piping valves and appurtenances are inspected as detailed in Section 3 of this plan;

6) At the time of installation, modification, construction or replacement of buried piping, integrity and leak testing are conducted;

7) Where there is a possibility that vehicles may endanger aboveground piping, warning signs are posted at the facility entrance.

APPENDIX A
CONTACT LISTS AND PHONE NUMBERS
RELEASE NOTIFICATION FORM
QUALIFIED DISCHARGE REPORT FORM

SPCC NOTIFICATION LIST

EnCana Oil & Gas (USA) Inc. Call List

David Grisso, Operations Superintendent
Work: (970) 625-4209 Cell: (970) 250-9660
Terry Gosney, EH&S Regional Environmental Coordinator
Work: (970) 285-2687 Cell: (970) 309-8155
Brenda Linster-Herndon, Permit Coordinator
Work: (970) 285-2608 Cell: (970) 309-8106

Emergency Response Contractors

Labor & Equipment
Advanced Oil and Gas: (970) 625-9704
Flint Energy Services: (970) 625-4265
RUCO: (970)989-0508
TD Productions: (970) 625-5240
Tank Trucks
Elder Trucking: (970) 625-4189
Dalbo: (970) 241-5047

SPCC NOTIFICATION LIST
FEDERAL, STATE AND LOCAL AGENCY CALL LIST

If any oil contacts surface water, whether flowing or not, or an intermittent drainage, and results in a "visible sheen" on the water, the following phone contacts must be made as soon as possible following the discovery of the spill. The contacts must be made irregardless of the quantity discharged.

1) National Response Center (The NRC should automatically contact the EPA)
2) The Regional office of the EPA
3) State Water Quality Control Division (CDPHE-WQCD)
4) State Oil and Gas Regulatory Agency (COGCC)
5) Any other state agencies with responsibility for oil pollution control
6) Affected land owners

FOLLOW COMPANY REPORTING PROCEDURES SHOULD IT BECOME NECESSARY TO CONTACT ANY OF THE ABOVE AGENCIES. USE THE RELEASE

NOTIFICATION FORM ON THE FOLLOWING PAGE TO ORGANIZE AND COMMUNICATE INFORMATION CONCERNING THE SPILL.

FEDERAL AGENCIES
National Response Center: (800) 424-8802
EPA Region VIII Spill Line: (303) 293-1788
EPA Region VIII: (303) 312-6312 (Working Hours) 1-800-227-8914 (24-Hour)
CDPHE: (303) 569-1831

STATE AGENCIES
COGCC (Colorado Oil and Gas Commission Parachute, CO): 970-285-9000

LOCAL EMERGENCY RESPONSE AGENCIES
Emergency Central Dispatch (Where Available - Local Calls Only) : 911
BLM Grand Junction Field Office: 970-244-3050
Fire: 911
Ambulance: 911
Hospital (Rifle): (970) 625-1510
Sheriff (Parachute:) (970) 285-9127

Release Notification Form

Should it become necessary to inform any federal or state agency concerning an accidental release, be prepared to provide the following information:

Reporter's Full Name: _____ Title: _____

Primary Phone Number: _____ Secondary Phone Number: _____

Company Name: _____

Office Address: _____

Spill Location: (Sec.Twns../Rng..) _____ Nearest City: _____

County: _____ State: _____

Directions From Nearest City to Spill Location: _____

_____

_____

Date and Time of Release: _____ Type of Material Released: _____

Source of the Material Release: _____

Total Quantity Released: _____ Quantity Released Into Water: _____

Container Type: _____ Container Material: _____

Container Storage Capacity: _____ Facility Storage Capacity: _____

Actions Undertaken to Correct, Control and Mitigate the Incident: _____

_____

_____

Description of Damages: _____

_____

_____

Number of Injuries: _____ Number of Deaths: _____

Evacuation(s) Conducted: _____ Number Evacuated: _____

NOTIFICATION LOG

Agency Contacted Contact Person Date and Time of Contact

National Response Center (NRC): _____

EPA Regional Office: _____

State Water Quality Division (CDHP-WQCD): _____

State Oil & Gas Commission (COGCC): _____

BLM Field Office: _____

Forest Service: _____

Other: _____

Other: _____

Information Submittal to EPA Regional Administrator for Qualified Discharge(s)

In the event of a qualified discharge or discharges, this form can be utilized to provide official notification to the EPA Regional Administrator. If a facility has experienced a discharge or discharges that meet one of the following two criteria, then this report must be submitted to the Regional Administrator within 60 days.

(Check as appropriate)

Q: Has this facility experienced a reportable spill as referenced in 40 CFR Part 112.1(b) of 1,000 gallons or more? Yes / No

Q: Has this facility experienced two (2) reportable spills (as referenced in 40 CFR Part 112.1(b) of greater than 42 gallons each within a 12-month period? Yes / No

Facility Name and Location: _____

Facility Contact Person (Name, address/phone number): _____

Facility Maximum Storage or Handling Capacity: _____

Facility Normal Daily Throughput: _____

Describe the Corrective Actions and Countermeasures Taken (include description of equipment repairs and replacements): _____

_____

_____

Describe the Facililty (Attach maps, flow diagrams and topographical maps as necessary): _____

_____

_____

Describe the Cause of the Discharge (as referenced in 40 CFR Part 112.1(b)) Including Failure analysis of the System: _____

_____

_____

Describe the Preventative Measures Taken or Contemplated to Minimize the Possibility of Recurrence: _____

_____

Other pertinent information: _____

_____

_____

NOTE: A copy of this report must also be sent to the appropriate state agency in charge of oil pollution control activities.

APPENDIX B
FACILITY EXAMINATION FORM AND INSPECTION FORMS

FACILITY EXAMINATION FORM

Facility: _____ Date: _____

Circle the appropriate response. Note that any "No" response requires corrective actions.

I. Wellheads

A. All shut-in wells should have 0 psi at the wellhead and tree: Yes / No

B. All wellhead and tree connections should be leak free: Yes / No

C. All active wells should have their master valves operating and serviced to assure they function: Yes / No

II. Flowlines

A. All active flowlines are leak free: Yes / No

B. All visible flowlines are free from serious corrosion: Yes / No

C. All active flowlines have a gauge installed to monitor pressure: Yes / No

D. Any clamp-type repairs on active flowlines are free from leaks: Yes / No

III. Process Equipment

A. All incoming flowlines (active and inactive) should be identified: Yes / No

B. Shut down valves are checked for fail-safe closure: Yes / No

C. Header/manifold systems, process vessels and their interconnecting piping should be leak-free: Yes / No

D. All automatic dump valves should be checked for fail-safe closure: Yes / No

E. Operating pressures on process vessels should be at or below the vessels rated working pressure: Yes / No

F. Secondary containment system is intact and competent: Yes / No

IV. Tanks

A. All bulk storage tanks and their related piping are leak-free: Yes / No

B. Secondary containment system is intact and competent: Yes / No

C. All pressure/vacuum reliefs and atmospheric tank vents are operational: Yes / No

D. Rainwater drain valve is kept in the closed position: Yes / No

E. Foundations and supports are stable and sufficient: Yes / No

F. Storage container are free of serious corrosion: Yes / No

G. Tanks have not experienced overflows: Yes / No

V. General

A. Drainage ditches proximate to the site are free from oil: Yes / No

B. Chemical injection systems are free from leaks: Yes / No

C. Lube oil systems are free from leaks: Yes / No

D. Facility is graded to drain stormwater away from natural watercourses: Yes / No

E. Pits are free from oil: Yes / No

F. Pits have at least 1 foot of freeboard: Yes / No

G. Liquid level in sumps is adequate to prevent overflow: Yes / No

H. Alarm systems operate properly: Yes / No

I. Drip and drain pans are emptied as needed to prevent overflows: Yes / No

J. Secondary containment for portable oil containers is adequate: Yes / No

K. Stormwater siphons are free from debris and blockage: Yes / No

L. Pump seals and related piping are free from leaks: Yes / No

VI. Corrective Actions

VII. Certification

A. Original Inspection By: _____ Title: _____

Date: _____

B. Corrective Actions By: _____ Title: _____

Date: _____

SPCC INSPECTION SUMMARY FORM

Facility Name: _____

Stock Tank and Pressure Vessel Summary

Stock Tank Description : _____

Designation Year of Construction: _____

Pressure Vessel Description: _____

Designation Year of Construction _____

Risk Designation (High or Low): _____

(1) Inspection History

a. Facility Examination (Annually) _____

b. Piping External Examination (Annually) _____

c. Piping Internal Inspections _____

(2) Tank External Examination (Annually)

a. Tank External Inspection (Within 15 years after construction) _____

b. Tank Internal Inspection/Examination _____

(3) Pressure Vessel External Inspections _____

(4) Pressure Vessel Internal _____

(5) On-Stream Inspections _____

Notes: 1 - Pressure vessel risk is categorized as high or low based upon three criteria:
1) potential for failure,
2) vessel history including operating conditions, age and remaining corrosion allowance, and
3) consequences of failure including location relative to employees, the public, and environmental receptors.
2 - Piping internal examinations may be conducted when equipment is shut-down for maintenance or repairs.
3 - Tank internal examinations are to be conducted when a tank is:
a) cleaned, b) transferred to a new location, c) service is changed more than 5 years following an inspection, or d) entered for any type of maintenance or repair. Internal tank inspections are to be conducted at 3/4 of the corrosive rate life as determined by external inspections.
4 -External inspections for pressure vessels categorized as low or high risk shall be preformed: when on-stream or internal inspections are performed or at shorter intervals at the owner's option.
5 - On-stream or internal pressure vessel inspections shall be performed: at least every 15 years or 3/4-remaining corrosion life, whichever is less for low risk vessels, or at least every 10 years or ½-remaining corrosion life, whichever is less for high risk vessels.

PROCESS PIPING INSPECTION FORM

EXTERNAL INSPECTION CHECKLIST FOR PROCESS PIPING
API 574 - Inspection Practices for Piping System Components
Facility: Date:
Authorized Inspector:

A. 1 Leaks
a. Process. Adequate/Corrective Action Required
b. Stream tracing. Adequate/Corrective Action Required
c. Existing clamps. Adequate/Corrective Action Required

A. 2 Misalignment
a. Piping misalignment/restricted movement. Adequate/Corrective Action Required
b. Expansion joint misalignment. Adequate/Corrective Action Required

A. 3 Vibration
a. Excessive overhung weight. Adequate/Corrective Action Required
b. Inadequate support. Adequate/Corrective Action Required
c. Thin, small bore, or alloy piping. Adequate/Corrective Action Required
d. Threaded connections. Adequate/Corrective Action Required
e. Loose supports causing metal wear. Adequate/Corrective Action Required

A. 4 Supports
a. Shoes-off support. Adequate/Corrective Action Required
b. Hanger distortion of breakage. Adequate/Corrective Action Required
c. Bottomed-out springs. Adequate/Corrective Action Required
d. Brace distortion/breakage. Adequate/Corrective Action Required
e. Loose brackets. Adequate/Corrective Action Required
f. Slide plates/rollers. Adequate/Corrective Action Required
g. Counterbalance condition. Adequate/Corrective Action Required
h. Support corrosion. Adequate/Corrective Action Required

A. 5 Corrosion
a. Bolting support points under clamps. Adequate/Corrective Action Required
b. Coating/painting deterioration. Adequate/Corrective Action Required
c. Soil-to-air interface. Adequate/Corrective Action Required
d. Insulation interfaces. Adequate/Corrective Action Required
e. Biological growth. Adequate/Corrective Action Required

A. 6 Insulation
a. Damage/penetrations. Adequate/Corrective Action Required
b. Missing jacketing/insulation. Adequate/Corrective Action Required
c. Sealing deterioration. Adequate/Corrective Action Required
d. Bulging. Adequate/Corrective Action Required
e. Banding (broken/missing). Adequate/Corrective Action Required

PRESSURE VESSEL INSPECTION FORM

Thickness Measurements_____

Name of Process Owner or User Number_____

Location Jurisdiction/National Board Number_____

Internal Diameter Manufacturer_____

Tangent Length/Height Manufacturer's Serial No._____

Shell Material Specification Date of Manufacture_____

Head Material Specification Contractor_____

Internal Materials Drawing Numbers_____

Nominal Shell Thickness_____

Nominal Head Thickness Construction Code_____

Design Temperature Joint Efficiency_____

Maximum Allowable Working Type Heads_____

Pressure Type Joint_____

Maximum Tested Pressure Flange Class_____

Design Pressure Coupling Class_____

Relief Valve Set Pressure Number of Manways_____

Contents Weight_____

Special Conditions_____

Notes:
1. Use additional sheets, as necessary.
2. The location that each comment relates to must be described.

API RP 510 - Alternative Rules for Exploration and Production Pressure Vessels

PRESSURE VESSEL Form Date_____

INSPECTION RECORD Form No._____

Owner or User_____

Vessel Name_____

Sketch or Location_____

Description_____

Location_____

Number_____

Original_____

Thickness_____

Required Minimum_____

Thickness_____

Date_____

Comments (See Note 2)_____

Method_____

Authorized Inspector_____

STORAGE TANK INSPECTION FORMS

API RP 12R1 - Recommended Practice for Setting, Maintenance, Inspection, Operation, and Repair of Tanks in Production Service Checklist for External Condition Examination

Identification

Tank Designation:_____
Size:_____
Date of Inspection:_____
Measured or Estimated Liquid Level:_____
Contents:_____

Foundation

Tank Property Supported YES/NO

Grade Ring/Foundation Structurally Sound YES/NO

Tank Bottom

Visible Signs of Leakage Around Tank Bottom YES/NO

Adequate Drainage Away From Tank YES/NO

Tank Shell

Active Leaks YES/NO
If Yes, Number & Location_____
Signs of Past Leakage YES/NO
If Yes, Number & Location_____
Structural Integrity (Distortions, Warping) YES/NO
If Yes, Type & Location_____
Coating Condition Satisfactory YES/NO
If No, Type & Location_____
Severe Corrosion and/or Pits YES/NO
If Yes, Type & Location_____

Checklist for External Condition Examination

Roof Deck

Holes YES/NO
If Yes, Number & Location_____
Adequate Drainage off of Deck YES/NO
Coating Condition Satisfactory YES/NO
If No, Type & Location_____
Severe Corrosion and/or Pits YES/NO
If Yes, Type & Location_____

Appurtenances/Miscellaneous

Thief Hatch and Vent Valve Seals Air Tight YES/NO
Gas Blanket System Operational (If Applicable) YES/NO
Stairways/Walkways Structurally Sound YES/NO Proper Warning Signs in Place YES/NO
Dikes Maintained YES/NO Cathodic Protection System Operational YES/NO
If Fiberglass Tank, All Metal Parts Bonded or Gas Blanket Operational YES/NO
Tank Area Clear of Trash & Vegetation YES/NO Piping Properly Supported YES/NO

Checklist for Internal Condition Examination

Identification

Tank Designation:_____
Size:_____
Date of Inspection:_____
Measured or Estimated Liquid Level:_____
Contents:_____

Tank Shell

Any Visual Leaks or Cracks YES/NO
If Yes, Number & Location_____
Any Structural Integrity Problems (Distortions or Warping) YES/NO
If Yes, Number & Location_____
Coating Condition Satisfactory YES/NO
If No, Type & Location_____
Internal Corrosion (Severe Pits) YES/NO
If Yes, Type & Location_____

Roof Deck

Holes YES/NO
If Yes, Number & Location_____
Coating Condition Satisfactory YES/NO
If No, Type & Location_____
Severe Corrosion and/or Pits YES/NO
If Yes, Type & Location_____
Structural Supports or Rafters Damaged YES/NO
If Yes, Type & Location_____

Appurtenances/Miscellaneous

Cathodic Protection System Satisfactory YES/NO
If No, Location & Problem_____

Checklist for External Inspection

Identification

Tank Designation:_____
Size:_____
Date of Inspection:_____
Measured or Estimated Liquid Level:_____
Contents:_____

Foundation

Tank Shell Adequately Supported YES/NO
Tank Floor Level (No Differential Settlement) YES/NO
Signs of Soil or Foundation Failure (Major Tank Settlement) YES/NO
Grade Ring/Foundation Structurally Sound YES/NO
Adequate Drainage Away from Tank YES/NO

Tank Bottom

Visible Signs of Leakage Around Tank Bottom YES/NO
Bottom/Shell Connection Free of Cracks & Leaks YES/NO

Tank Shell

Tank Shell Patches YES/NO

If Yes, Number & Location YES/NO_____

Tank Shell Abnormalities/Distortions YES/NO

If Yes, Number & Location_____

Visible Signs of Holes/Leaks YES/NO

If Yes, Number & Location_____

Cracks or Seepage in Seam YES/NO

If Yes, Number & Location_____

Cracks in Shell/Roof Seam YES/NO

If Yes, Number & Location_____

Condition of Eternal Coating of Uninsulated Tanks, Holes, Disbonding, Deterioration, Discoloration

Number & Location_____

Condition of Insulation Protection of Insulated Tanks, Shell Material (Holes/Tears). Number & Location Seal Around Roof/Shell Joint (Separations)_____

Number & Location Seal Around Appurtenances (Separations). Number & Location_____

_____

External Corrosion YES/NO

Tank Bolt/Rivets Corrosion YES/NO/NA

If Yes, Number & Location_____

Tank Fiberglass Delaminated YES/NO/NA

If Yes, Number & Location_____

Results of Ultrasonic Measurements

In Vapor Zone_____

In Liquid Zone_____

Tank Roof Deck

Hatches Securely Closed YES/NO/NA

Roof Patches YES/NO

If Yes, Number & Location_____

Roof Deck Abnormalities/Distortions YES/NO

If Yes, Number & Location_____

Visible Signs of Holes/Leaks YES/NO

If Yes, Number & Location_____

Deck External Corrosion None, Minimal, Moderate, Severe

Adequate Drainage Off of Deck YES/NO

Condition of External Coating of Uninsulated Deck, Disbonding, Deterioration, Discoloration

Number & Location_____

Condition of Insulation Protection of Insulated Deck Roof Material (Holes/Tears)

Number & Location_____

Seal Around Appurtenances (Separations). Number & Location_____

Results of Ultrasonic Thickness Measurements. (Compare to Original Values)_____

_____

Results of Hammer Tests_____

Appurtenances

Thief Hatch & Vent Valves Seal Properly YES/NO

Thief Hatch Opens Freely W/O Plugging YES/NO

Vent Valve Operational YES/NO

Sample & Drain Valves Leak YES/NO

Inspect Nozzle Seams for Cracks YES/NO

Piping, and the like, Properly Supported Off of Tank YES/NO

Tank Shell Dimpling at Connections YES/NO
Metal Appurtenance Bonded OR Gas Blanket YES/NO
Operational on Fiberglass Tank YES/NO/NA
Stairways & Walkways Structurally Sound YES/NO

Checklist for External Inspection

Miscellaneous

Cathodic Protection Operational/Potential Adequate YES/NO/NA
Vapor Recovery System Operational YES/NO/NA
Gas Blanket System Operational YES/NO/NA
Containment Dikes and/or Liner Maintained & Adequate Size YES/NO/NA
Proper Warning Signs in Place YES/NO
Automatic Level Indicator Operational & Accurate YES/NO
(Compare to Hand Gauge Level) YES/NO/NA
Tank Area Clean of Trash & Vegetation YES/NO

Recommended Future Action_____

Checklist for Internal Inspection

Identification

Tank Designation:_____
Size:_____
Date of Inspection:_____

Measured or Estimated Liquid Level:_____
Contents:_____

Pre-Inspection

Tank Properly Cleaned YES/NO

Tank Atmosphere Properly Tested YES/NO

Tank Properly Isolated YES/NO

Tank Structurally Sound YES/NO

Confined Space Entry Procedure Implemented YES/NO

Tank Bottom

Floor Adequately Supported (Limited Voids Under Floor Plate) YES/NO

Floor Sloped for Adequate Drainage. If Low Spots Exist, Number & Location YES/NO

Plate Buckling/Deflection Acceptable YES/NO

Visually Inspect & Record Plate & Weld Condition_____
Inspect Shell/Bottom Seam_____
Condition of Internal Coating (Holes, Disbonding, Deterioration). Number & Location_____
Inspect & Describe Pitting Appearance (Depth, Sharp Edged, Lake Type, Dense, Scattered)_____
Results of Ultrasonic Thickness Measurement_____
Results of Vacuum Tests_____
Results of Penetrant Dye Tests_____
Results of Hammer Tests_____
Results of Other Testing (Magnetic Flux Leakage, Acoustical Emission and so forth)_____
In Earthquake Zones 3 & 4, Roof Supports Restrained From Horizontal Movement Only (Not Welded to Floor) YES/NO

Identify Areas to Be Repaired:
Number & Location_____

Tank Shell

Visually inspect & Record Plate & Weld Conditions. Number & Location_____
_____
Inspect & Describe Pitting Appearance. (Depth, Sharp Edged, Lake Type, Dense, Scattered, and so on)_____
_____
Condition of Internal Coating (Holes, Disbonding, Deterioration). Number & Location_____
_____
Survey Shell to Check Plumb & Roundness_____
Results of Ultrasonic Thickness Measurements in Vapor Zone_____

Checklist for Internal Inspection (Continued)

In Liquid Zone Yes/No
Identify Areas to Be Repaired:
Number & Location_____
_____

Tank Roof

Inspect & Describe Pitting Appearance (Depth, Sharp Edge, Lake Type, Dense, Scattered)_____
_____
Conditions of Internal Coating. (Holes, Disbonding, Deterioration) Number & Location_____
_____
Visually Inspect & Record Plate & Weld Conditions. Number & Location_____
_____
Results of Ultrasonic Thickness Measurements_____
Check Roof Support Columns for:
Thinning in Vapor Zone_____
_____
Thinning in Liquid Zone_____

Drain Opening in Bottom of Pipe or Concrete Filled_____
Proper Attachment to Roof & Bottom_____
Inspect Girders & Rafters for Thinning_____
Girders & Rafters Properly Secured YES/NO

Identify Areas to Be Repaired:
Number & Location_____

Appurtenances
Visually Inspect All Seals & Gaskets_____
Inspect & Service Pressure/Vacuum Hatches/Valves_____
Inspect Gauge Well (If Existing)_____
Inspect Internal Reinforcing Pads (If Existing) for Cracks_____
Inspect Internal Nozzle Seams for Cracks, Corrosion, and the like_____
Inspect Diffusers & Rolling Systems_____
Inspect Swing Lines_____
Inspect Wear Plates_____

Recommended Future Action_____

APPENDIX C
TRAINING RECORD FORM

TRAINING RECORD FORM

DATE: _____ TRAINER: _____

SUBJECT: _____

_____

_____

ATTACH COPIES OF ALL HANDOUTS ETC.

NAME: _____

SIGNATURE: _____

COMPANY JOB TITLE: _____

APPENDIX D
CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION

CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION

Operator Name: EnCana Oil & Gas (USA) Inc.
Facility Name: Parachute Staging Area

1. Does any single facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons? YES **NO X**

2. Does any single facility have a maximum storage capacity greater than or equal to one million (1,000,000) gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation with the storage area? YES **NO X**

3. Does any single facility have the maximum storage capacity greater than or equal to one million (1,000,000) gallons and is the facility located at a distance (as calculated using the appropriate formula in attachment C-III to Appendix C of Part 112 or a comparable formula) such that a discharge from the facility could cause injury to fish, wildlife or sensitive environments? YES **NO X**

4. Does any single facility have a maximum storage capacity greater than or equal to one million (1,000,000) gallons and is the facility located at a distance (as calculated using the appropriate formula in attachment C-III to Appendix C of Part 112 or a comparable formula*) such that a discharge from the facility would shut down a public drinking water intake? YES **NO X**

5. Does any single facility have a maximum storage capacity greater than or equal to one million (1,000,000) gallons and has the facility experienced a reportable spill in an amount greater than or equal to 10,000 gallons within the past 5 years? YES **NO X**

* If an alternative formula is used, documentation of the reliability and analytical soundness of the alternative formula must be attached to this form.

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature Date: _____ Signature: _____

Name: Terry C. Gosney, P.E., CET

Title: EH&S Regional Environmental Coordinator

APPENDIX E
FACILITY LIST AND SITE SPECIFIC INFORMATION

FACILITY LIST

The following facilities are included in this SPCC Plan: **Parachute Staging Area Site Specific Spill Planning, Countermeasures and Control Information**

Operator:	**EnCana Oil & Gas (USA) Inc.**
Name of Facility:	**Parachute Staging Area**
Location of Facility:	**NE ¼ Section 33 and NW ¼ & SW ¼ Section 34, Township 6S, Range 96W of the 6th P.M., Garfield County, Colorado**

Surface Water Distance and Direction from Facility:
Intermittent Drainage to Parachute Creek 125' to Southwest

Potential Source: **Various Mobile Drilling, Completions, Work-over Rigs and Associated Equipment and Containers**

Type Of Oil Storage: **Various Bulk Containers and Various Types of Associated Equipment that utilize oil as a lubricant and oil related products**

Quantity (bbls): **1000**

Predicted Direction of Flow Discharge: **Drainage**

Prevention Measure

Parachute Staging Area utilizes secondary and (in some cases) tertiary containment. The capacity is adequate to assure that oil and related materials will not discharge from the staging area. Where practicable, bulk storage container installations are constructed so that a means of secondary containment is provided for the entire capacity of the largest single container plus sufficient freeboard to contain precipitation. One-hundred year 24-hour storm event data indicate a worst-case precipitation rate of 3.5 inches per day for this region. Storage containers for which secondary containment is not practicable are discussed in Section 2.1. Diked or bermed areas are sufficiently impervious to contain discharged oil. When present, mobile or portable oil storage containers, including drums, are stored within diked areas. Visible discharges which result in a loss of product from containers and/or equipment will be promptly corrected and any accumulations of oil in the staging area will be promptly removed.

APPENDIX F
FACILITY LOCATION MAP

ATTACHMENT 4

Garfield County

Application for Driveway Permit

Person Obtaining Permit: Encana Oil and Gas(USA), Inc. ***Permit Number: GRB06-D-121***
Application Date: 11/16/2006 ***Termination Date: 5/1/2007***
County Road Number: 215 ***District: Rifle*** ***Inspector: Jake Mall***

hereby requests permission and authority from the Board of County Commissioners to construct a driveway approach (es) on the right-of-way off of County Road, **215**, **3.5 miles North of Highway 6 & CR 215**, located on the **West** side of road for the purpose of obtaining access to property.

Applicant submits herewith for the consideration and approval of the Board of County Commissioners, a sketch of the proposed installation showing all the necessary specification detail including:

1. Frontage of lot along road.
2. Distance from centerline of road to property line.
3. Number of driveways requested
4. Width of proposed driveways and angle of approach.
5. Distance from driveway to road intersection, if any.
6. Size and shape of area separating driveways if more than one approach.
7. Setback distance of building(s) and other structure improvements.
8. No unloading of equipment on county road, any damage caused to county road will be repaired at subdivision expense.
9. Responsible for two years from the date of completion.

General Provisions

1) The applicant represents all parties in interest, and affirms that the driveway approach (es) is to be constructed by him for the bona fide purpose of securing access to his property and not for the purpose of doing business or servicing vehicles on the road right of way.

2) The applicant shall furnish all labor and materials, perform all work, and pay all costs in connection with the construction of the driveway(s). All work shall be completed within thirty (30) days of the permit date.

3) The type of construction shall be as designated and/or approved by the Board of County Commissioners or their representative and all materials used shall be of satisfactory quality and subject to inspection and approval of the Board of County Commissioners or their representative.

4) The traveling public shall be protected during the installation with proper warning signs and signals and the Board of County Commissioners and their duly appointed agents and employee shall be held harmless against any action for personal injury or property damage sustained by any reason of the exercise of the Permit.

5) The Applicant shall assume responsibility for the removal or clearance of snow, ice, or sleet upon any portion of the driveway approach (es) even though deposited on the driveway(s) in the course of the County snow removal operations.

6) In the event it becomes necessary to remove any right-of-way fence, the posts on either side of the entrance shall be surely braced before the fence is cut to prevent any slacking of the remaining fence and all posts and wire removed shall be turned over to the District Road Supervisor of the Board of County Commissioners.

7) No revisions or additions shall be made to the driveway(s) or its appurtenances on the right-of-way without written permission of the Board of County Commissioners.

8) Provisions and specifications outlined herein shall apply on all roads under the jurisdiction of the Board of County Commissioners of Garfield County, Colorado, and the Specifications, set forth on the attached hereof and incorporated herein as conditions hereof.

9) **Final inspection of driveway will be required upon completion and must be approved by person issuing permit or representative of person issuing permit.**
The inspection and sign off must be done prior to any CO from the Building and Planning Department being issued.

Special Conditions:

1. **Driveway Width- 100 ft**
2. **Culvert required? False Size: by**
3. **Asphalt or concrete pad required? True Size of pad: 100 ft x 20 ft x 4 inches thick**
4. **Gravel portion required? True Length: 100ft**
5. **Trees, brush and/or fence need to be removed for visibility? False**
6. **Distance and Direction:**
7. **Certified Traffic Control Required? True**
8. **Work zone signs required? True**

In signing this application and upon receiving authorization and permission to install the driveway approach (es) described herein the Applicant signifies that he has read, understands and accepts the foregoing provisions and conditions and agrees to construct the driveway(s) in accordance with the accompanying specification plan reviewed and approved by the Board of County Commissioners.

Signed: Brenda Herrington

Address: Encana Oil and Gas(USA), Inc. 2717 CR 245, Ste 100 Parachute, CO 81635

Telephone Number: 970-285-2608

Permit granted 11/16/2006, subject to the **provisions, specifications and conditions stipulated herein.**

For Board of County Commissioners' of Garfield County, Colorado:

Representative of Garfield County Road and Bridge Signature

Specifications

1. A driveway approach is understood to be that portion of the county road right-of way between the pavement edge and the property line that is designed and used for the interchange of traffic between the roadway and abutting property.

2. At any intersection, a driveway shall be restricted for a sufficient distance from the intersection to preserve the normal and safe movement of traffic. (It is recommended for rural residence entrances that a minimum intersection clearance of 50 feet be provided and for rural commercial entrances a minimum of 100 feet be provided.)

3. All entrances and exits shall be so located and constructed that vehicles approaching or using them will be able to obtain adequate sight distance in both directions along the county road in order to maneuver safely and without interfering with county road traffic.

4. The Applicant shall not be permitted to erect any sign or display material, either fixed or movable, on or extending over any portion of the county road right-of-way.

5. Generally, no more than one approach shall be allowed any parcel or property the frontage of which is less than one hundred (100) feet. Additional entrances or exits for parcels having a frontage in excess of one hundred 100) feet shall be permitted only after showing of actual convenience and necessity.

6. All driveways shall be so located that the flared portion adjacent to the traveled way will not encroach upon adjoining property.

7. No commercial driveway shall have a width greater than thirty (30) feet measured at right angles to the centerline of the driveway except as increased by permissible radii. No noncommercial driveway shall have a width greater than twenty (20) feet measured at right angles to the centerline of the driveway, except as increased by permissible radii.

8. The axis of an approach to the road may be at a right angle to the centerline of the county road and of any angle between ninety (90) degrees and sixty (60) degrees but shall not be less than sixty (60) degrees. Adjustment will be made according to the type of traffic to be served and other physical conditions.

9. The construction of parking or servicing areas on the county road right-of-way is specifically prohibited. Commercial establishments for customer vehicles should provide off-the-road parking facilities.

10. The grade of entrance and exit shall slope downward and away from the road surface at the same rate as the normal shoulder slope and for a distance equal to the width of the shoulder but in no case less than twenty (20) feet from the pavement edge. Approach grades are restricted to not more than ten percent (10%).

11. All driveways and approaches shall be so constructed that they shall not interfere with the drainage system of the street or county road. The Applicant will be required to provide, at his own expense, drainage structures at entrances and exits, which will become an integral part of the existing drainage system. The Board of County Commissioners or their representative, prior to installation, must approve the dimensions and types of all drainage structures.

Note: This permit shall be made available at the site where and when work is being done. A work sketch or drawing of the proposed driveway(s) must accompany application. No permit will be issued without drawing, blueprint, or sketch.

ATTACHMENT 5

BOND NO. RLB0010054

PERMIT BOND

KNOW ALL BY THESE PRESENTS, That we, EnCana Oil & Gas (USA) Inc., 370 17th Street, Suite 1700, Denver, Colorado 80202 as Principal, and the RLI Insurance Company, an Illinois corporation, as Surety, are held and firmly bound unto Garfield County, Vegetation Management Department, P.O. Box 426, Rifle, CO 81650, as Obligee, in the sum of Twenty Eight Thousand Eight Hundred and No/100---------- Dollars ($28,800.00 -----)

for which sum, well and truly to be paid, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has been or is about to be granted a permit for the Parachute Staging Area (NW4 Section 33 and NWSW Section 34, T6S, R96W) in Garfield County, Colorado, USA by the Obligee.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT if the Principal shall well and truly comply with applicable local ordinances, and conduct business in conformity therewith, then this obligation to be void; otherwise to remain in full force and effect; in no event shall the liability hereunder exceed the penal sum hereof.

PROVIDED AND SUBJECT TO THE CONDITIONS PRECEDENT:

1. This obligation may be canceled by the Surety by giving thirty (30) days notice in writing of its intention to do so to the Obligee, and the Surety shall be relieved of any further liability under this Bond thirty (30) days after receipt of said notice by the Obligee, except for defaults occurring prior thereto.

2. Any claim must be presented in writing to RLI Insurance Company to the attention of Greg E. Chilson, 8 Greenway Plaza, Suite 400, and Houston, Texas 77046.

3. Surety shall have no obligation to the Principal, the Obligee or any other person or entity for any loss suffered by the Principal, the Obligee or any other person or entity by reason of acts or omissions which are or could be covered by the Obligee's or the Principal's general liability insurance, products liability insurance, completed operations insurance or any other insurance.

4. No right or action shall accrue under this Bond to or for the use or benefit of anyone other than the named Obligee.

5. The Obligee will issue a release of this Bond within a reasonable period, but in no instance longer than thirty (30) days after termination of the Permit.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their several seals this 26th day of January 2007, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative pursuant to authority of its governing body.

EnCana Oil & Gas (USA) Inc.
Principal

By Jesse G Wood [redacted]
Jesse G Wood, Attorney in Fact

RLI Insurance Company
8 Greenway Plaza, Suite 400
Houston, TX 77046
Surety

By
Paul M. O'Sullivan, Attorney-in-Fact

RLI

RLI Insurance Company | 9025 North Lindbergh Dr.
Peoria, IL 61615-1499 | Ph. (309) 692-1000

RLB0010054

POWER OF ATTORNEY

RLI Insurance Company

Know All Men by These Presents:

That the RLI INSURANCE COMPANY, a corporation organized and existing under the laws of the State of Illinois, and authorized and licensed to do business in all states and the District of Columbia does hereby make, constitute and appoint: PAUL M. O'SULLIVAN

in the City of HOUSTON, State of TEXAS, as Attorney-in-Fact, with full power and authority hereby conferred upon him to sign, execute, acknowledge and deliver for and on its behalf as Surety and as its act and deed, all of the following classes of documents to-wit:

$28,800.00

Indemnity, Surety and Undertakings that may be desired by contract, or may be given in any action or proceeding in any court of law or equity; policies indemnifying employers against loss or damage caused by the misconduct of their employees; official, bail and surety and fidelity bonds. Indemnity in all cases where indemnity may be lawfully given; and with full power and authority to execute consents and waivers to modify or change or extend any bond or document executed for this Company, and to compromise and settle any and all claims or demands made or existing against said Company.

The RLI INSURANCE COMPANY further certifies that the following is a true and exact copy of a Resolution adopted by the Board of Directors of RLI Insurance Company, and now in force to-wit:

"All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys-in-Fact or Agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile."

(Blue shaded areas above indicate authenticity)

IN WITNESS WHEREOF, the RLI Insurance Company has caused these presents to be executed by its PRESIDENT, CEO with its corporate seal affixed this

RLI INSURANCE COMPANY CORPORATE SEAL ILLINOIS

ATTEST:

Camille J. Hersey
Corporate Secretary

By: M J Stone
President, CEO

RLI INSURANCE COMPANY

State of Illinois)
) SS
County of Peoria)

On this 26 day of Jan. 2007 before me, a Notary Public personally appeared Michael J. Stone and Camille J. Hersey, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as President, CEO and Corporate Secretary, respectively, of the said RLI INSURANCE COMPANY, and acknowledged said instrument to be the voluntary act and deed of said corporation.

Cherie L Montgomery
Notary Public

NOTARY PUBLIC STATE OF ILLINOIS "OFFICIAL SEAL" CHERIE L. MONTGOMERY COMMISSION EXPIRES 02/02/08

EnCana Parachute Laydown Yard

Integrated Vegetation and Noxious Weed Management Plan

Garfield County, Colorado

Prepared for:

EnCana Oil & Gas (USA), Inc.
2717 County Road 215
Parachute, CO 81635
Attn: Brenda Herndon
970-285-2600

Prepared by:

WestWater Engineering
2516 Foresight Circle #1
Grand Junction, CO 81505
970-241-7076

October 1, 2006

EnCana Parachute Laydown Yard

Integrated Vegetation and Noxious Weed Management Plan

Introduction

On September 27, 2006, WestWater biologists performed a site inspection of the subject property located west of County Road 215, Parachute Creek Road at Wheeler Gulch Road (see Figure 1). The inspection conducted for the purpose of an integrated vegetation and noxious weed management plan. Factors considered include soil type and texture, existing land management practices, absence or presence of listed noxious weeds and likely potential natural vegetation community.

Landscape Setting

The EnCana Oil & Gas, Inc. (USA) (EnCana) Parachute Laydown Yard (PLY) is on the first terrace above the floodplain of Parachute Creek. It is east of Parachute Creek in an industrial setting situated between Williams, Inc. compressor plant and American Soda. Approximately 80 acres of vacant land adjacent to the PLY has been set aside as wildlife habitat by EnCana and Williams, Inc.

Terrain is gently sloping to nearly flat at the entrance to the yard. The property has a westerly aspect. Soils are primarily halaquepts, a soil with salic horizon, and Arvada loam (NRCS, 2006b).

According to the Natural Resources Conservation Service, U.S. Dept. of Agriculture, 2006b, potential natural vegetation for Arvada loam includes alkalai sacaton (*Sporobolus airoides*), inland saltgrass (*Distichlis spicata*), western wheatgrass (*Pascopyrum smithii*), bottlebrush squirreltail (*Sitanion hystrix*), Gardner's saltbush (*Atriplex gardneri*), greasewood (*Sarcobatus vermiculatus*), and winterfat (*Krascheninnikovia lanata*). No ecological site or rangeland information is available from the USDA for halaquepts soils which are the white-glazed, highly-saline clay soils commonly found in low-lying areas in or near Wasatch Badlands.

A few individual saltcedar plants, greasewood, 0.5-1.5 m. in height, robust, desert seep willow (*Saueda moquinii*), Russian thistle (*Salsola tragus*), and pepperweed (*Lepidium spp.*) dominate the alkaline halaquepts soil. Vegetation present on the Arvada loam includes alkalai sacaton, bottlebrush squirreltail, rabbitbrush (*Ericameria spp.*) and a wheatgrass, probably tall wheatgrass (*Elymus elongatus*). Cheatgrass (*Bromus tectorum*) and halogeton (*Halogeton glomeratus*) are also present but in relatively low density.

The vegetation community of the Arvada loam exhibited heavy grazing pressure from cattle with less than 25% of vegetative canopy remaining on most plants in the study area. Native vegetation canopy varied between 1-15%.

Current Amount of Infested Land Needing Treatment

The site is free of listed noxious weed species Garfield County regulates. A couple of meters west of the proposed entrance are saltcedar which have regenerated from previously treated plants. There were stems of dead saltcedar in the immediate area. Saltcedar plants numbered less than 20 in the immediate vicinity and less than 1% canopy in the floodplain riparian area west of the site.

Table 1. Garfield County Listed Noxious Weeds Near EnCana Pipe Laydown Yard (in bold).

Common Name*/ USDA Symbol	***Scientific Name***	**Type****	**Acres**	**Control Methods**
Saltcedar	***Tamarix spp.***	P	≤20 plants	Tamarisk can be controlled by five principal methods: 1) applying herbicide to foliage of intact plants; 2) removing aboveground stems by burning or mechanical means followed by foliar application of herbicide; 3) cutting stems close to the ground followed by application of herbicide to the cut stems; 4) spraying basal bark with herbicide; and 5) digging or pulling plants (Carpenter, 1998).
Russian olive ELAN	*Elaeagnus angustifolia*	P	Not Present/ High potential	Seedlings and sprouts easily hand-pulled when the soil is moist. Once established, cut-stump herbicide treatment most effective.
*State of Colorado. 2000. Colorado Revised Statute 35-5-5. **P – perennial*				

Photo 1. Mature Saltcedar. Adams County. Extension Service.

Photo 2. Mature saltcedar, inflorescence, and bark insets, Anonymous, 2006.

A species found on the State of Colorado "C" list at 8CCR1203-19, *Bromus tectorum*, cheatgrass, is found throughout the site in low density (≤ 20%). As mentioned previously, clasping pepperweed and halogeton are also present but not regulated.

Recommended Treatment

Herbicides should not necessarily always be the first treatment of choice when other methods can be effectively employed. In this, an industrial complex, it is not acceptable to have vegetation component subject to wildfire. Therefore, the recommended treatment for the interior of the PLY is a selective soil sterilant. This should be a soil sterilant which will not drift outside the boundaries if used according to label instructions, e.g., Journey® or Sahara DG®. Some products are reputed to be selective to undesirable plants while allowing desirable plants to flourish even if their roots come into contact with the active ingredient of the herbicide.

Due to the complexity and inherent danger if improperly used or applied, it is recommended a certified commercial applicator be retained to choose the most appropriate product(s) and make the application.

Best Management Practices

In all cases temporary disturbance should be kept to an absolute minimum. All temporary disturbances should be immediately replanted with the recommended mix in the re-vegetation section.

Herbicides:

For control of saltcedar plants, cut and immediately spray stump during the growing season. Many over-the-counter products are available which are effective. The most commonly used active ingredient is triclopyr, most commonly sold under the trade name Garlon 4® but also available in other products.

It is recommended a commercial herbicide applicator be retained to treat the PLY during soil and earth work activities. Incorporating appropriate herbicides in the upper 2-inch soil horizon instead of just the surface may increase the effectiveness of the product. Appropriate selection and timing of application by a certified applicator can make a difference in the success of control.

Grazing:

There is currently heavy grazing by cattle on the site and adjacent to it. Grazing should be controlled in a manner to enhance the vegetative community. At the present level observed on the site, native vegetation will be suppressed and the opportunity for invasive noxious weeds is greater than it could be. It is recommended grazing be removed on adjoining EnCana, Williams, Inc. and American Soda vacant lands.

Mechanical:

Monitoring for establishment of noxious weeds in a timely way can make control a matter of hand-pulling new seedling saltcedar.

Alternative Methods:

No noxious weeds with potential for biological control are found near the site in sufficient density to host a colony of parasitic insects. It is not possible to control a few plants with insects. Removing grazing of domestic livestock could be considered, in this case, an alternative treatment and would improve the quality and quanity of rangeland plants.

Revegetation

The seed mix was developed for EnCana by WestWater in the "EnCana North Parachute (NPR) Reclamation Plan", March of 2006 and is repeated herein for convenience and consistency for EnCana projects on or near NPR.

Table 2. Recommended Seed Mix for Lower Zone Disturbances

Species	Variety (cultivar)	Seeding Rate (PLS*/Ac)
Grasses		
Western Wheatgrass	Arriba	3.0 lbs
Needle-and-Thread Grass		1.0 lbs
Thickspike Wheatgrass	Critana	2.0 lbs
Indian Ricegrass	Rimrock	2.0 lbs
Bluebunch Wheatgrass or Beardless Bluebunch	P7 preferred, Goldar, Anatone or Whitmar	1.0 lbs
Forbs		
Scarlet Globemallow		0.5 lbs
Utah Sweetvetch		1.0 lbs
Lewis Flax		0.5 lbs
Shrubs		
Rubber rabbitbrush		1.0 lbs
Four-wing Saltbush	Wytana	1.0 lbs
Gardner Saltbush and/or Shadscale Saltbush		1.0 lbs
*Pure Live Seed		Total 14.0 lbs PLS/AC

(NRCS, 2006a), Colorado Natural Heritage Program, 1998.

Seeding rate should be doubled for broadcast application. Preferred seeding method is multiple seed bin rangeland drill. Seed should be bagged separately so each size group of seed can be metered at the appropriate rate. Applying a half pound over an acre with a species such as scarlet globemallow is difficult and may require use of wheat bran or rice hulls or some other adjuvant to assist metering the small seeds at the appropriate rate.

Alternative seeding methods include but are not limited to:

- harrow with just enough soil moisture to create a rough surface, broadcast seed and re-harrow, preferably at a 90 degree angle to the first harrow,
- hydro-seeding (most economical in terms of seed cost), and
- hand raking and broadcast followed by re-raking at a 90 degree angle to the first raking.
- These are not the only means of replanting the site. However, these methods have been observed to be effective in similar landscapes.

Native shrubs and forbs often do not establish well from seed, particularly when mixed with grasses. Past experience has shown that stabilizing the soil with grasses, accomplishing weed control and then coming back to plant live; containerized woody species has been the most cost effective method for establishing the woody species component of the plant community. Upon completion of re-seeding, shrub species adapted to the site from the above table could be planted with live plants to increase compatibility with adjacent wildlife habitat. Best results can be expected from use of live, containerized plant materials. These species are available in containers of 10 in.^{3}, 1 quart, 1 gallon and 5 gallon containers and are available locally from Rocky Mountain Native Plants, Silt, Palisade Gardens, Palisade, CO., or Dry West Nursery, Hotchkiss, CO. Other local vendors may have native species depending on availability at time of need.

Number of plants needed is based on the mature size of the species and, to a lesser extent, size of live plant material at time of planting. Application of commercial arbuscular mycorrhizal fungi (AMF) compounds to roots of live shrubs and trees has been shown to increase survival where native AMF may be absent due to disturbance of native soils horizons.

Temporary, supplemental irrigation for approximately 3 years after planting will greatly increase successful establishment of shrubs and forbs. Once established, the recommended species will not need supplemental irrigation.

Life Cycle and Management Calendar

Due to the absence of regulated weeds, the annual calendar for this site is relatively simple.

Table 3. Annual Life Cycle and Management of Selected Weeds for EnCana Oil & Gas (USA) Inc.
Pipe Laydown Yard Integrated Vegetation and Noxious Weed Management Plan

Species	Type*	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Tamarisk*	P	semi-dormancy		-->	leaves emerge	flowering & seed set		growth	flowering & seed set		senescence & semi-dormancy		
Russian Olive	P				germination								

P = perennial

Shaded areas indicate best control timing.
*Tamarisk control can be done at any time of year, but is easier when leaves are absent and weather is cooler.

Sirota, 2004.

References

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Colorado Natural Areas Program. 1998. Native Plant Re-vegetation Guide for Colorado. Caring for the Land Series, Vol. III, State of Colo., Div. Parks and Outdoor Rec., Dept. Nat. Res., Denver, 258 pp.

Natural Resource Conservation Service (NRCS), 2006a. The PLANTS Database (http://plants.usda.gov, 7 September 2006). National Plant Data Center, US Department of Agriculture, Baton Rouge, LA 70874-4490 USA.

NRCS, 2006b. Web Soil Survey, US Dept. of Agriculture. URL: http://websoilsurvey.nrcs.usda.gov

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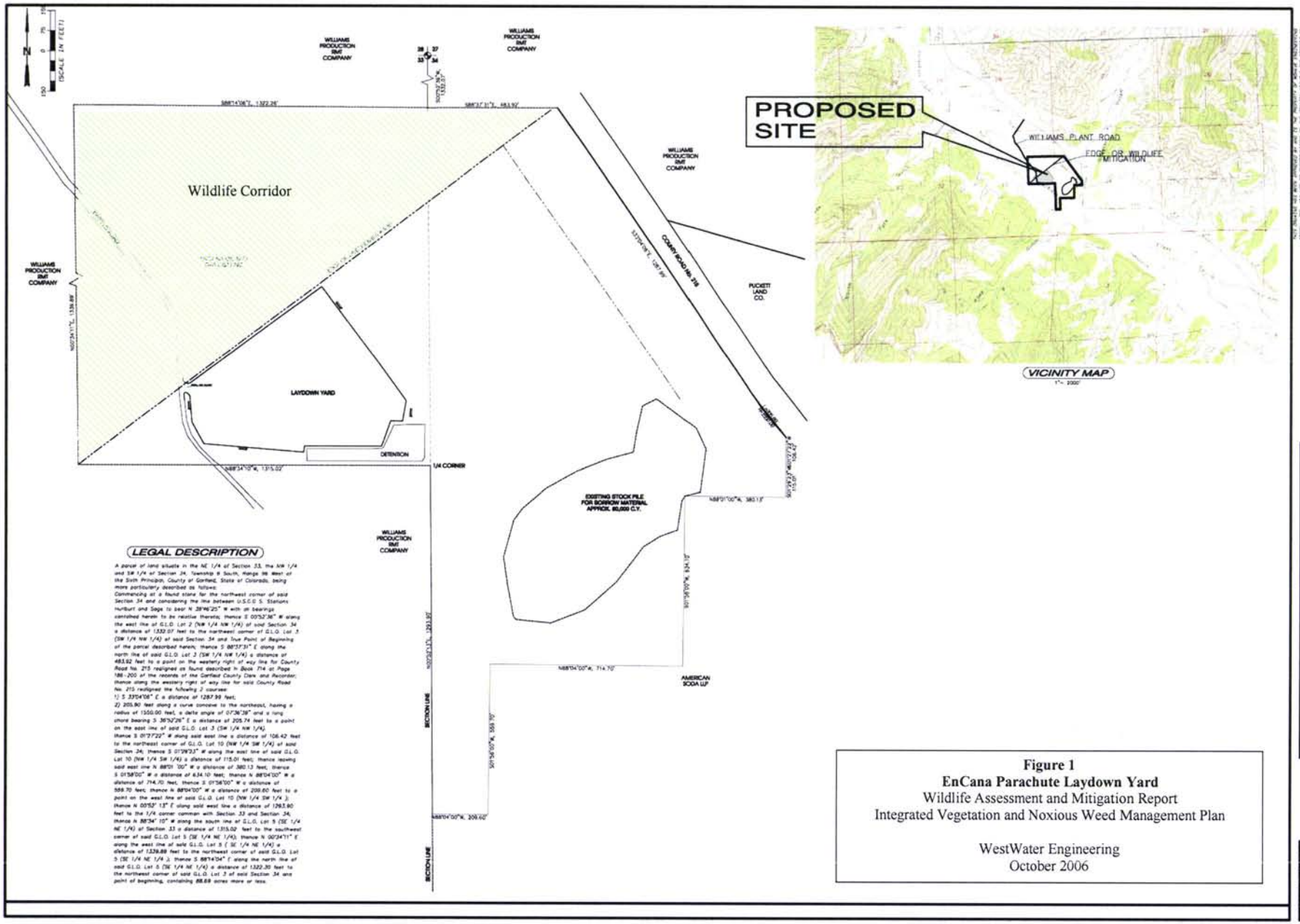


Figure 1
EnCana Parachute Laydown Yard
Wildlife Assessment and Mitigation Report
Integrated Vegetation and Noxious Weed Management Plan

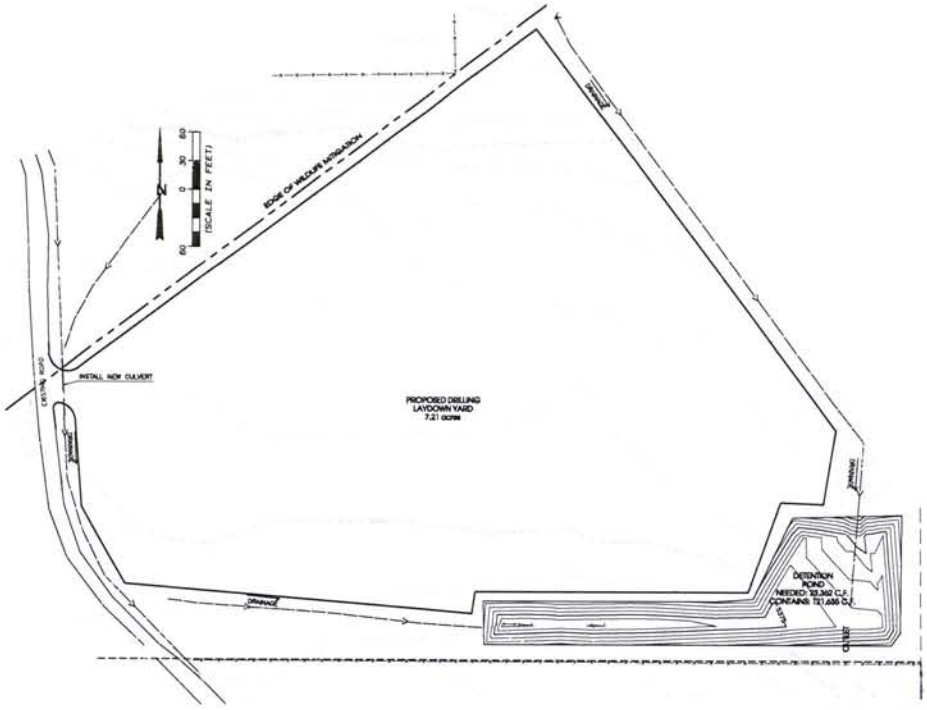
WestWater Engineering
October 2006

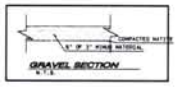
2202 STOCKTON HILL ROAD
KINGMAN, AZ 86401
(928) 753-2627
MOHAVE ENGINEERING ASSOCIATES, INC.

ENCANA OIL & GAS (USA) INC.
PROPOSED LAYDOWN YARD SITEPLAN
LOCATED IN THE NE¼ OF SECTION 33 AND THE NW¼ AND SW¼ OF SECTION 34, THE PARK, 9TH P.M., GARFIELD COUNTY, COLORADO

PROJECT NUMBER 06-082
DATE 10/23/06
DESIGNED BY T. Martinez
DRAWN BY T. Martinez
CHECKED BY B. Moore
DRAWING NUMBER 1 of 2

ATTACHMENT 6





GRADING NOTES

DRILLING LAYDOWN YARD PAD

ESTIMATED EARTHWORK QUANTITIES @ FINISH SUB-GRADE:

UNCLASSIFIED
EXCAVATION..... 0.0 C.Y.

COMPACTED (1" IN DEPTH)
FILL..... 10,870 C.Y.

3" MINUS AT 6" DEEP= 5,816

(ESTIMATED SHRINKAGE AT 0%)

DETENTION POND

UNCLASSIFIED
EXCAVATION..... 4,505 C.Y.

COMPACTED (1" IN DEPTH)
FILL..... 0 C.Y.

(ESTIMATED SHRINKAGE AT 0%)

REQUIRED DETENTION= 23,362 C.F. PROVIDED DETENTION= 121,635 C.F.
NOTE THAT THE PROVIDED DETENTION EXCEEDS THE REQUIRED DETENTION BY 98,273 C.F.

NOTE: EARTHWORK QUANTITIES ARE ESTIMATES BASED ON THE BEST INFORMATION AVAILABLE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE EXACT QUANTITIES. IF THE CONTRACTOR BELIEVES THERE IS A DISCREPANCY IN THE QUANTITIES SHOWN HEREON, HE SHALL NOTIFY THE ENGINEER AND THE OWNER PRIOR TO BIDDING.

GEO-TECH REPORT

GEOTECH. PERFORMED BY: HARMSWORTH-PARLAK GEOTECHNICAL
DATED MARCH 31, 2006, JOB NUMBER 106 0159

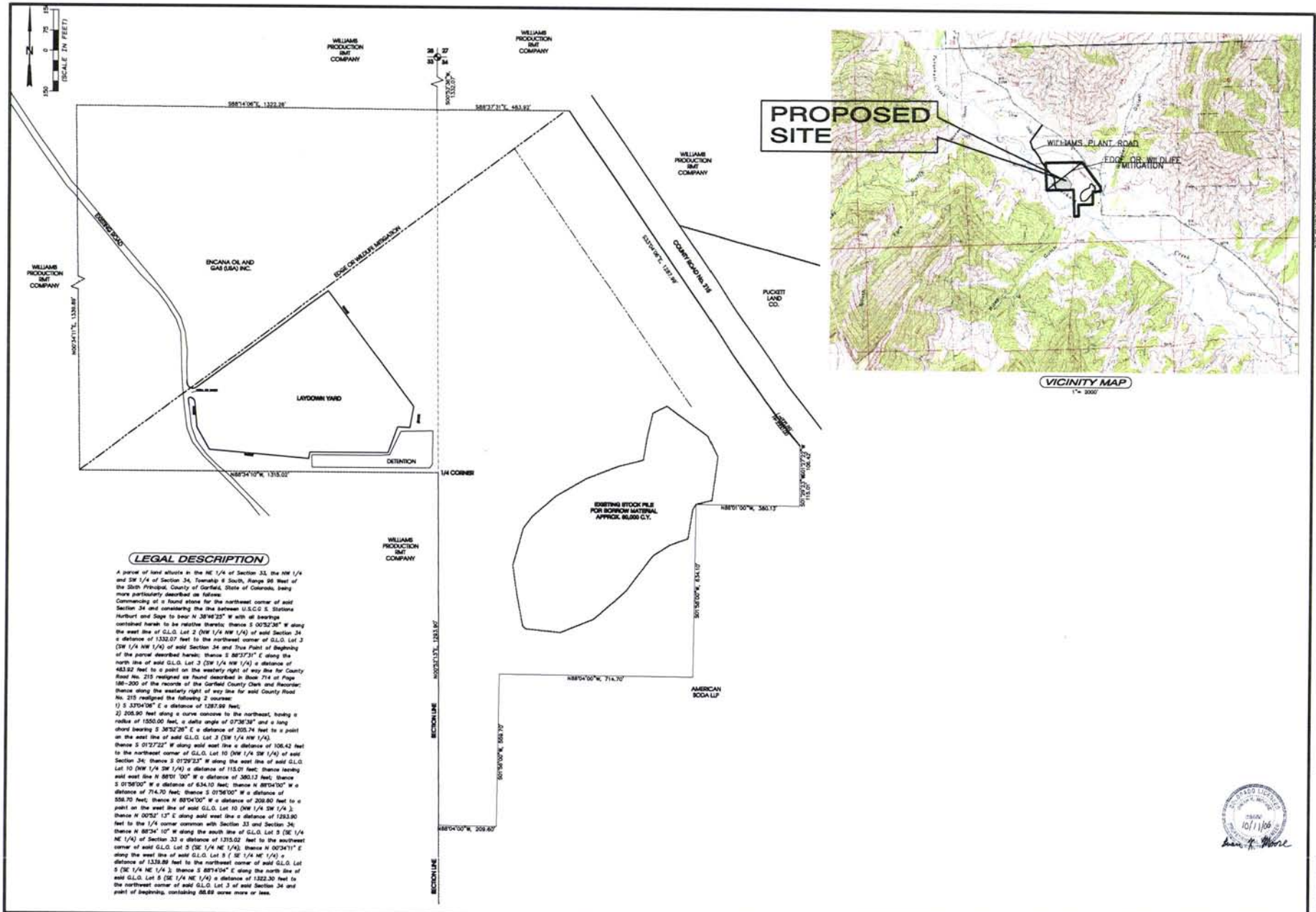
NO.	DATE	REVISION DESCRIPTION

2202 STOCKTON HILL ROAD
KINGMAN, ARIZONA 86401
(928) -753-2627
MOHAVE ENGINEERING & ASSOCIATES, INC.

SHEET TITLE: ENCANA OIL & GAS (USA) INC.
PROPOSED LAYDOWN YARD SITEPLAN

PROJECT:
LOCATED IN THE NE¼ OF SECTION 33
AND THE NW¼ OF AND SW¼ OF SECTION 34
T6S, R90W, 6TH P.M., GARFIELD COUNTY, COLORADO

PROJECT NUMBER	06-082
DATE	02/23/06
DESIGNED BY	T. Martinez
DRAWN BY	T. Martinez
CHECKED BY	B. Moore
DRAWING NUMBER	2 of 2



LEGAL DESCRIPTION

A parcel of land situate in the NE 1/4 of Section 33, the NW 1/4 and SW 1/4 of Section 34, Township 6 South, Range 96 West of the Sixth Principal, County of Garfield, State of Colorado, being more particularly described as follows:
Commencing at a found stone for the northeast corner of said Section 34 and considering the line between U.S.C.G.S. Stations Hurlburt and Sage to bear N 38°48'25" W with all bearings contained herein to be relative thereto; thence S 00°52'36" W along the east line of G.L.O. Lot 2 (NW 1/4 NW 1/4) of said Section 34 a distance of 1332.07 feet to the northeast corner of G.L.O. Lot 3 (SW 1/4 NW 1/4) of said Section 34 and True Point of Beginning of the parcel described herein; thence S 88°37'31" E along the north line of said G.L.O. Lot 3 (SW 1/4 NW 1/4) a distance of 483.92 feet to a point on the westerly right of way line for County Road No. 215 realigned as found described in Book 714 at Page 188-200 of the records of the Garfield County Clerk and Recorder; thence along the westerly right of way line for said County Road No. 215 realigned the following 2 courses:
1) S 33°09'09" E a distance of 1287.99 feet;
2) 205.90 feet along a curve concave to the northeast, having a radius of 1550.00 feet, a delta angle of 07°36'38" and a long chord bearing S 36°52'28" E a distance of 205.74 feet to a point on the east line of said G.L.O. Lot 3 (SW 1/4 NW 1/4);
thence S 01°27'22" W along said east line a distance of 106.42 feet to the northeast corner of G.L.O. Lot 10 (NW 1/4 SW 1/4) of said Section 34; thence S 01°29'23" W along the east line of said G.L.O. Lot 10 (NW 1/4 SW 1/4) a distance of 113.01 feet; thence leaving said east line N 88°01'00" W a distance of 380.13 feet; thence S 01°56'00" W a distance of 634.10 feet; thence N 88°04'00" W a distance of 714.70 feet; thence S 01°56'00" W a distance of 558.70 feet; thence N 88°04'00" W a distance of 209.60 feet to a point on the west line of said G.L.O. Lot 10 (NW 1/4 SW 1/4); thence N 00°52' 13" E along said west line a distance of 1283.90 feet to the 1/4 corner common with Section 33 and Section 34; thence N 88°34' 10" W along the south line of G.L.O. Lot 5 (SE 1/4 NE 1/4) of Section 33 a distance of 1315.02 feet to the southwest corner of said G.L.O. Lot 5 (SE 1/4 NE 1/4); thence N 00°34'11" E along the west line of said G.L.O. Lot 5 (SE 1/4 NE 1/4) a distance of 1339.89 feet to the northwest corner of said G.L.O. Lot 5 (SE 1/4 NE 1/4); thence S 88°14'06" E along the north line of said G.L.O. Lot 5 (SE 1/4 NE 1/4) a distance of 1322.30 feet to the northwest corner of said G.L.O. Lot 3 of said Section 34 and point of beginning, containing 68.69 acres more or less.

10/11/06

NO.	DATE	REVISION DESCRIPTION

2202 STOCKTON HILL ROAD
KINGMAN, ARIZONA 86401
(928)-753-0627
MOHAVE ENGINEERING ASSOCIATES, INC.

SHEET TITLE: ENCANA OIL & GAS (USA) INC.
PROPOSED LAYDOWN YARD SITEPLAN

PROJECT:
LOCATED IN THE NE1/4 OF SECTION 33
AND THE NW1/4 AND SW1/4 OF SECTION 34
T6S, R96W, 6TH P.M., GARFIELD COUNTY, COLORADO

PROJECT NUMBER	06-062
DATE	02/23/06
DESIGNED BY	T. Martinez
DRAWN BY	T. Martinez
CHECKED BY	B. Moore
DRAWING NUMBER	1 of 2

EnCana Parachute Laydown Yard

Integrated Vegetation and Noxious Weed Management Plan

Garfield County, Colorado

Prepared for:

EnCana Oil & Gas (USA), Inc.
2717 County Road 215
Parachute, CO 81635
Attn: Brenda Herndon
970-285-2600

Prepared by:

WestWater Engineering
2516 Foresight Circle #1
Grand Junction, CO 81505
970-241-7076

October 1, 2006

EnCana Parachute Laydown Yard

Integrated Vegetation and Noxious Weed Management Plan

Introduction

On September 27, 2006, WestWater biologists performed a site inspection of the subject property located west of County Road 215, Parachute Creek Road at Wheeler Gulch Road (see Figure 1). The inspection conducted for the purpose of an integrated vegetation and noxious weed management plan. Factors considered include soil type and texture, existing land management practices, absence or presence of listed noxious weeds and likely potential natural vegetation community.

Landscape Setting

The EnCana Oil & Gas, Inc. (USA) (EnCana) Parachute Laydown Yard (PLY) is on the first terrace above the floodplain of Parachute Creek. It is east of Parachute Creek in an industrial setting situated between Williams, Inc. compressor plant and American Soda. Approximately 80 acres of vacant land adjacent to the PLY has been set aside as wildlife habitat by EnCana and Williams, Inc.

Terrain is gently sloping to nearly flat at the entrance to the yard. The property has a westerly aspect. Soils are primarily halaquepts, a soil with salic horizon, and Arvada loam (NRCS, 2006b).

According to the Natural Resources Conservation Service, U.S. Dept. of Agriculture, 2006b, potential natural vegetation for Arvada loam includes alkalai sacaton (*Sporobolus airoides*), inland saltgrass (*Distichlis spicata*), western wheatgrass (*Pascopyrum smithii*), bottlebrush squirreltail (*Sitanion hystrix*), Gardner's saltbush (*Atriplex gardneri*), greasewood (*Sarcobatus vermiculatus*), and winterfat (*Krascheninnikovia lanata*). No ecological site or rangeland information is available from the USDA for halaquepts soils which are the white-glazed, highly-saline clay soils commonly found in low-lying areas in or near Wasatch Badlands.

A few individual saltcedar plants, greasewood, 0.5-1.5 m. in height, robust, desert seep willow (*Saueda moquinii*), Russian thistle (*Salsola tragus*), and pepperweed (*Lepidium spp.*) dominate the alkaline halaquepts soil. Vegetation present on the Arvada loam includes alkalai sacaton, bottlebrush squirreltail, rabbitbrush (*Ericameria spp.*) and a wheatgrass, probably tall wheatgrass (*Elymus elongatus*). Cheatgrass (*Bromus tectorum*) and halogeton (*Halogeton glomeratus*) are also present but in relatively low density.

The vegetation community of the Arvada loam exhibited heavy grazing pressure from cattle with less than 25% of vegetative canopy remaining on most plants in the study area. Native vegetation canopy varied between 1-15%.

Current Amount of Infested Land Needing Treatment

The site is free of listed noxious weed species Garfield County regulates. A couple of meters west of the proposed entrance are saltcedar which have regenerated from previously treated plants. There were stems of dead saltcedar in the immediate area. Saltcedar plants numbered less than 20 in the immediate vicinity and less than 1% canopy in the floodplain riparian area west of the site.

Table 1. Garfield County Listed Noxious Weeds Near EnCana Pipe Laydown Yard (in bold).

Common Name*/ USDA Symbol	***Scientific Name***	**Type****	**Acres**	**Control Methods**
Saltcedar	***Tamarix spp.***	P	≤20 plants	Tamarisk can be controlled by five principal methods: 1) applying herbicide to foliage of intact plants; 2) removing aboveground stems by burning or mechanical means followed by foliar application of herbicide; 3) cutting stems close to the ground followed by application of herbicide to the cut stems; 4) spraying basal bark with herbicide; and 5) digging or pulling plants (Carpenter, 1998).
Russian olive ELAN	*Elaeagnus angustifolia*	P	Not Present/ High potential	Seedlings and sprouts easily hand-pulled when the soil is moist. Once established, cut-stump herbicide treatment most effective.

*State of Colorado. 2000. Colorado Revised Statute 35-5-5.
**P – perennial*

Photo 1. Mature Saltcedar. Adams County. Extension Service.

Photo 2. Mature saltcedar, inflorescence, and bark insets, Anonymous, 2006.

A species found on the State of Colorado "C" list at 8CCR1203-19, *Bromus tectorum*, cheatgrass, is found throughout the site in low density (≤ 20%). As mentioned previously, clasping pepperweed and halogeton are also present but not regulated.

Recommended Treatment

Herbicides should not necessarily always be the first treatment of choice when other methods can be effectively employed. In this, an industrial complex, it is not acceptable to have vegetation component subject to wildfire. Therefore, the recommended treatment for the interior of the PLY is a selective soil sterilant. This should be a soil sterilant which will not drift outside the boundaries if used according to label instructions, e.g., Journey® or Sahara DG®. Some products are reputed to be selective to undesirable plants while allowing desirable plants to flourish even if their roots come into contact with the active ingredient of the herbicide.

Due to the complexity and inherent danger if improperly used or applied, it is recommended a certified commercial applicator be retained to choose the most appropriate product(s) and make the application.

Best Management Practices

In all cases temporary disturbance should be kept to an absolute minimum. All temporary disturbances should be immediately replanted with the recommended mix in the re-vegetation section.

Herbicides:

For control of saltcedar plants, cut and immediately spray stump during the growing season. Many over-the-counter products are available which are effective. The most commonly used active ingredient is triclopyr, most commonly sold under the trade name Garlon 4® but also available in other products.

It is recommended a commercial herbicide applicator be retained to treat the PLY during soil and earth work activities. Incorporating appropriate herbicides in the upper 2-inch soil horizon instead of just the surface may increase the effectiveness of the product. Appropriate selection and timing of application by a certified applicator can make a difference in the success of control.

Grazing:

There is currently heavy grazing by cattle on the site and adjacent to it. Grazing should be controlled in a manner to enhance the vegetative community. At the present level observed on the site, native vegetation will be suppressed and the opportunity for invasive noxious weeds is greater than it could be. It is recommended grazing be removed on adjoining EnCana, Williams, Inc. and American Soda vacant lands.

Mechanical:

Monitoring for establishment of noxious weeds in a timely way can make control a matter of hand-pulling new seedling saltcedar.

Alternative Methods:

No noxious weeds with potential for biological control are found near the site in sufficient density to host a colony of parasitic insects. It is not possible to control a few plants with insects. Removing grazing of domestic livestock could be considered, in this case, an alternative treatment and would improve the quality and quanity of rangeland plants.

Revegetation

The seed mix was developed for EnCana by WestWater in the "EnCana North Parachute (NPR) Reclamation Plan", March of 2006 and is repeated herein for convenience and consistency for EnCana projects on or near NPR.

Table 2. Recommended Seed Mix for Lower Zone Disturbances

Species	Variety (cultivar)	Seeding Rate (PLS*/Ac)
Grasses		
Western Wheatgrass	Arriba	3.0 lbs
Needle-and-Thread Grass		1.0 lbs
Thickspike Wheatgrass	Critana	2.0 lbs
Indian Ricegrass	Rimrock	2.0 lbs
Bluebunch Wheatgrass or Beardless Bluebunch	P7 preferred, Goldar, Anatone or Whitmar	1.0 lbs
Forbs		
Scarlet Globemallow		0.5 lbs
Utah Sweetvetch		1.0 lbs
Lewis Flax		0.5 lbs
Shrubs		
Rubber rabbitbrush		1.0 lbs
Four-wing Saltbush	Wytana	1.0 lbs
Gardner Saltbush and/or Shadscale Saltbush		1.0 lbs
*Pure Live Seed		Total 14.0 lbs PLS/AC

(NRCS, 2006a), Colorado Natural Heritage Program, 1998.

Seeding rate should be doubled for broadcast application. Preferred seeding method is multiple seed bin rangeland drill. Seed should be bagged separately so each size group of seed can be metered at the appropriate rate. Applying a half pound over an acre with a species such as scarlet globemallow is difficult and may require use of wheat bran or rice hulls or some other adjuvant to assist metering the small seeds at the appropriate rate.

Alternative seeding methods include but are not limited to:

- harrow with just enough soil moisture to create a rough surface, broadcast seed and re-harrow, preferably at a 90 degree angle to the first harrow,
- hydro-seeding (most economical in terms of seed cost), and
- hand raking and broadcast followed by re-raking at a 90 degree angle to the first raking.
- These are not the only means of replanting the site. However, these methods have been observed to be effective in similar landscapes.

Native shrubs and forbs often do not establish well from seed, particularly when mixed with grasses. Past experience has shown that stabilizing the soil with grasses, accomplishing weed control and then coming back to plant live; containerized woody species has been the most cost effective method for establishing the woody species component of the plant community. Upon completion of re-seeding, shrub species adapted to the site from the above table could be planted with live plants to increase compatibility with adjacent wildlife habitat. Best results can be expected from use of live, containerized plant materials. These species are available in containers of 10 $in.^3$, 1 quart, 1 gallon and 5 gallon containers and are available locally from Rocky Mountain Native Plants, Silt, Palisade Gardens, Palisade, CO., or Dry West Nursery, Hotchkiss, CO. Other local vendors may have native species depending on availability at time of need.

Number of plants needed is based on the mature size of the species and, to a lesser extent, size of live plant material at time of planting. Application of commercial arbuscular mycorrhizal fungi (AMF) compounds to roots of live shrubs and trees has been shown to increase survival where native AMF may be absent due to disturbance of native soils horizons.

Temporary, supplemental irrigation for approximately 3 years after planting will greatly increase successful establishment of shrubs and forbs. Once established, the recommended species will not need supplemental irrigation.

Life Cycle and Management Calendar

Due to the absence of regulated weeds, the annual calendar for this site is relatively simple.

Table 3. Annual Life Cycle and Management of Selected Weeds for EnCana Oil & Gas (USA) Inc.
Pipe Laydown Yard Integrated Vegetation and Noxious Weed Management Plan

Species	Type*	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Tamarisk*	P	semi-dormancy		-->	leaves emerge	flowering & seed set		growth	flowering & seed set		senescence & semi-dormancy		
Russian Olive	P				germination								

P = perennial

Shaded areas indicate best control timing.
*Tamarisk control can be done at any time of year, but is easier when leaves are absent and weather is cooler.

Sirota, 2004.

References

Adams County Cooperative Extension Service. 2003. Saltcedar/Tamarisk Identification and Managment. Colorado State University Cooperative Extension. Brighton, CO. 2 pp.

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Carpenter, Alan T., 1998. ELEMENT STEWARDSHIP ABSTRACT for Saltcedar. The Nature Conservancy. Arlington, VA. 30pp.

Colorado Natural Areas Program. 1998. Native Plant Re-vegetation Guide for Colorado. Caring for the Land Series, Vol. III, State of Colo., Div. Parks and Outdoor Rec., Dept. Nat. Res., Denver, 258 pp.

Natural Resource Conservation Service (NRCS), 2006a. The PLANTS Database (http://plants.usda.gov, 7 September 2006). National Plant Data Center, US Department of Agriculture, Baton Rouge, LA 70874-4490 USA.

NRCS, 2006b. Web Soil Survey, US Dept. of Agriculture. URL: http://websoilsurvey.nrcs.usda.gov

Sirota, Judith, 2004. Best management practices for noxious weeds of Mesa County. CSU Cooperative Extension Tririver Area. Grand Junction, CO. URL: http://www.coopext.colostate.edu/TRA/PLANTS/index.html#

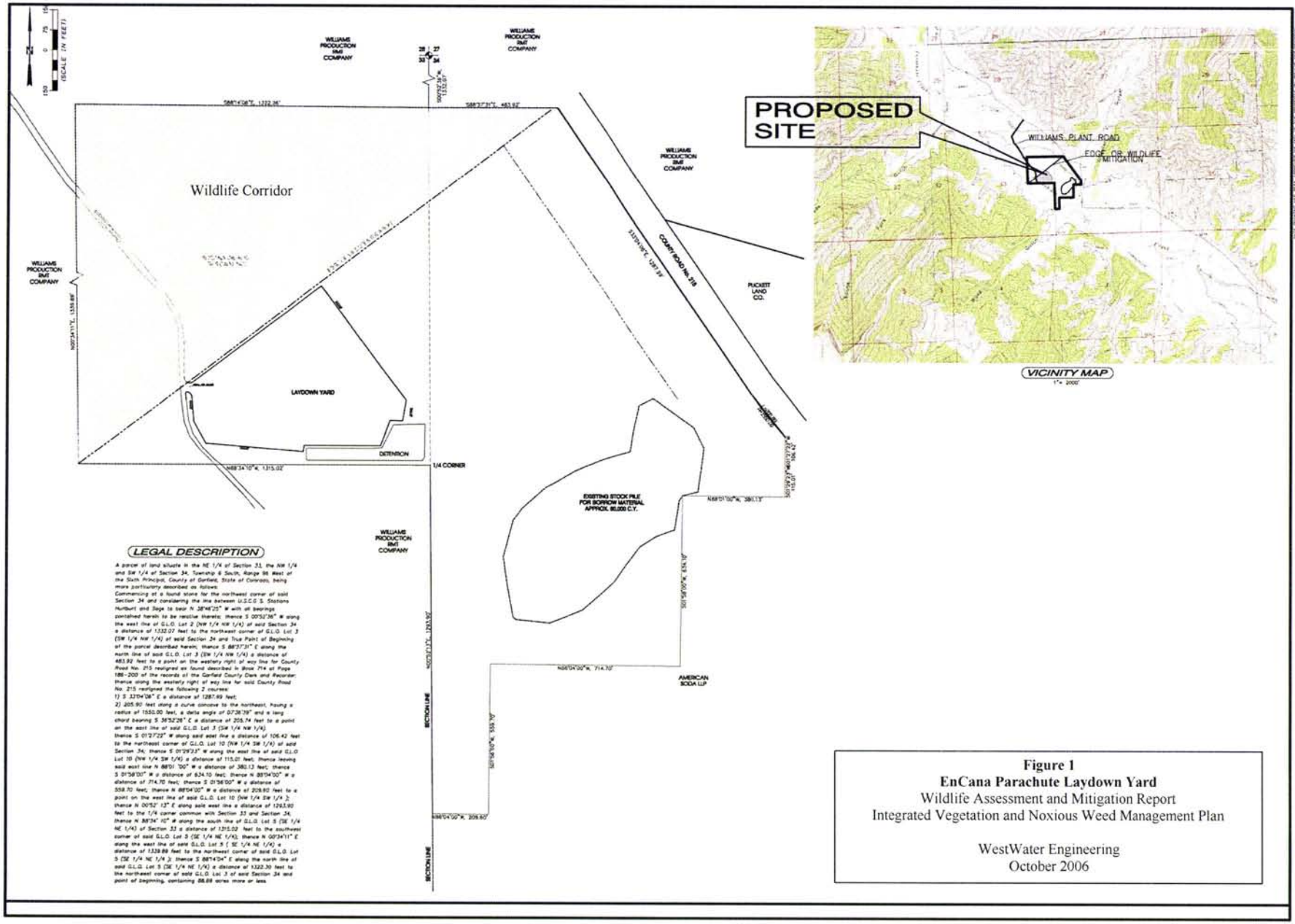

Figure 1
EnCana Parachute Laydown Yard
Wildlife Assessment and Mitigation Report
Integrated Vegetation and Noxious Weed Management Plan

WestWater Engineering
October 2006

2202 STOCKTON HILL ROAD
KINGMAN, ARIZONA 86401
(928) - 753-2627
WESTWATER ENGINEERING ASSOCIATES, INC.

SHEET TITLE: ENCANA OIL & GAS (USA) INC.
PROPOSED LAYDOWN YARD SITEPLAN
PROJECT
LOCATED IN THE NE1/4 OF SECTION 33
AND THE NW 1/4 AND SW 1/4 OF SECTION 34
T6S, R96W, 6TH P.M., GARFIELD COUNTY, COLORADO

PROJECT NUMBER 06-082
DATE 02/23/06
DRAWN BY T. Martinez
CHECKED BY B. Moore
DRAWING NUMBER 1 of 2

SPILL RESPONSE AND REPORTING PROCEDURES

Garfield County
Parachute, Colorado

October 2006

Prepared For:

EnCana Oil & Gas (USA) Inc.
2717 County Rd. 215
Suite 100
Parachute, CO 81635

Prepared By:

Wagon Wheel Consulting
111 East 3rd Street
Suite 213
Rifle, CO 81650

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SECTION 1.0
INTRODUCTION

1.1 Purpose

This procedure is established to enable a coordinated and efficient response by EnCana Oil & Gas (USA) Inc. (EnCana) representatives to discharges or spills of exploration and production (E&P) related materials within the Town of Parachute Watershed District (Watershed). It is not the intent of this procedure to establish liability of the responsible party for a discharge or spill within the Watershed. The procedure details the notification and response procedures by which any such E&P related discharge or spill shall be handled. Figure 1 has been prepared to illustrate the watershed boundary and the coverage of this procedure.

1.2 Applicability

This procedure is applicable to all facilities, including but not limited to, pipelines, stationary vessels, and all transports that may contain E&P related materials that may cause an adverse environmental impact to the Watershed.

A spill or unintentional release into the environment may give rise to a variety of reporting requirements. Reporting requirements will vary depending upon what is spilled, the amount spilled and the time, location, and effects of the spill. This procedure provides guidance for fulfilling the requirements of EnCana or their designated representative and does not fulfill any Federal, State or local reporting requirements.

1.3 Limitations

To develop this guidance, Wagon Wheel Consulting (WWC) was required to formulate the procedures based on the best information available during the period in which this document was developed. Information from currently promulgated and, in some cases, interim regulations were used. Additionally, third party documents and statements were used, the accuracy of which cannot be warranted. Professional judgment was exercised in gathering and analyzing the information obtained.

Caution should be exercised in using this document because of the additional Federal, State, and local reporting requirements that may be applicable and are not contained as part of this document. WWC cannot completely eliminate the possibility of obtaining partially imprecise or incomplete information. This document should be periodically reviewed and updated.

1.4 Procedure Organization

This procedure is organized into three sections including this introduction. Section 2.0 presents the response organization of EnCana. The initial response actions to a spill or release are presented in Section 3.0

Figure 1

SECTION 2.0
RESPONSE ORGANIZATION AND COORDINATION

2.1 EnCana Organization

The reporting of spills is the responsibility of the initial responder. Awareness of this procedure by any potential initial responder is critical to ensure the proper implementation of this procedure. A *Spill contingency Plan Decision Tree* has been prepared and is included as Attachment A. The *Spill Contingency Plan Decision Tree* should be used by the initial responder and subsequent responders to properly assess a spill event.

Immediate access to the Emergency Call Out Contact List must be made available to any and all appropriate parties including, but not limited to, all applicable EnCana personnel, contractors, subcontractors, and applicable Town of Parachute representatives. The *Emergency Call Out Contact List* has been incorporated into this document as Attachment B.

2.2 Response Training

All applicable response personnel of EnCana, and selected response contractors will be trained in accordance with the provisions of this procedure. On-site annual refresher training will occur with all response personnel. Response procedures and materials will be evaluated annually and any changes incorporated within a revised *Spill Response and Reporting Procedures* document. Revised procedures will be distributed to all applicable personnel, contractors and Town of Parachute representatives.

Additional training of response personnel may apply pursuant OSHA Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). Discretion and responsibility of additional OSHA training are determined by the responders company policy.

2.3 Documentation

Appropriate verbal and/or written notification should be made based upon the situation and reporting requirements. Corrective action and/or countermeasures should be immediately addressed by on-site personnel.

A written record of all pertinent information given to each applicable Agency and the Agency's response is to be retained by the environmental manager or designated representative of the responsible party. The information should include:

- Name, address, and location of the facility;
- Name, title and phone number of the person reporting the spill, the responsible party and the contact person;

- Spill location within the facility and/or outside of the facility (section, township and range);
- Material spilled or released
- Volume/ quantity of the spill;
- Complete description of containment and remedial efforts, including ultimate disposal or treatment alternatives;
- Bodies of water involved, the extent of actual and potential pollution or threat to surface water;
- A chronology of all occurred events including; a complete description of circumstances causing the release or spill, actions taken and explanations;
- Whether or not the spill or release consisted of a listed hazardous waste and/or a characteristic hazardous waste, as defined in 40 CFR Part 261;
- A description and estimate of any third party damages;
- Procedures, Methods and precautions instituted to prevent a similar reoccurrence;
- Other appropriate information for the particular spill or release.

A sample *Spill Response Notification Form* has been provided in Appendix C.

SECTION 3.0
INITAIL RESPONSE ACTIONS

There are a number of measures which can be taken to minimize the threat to human health and the environment when a spill of oil or hazardous substances is first detected. The following measures should be considered as general guidelines and may not apply to all circumstances.

3.1 Initial Contact

If a spill endangers the public health or welfare though traffic hazard, explosion, fire, noxious gas, water contamination or other means, immediately refer to the *Emergency Call Out Contact List* for notifications. When making these initial notifications, personnel should attempt to provide, at a minimum, the following information:

- Name of caller and call-back number;
- The exact location and nature of the incident;
- The extent of personal injuries and damage; and
- The material involved and any hazardous information.

3.2 Human Safety

Only trained personnel should approach a fire or spill. Individuals who first identify a spill should:

- Avoid direct contact with the spilled material;
- Avoid inhalation of any gases, fumes, vapors and smoke;
- Move and keep people away from the incident scene. Contact law enforcement authorities for assistance, if necessary;
- Attempts to determine and remove all ignition sources without unnecessarily endangering life;
- Contact the designated first contacts or alternates as illustrated in the *Emergency Call Out Contact List.*

3.3 Substance Identification

One of the most important aspects of the initial response activities is the identification of the substance involved. Members of the response team should make this assessment with the assistance of the responsible party or operations personnel. Under no circumstances should substance identification be attempted without adequate personal protective equipment and without exercising extreme caution.

3.4 Mitigation Measures

Initial response actions should include actions by trained personnel to shut off the source of a spill or discharge, and to contain and mitigate the consequences of the spill.

Any spill with the potential to impact Parachute Creek, upgradient of the Town of Parachute Municipal water supply intake, will require trained personnel to mitigate any impact to the Town of Parachute water supply. Mitigation measures may include manually closing the Town of Parachute intake upgradient of the gauging station or using response materials to prevent any contaminants from entering the intake.

3.4.1 Containment of Spills on Land

Natural avenues of migration such as streams, waterways, ditches, and natural gullies should be followed on foot to determine extent of migration and impacted avenues. Containment facilities should be constructed if any impacts are identified. A field-constructed type of containment device is an earthen dam. A dam can be made by piling up earth with a bulldozer, backhoe, or other earth-moving equipment. Natural dry ditches can be blocked with compacted earth (dam) and used as a storage pond to which a spill can be directed. Spills on paved or hard (frozen) surfaces can be deflected into such ditches or ponds with sandbag barriers. The dams act to stop the uncontrolled flow of product and create a pool for easier recovery.

In order to prevent the infiltration of the released product into the subsurface or leaching into the ground water, plastic sheeting or other non-porous material may be used to line the dam.

3.4.2 Containment of Spills in Shallow Water

Spill booms, straw fences, and or flume dams are types of spill containment devices that can be used to contain spills in shallow waters. The type of containment selected will depend on the site-specific conditions encountered and materials readily available.

Spill booms may be used if the water is deep enough to allow free flow of water under the boom. If used, the booms will be set at an angel to the flow of the stream and skimmer pits should be dug to catch the containment as it moves downstream.

A straw fence may be constructed using chicken wire or snow fence staked at an angel to the flow of the stream. Straw bales should be broken into pieces about two-feet square by eight to ten-inches thick and stacked vertically. This provides protection for a long time, prevents loose impacted straw from working downstream, and facilitates changing saturated straw for fresh straw. A straw fence should be built at an angel to the shore, with a pit or sump at the shore to skim the oil.

An underflow dam (or flume dam) may be built to contain the product or to protect against the further spread of the spill in the event of rain. The dam diverts the water though a conduit of pipe (or pipes) placed roughly parallel to the direction of the water flow. The pipes are installed so that the upstream end is lower than the downstream end. The stream is blocked by bulldozing earth across the pipes and packing the dirt down. The pipes allow water to pass through the flume, but retain the product behind the dam.

3.4.3 Containment of Spills in Deep Water

A containment boom is the best method of confining a spill on deep water. These may be of the commercial variety or may be made from poles, logs, or other types of floating devices.

The placement of the boom on a flowing stream or river is critical. The boom should be placed at an angel to the shoreline to channel the product to shore. The greater the velocity of the flow the greater the angle should be on the boom. Under no circumstances should the boom be placed in a loop configuration. This will channel the product to the center of the loop and under the boom. Skimmer pits should be dug at the downstream end of the boom to retrieve the product out of the channel.

3.4.4 Recovery of Product Layers Greater than 0.5-inches in Depth on Water

Product is more easily recovered when it is present in thicker, larger quantities. Portable skimmers can be used within the boom area to remove the product from the water surface. Vacuum trucks are also a valuable tool when used at skimming pits or when product is present on water. In using any type of powered collection equipment, caution should be used not to ignite the potential vapors. Gasoline powered equipment is not recommended. Air driven pumps are to be used whenever possible.

3.4.5 Recovery of Product Layers Less than 0.5-inches in Depth on Water

As the product gets thinner on the water, it becomes more difficult to pick up. It can be moved by slowly moving the spill boom in toward the shore or by tightening the circle when the spill is surrounded. The product also can be moved by agitating with a fire hose.

The use of sorbing agents such as *Fiber Perl, Petro Green* and *Spag Sorb* should be used to pick up the residue. This material is spread thin upgradient of the product and allowed to float into it. As the product is further trapped, more of the sorbent can be spread on top of the product. The sorbent should be allowed to maintain a stationary position for in order to absorb as much oil as practical. Then the sorbent can be raked into a skimmer pit and removed. These sorbents do not absorb water and do not readily release the product. Spent sorbent material should be properly contained and disposed of at an approved facility.

Final shoreline cleanup may involve applying emulsifying agents or implementing bioremediation techniques. Approval from the applicable regulatory agencies is required prior to conducting these activities.

3.4.6 Recovery of Spills on Land

Product trapped in containment devices should be collected by a vacuum truck and disposed of at the closest terminal or approved disposal facility. Residual thin layers of product can be cleaned up using sorbents, emulsifying agents, or bioremediation techniques. Prior to applying emulsifying agents or implementing bioremediation techniques, the approval of the applicable regulatory agencies is required.

3.5 Response Materials

Response personnel will be properly trained on the use and location of response equipment. Response equipment will be located and secured adjacent to the Town of Parachute Municipal water supply intake. The intake response equipment will consist of a 95-Gallon Poly-Overpack Spill Response Kit. The kit will contain the following:

- 15 – 3" x 4' Booms
- 4 – 3" x 10' Booms
- 3 – 3" x 20' Booms
- 1 – 6" x 25' River Containment boom
- 50 – 18" x 18" Pads
- 10 – 17" x 17" Pillows
- 6 – Temporary Disposal Bags
- 6 – Hazard Warning Labels

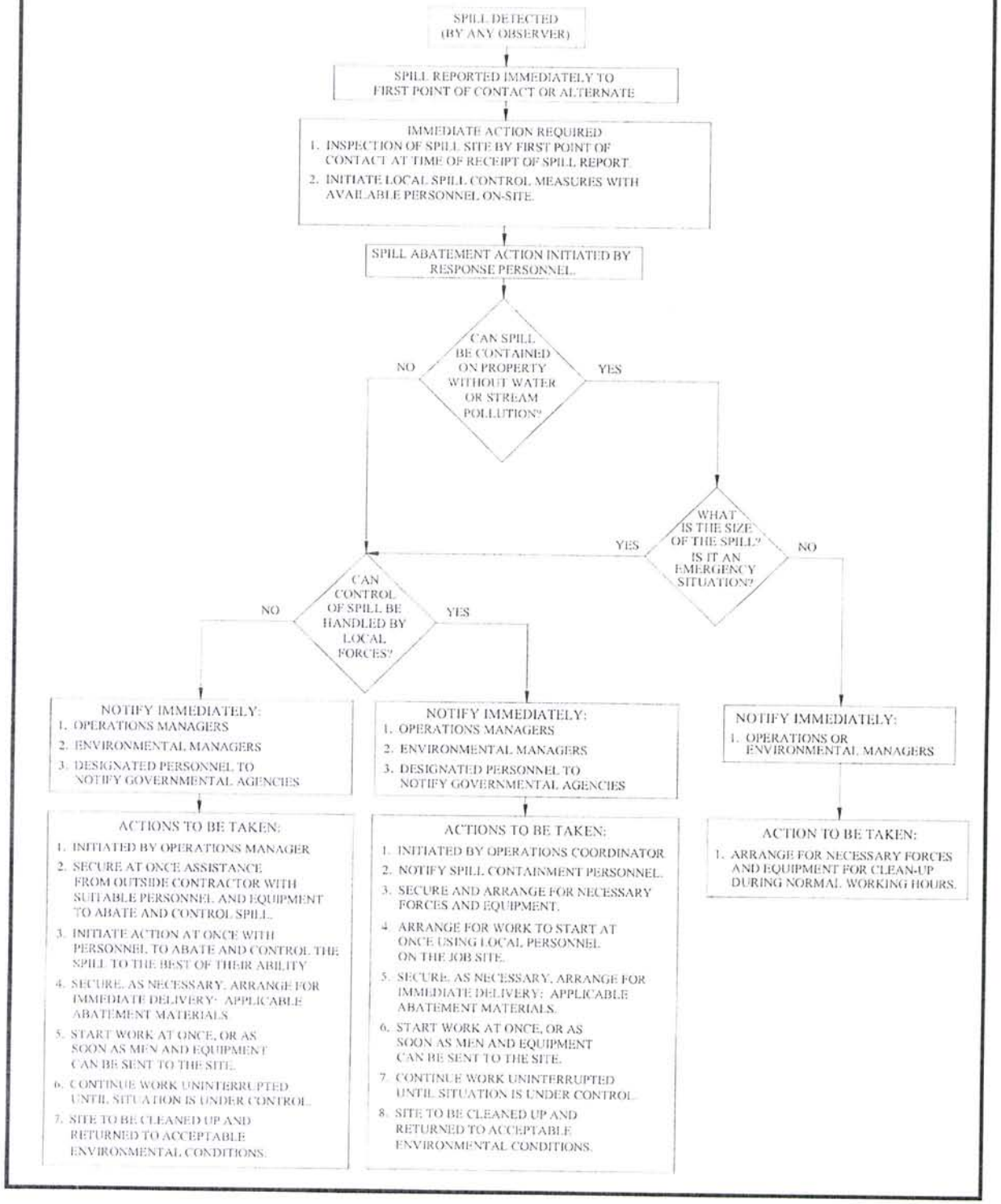
Inspection of on-site response equipment will be conducted annually with items replaced or added as warranted.

Predetermined response locations along Parachute Creek will be identified and incorporated within this procedure. Anchor points and equipment will be established at the predetermined response locations to facilitate response activities.

APPENDIX A

SPILL CONTINGENCY PLAN
DECISION TREE

PARACHUTE WATERSHED DISTRICT
SPILL CONTINGENCY PLAN DECISION



APPENDIX B

EMERGENCY CALL OUT
CONTACT LIST

ENCANA

EnCana Oil & Gas (USA) Inc.

EMERGENCY CONTACT LIST
USA REGION

NOTE: If you cannot make contact with the appropriate area contact, call the 24-hour answering service at (877) 386-2200.

State	Operation	Name	Work	Cell	Other	Home
COLORADO						
South Piceance	Drilling	Richard Eberspecher	970-285-2652	970-618-5121	970-625-3401	
		Gary Vallad	970-285-2602	970-379-1061		
		John Moran – Denver	720-876-5066	303-249-2234		303-688-3569
		Ron Schuyler – Denver	720-876-5142	303-250-8299		303-663-3877
		Mike Griffis – Denver	720-876-3843	303/819-7354		
	Production	David Grisso	970-285-2601	970-250-9660		970-241-6839
		Jim Martinez	970-285-2624	970-379-7518		970-625-9260
		John Grubich	970-285-2631	970-379-6735		
		Tim Baer – Denver	720-876-5059	720-560-3131		
		Tina Johnson – Denver	720/876-5083	303/249-6370		
	Completions/Fracs	Mark Balderston	970-285-2692	970-629-5846		970-824-6115
	Completion/Drill-outs	Jeff Johnson	970-285-2664	970-640-8506		
	Plant/Pipeline	Troy Malone	970-285-2671	307-679-9869		970-241-6444
		Dewey Neely	970-285-2632	435-260-1675		
North Piceance	Drilling & Completion	Jim Jackson	970-285-2681	303-261-0218		
	Drilling	David Wall	720-876-5542	303-594-5276		
		Frank Merendino	720-876-5161	303-819-7319		
	Production	Doug Rosa	970-263-5402	970-260-1670		
		Fred Slagle	970-675-4496	970-629-0277		970-675-8066
	Completions	Eric Bridgford	720-876-3569	720-320-7421		
	Plant	Dennis Phelan	970-675-4402	970-574-7721		970-675-3077
	Gathering Services	Lyndel Loman	970-675-4486	970-574-8906		970-675-3006
		Brad Ankrum	970-285-2630	435-260-1673		
EH&S	Safety – E&P	Kenny Allred	970-285-2635	435-260-1669		970-564-5889
		Harold Cook	970-285-2634	970-319-7099		970-285-7827
		Lannie Massey	970-675-4477	970-629-8733		970-675-8386
	Safety - Gathering	John Baker	970-285-2626	970-319-8371		435-789-0317
		Laura Lancaster	970-675-4449	970-574-8292		970-675-8122
	Environmental	Greg Braine	970-285-2635	303-588-5653		
		Kim Kaal	970-285-2687	970-210-2261		
Landowner Relations		Sher Long	970-285-2640	970-618-8443		
Emergency #s		St. Mary's Care Flight	800-332-4923			
		Clagett Memorial Hospital	970-625-1510			
		Meeker Hospital	970-878-5047			
		Rangely Hospital	970-675-5011		800-621-0925	
		Garfield County Sheriff	970-625-8095			
		Rio Blanco Cty Sheriff	970-675-2350			
		Mesa County Sheriff	970-434-2001			
		Colorado State Patrol	877-315-7623			
		Rifle Fire Department	970-625-8095			
		Parachute Fire Depart.	970-285-7711			
		Rio Blanco Fire District	970-878-3443			
		Colorado Security	970-260-7884	970-260-9503		
Agency Contacts		BLM – Glenwood Springs	970-947-2800			
		BLM – Grand Junction	970-244-3000			
		BLM - Meeker	970-828-3800			
		COGCC	303-894-2100			
		CDPHE	877-518-5608			
		NRC	800-424-8802			
		Federal OSHA	800-321-6742			
		Garfield County LEPC	970-625-8095			
		Mesa County LEPC	970-241-3475			
		Rio Blanco County LEPC	970-878-5023			
Denver						
	S.Piceance - Team Lead	Joel Fox	720-876-3597	303-885-0101		
	N. Piceance – Team Lead	Darrin Henke	720-876-5157	303-819-7316		
	Gathering Services	Jess Wood	720-876-5064	303/885-5559		
	EH&S (E&P)	Chris Williams	720-876-5485	303-888-6978		303-663-6564
	EH&S (Gas Gathering)	Brant Gimmeson	720-876-5030	303-819-7323		303-680-1568
	Public Relations	Doug Hock	720-876-5096	303-328-7048		

7/7/2005

APPENDIX C

SPILL RESPONSE NOTIFICATION FORM

SPILL RESPONSE NOTIFICATION FORM

Note: Discharges or spills within the Parachute Watershed District will be verbally reported immediately under the guidance of the Spill Contingency Plan Decision Tree. The following form must be completed and faxed to the Environmental Managers listed on the Emergency Call Out Contact List within 24 hours of the spill occurrence. The responsible party and/or the applicable environmental manger(s) will perform any necessary state and federal reporting requirements.

Spill Location

State:_____ County:_____
Facility Name and/or General Location:_____
Exact Location Where Spill Occurred:_____
_____
_____
Spill Location, Section, Township, Range: _____
Exact Directions to Spill Location From Nearest Town:_____
_____
_____
_____
_____
Distance/Direction to Nearest Off-Site Residence or Potential Receptor (e.g., Lake, River, Stream, Wetlands, Dry Wash or Ravine, etc.):_____
_____

Spill Description

Date of Spill:_____ Time of Spill:_____
Material/Chemical Spilled and Concentration: _____
Quantity of Spilled Material/Chemical (Units):_____
Is the Spilled Quantity > Than the State or Federal Minimum Amount to Report: _____ (Y/N)?
Did Spill Occur Entirely Within a 24-Hour Period:_____ (Y/N)?
Type of Facility Where the Spill Occurred: _____
Cause of Spill: _____
_____
_____
_____
Type of Container/Vessel (Size, Age, Construction): _____
_____
Has Spill Left Containment:_____ (Y/N)?
Has Spill Migrated Off-Site:_____ (Y/N)?

SPILL RESPONSE NOTIFICATION FORM

Has Spill Impacted or Potentially Impacted Water: _____ (Y/N)?
If Yes to Above Please Describe: _____

Response Actions

Actions Taken or Planned to Correct, Control, or Remediate Spill: _____

Describe Corrective Measures to Prevent Future Spills: _____

Describe How Spill Cleanup Material Will be Contained, Stored and Disposed: _____

Impact to Personnel and Environment

Any Injuries, Evacuations, or Damage Resulting From Spill? If Yes Please Explain: _____

What Is the Dollar Amount of Damage if Any?: _____
What Environmental Media Was Effected and to What Extent?: _____

Reporting Party Information

Reporter's Name and Position: _____
Reporter's Phone Number(s): _____
Reporter's Work Address: _____
Date, Time and Name of Verbal Report to Corporate Staff:
Date: _____ Time: _____ Name: _____

Additional Information

Any Information About the Spill Not Recorded Elsewhere in This Form: _____

RATIONAL METHOD: Q = CIA

Q = Runoff in cubic feet per second (cfs) from given areas
C = a coefficient representing the ratio of runoff to rainfall
I= the rainfall intensity in inches per hour
A= the drainage area in acres

Pre-Development Condition

Area = 7.2 acres
Soil type = D
Time of Concentration = 13 mins
Intensity "I" = 6.5 inches
C = 0.48 (Soil group D, average slope = 1%)

Q = 0.48 x 6.5 x 7.2 = 22.46 cfs

Post-Development Condition

Area = 7.2 acres
Soil type = D
Time of concentration = 4 mins
Intensity "I" = 9 inches
C = 0.8 (Commercial/Industrial)

Q = 0.8 x 9 x 7.2 = 51.84 cfs

Detention Required = (51.84-22.46) * 4*60 sec/min =7015 cubic feet