



## APPLICATION FOR GENERAL AIR QUALITY PERMIT IN INDIAN COUNTRY

**Fisher Sand & Gravel - New Mexico, Inc.  
Grey Mesa Gravel Pit**



**Request for Coverage under the General Air Quality Permit for  
New or Modified Minor Source Stone Quarrying, Crushing, and  
Screening Facilities in Indian Country**

Prepared By:

**TRINITY CONSULTANTS**  
9400 Holly Ave. NE  
Building 3, Suite A  
Albuquerque, NM 87122  
(505) 266-6611

June 2015

Project 153201.0111



*Environmental solutions delivered uncommonly well*

## TABLE OF CONTENTS

---

|                                                  |     |
|--------------------------------------------------|-----|
| 1. EXECUTIVE SUMMARY                             | 1-1 |
| 2. DESCRIPTION OF FACILITY                       | 2-3 |
| 3. APPLICATION FORM                              | 3-4 |
| 4. EMISSION CALCULATIONS                         | 4-1 |
| 4.1. Crushing, Screening & Conveying .....       | 4-1 |
| 5. THREATENED OR ENDANGERED SPECIES REQUIREMENTS | 5-2 |
| 6. HISTORIC PROPERTIES SCREENING PROCESS         | 6-5 |

## 1. EXECUTIVE SUMMARY

---

This request for coverage under the General Air Quality Permit for Minor Source Stone Quarrying, Crushing, and Screening Facilities is being submitted by Fisher Sand & Gravel – New Mexico, Inc. (Fisher). The source will be a portable stone quarrying, crushing, and screening facility at the proposed Grey Mesa Gravel Pit (Grey Mesa). Grey Mesa is currently an abandoned gravel pit located approximately 2.5 miles southwest of the town of Newcomb in San Juan County, New Mexico on Navajo Nation land.

The facility qualifies to apply under this General Permit as all of the criteria below are met:

- You plan to construct a new true or synthetic minor source stone quarrying, crushing, and screening facility OR you plan to modify an existing, minor source stone quarrying, crushing, and screening facility;  
*The proposed facility will be a new minor source stone quarrying, crushing, and screening facility.*
- You are not planning to construct or modify a major source stone quarrying, crushing, and screening facility;  
*The application does not propose to construct or modify a major source facility.*
- Your new or modified minor source stone quarrying, crushing, and screening facility is located within Indian country;  
*The proposed new facility will be located in Navajo Nation land.*
- Your facility processes non-metallic materials (i.e., sand, gravel, rock or stone);  
*The proposed facility will process non-metallic minerals.*
- Your facility utilizes some combination of primary, secondary, tertiary, or fine crushers or screeners;  
*The proposed facility will utilize a combination of crushers and screeners.*
- If located in an attainment, unclassifiable or attainment/unclassifiable area for ozone or a marginal or moderate nonattainment area for ozone, after the proposed construction or modification project your facility's fuel usage for all combustion sources is projected to be less than a combined total of 24,200 gallons of diesel fuel per calendar month;  
*The facility will be located in an attainment area. There will be no stationary combustion sources at this facility. The generator engines at this facility will be portable exempt mobile sources per §49.153. The air separator engine is electrically powered.*
- If located in a serious/severe/extreme ozone nonattainment area, after the proposed construction or modification project your facility's fuel usage for all combustion sources is projected to be less than a combined total of 12,000/5,500/1,900 gallons of diesel fuel per calendar month, respectively;  
*The proposed facility will not be located in an ozone nonattainment area.*
- After the proposed construction or modification project, your facility is projected to process less than 1,100,000 tons of raw material throughput per month based on a 12-month rolling average;  
*The proposed facility is projected to process less than 1,100,000 tons of raw material per month based on a 12-month rolling average.*
- You are seeking to co-locate your facility with a hot mix asphalt facility and would like to limit your combined emissions to less than 100 tons per year (tpy) for New Source Review (NSR) - regulated pollutants. Your source must comply with Conditions 16. and 19.e. in the General Permit and this option is not available under the General Permit in serious, severe, or extreme ozone nonattainment areas and serious carbon monoxide (CO) nonattainment areas. Sources in these areas would have to seek a site-specific permit to obtain tighter limits to further reduce their potential to emit (PTE);  
*The proposed facility will not be co-located with a hot mix asphalt facility.*
- You demonstrate that you meet one of the criteria listed in Appendix A with respect to the protection of any and all species that are federally-listed as threatened or endangered under the Endangered Species Act (ESA) or of habitat that is federally-designated as "critical habitat" under the ESA; and

- Criteria A of Appendix A is met. Section 5 of this application demonstrates qualification under this criteria.*
- You have completed the screening process in Appendix B to determine if the construction, modification or operation of your new or modified minor source of air pollutants has the potential to cause effects to historic properties (pursuant to the National Historic Preservation Act (NHPA)).  
*The screening process in Appendix B has been completed and determined that the proposed source would not have the potential to cause effects on historic properties. Section 6 of this application includes a discussion of this determination.*

## 2. DESCRIPTION OF FACILITY

The proposed stone quarrying, crushing, and screening facility will include the equipment listed in Table 1. The gravel from the pit will enter the primary crusher where rocks will be crushed to approximately 6 inch diameter maximum. The crushed rocks will go through a sorter which will distribute the rock via conveyors to the secondary crushers. Rock from the secondary crusher will be stockpiled for future sale or loaded into trucks and hauled offsite.

The generator engines at this facility are not stationary engines. The engines meet the definition of “nonroad engines” in 40 CFR 49.123(a) as the units are designed to be portable, are not regulated by a federal new source performance standard promulgated under section 111 of the Clean Air Act, and will not remain at a location for more than 12 consecutive months. As nonroad engines, the units meet the definition of a “mobile source” under 40 CFR 49.123(a). Per 40 CFR 49.153(c)(1), the Federal Minor New Source Review Program in Indian Country does not apply to mobile sources. Emissions and fuel usage data were not accounted for as these units are exempt.

| Table 1. Proposed Equipment |                            |                |
|-----------------------------|----------------------------|----------------|
| Unit Number                 | Description                | Equipment Size |
| 1                           | Oversize Feeder            | 700 TPH        |
| 2                           | Jaw Crusher                | 300 TPH        |
| 3                           | Cone Crusher               | 300 TPH        |
| 4                           | Deck Screen                | 500 TPH        |
| 5                           | Deck Screen                | 500 TPH        |
| 6                           | Cone Crusher               | 700 TPH        |
| 7                           | Cone Crusher               | 300 TPH        |
| 8                           | Deck Screen                | 500 TPH        |
| 9                           | Deck Screen                | 500 TPH        |
| 10                          | Electric Air Separator     | 75 HP          |
| 11 to 19                    | Conveyors                  | 175 to 700 TPH |
| 20 to 31                    | Conveyors                  | 175 to 700 TPH |
| 23                          | Portable Generator Engine* | 400 HP         |
| 33                          | Portable Generator Engine* | 650 HP         |
| 34                          | Portable Generator Engine* | 510 HP         |
| TK-1                        | Diesel tank                | 10,000 gal     |
| TK-2                        | Water tank                 | 10,000 gal     |
| TK-3                        | Diesel/gasoline tank       | 2,000 gal      |

\*The portable generator engines are exempt mobile sources per §49.153.

### 3. APPLICATION FORM

---

The completed application form is attached in this section.



# United States Environmental Protection Agency General Air Quality Permit for New or Modified Minor Sources of Air Pollution in Indian Country

<http://www.epa.gov/air/tribal/tribalnsr.html>

## Request for Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing, and Screening Facilities in Indian Country

Last Modified: March 23, 2015

Version 1.0

**Prior to construction or modification, complete this application and submit it to your reviewing authority.**

A list of reviewing authorities, their area of coverage, and contact information can be found in Attachment D to the General Air Quality Permit for Minor Source Stone Quarrying, Crushing, and Screening Facilities or visit:

<http://www.epa.gov/air/tribal/tribalnsr.html>.

For questions regarding this application please contact your reviewing authority.

For instructions on completing this application please see the document "Instructions for Requesting Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing, and Screening Facilities in Indian Country."

### Section 1: Contact Information

|                                                                                                                                                                                             |                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Business Name:<br>Fisher Sand & Gravel - New Mexico, Inc.                                                                                                                                | 2. Date:<br>June 2015                                                                                                                                                                                       |
| 3. Site Address(es):<br>See Section 2 for site location details.                                                                                                                            | 4. County(ies):<br>San Juan                                                                                                                                                                                 |
| 5. Name of Operator at Site(s) (if different from owner):<br>N/A                                                                                                                            | 6. Phone of Operator or Contact at Site(s) (if different from owner):<br>N/A                                                                                                                                |
| 7. Owner:<br>Fisher Sand & Gravel - New Mexico, Inc.                                                                                                                                        | 8. Telephone Number of Owner:<br>(866) 460-7927                                                                                                                                                             |
| 9. Owner's Mailing Address:<br>Fisher Sand & Gravel - New Mexico, Inc.<br>30A Frontage Road East<br>Placitas, NM 87043                                                                      | 10. Send all correspondence regarding this application to:<br>Company Name:<br>c/o:<br>Address: Fisher Sand & Gravel - New Mexico, Inc.<br>c/o Brian Gambrel, 30A Frontage Road East,<br>Placitas, NM 87043 |
| 11. Authorized contact regarding this permit application:<br>Name: Brian Gambrel<br>Title: Project Manager<br>Phone: (505) 867-2600<br>Email: bgambrel@fisherind.com<br>FAX: (505) 867-1609 |                                                                                                                                                                                                             |

| Unit ID # | Type Description         |                          |                                     |                          |           | Maximum Rated Capacity | Make/Model                        | Date of Construction (mm/dd/yyyy) |
|-----------|--------------------------|--------------------------|-------------------------------------|--------------------------|-----------|------------------------|-----------------------------------|-----------------------------------|
| 11-19     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | Conveyors | Various; 175-700 TPH   | Various                           | Various                           |
| 20-31     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | Conveyors | Various; 175-700 TPH   | Various                           | Various                           |
| 32        | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           | 400 hp                 | Caterpillar 3406                  | 1999                              |
| 33        | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           | 650 hp                 | Volvo/IR TAD1361GE/<br>2160043289 | 2001                              |
| 34        | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |           | 510 hp                 | Cummins 37173653                  | 1996                              |
|           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |           |                        |                                   |                                   |
|           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |           |                        |                                   |                                   |

**Notes:**

In the column labeled Unit ID # please give unique identifiers for all of the equipment at the site. You may use an existing facility numbering system or emissions inventory ID #. This unique identifier will differentiate between the different emission units at the facility.

In subsequent sections of this permit application, please use the same Unit ID #'s already provided for the equipment listed here.

It is recommended—but not required—that you include an identifying letter specific to the equipment type, e.g., 'C' for crusher, followed by an identifying number of your choice.

**23. Crushing** (Please use same ID #'s identified above in this permit application)

| Unit ID #      | Process Rate |                           |                          | Type                                |                                     |                          |                          | Controls                     |                                |            |
|----------------|--------------|---------------------------|--------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|------------------------------|--------------------------------|------------|
|                | tph          | Annual hours of operation | tpy (tph x annual hours) | Primary                             | Secondary                           | Tertiary                 | Fines                    | Average Moisture Content (%) | Controls Used (Please specify) | Efficiency |
| 2              | 300          | 8,760                     | 2,628,000                | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | N/A                          | N/A                            | N/A        |
| 3              | 300          | 8,760                     | 2,628,000                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A                          | N/A                            | N/A        |
| 6              | 700          | 8,760                     | 6,132,000                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A                          | N/A                            | N/A        |
| 7              | 300          | 8,760                     | 2,628,000                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A                          | N/A                            | N/A        |
|                |              |                           |                          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                              |                                |            |
| <b>Totals:</b> | 1600         |                           | 14,016,000               |                                     |                                     |                          |                          |                              |                                |            |

## Section 2: Facility Information for Requesting Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities

12. Please list all of the site locations for which you want approval to locate your stone quarrying, crushing, and screening facility. Include the site name (if any), street address, city, state, and name of the Indian Reservation. If needed, use additional paper. You may seek approval for additional locations in the future.

| Site Name            | Street Address                                  | City/Town | Area of Indian Country |
|----------------------|-------------------------------------------------|-----------|------------------------|
| Grey Mesa Gravel Pit | Sections 2, 3, and 10, Township 23N, Range 18W  | Newcomb   | Navajo Nation          |
|                      | Approximately 2.5 miles southwest of Newcomb in |           |                        |
|                      | San Juan County, New Mexico                     |           |                        |
|                      |                                                 |           |                        |
|                      |                                                 |           |                        |
|                      |                                                 |           |                        |
|                      |                                                 |           |                        |
|                      |                                                 |           |                        |
|                      |                                                 |           |                        |
|                      |                                                 |           |                        |

13. This application is for (check all that apply):

☒ Construction/relocation of a new stone quarrying, crushing, and screening facility in Indian country (please describe the proposed new source).  
The proposed source will be a portable stone quarrying, crushing, and screening facility. The application proposes an expansion of an abandoned gravel pit and the upgrade of an existing access road.

☐ Add a new location for your stone quarrying, crushing, and screening facility already covered by the General Permit. (Please describe the proposed new location.)

☐ Modification of an existing stone quarrying, crushing, and screening facility. Please describe the modification below. The definition of "modification" can be found at 40 CFR 49.152(d), and in the "Instructions" document.

☐ A stone quarrying, crushing, and screening operation co-located with a hot mix asphalt operation and seeking to limit combined emissions to less than 100 tpy for NSR-regulated pollutants. You must comply with Conditions 16. and 19.e in the General Permit. This option is not available in serious, severe, or extreme ozone nonattainment areas and serious CO nonattainment areas. (Please describe the proposed source.)

☐ Stationary (fixed) stone quarrying, crushing, and screening facility

- ☒ Portable stone quarrying, crushing, and screening facility
- ☐ Relocation of an existing stone quarrying, crushing, and screening facility

14. North American Industry Classification System/Standard Industrial Classification Code and/or description of the facility:

NAICS: 212321 (Construction sand and gravel mining); 212319 (Other crushed and broken stone mining and quarrying)

Gravel from the quarry will enter a primary crusher, be sorted and then conveyed to a secondary crusher.

15. Will your new or modified facility be located in an ozone nonattainment area? Information on the ozone attainment status of the area where your facility is or will be located can be found at:

<http://www.epa.gov/airquality/greenbook/>.

☐ Yes ☒ No

If you answered 'Yes,' specify the classification of the ozone nonattainment area:

☐ Marginal ☐ Moderate ☐ Serious ☐ Severe ☐ Extreme

16. Will your new or modified facility be located in a particulate matter (PM<sub>10</sub>/PM<sub>2.5</sub>) nonattainment area?

Information on the attainment status of the area where your facility is or will be located can be found at:

<http://www.epa.gov/airquality/greenbook/>.

☐ Yes ☒ No

If you answered 'Yes,' specify the classification of the PM<sub>10</sub>/PM<sub>2.5</sub> nonattainment area:

☐ Moderate ☐ Serious

17. Will the PTE of your new facility or the increase in potential emissions from your modified existing facility be equal to or above the applicable minor NSR thresholds listed below for ANY of the listed pollutants, both in tpy?

Emissions from your facility may be calculated using the PTE calculator available online at:

<http://www.epa.gov/air/tribal/tribalnsr.html>. Be sure to include all new or modified emission units at your facility.

| Pollutant                               | Attainment Area | Nonattainment Area |
|-----------------------------------------|-----------------|--------------------|
| CO                                      | 10 tpy          | 5 tpy              |
| Particulate Matter (PM)                 | 10 tpy          | 5 tpy              |
| Particulate Matter (PM <sub>10</sub> )  | 5 tpy           | 1 tpy              |
| Particulate Matter (PM <sub>2.5</sub> ) | 3 tpy           | 0.6 tpy            |
| Sulfur Dioxide (SO <sub>2</sub> )       | 10 tpy          | 5 tpy              |
| Nitrogen Oxides (NO <sub>x</sub> )      | 10 tpy          | 5 tpy              |
| Volatile Organic Compounds (VOC)        | 5 tpy           | 2 tpy              |

☒ Yes ☐ No

If you answered **'No,'** your source is likely exempt from the minor NSR program. Please contact your reviewing authority to confirm that your facility will not need a permit. If you answered **'Yes,'** continue on to the next question.

18. If located in an attainment, attainment/unclassifiable or unclassifiable area, will the PTE of your new or modified facility be less than 250 tpy for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, VOC, NO<sub>x</sub>, CO, and SO<sub>2</sub> each individually? Be sure to include all existing, new, and modified emission units at the facility.

☒ Yes ☐ No

If you answered **'No,'** your source does not qualify for the General Permit. Please contact your reviewing authority to apply for a site-specific permit. If you answered **'Yes,'** continue on to the next question.

19. If located in a nonattainment area, will the PTE of your facility for the particular nonattainment pollutant be less than the NSR major source thresholds below for ALL pollutants? Be sure to include all existing, new, and modified emission units at the facility.

| Pollutant                                             | Nonattainment Classification    | NSR Major Source Threshold        |
|-------------------------------------------------------|---------------------------------|-----------------------------------|
| Ozone                                                 | Marginal                        | 100 tpy of VOC or NO <sub>x</sub> |
|                                                       | Moderate                        | 100 tpy of VOC or NO <sub>x</sub> |
|                                                       | Serious                         | 50 tpy of VOC or NO <sub>x</sub>  |
|                                                       | Severe                          | 25 tpy of VOC or NO <sub>x</sub>  |
|                                                       | Extreme                         | 10 tpy of VOC or NO <sub>x</sub>  |
| PM <sub>10</sub>                                      | Moderate                        | 100 tpy                           |
|                                                       | Serious                         | 70 tpy                            |
| CO                                                    | Moderate                        | 100 tpy                           |
|                                                       | Serious                         | 50 tpy                            |
| SO <sub>2</sub> , NO <sub>2</sub> , PM <sub>2.5</sub> | No nonattainment classification | 100 tpy                           |

☐ Yes ☐ No ☒ N/A - Not located in any nonattainment area

If you answered **'No,'** your source does not qualify for the General Permit. Please contact reviewing authority to apply for a site-specific permit. If you answered **'Yes' or 'N/A,'** continue on to the next question.

20. What is the projected monthly throughput of rock, stone, sand, gravel, and aggregate (in tons) to be processed at your new or modified facility?  
520,800 tons per month

21. What is the projected monthly usage of diesel fuel (in gallons) for all stationary combustion sources (e.g., boilers) at your new or modified facility?

N/A \* \_\_\_\_\_ gallons per month \*There will be no stationary combustion sources at the facility.

### Section 3: Technical Information for Requesting Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities

Information regarding the emission units at your facility is required by 40 CFR 49.154 and 40.160. Please provide the information below for all equipment at your facility. For each emissions unit, include supporting documentation for the PTE of the unit with your Request for Coverage. In addition, for existing emissions units, include the most recent actual annual emissions. See 40 CFR 49.154(a)(2). (For more information on how to calculate actual emissions, go to:

<http://www.epa.gov/air/tribal/tribalnsrcalculators.html>.) As needed, please include other relevant information with your notification (including any equipment not identified below).

#### 22. Facility Equipment

List all equipment at the site that is or will be owned, leased or operated by the applicant, as well as the maximum rated capacity in tons per hour, Btu, or horsepower. If needed to list all equipment, additional pages may be photocopied and added after this one.

| Unit ID # | Type Description                    |                                     |                            |                          |                        | Maximum Rated Capacity                                              | Make/Model            | Date of Construction (mm/dd/yyyy) |
|-----------|-------------------------------------|-------------------------------------|----------------------------|--------------------------|------------------------|---------------------------------------------------------------------|-----------------------|-----------------------------------|
|           | Crusher                             | Screeners                           | Internal Combustion Engine | Other Exhaust Unit       | Other (please specify) | Tons per Hour (tph) for Equipment and Btu or Horsepower for engines |                       |                                   |
| 1         | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>   | <input type="checkbox"/> | Feeder                 | 700 tph                                                             | Fisher GSS 48X53      | 2006                              |
| 2         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>   | <input type="checkbox"/> |                        | 300 tph                                                             | Pioneer 2854          | 1996                              |
| 3         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>   | <input type="checkbox"/> |                        | 300 tph                                                             | Spokane 82DG          | 1981                              |
| 4         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> |                        | 500 tph                                                             | AC 500                | 1994                              |
| 5         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> |                        | 500 tph                                                             | Terex/Cedarapids 3620 | 1999                              |
| 6         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>   | <input type="checkbox"/> |                        | 700 tph                                                             | Torgerson HIS         | 1994                              |
| 7         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>   | <input type="checkbox"/> |                        | 300 tph                                                             | JCI 1400RA            | 1999                              |
| 8         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> |                        | 500 tph                                                             | JCI 3620              |                                   |
| 9         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>   | <input type="checkbox"/> |                        | 500 tph                                                             | Fisher GSS            |                                   |
| 10        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>   | <input type="checkbox"/> | Air separator          | 75 hp                                                               | Fisher GSS SN04 13'6" | 1998                              |

**24. Screening** (Please use same Unit ID #'s identified above in this permit application)

| Unit ID #      | Process Rate |                           |                          | Type of Screening                   |                          |                          | Controls                     |                                |            |
|----------------|--------------|---------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|------------------------------|--------------------------------|------------|
|                | tph          | Annual hours of operation | tpy (tph x annual hours) | Regular                             | Fines                    | Wet Screening*           | Average Moisture Content (%) | Controls Used (Please specify) | Efficiency |
| 4              | 500          | 8,760                     | 4,380,000                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A                          | N/A                            | N/A        |
| 5              | 500          | 8,760                     | 4,380,000                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A                          | N/A                            | N/A        |
| 8              | 500          | 8,760                     | 4,380,000                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A                          | N/A                            | N/A        |
| 9              | 500          | 8,760                     | 4,380,000                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | N/A                          | N/A                            | N/A        |
|                |              |                           |                          | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |                              |                                |            |
| <b>Totals:</b> | 2,000        |                           | 17,520,000               |                                     |                          |                          |                              |                                |            |

\* Wet screening refers to screening processes that are accomplished with water as the carrier of the sand/aggregate or where the aggregate is saturated with water.

**25. Material Handling – Transferring, Loading, Unloading, Conveyors, and Dropping** (Please use same Unit ID #'s identified above in this permit application)

| Unit ID #      | Description                                   |             | Maximum Material Transferred (tpy) | Average Moisture Content | Control Technology                  |                          |                          |                          |                          |                          |
|----------------|-----------------------------------------------|-------------|------------------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                |                                               |             |                                    |                          | None                                | Water Spray              | Chemical Additive        | Conveyor with ½ cover    | Conveyor with ¾ cover    | Cover with full cover    |
|                | e.g. truck dump, conveyor drop, truck loading |             | Per point                          | %                        |                                     |                          |                          |                          |                          |                          |
| Unload         | Truck unloading                               | 700 TPH     | 6,132,000                          | N/A                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11-19          | Conveyors                                     | 175-700 TPH | 6,132,000                          | N/A                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20-31          | Conveyors                                     | 175-700 TPH | 6,132,000                          | N/A                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Load           | Truck loading                                 | 700 TPH     | 6,132,000                          | N/A                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                |                                               |             |                                    |                          | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Totals:</b> |                                               |             | 24,528,000                         |                          |                                     |                          |                          |                          |                          |                          |

**26. Internal Combustion Engines** (including emergency generators)

| Unit ID # | Unit Description           | Maximum Rated Capacity (HP) | Types of Fuel(s) Used <sup>1</sup> | Manufactured Date (mm/dd/yyyy) | Model Year |
|-----------|----------------------------|-----------------------------|------------------------------------|--------------------------------|------------|
| 32        | Caterpillar 3406 Generator | 400 hp                      | Diesel                             |                                |            |
| 33        | Volvo/IR Generator         | 650 hp                      | Diesel                             | 2001                           |            |
| 34        | Cummins Generator          | 510 hp                      | Diesel                             | 1996                           |            |
|           |                            |                             |                                    |                                |            |

**27. Volatile Liquid Storage Tanks**

This section applies to storage tanks used to store liquid materials. Please provide the following information for each storage tank.

| Unit ID# | Type of Liquid  | Capacity (gallons) | Vapor pressure of liquid (psi) | Is the tank above or underground? | Date of installation (if existing) |
|----------|-----------------|--------------------|--------------------------------|-----------------------------------|------------------------------------|
| TK1      | Diesel          | 10,000             | 0.022 psia @ 100F              | Above ground                      | 1992                               |
| TK2      | Water           | 10,000             | N/A                            | Above ground                      | 1992                               |
| TK3      | Diesel/Gasoline | 2,000              | 0.022 psia @ 100F              | Above ground                      | 1992                               |
|          |                 |                    |                                |                                   |                                    |
|          |                 |                    |                                |                                   |                                    |

**Section 4: Information on Completing Screening Processes that Have to Be Satisfied to Request Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities**

**28. Threatened or Endangered Species**

Have you demonstrated that you meet one of the criteria listed in Appendix A with respect to the protection of any and all species that are federally listed as threatened or endangered under the ESA or of habitat that is federally designated as "critical habitat" under the ESA? If you answer '**No,**' you cannot request coverage under this permit.

☒ Yes ☐ No

If you answered '**Yes,**' then you need to provide the appropriate documentation to the EPA to qualify for coverage under this permit. Please indicate under which criterion in Appendix A you are satisfying this requirement:

☒ A ☐ B ☐ C ☐ D ☐ E

## 29. Historic Properties

Have you completed the screening process in Appendix B to determine if the construction, modification or operation of your new or modified minor source of air pollutants has the potential to cause effects to historic properties (pursuant to the NHPA)? If you answer **'No,'** you cannot request coverage under this permit.

☒ Yes ☐ No

If you answered **'Yes,'** then provide the appropriate documentation to the EPA to qualify for coverage under this permit.

## Section 5: Additional Information about the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities

This section provides information on the sizes of sources in terms of emissions that are eligible for the General Permit. The emission limitations and standards in this permit are expected to ensure that source-wide emissions are below the rates shown in the following table:

| Pollutant of Concern | Attainment, Unclassifiable or Attainment/Unclassifiable Areas | Nonattainment Areas                        |
|----------------------|---------------------------------------------------------------|--------------------------------------------|
| CO                   | 19 tpy                                                        | 19 tpy (moderate and serious areas)        |
| PM <sub>10</sub>     | 63 tpy                                                        | 63 tpy (moderate areas and serious areas)  |
| PM <sub>2.5</sub>    | 63 tpy                                                        | 63 tpy                                     |
| NO <sub>x</sub>      | 88 tpy                                                        | 88 tpy (marginal and moderate ozone areas) |
|                      |                                                               | 45 tpy (serious ozone areas)               |
|                      |                                                               | 22.5 tpy (severe ozone areas)              |
|                      |                                                               | 9 tpy (extreme ozone areas)                |
| VOC                  | 7 tpy                                                         | 7 tpy (ozone areas)                        |

For a stone quarrying, crushing and screening operation co-located with a hot mix asphalt operation the emission limitations and standards in Conditions 16. and 19.e of the General Permit are expected to ensure the source-wide emissions are below the rates shown in the following table:

| Pollutant of Concern | Attainment, Unclassifiable or Attainment/Unclassifiable Areas | Nonattainment Areas            |
|----------------------|---------------------------------------------------------------|--------------------------------|
| CO                   | 78 tpy                                                        | 78 tpy (moderate areas)        |
|                      |                                                               | Not applicable (serious areas) |

| Pollutant of Concern | Attainment, Unclassifiable or Attainment/Unclassifiable Areas | Nonattainment Areas                               |
|----------------------|---------------------------------------------------------------|---------------------------------------------------|
| PM                   | 86 tpy                                                        | Not applicable                                    |
| PM <sub>10</sub>     | 63 tpy                                                        | 63 tpy<br>(moderate areas)                        |
|                      |                                                               | 63 tpy<br>(serious areas)                         |
| PM <sub>2.5</sub>    | 30 tpy                                                        | 30 tpy                                            |
| SO <sub>2</sub>      | 18 tpy                                                        | 18 tpy                                            |
| NO <sub>x</sub>      | 90 tpy                                                        | Not applicable<br>(serious and above ozone areas) |
|                      |                                                               | 90 tpy<br>(marginal and moderate ozone areas)     |
| VOC                  | 27 tpy                                                        | Not applicable<br>(serious and above ozone areas) |
|                      |                                                               | 27 tpy<br>(marginal and moderate ozone areas)     |

You should contact your reviewing authority if you intend to rely on the emission limitations and standards in this General Permit to prevent having to obtain a Title V permit.

#### Applicant's Statement (to be signed by the applicant)

I certify that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Name: Brian Gambrel Name: Brian Gambrel Date: 5-3-2015  
(Signature) (Print or Type)  
Project Manager  
Title: \_\_\_\_\_

## 4. EMISSION CALCULATIONS

---

The emission calculations for the facility are attached in this section. Emissions were calculated using the PTE calculator available online at <http://www.epa.gov/air/tribal/tribalnsr.html>. The potential to emit calculator shows that the total potential to emit of the facility falls under the threshold emission rates for attainment areas listed in Section 5 of the application form.

### 4.1. CRUSHING, SCREENING & CONVEYING

As a conservative measure, emissions from crushing, screening, and conveying were performed based on 8,760 hours of operation. The emission calculation for controlled dry sand and gravel conveying contained a link to the incorrect emission factor. The calculation used the emission factor for uncontrolled screening (tertiary crushing). The calculation was updated to use the conveyor transfer point (controlled) emission factor, consistent with the uncontrolled dry sand and gravel conveying emission rate calculation.

# Potential To Emit Calculator for Stone Quarrying, Crushing, and Screening Plants

3/23/2015

This workbook is designed to calculate the potential to emit of a sand, gravel, rock crushing, and screening facility without control devices.

Directions - Enter the facility's information below in the yellow highlighted cells.

For the rock processing operations, input the number of machines in each category that are used in your operations.

For the conveying operations, enter the number of drop points associated with each crushing/screening operation.

For the truck loading and transport offsite, enter the number 1.

For the engines, input the total horsepower rating of all the stationary engines on site.

The potential to emit for the facility will be displayed under the "Output" tab. The criteria pollutant emission rate is calculated depending on the equipment used and the maximum rating of any stationary engines. The effect of any control devices is not considered.

## Facility Profile

| Rock Processing Equipment                                     | Number of Operations | Maximum Capacity (tons/hr)* | Number of Conveyor Drop Points | Description                                                                                                                                                                                                 |
|---------------------------------------------------------------|----------------------|-----------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Truck Unloading/Grizzly Feeder                                | 1                    | 700                         |                                | Fragmented rock delivered to site and dumped into grizzly or crusher feeder                                                                                                                                 |
| Primary Crusher (Output is 3 - 12 inches) and Screening       | 1                    | 300                         | 1                              | Rock that passes through the primary crusher. This rock is 3 to 12 inches in diameter after this step. Rock is screened, conveyed to a pile, and shipped offsite or conveyed to another processing step.    |
| Secondary Crusher (Output is 1 - 3 inches) and Screening      | 1                    | 1,300                       | 5                              | Rock that passes through the secondary crusher. This rock is 1 to 3 inches in diameter after this step. Rock is screened, conveyed to a pile, and shipped offsite or conveyed to another processing step.   |
| Tertiary Crusher (Output is 3/16 - 1 inches) and Screening    | 0                    | 0                           | 0                              | Rock that passes through the tertiary crusher. This rock is 3/16 to 1 inches in diameter after this step. Rock is screened, conveyed to a pile, and shipped offsite or conveyed to another processing step. |
| Fines Crusher (output is less than 3/16 inches) and Screening | 0                    | 0                           | 0                              | Rock that passes through the fines crusher. This rock is less than 3/16 inches in diameter after this step. Rock is screened, conveyed to a pile, and shipped offsite.                                      |
| Dry Sand and Gravel Screening**                               | 1                    | 600                         | 21                             | Dry sand and gravel that passes through the screener. Dry sand and gravel is excavated, screened, classified for size, conveyed to a pile, and shipped offsite.                                             |
| Truck Loading and Transport Offsite                           | 1                    | 700                         |                                | Rock product that is shipped offsite.                                                                                                                                                                       |

\* If the maximum capacity of a piece of equipment is bottlenecked (reduced) by another piece of equipment operating in a 'train', enter the bottlenecked capacity.

\*\* If your sand and gravel screening operation processes saturated material, and uses wet processing methods, enter zero (0) for the inputs in this row.

| Power Generation Equipment                                                          | Generator/Engine Size (Hp) (total) <sup>1</sup> | Sulfur Content of Diesel Fuel (%) | Description                                                                                                                                              |
|-------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stationary Diesel Electrical Generators w/ Rating Less Than or Equal to than 600 Hp | 0                                               | 0.50%                             | A stationary engine is an engine that is used in a fixed location, or a nonroad (portable) engine that remains in one location for at least a full year. |
| Stationary Diesel Electrical Generators w/ Rating Greater than 600 Hp               | 0                                               | 0.50%                             |                                                                                                                                                          |

<sup>1</sup>No stationary engines will be located at this facility. The engines will be nonroad (portable) engines which will remain in one location less than 12 consecutive months.

| Storage Piles                         |        | Description                                                                                                                                                                                                             |
|---------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rock Product in Storage Piles (tons)  | 50,000 | Average Amount of Crushed Rock Product Stored in Storage Piles During the Year (tons). Default value is one week's production.                                                                                          |
| Moisture Content of Storage Piles (%) | 2.0%   | Moisture content of the storage piles. If operations are controlled with water sprays, include this in your estimate. Default value for uncontrolled operations is 0.7%. Default value for controlled operations is 2%. |
| Mean Wind Speed (mph)                 | 15.00  | Average wind speed at the site.                                                                                                                                                                                         |

# Potential To Emit Calculator for Stone Quarrying, Crushing, and Screening Plants

3/23/2015

## Facility Potential to Emit (PTE) Summary

### FOR DETERMINING IF YOU NEED A PERMIT (does not include controls):

| Process                                           | Pollutant      |                  |                   |                 |                 |             |             |
|---------------------------------------------------|----------------|------------------|-------------------|-----------------|-----------------|-------------|-------------|
|                                                   | PM             | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub> | NO <sub>x</sub> | CO          | VOC         |
| Sand, Gravel, Rock Crushing, Screening, Conveying | 1140.21        | 318.29           | 0.00              | -               | -               | -           | -           |
| Storage Piles                                     | 0.25           | 0.12             | 0.02              | -               | -               | -           | -           |
| Engine/Generator <sup>1</sup>                     | 0.00           | 0.0000           | 0.00              | 0.00            | 0.00            | 0.00        | 0.00        |
| <b>Total Potential to Emit (tons/year)</b>        | <b>1140.45</b> | <b>318.41</b>    | <b>0.02</b>       | <b>0.00</b>     | <b>0.00</b>     | <b>0.00</b> | <b>0.00</b> |

### FOR DETERMINING PTE IF USING GENERAL PERMIT (includes controls in General Permit):

| Process                                           | PM           | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub> | NO <sub>x</sub> | CO          | VOC         |
|---------------------------------------------------|--------------|------------------|-------------------|-----------------|-----------------|-------------|-------------|
| Sand, Gravel, Rock Crushing, Screening, Conveying | 25.94        | 14.11            | 0.39              |                 |                 |             |             |
| Storage Piles                                     | 0.25         | 0.12             | 0.02              | -               | -               | -           | -           |
| Engine/Generator <sup>1</sup>                     | 0.00         | 0.00             | 0.00              | 0.00            | 0.00            | 0.00        | 0.00        |
| <b>Total Potential to Emit (tons/year)</b>        | <b>26.19</b> | <b>14.23</b>     | <b>0.40</b>       | <b>0.00</b>     | <b>0.00</b>     | <b>0.00</b> | <b>0.00</b> |
| <b>Threshold emission rates</b>                   | <b>63</b>    | <b>63</b>        | <b>63</b>         | <b>88</b>       | <b>19</b>       | <b>7</b>    |             |

| Maximum Throughputs, Based on Equipment Capacity |             |
|--------------------------------------------------|-------------|
| Operation Description                            | tons/year   |
| Truck Unloading - Fragmented Stone               | 6,132,000   |
| Primary Crushing and Screening                   | 2,628,000   |
| Secondary Crushing and Screening                 | 11,388,000  |
| Tertiary Crushing and Screening                  | 0           |
| Fines Crushing and Screening                     | 0           |
| Dry Sand and Gravel Screening                    | 5,256,000   |
| Conveyor Transfer Points (total)                 | 169,944,000 |
| Truck Loading - Conveyor, crushed stone          | 6,132,000   |

**Threshold raw material processing for General Permit:** 13,200,000

| Maximum Fuel Usage, Based on Engine Size <sup>1</sup> |          |           |
|-------------------------------------------------------|----------|-----------|
| Operation Description                                 | gal/year | gal/month |
| Diesel Engine (<= 600 hp)                             | 0        | 0         |
| Diesel Engine (> 600 hp)                              | 0        | 0         |

**Threshold fuel usage for General Permit:** 24,200

## Notes

<sup>1</sup>No stationary engines will be located at this facility. The engines will be nonroad (portable) engines which will remain in one location less than 12 consecutive months. Per 40 CFR 49.153(c)(1), the Federal Minor New Source Review Program in Indian Country does not apply to mobile sources. Emissions and fuel usage data were not accounted for as these units are exempt.

# Potential To Emit Calculator for Stone Quarrying, Crushing, and Screening Plants

3/23/2015

## Emissions from Sand, Gravel, Rock Crushing, and Screening Operations

### 1. Emission Factors for PM, PM10 , and PM2.5

| Type of Operation                                               | SCC            | Emission Factors (lb/ton) |         |                    |
|-----------------------------------------------------------------|----------------|---------------------------|---------|--------------------|
|                                                                 |                | PM <sup>c</sup>           | PM10    | PM2.5 <sup>c</sup> |
| Primary Crushing <sup>a</sup>                                   | 3-05-020-01    | 1.4E-03                   | 6.0E-04 |                    |
| Primary Crushing (controlled) <sup>a</sup>                      | 3-05-020-01    | 3.0E-04                   | 1.4E-04 |                    |
| Secondary Crushing <sup>a</sup>                                 | 3-05-020-02    | 2.7E-03                   | 1.2E-03 |                    |
| Secondary Crushing (controlled) <sup>a</sup>                    | 3-05-020-02    | 6.0E-04                   | 2.7E-04 |                    |
| Tertiary Crushing                                               | 3-05-030-03    | 5.4E-03                   | 2.4E-03 |                    |
| Tertiary Crushing (controlled)                                  | 3-05-020-03    | 1.2E-03                   | 5.4E-04 | 1.0E-04            |
| Fines Crushing                                                  | 3-05-020-05    | 3.9E-02                   | 1.5E-02 |                    |
| Fines Crushing (controlled)                                     | 3-05-020-05    | 3.0E-03                   | 1.2E-03 | 7.0E-05            |
| Screening of Primary Crusher Output <sup>b</sup>                |                | 6.3E-03                   | 2.2E-03 |                    |
| Screening of Primary Crusher (controlled) <sup>b</sup>          |                | 5.5E-04                   | 1.9E-04 |                    |
| Screening of Secondary Crusher Output <sup>b</sup>              |                | 1.3E-02                   | 4.4E-03 |                    |
| Screening of Secondary Crusher Output (controlled) <sup>b</sup> |                | 1.1E-03                   | 3.7E-04 |                    |
| Screening (Tertiary Crushing)                                   | 3-05-020-02-03 | 2.5E-02                   | 8.7E-03 |                    |
| Screening (Tertiary Crushing) (controlled)                      | 3-05-020-02-03 | 2.2E-03                   | 7.4E-04 | 5.0E-05            |
| Fines Screening                                                 | 3-05-020-21    | 3.0E-01                   | 7.2E-02 |                    |
| Fines Screening (controlled)                                    | 3-05-020-21    | 3.6E-03                   | 2.2E-03 |                    |
| Conveyor Transfer Point                                         | 3-05-020-06    | 3.0E-03                   | 1.1E-03 |                    |
| Conveyor Transfer Point (controlled)                            | 3-05-020-06    | 1.4E-04                   | 4.6E-05 | 1.3E-05            |
| Truck Unloading - Fragmented Stone                              | 3-05-020-31    | 1.6E-05                   | 1.6E-05 |                    |
| Truck Loading - Conveyor, crushed stone                         | 3-05-020-32    | 1.0E-04                   | 1.0E-04 |                    |

Emission factors are from AP 42, Chapter 11.19.2, Tables 11.19.2-2 and 11.19.2-4 (1/95), except as noted.

<sup>a</sup> AP 42 emission factors for primary crushing and secondary crushing are not available. Emission factors are estimated based on the assumption that emissions are proportional to the relative surface area of the product emerging from the crusher. Secondary crushing emissions are conservatively estimated at 50% of tertiary crushing emissions, and primary crushing emissions are conservatively estimated at 50% of secondary crushing emissions.

<sup>b</sup> AP 42 emission factors for screening of rock output from primary crushing are not available. Emission factors are estimated based on the assumption that emissions are proportional to the relative surface area of the product emerging from the crusher. Secondary screening emissions are conservatively estimated at 50% of tertiary crushing emissions, and primary screening emissions are conservatively estimated at 50% of secondary screening emissions.

<sup>c</sup> Where there is no data for an emission factor, a blank cell is shown in the emission factor table.

## 2. Potential to Emit from Rock Crushing and Screening Operations

Purple values are from the inputs page

Blue values are results

| Type of Operation                       | Maximum Throughput<br>(tons/yr) | Emissions (tons/yr) (uncontrolled) |          |        | Emissions (tons/yr) (controlled) |         |         |
|-----------------------------------------|---------------------------------|------------------------------------|----------|--------|----------------------------------|---------|---------|
|                                         |                                 | PM                                 | PM10     | PM2.5  | PM                               | PM10    | PM2.5   |
| Truck Unloading - Fragmented Stone      | 6,132,000                       | 0.0491                             | 0.0491   | 0.0000 | 0.0491                           | 4.9E-02 | 0.0E+00 |
| Primary Crushing                        | 2,628,000                       | 1.7739                             | 0.7884   | 0.0000 | 0.3942                           | 1.8E-01 | 0.0E+00 |
| Screening of Primary Crusher Output     | 2,628,000                       | 8.2125                             | 2.8580   | 0.0000 | 0.7227                           | 2.4E-01 | 0.0E+00 |
| Conveyor Transfer Point                 | 2,628,000                       | 3.9420                             | 1.4454   | 0.0000 | 0.1840                           | 6.0E-02 | 1.7E-02 |
| Secondary Crushing                      | 11,388,000                      | 15.3738                            | 6.8328   | 0.0000 | 3.4164                           | 1.5E+00 | 0.0E+00 |
| Screening of Secondary Crusher Output   | 11,388,000                      | 71.1750                            | 24.7689  | 0.0000 | 6.2634                           | 2.1E+00 | 0.0E+00 |
| Conveyor Transfer Point                 | 56,940,000                      | 85.4100                            | 31.3170  | 0.0000 | 3.9858                           | 1.3E+00 | 3.7E-01 |
| Tertiary Crushing                       | 0                               | 0.0000                             | 0.0000   | 0.0000 | 0.0000                           | 0.0E+00 | 0.0E+00 |
| Screening of Tertiary Crusher Output    | 0                               | 0.0000                             | 0.0000   | 0.0000 | 0.0000                           | 0.0E+00 | 0.0E+00 |
| Conveyor Transfer Point                 | 0                               | 0.0000                             | 0.0000   | 0.0000 | 0.0000                           | 0.0E+00 | 0.0E+00 |
| Fines Crushing                          | 0                               | 0.0000                             | 0.0000   | 0.0000 | 0.0000                           | 0.0E+00 | 0.0E+00 |
| Fines Screening                         | 0                               | 0.0000                             | 0.0000   | 0.0000 | 0.0000                           | 0.0E+00 | 0.0E+00 |
| Conveyor Transfer Point                 | 0                               | 0.0000                             | 0.0000   | 0.0000 | 0.0000                           | 0.0E+00 | 0.0E+00 |
| Dry Sand and Gravel Screening           | 5,256,000                       | 788.4000                           | 189.2160 | 0.0000 | 2.8908                           | 5.8E+00 | 0.0E+00 |
| Dry Sand and Gravel Conveying           | 110,376,000                     | 165.5640                           | 60.7068  | 0.0000 | 7.7263                           | 2.5E+00 | 0.0E+00 |
| Truck Loading - Conveyor, crushed stone | 6,132,000                       | 0.3066                             | 0.3066   | 0.0000 | 0.3066                           | 3.1E-01 | 0.0E+00 |
| Total                                   |                                 | 1140.207                           | 318.289  | 0.000  | 25.9392                          | 1.4E+01 | 3.9E-01 |

### Methodology

Maximum Throughput (tons/yr) = Number of Operations x Maximum Capacity (tons/hr) x Total Annual Hours of Operation (hr/yr)

Emissions (tons/yr) = Maximum Throughput (tons/yr) x Emission factor (lb/ton) x 1 ton/2,000 lbs

|                                         |       |
|-----------------------------------------|-------|
| Total Annual Hours of Operation (hr/yr) | 8,760 |
|-----------------------------------------|-------|

# Potential To Emit Calculator for Stone Quarrying, Crushing, and Screening Plants

3/23/2015

## Emissions from Storage Piles

50,000 Average Annual Product in Piles (ton/yr)  
 2 Agg. Moisture (%)  
 15.00 Mean Wind Speed (MPH)

Purple values are pulled from the inputs worksheet  
 Blue values are results

According to AP42, Chapter 13.2.4 - Aggregate Handling and Storage Piles (updated 11/06), the particulate emission factors for storage piles can be estimated from the following equation:

$$Ef = \frac{k \times 0.0032 \times (U/5)^{1.3}}{(M/2)^{1.4}}$$

where:

Ef = Emission Factor (lbs/ton)  
 k = Particle size multipliers =  
 U = Mean wind speed (MPH) =  
 M = Moisture content (%) =

0.74 for PM, 0.35 for PM<sub>10</sub>, and 0.053 for PM<sub>2.5</sub>

15 MPH (provided by the facility)

2 % (provided by the facility)

| Pollutant         | Emission Factor | Potential to Emit |
|-------------------|-----------------|-------------------|
|                   | (lb/ton)        | (tons/yr)         |
| PM                | 0.00988         | 0.247             |
| PM <sub>10</sub>  | 0.00467         | 0.117             |
| PM <sub>2.5</sub> | 0.00071         | 0.018             |

## Methodology

Potential to Emit (ton/yr) = Max. Annual Production (ton/yr) x 1/52 x EF (lb/ton) x 1 ton/2000 lb

Assume that storage piles contain one week's production, on average.

## 5. THREATENED OR ENDANGERED SPECIES REQUIREMENTS

---

An environmental assessment was performed in 2009 and approved in March of 2010 by the Division of Environmental, Cultural, and Safety Management, Navajo Regional Office. It was determined that the proposed actions would not have a significant impact on the natural and human environment. An environmental impact statement for the proposed project was deemed not required.

Due to a new species listing, the biological evaluation was updated in May of 2015. The conclusion of the evaluation is consistent with the initial assessment: due to lack of available suitable habitat, the proposed actions should have no negative impacts on any listed or special status species. Based on this conclusion, the eligibility Criterion A is selected. A copy of the assessments are attached in this section.

## 2009 Environmental Assessment



# United States Department of the Interior

Bureau of Indian Affairs  
Navajo Region  
P. O. Box 1060  
Gallup, New Mexico 87305



MC 620: Division of Environmental, Cultural & Safety Management

## MEMORANDUM

MAR 18 2010

To: Regional Realty Officer  
Attention: Ms. Mary Lujan

From: NEPA Coordinator */s/ Harrilene J. Yazzie*

Through: Regional Environmental Scientist */s/ George Padilla*

Subject: FONSI-Recon Oil Co., Inc Grey Mesa Gravel Pit and Access Road **EA-09-236**

The Environmental Assessment (EA), EA-09-236, for Recon Oil Corporation, Inc, proposed Grey Mesa Gravel Pit and Access Road on 88.58 acres of Navajo Tribal Trust land located roughly 0.5-3 miles southwest of Newcomb, San Juan County, New Mexico, has been reviewed in the Division of Environmental, Cultural and Safety Management, Navajo Regional Office. A Finding of No Significant Impact (FONSI) has been determined for the proposed action. It will not have a significant impact on the quality of the natural and human environment. An environmental impact statement for the proposed project is not required.

If you have questions, you may contact Ms. Harrilene J. Yazzie, Regional NEPA Coordinator, at (505) 863-8287.

Attachment

cc: Mr. Brian Wood, Permits West, Inc. 37 Verano Loop, Santa Fe, NM 87508

FINDING OF NO SIGNIFICANT IMPACT  
ENVIRONMENTAL ASSESSMENT DOCUMENT, EA-09-236  
GREY MESA GRAVEL PIT AND ACCESS ROAD

RECON OIL CORPORATION, INC

Location: Newcomb and Sheep Springs Quadrangles, USGS 7.5 Minute Series Maps  
Sections 2, 3 & 10, T23N, R18W, NMPM  
Sections 35 & 36, T24N, R18W, NMPM  
Southwest of Newcomb, San Juan County, New Mexico

The proposed action is approval of a right-of-way (ROW) grant, by the Bureau of Indian Affairs, for gravel pit expansion and access road. The expansion for the gravel pit will be 83.73 acres and upgrade of access road will be 20-feet by 2 miles (4.85 acres). No more than 20% (≈16.6 acres) of the pit will be excavated at any one time. Upgrading will consist of rocking low water crossings and installing a cattle guard in the U.S. 491 fence at Mile Post ≈55.99. There will be no drilling or blasting. The project will affect 88.58 acres of Navajo Tribal Trust land located roughly 0.5-3 miles southwest of Newcomb, San Juan County, New Mexico. The project is sponsored by Recon Oil Corporation, Inc., 920 E. Highway 66, Gallup, New Mexico 87301.

The project environmental assessment (EA) was reviewed by the Division of Environmental, Cultural and Safety Management, Navajo Regional Office. Based on the environmental assessment and the mitigation measures specified in the document, it is determined that the proposed action will not have a significant impact on the natural and human environment. Therefore, in accordance with the National Environmental Policy Act, Section 102 (2) (C), an environmental impact statement will not be required.

The following references, incorporated in the environmental assessment, serve as the bases for this decision:

1. Agency and public involvement was solicited. Environmental issues relative to right-of-way approval for the proposed project were identified. Alternative courses of action and mitigation measures were developed in response to environmental concerns and issues.
2. The EA disclosed the environmental consequences of the proposed and "no action" alternatives.
3. In compliance with the Endangered Species Act, informal consultation was held with the Navajo Nation Department of Fish and Wildlife (NNDFW), Natural Heritage Program (NHP). Although the NNDFW has no record of species of concern occurring on or near the project site at this time, it provided a list of species of concern having the *potential* to occur on the *Newcomb, NM*, USGS 7.5-Minute Quadrangle containing the project boundaries (June 29, 2009). In accordance with the NNDFW Biological Resource Land Clearance Policies and Procedures (BRLCPP), the proposed project is located within a low sensitivity wildlife resources zone and therefore the NNDFW issued Biological Compliance Form (BRCF), NNDF & WL Review No. 09/21/09Q indicating Compliance with Tribal and Federal laws protecting biological resource (EA-Appendix 7-BRCF).

4. Potential impacts to flood plains and wetlands by the proposed project have been evaluated in accordance with Executive Orders 11988 and 11990 respectively. According to the Federal Emergency Management Agency Flood Insurance Rate Map the proposed action is not located in a floodplain. Therefore, there will be no involvement with any 100-year floodplain as a result of the construction of the proposed action (EA, Part 3.0-Table A).

5. Water Resources- surface flows are associated with small ephemeral drainage from snow melt and summer thunderstorms. Local drainage in the area is northeast off of Grey Mesa into an unnamed ephemeral wash that drains into Captain Tom Wash then on to the Chaco River. There are no springs on the sides of the mesa which could indicate shallow depth to groundwater. Potential impacts from the proposed action include: 1) increased sediment loading to the adjacent surface drainages through runoff of disturbed soils; and, 2) produced water and/or drilling fluids getting into surface or ground hydrology. Mitigation measures shall include: 1) protecting water zones and fresh water; 2) cleaning spilled contaminants quickly; and 3) reclaiming disturbed areas (EA, Parts 3.3, 3.3.1 & 3.3.2).

6. In compliance with the National Historic Preservation Act of 1966, as amended, Section 106 and 36 CFR 800.9 (b), a cultural resources inventory was conducted on the project area by Complete Archeology Service Associates (CASA). The Navajo Nation Historic Preservation Department (NNHPD) issued Cultural Resources Compliance Form (CRCF), NNHPD No. HPD-09-572 indicating, *No historic properties will be affected if the conditions are followed that are cited within the CRCF (Appendix-5-CRCF). The operator shall comply with the effects and conditions of compliance cited in the CRCF (Appendix-5-CRCF).*

In the event of a discovery [discovery means any previously unidentified or incorrectly identified cultural resources including, but not limited to, archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices] all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Historic Preservation Department must be notified.

7. RCRA, Subtitles C and D, Hazardous and Non-Hazardous Solid Waste- generation of hazardous waste is not expected. If hazardous waste is inadvertently generated, the proper authorities shall be consulted regarding disposal. Solid waste materials will be generated as a result of construction, drilling and operation of the project (EA, Part 3.5.). All trash shall be placed in a portable trash cage and hauled to an approved landfill. Trash shall not be buried or burned. Chemical toilets shall be used for human waste. The waste shall be disposed at approved dump stations (EA, Part 3.5.2).

8. Air Resources- there will be a short-term increase in dust during construction of the proposed project and there will be a local increase in combustive emissions from operating vehicles and earth moving equipment. Water shall be applied for dust control and vehicular traffic shall be limited to reduce combustive emissions and dust. Crushing and separating operations at the gravel pit will be performed by a contractor. The contractor shall be responsible for the obtaining the required permits and shall practice best management practices (EA, Parts 3.2.1 & 3.2.2).

9. Noise levels- the proposed action will be located in a relatively isolated location and is not within 400 feet of a BLM designated Noise Sensitive Area (NSA), nor is the pit located within 400 feet of any dwelling, residence, or building. There is no house located within a quarter mile of the proposed action (EA, Part 3.0-Table b).

10. Noxious Weeds- the Biological Assessment of the proposed action indicated the presences of halogeton, and invasive non-native species; however, no other invasive or non-native species were found in the project area. Noxious weeds may become established in disturbed areas within the proposed action. However, the operator shall make every effort to ensure that noxious weeds do not spread over disturbed areas (EA, Part 3.8.1, 3.8.2). If noxious weeds become established in the project area, the operator shall contact the Navajo Nation Department of Agriculture regarding management and control of noxious weeds. The NNEPA, Pesticide Enforcement and Development Program may be contacted regarding pesticide/herbicide applicators.

11. Cumulative and secondary effects on soil, water, air, noise, vegetation, cultural resources, and wildlife resources (species and habitat) were considered, and the proposed mitigation measures were found to be acceptable.

12. In accordance with Executive Order 12898 on Environmental Justice, impacts to minority and low-income populations and communities have been considered by the Regional NEPA Coordinator, as have impacts to Indian Trust Resources.

The proposed action would allow the development and production of mineral resources to meet national, regional and local energy needs.

---

Regional NEPA Coordinator

MAR 18 2016  
Date

**ENVIRONMENTAL ASSESSMENT (EA) FOR  
RECON OIL CO., INC.  
PLAN OF DEVELOPMENT  
GREY MESA GRAVEL PIT AND ACCESS ROAD  
ON NAVAJO TRIBAL SURFACE  
TOWNSHIP 23N, R18W, SECTIONS 2, 3, and 10 (PIT)  
And  
TOWNSHIP 24N, R18W, Section 35 and 36 (ACCESS)**

**NAVAJO NATION SAND AND GRAVEL LEASE NO.:\_\_\_\_\_**

**July 19, 2009**

**1. Introduction**

Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing ‘abandoned’ gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb (Appendix 1).

**1.1 Purpose and Need**

The initial purpose of the Proposed Action is to mine gravel for sale to construction companies widening US 491 to four lanes. Thereafter the gravel will be for private and/or public sale for future projects, depending on gravel market conditions.

**1.2 Conformance with Applicable Land Use Plan and Other Environmental Assessments**

Pursuant to 40 Code of Federal Regulations (CFR) 1508.28 and 1502.21, this site-specific environmental assessment (EA) tiers to and incorporates by reference the information and analysis contained in the Farmington Proposed Resource Management Plan/Final Environmental Impact Statement [(PRMP/FEIS) BLM 2003a], which was approved as the Final Resource Management Plan for the Farmington Field Office (FFO) of the BLM by the Record of Decision (ROD) signed September 29, 2003 (BLM 2003b). This EA addresses the resources and impacts on a site-specific basis as required by the National Environmental Policy Act (NEPA) of 1969, as amended (Public Law 91-90, 42 USC 4321 et seq.). The proposed project would not be in conflict with any local, county, or state plans.

**1.3 Federal, State or Local Permits, Licenses or Other Consultation Requirements**

A Navajo Nation Sand and Gravel Lease will be obtained by Recon for the right to extract sand and gravel from the designated location, and for the right-of-way access to the gravel pit. The proposed surface use plan is attached as Appendix 2. Field clearance request for 88.58 acres (83.73 for pit + 4.85 for road) was received by Project Review Office on June 19, 2009.

The Proposed Action will excavate an area larger than 1 acre (~16.6 acres at a time) therefore Recon would be subject to Nation Pollutant Discharge Elimination System (NPDES) permit requirements. Recon will prepare a Storm Water Pollution Prevention Plan and obtain a permit from the Environmental Protection Agency NPDES program.

Compliance with Section 106 responsibilities of the National Historic Preservation Act are adhered to by following the BLM – New Mexico SHPO protocol agreement, which is authorized by the National Programmatic Agreement between the *BLM*, the *Advisory Council on Historic Preservation*, and the *National Conference of State Historic Preservation Officers*, and other applicable BLM handbooks.

The Navajo Nation Department of Fish & Wildlife (NFWD)-Natural Heritage Program has been consulted within the last two years with respect to species of concern that are known to occur or that have the potential to occur within the area of the Proposed Action (Appendix 3). Species of concern listed by the NFWD will be evaluated in Section 3.0 of this document and in the Biological Assessment attached as Appendix 4.

In Addition, crushing and separating operations at the gravel pit will be performed by a contractor. The contractor will be responsible for obtaining the required permits from the Navajo Nation Environmental Protection Agency Air Quality Control Program.

Additionally, the Operator is required to comply with all applicable Federal, State and Local laws and regulations.

## **2. Alternatives Including the Proposed Action**

### **2.1 Alternative A - No Action**

The BLM NEPA Handbook (H-1790-1) states that for Environmental Assessments (EAs) on externally initiated proposed actions, the No Action Alternative generally means that the proposed activity will not take place. This option is provided in 43 CFR 3162.3-2 (h) (2). This alternative would deny the approval of the Sand and Gravel Lease necessary to construct the Proposed Action on Navajo Tribal surface, and the current land and resource uses would continue to occur in the proposed project area. No mitigation measures would be required.

The No Action Alternative is presented for baseline analysis of resource impacts.

### **2.2 Alternative B Proposed Action**

The Proposed Action involves upgrading of an existing access road and expansion of an abandoned depleted pit. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Section 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. A project location map and plat of the proposed pit expansion is attached as Appendix 1.

### **2.2.1. Gravel Pit**

The proposed gravel pit expansion is in the NE/4 of Section 10, the SE/4 of Section 3, and the NE/4 of Section 2 (T. 23 N., R. 18 W.). The northern boundary is along an existing two-track road, with the existing abandoned gravel pit on the north side of the road at the east end. The eastern boundary is along an existing two-track road. The southern boundary is along the south edge of Grey Mesa. The western boundary is across undisturbed land. See Section 6 of Appendix 2 for proposed construction, operation and reclamation procedures for the Proposed Action.

### **2.2.2. Access Road**

The access road is in the SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and the SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.). It begins on the west side of US Highway 491 in the NE/4 of Section 36 (T. 24 N., R. 18 W.) and heads west around the north side of a residential area. It continues southwest and then south to end at the proposed gravel pit expansion in the SW/4 of Section 2 (T. 23 N., R. 18 W.).

Upgrading will consist of rockering low water crossings and installing a cattle guard in the US 491 fence at Mile Post ≈55.99. Low water crossing work will consist of excavating a swath below grade and piling the excavated material atop the arroyo bank. The swath will then be packed with pit run rock. The road dimensions will be 20 feet by 2 miles (4.85 acres).

## **2.3 Alternatives Considered But Not Analyzed In Detail**

Other locations for the Proposed Action were considered. The present location of the Proposed Action was chosen to utilize existing disturbance. No significant issues were identified for the present location of the Proposed Action during the following activities:

1. On-site inspections;
2. Cultural Resources Inventory;
3. Threatened, Endangered and Special Status Species Surveys of the location of the Proposed Action; and
4. Review of Navajo Nation Department of Fish and Wildlife species of concern known to occur or with the potential to occur on the 7.5 minute Newcomb and Sheep Springs, NM Quadrangle.

No additional alternatives for the Proposed Action have been considered.

### 3. Description of Affected Environment

This section describes the environment that would be affected by implementation of the alternatives described in Section 2. Aspects of the affected environment described in this section focus on the relevant major resources or issues. Certain critical environmental components require analysis under BLM policy. These items are included below in Table 3.0. Following the tables, only the aspects of the affected environment that are potentially impacted are described.

Table 3.0a: Critical Elements of the Affected Environment

| Resources                               | Located in Project Area | Not Located in Project Area | Further Analysis Presented in Text | Basis for No Further Analysis                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------|-------------------------|-----------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air Quality                             | X                       |                             | X                                  |                                                                                                                                                                                                                                                                                                                                            |
| Areas of Critical Environmental Concern |                         | X                           |                                    |                                                                                                                                                                                                                                                                                                                                            |
| Cultural Resources                      | X                       |                             | X                                  |                                                                                                                                                                                                                                                                                                                                            |
| Native American Religious Concerns      |                         | X                           |                                    | There are no known traditional cultural properties in the area of the Proposed Action.                                                                                                                                                                                                                                                     |
| Environmental Justice                   | X                       |                             | X                                  |                                                                                                                                                                                                                                                                                                                                            |
| Farmlands, Prime or Unique              |                         | X                           |                                    |                                                                                                                                                                                                                                                                                                                                            |
| Floodplains                             |                         | X                           |                                    | A review of the Federal Emergency Management Agency Flood Insurance Rate Map for the area of the Proposed Action indicates that the Proposed Action is not located within 100-year floodplain. Therefore, there will be no involvement with any 100-year floodplain as a result of the construction of the Proposed Action. (USDOI, 2009). |

| Resources                        | Located in Project Area | Not Located in Project Area | Further Analysis Presented in Text | Basis for No Further Analysis                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------|-------------------------|-----------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Invasive, Non-native Species     | X                       |                             | X                                  | A botanical survey of the area of the Proposed Action (Appendix 4) indicated the presence of halogeton ( <i>Halogeton glomeratus</i> ), an invasive non-native species in the project area. No other invasive or non-native species were found in the project area. Any future infestations should be handled according to directives set forth in Section 3.                                                               |
| Threatened or Endangered Species |                         | X                           |                                    | There are no known threatened or endangered species or species of concern known to occur within one mile of the project area (Appendix 3). The Proposed Action was surveyed for listed species with the potential to occur in the Newcomb and Sheep Springs, NM 7.5 minute quadrangle. A complete listing of habitat and species found during the surveys is contained in the Biological Assessment attached as Appendix 4. |
| Wastes, Hazardous or Solid       |                         |                             | X                                  |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Water Quality – Surface/Ground   | X                       |                             | X                                  |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Wetlands/Riparian Zones          |                         | X                           |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Wild and Scenic Rivers           |                         | X                           |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Wilderness                       |                         | X                           |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                             |

Table 3.0b: Non-Critical Elements of the Affected Environment

| Resources                          | Located in Project Area | Not Located in Project Area | Further Analysis Presented in Text | Basis for No Further Analysis                                                                                               |
|------------------------------------|-------------------------|-----------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| General Topography/Surface Geology | X                       |                             | X                                  |                                                                                                                             |
| Mineral Resources                  | X                       |                             | X                                  | The purpose of the Proposed Action is to mine gravel. No other mineral resources should be impacted by the Proposed Action. |
| Soils/Watershed/Hydrology          | X                       |                             | X                                  |                                                                                                                             |
| Paleontology                       |                         | X                           |                                    |                                                                                                                             |
| Vegetation, Forestry               | X                       |                             | X                                  |                                                                                                                             |
| Livestock Grazing                  | X                       |                             | X                                  | See Land Use Section 3.6 for further analysis.                                                                              |
| Special Status Species             |                         | X                           |                                    |                                                                                                                             |
| Wildlife                           | X                       |                             | X                                  |                                                                                                                             |
| Wild Horse and Burros              |                         | X                           |                                    |                                                                                                                             |

| Resources                | Located in Project Area | Not Located in Project Area | Further Analysis Presented in Text | Basis for No Further Analysis                                                                                                                                                                                                                                                                                     |
|--------------------------|-------------------------|-----------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recreation               |                         | X                           |                                    | The Proposed Action is not located in a designated recreation area and does not receive any dispersed recreation.                                                                                                                                                                                                 |
| Visual Resources         | X                       |                             | X                                  |                                                                                                                                                                                                                                                                                                                   |
| Public Health and Safety |                         |                             | X                                  |                                                                                                                                                                                                                                                                                                                   |
| Noise                    |                         | X                           |                                    | The Proposed Action would be located in a relatively isolated location and is not in or within 400 feet of a BLM designated Noise Sensitive Area (NSA), nor is the pit located within 400 feet of any dwelling, residence, or building. There are no houses located within a quarter mile of the Proposed Action. |

### 3.1 General Topography/Surface Geology

The pit would be excavated on a relatively flat area on a mesa top. The soil in the area of the proposed pit and most of the existing access is fine sandy loam, with areas of sandy clay loam. These soils were derived from fan alluvium derived from sandstone and shale (USDA 2009).

#### 3.1.1. Direct and Indirect Effects

1. A direct effect to the natural topography would result from leveling of the area for construction activities.
2. An indirect effect to natural drainage patterns would result from leveling of the natural topography for the pipeline construction.
3. An indirect effect to soil and seed bank disturbance/loss would result from leveling of the natural topography.

#### 3.1.2. Mitigation

1. Surface disturbance and vehicular traffic would be limited to approved locations to reduce the area of disturbance.
2. Disturbed areas would be reclaimed pursuant to Appendix 2, Section 6. Reseeding would help prevent soil loss and seed bank disturbance/loss. Successful reclamation will take two to three years.
3. Use of Best Management Practices listed in Appendix 2.

### 3.2 Air Quality

Air quality in the San Juan Basin is affected both by nearby industry and by natural terrain. The primary sources of air pollutants in the basin are from electrical power generation plants, oil/gas refineries and treating facilities and compressor stations. Additional air quality impairment results from the cumulative impact of area motor vehicle emissions and dust, and natural gas well pads. Since the San Juan Basin is a natural depression, air masses sometimes stagnate from lack of circulation resulting in diminishing air quality. The New Mexico Air Quality Bureau (NMAQB) is responsible for enforcing the state and national ambient air quality standards in New Mexico. Any emission source must comply with the NMAQB regulations (USDI, BLM 2003b).

The project area lies within the Four Corners Interstate Air Quality Control Region. Initial cumulative air quality analysis was conducted in the final EIS for the Proposed Farmington Resource Management Plan (USDI, BLM 2003a). At the present time, the counties that lie within the jurisdictional boundaries of the FFO are classified as in attainment of all state and national ambient air quality standards as defined in the Clean Air Act of 1972, as amended (USDI, BLM 2003b). However, during the summers of 2000 through 2002, ozone levels in San Juan County were approaching non-attainment. Additional modeling and monitoring was conducted by Alpine Geophysics, LLC and Environ International Corporations, Inc., in 2003 and 2004. Results of the modeling suggest the episodes recorded in 2000 through 2002 were attributable to regional transport and high natural biogenic source emissions. The model also predicted that the region will not violate the ozone NAAQS through 2007 and that the trends in the 8-hr ozone values in the region are declining. There is no indication at this time that the approval of the proposed action would result in a violation of ambient air quality standards.

Recently, the BLM initiated the process by which future natural gas development would occur under the jurisdiction of the Durango, Colorado San Juan Public Lands Center. The cumulative air quality impact assessment performed by Durango, which included Farmington's potential emission sources, determined that potential visibility impacts to federal PSD Class I Areas (Mesa Verde National Park and the Wenimuche Wilderness Area) could occur. Additional air quality monitoring and modeling may be required. The BLM will work directly with the state regulatory agency to assure that any data gathered meets state standards. Results may require additional mitigation measures on future projects.

USEPA, Region IX, and the Navajo Nation EPA Air Quality Control program are responsible for administering air quality regulations on Navajo Tribal Trust and Allotted Lands in New Mexico. Navajo Nation Air Quality Control program (NNAQCP) is responsible for the implementation and enforcement of the Navajo Air Pollution Prevention and Control Act (NAPPCA), as described in Title 4, Chapter 11, Sec. 1101-1162 of the NAPPCA and encompassing the area defined in 7 NN Sec. 254.

### **3.2.1. Direct and Indirect Effects**

1. There would be a short-term increase in dust during the upgrading of the existing access road.
2. The Proposed Action would lead to a long-term local increase in combustive emissions from operating vehicles, earth moving, crushing and separating equipment.

### **3.2.2 Mitigation**

1. Recon would apply water for dust control if necessary.
2. Surface disturbance and vehicular traffic would be limited to the approved locations to reduce combustive emissions and dust.
3. Disturbed areas will be reclaimed pursuant to Section 6 of Appendix 2.
4. Crushing and separating operations at the gravel pit will be performed by a contractor. The contractor will be responsible for obtaining the required permits from the Navajo Nation Environmental Protection Agency Air Quality Control Program.

## **3.3 Water Quality: Surface and Groundwater**

The hydrologic setting of the area is characterized by several ephemeral drainages filled with alluvium which is the principle source of ground water recharge. Surface flows are associated with small ephemeral drainage from snow melt, and summer thunderstorms. These small drainages are categorized as sandy, silty, clayey or gravelly sediment on the floodplain or streambeds. The alluvial cover usually conceals evidence of discharge, and white salt or alkali deposits associated with small field springs are often the only surface expression of ground water discharge near the area. Most discharge to the alluvial channels is lost by evapotranspiration. However, some water also moves as subsurface flow. The flows associated with ephemeral drainage are classified as calcium sulfate and sodium sulfate water. Predominate ions are sodium (Na) and sulfates (SO<sub>4</sub>) with increasing concentrations as the flow moves downstream. Salinity (salt) concentrations also increase in the water as it flows downstream. This is a result of porous sandstone, inter-bedded shale and dissolved solids which are inorganic ions of sodium, potassium, calcium, magnesium, bicarbonate, chloride and sulfates.

Precipitation is the primary source of groundwater. Permeability is often low, reducing yields to 5 to 50 gallons per minute depending on where you are in the San Juan Basin. Deeper aquifers have a greater yield often in the 100 gallon per minute range.

Local surface drainage in the area of the Proposed Action is northeast off of Grey Mesa into an unnamed ephemeral wash that drains into Captain Tom Wash then on to the Chaco River. Ephemeral flows are limited to snow melt and rainfall. Average annual precipitation in the project areas is 5.97 inches [WRCC 2009].

The communities of Newcomb and Sheep Springs produce water from several groundwater sources including alluvium and the Morrison, Menefee, Gallup Sandstone, and Dakota formations (Navajo Gallup Water Supply Project, Technical Memorandum, March 16, 2001). The New Mexico State Engineer Office Waters Database has no record of water, injection or disposal wells located in the area of the Proposed Action (NMSEO 2009). There are no springs on the sides of the mesa which could indicate shallow depth to groundwater. Due to the deep water table, there are no anticipated affects from excavation on groundwater resources. The excavation depth would not exceed 8 feet.

### **3.3.1. Direct and Indirect Effects**

1. Increased sediment loading to the adjacent surface drainages through runoff of disturbed soils.
2. Spilled contaminants from operating equipment or vehicles getting into surface or ground hydrology.

### **3.3.2. Mitigation**

The following actions will be taken to protect Surface and Groundwater resources:

1. Reclamation and Erosion and Sediment Control procedures in Section 6 of Appendix 2.
2. Any spilled contaminants will be cleaned up as soon as possible to prevent run-off of contaminants into surface hydrology or infiltration into groundwater.

## **3.4 Soils – Watershed – Hydrology**

The soils in the San Juan Basin were formed primarily in two kinds of parent material: alluvial sediment and sedimentary rock. The alluvial sediment is material that was deposited in river valleys and on mesas, plateaus, and ancient river terraces. The material has been mixed and sorted in transport and has a wide range in mineralogy and particle size. Sedimentary parent material consists mainly of sandstone and shale bedrock. These shale and resistant sandstone beds form prominent structural benches, buttes and mesas bounded by cliffs.

The soils in the area of the proposed pit and existing access/haul road are Hamburn clay loam, Badland-Genats complex and the Mesa Fine sandy loam. The approximate areas of the project located in each soil mapping unit are shown in Appendix 6, Web Soil Survey Map. Also included in Appendix 6 are the soil descriptions for each of these units.

The San Juan Basin consists of broad mesas interspersed with many deep canyons with steep canyon walls, dry washes, entrenched narrow valleys, alluvial fans and floodplains. Elevations range from approximately 4,800 feet, where the San Juan River flows into Utah, to approximately 8,800 feet near the Jicarilla Apache land. The planning area is divided into watersheds based on the Hydrologic Units (4<sup>th</sup> level) delineated by the USGS. Principally, the administrative area under the jurisdiction of the Farmington Field Office consists of five of these

4<sup>th</sup> level hydrologic watershed units. These watershed units are: (1) Middle San Juan, (2) Animas, (3) Upper San Juan, (4) Blanco Canyon, and (5) Chaco. The Proposed Action is located in the Chaco watershed unit.

#### **3.4.1. Direct and Indirect Effects**

1. Soils would be structurally reduced and mixed, exposed to the elements of wind and water erosion, and compacted.
2. Due to wind and water, the soils would be subject to an undetermined amount of erosion until vegetation is established.
3. Natural drainage patterns would be disrupted during the Proposed Action.

#### **3.4.2. Mitigation**

1. Reclamation and Erosion and Sediment Control procedures in Section 6 of Appendix 2.
2. Use of Best Management Practices listed in Appendix 2 would reduce impacts to soils, watershed and hydrology.

### **3.5 Hazardous or Solid Waste Materials**

As a result of the Proposed Action, solid waste materials would be generated. Generation of hazardous waste would not be expected. If hazardous waste is inadvertently generated, the proper authorities would be consulted regarding the disposal of such waste.

#### **3.5.1. Direct and Indirect Effects**

Trash and unwanted materials would be generated by construction and operation.

#### **3.5.2. Mitigation**

The operations trailer will have self contained water and sewage tanks. Sewage will be hauled to a state approved dump station off the reservation. A trash cage or dumpster will be placed next to the camper and scales. Trash cage or dumpster will be hauled to an approved transfer station or landfill.

### **3.6 Land Use**

The Proposed Action would be located on Navajo Tribal Trust Surface. The overall site is moderately to heavily disturbed from previous gravel pit activities, grazing, and human activities such as refuse dumping, with almost no disturbance along the western boundary of the expansion site.

#### **3.6.1. Direct and Indirect Effects**

The Proposed Action would clear from 16.6 acres at a time with a maximum disturbance of 83.73 acres depending on the gravel market. The road consists of 4.85 acres of existing disturbance. Clearing of vegetation would have a direct effect on livestock grazing in the area.

### **3.6.2. Mitigation**

1. Reclamation and re-vegetation of the Proposed Action as stated in Section 6 of Appendix 2. Successful reclamation is expected to take two to three years.
2. Field Clearance has been granted for the Proposed Action.

## **3.7 Vegetation, Forestry**

The access road is located in the shallow basin adjacent to Grey Mesa and begins on the west side of US 491. The road then travels south-southwest, climbing up the mesa side to the north side of the gravel pit expansion. Existing habitat at the access road consists of barren, sandy gravel surfaces with sparse vegetation (Figure 2 - Appendix B of Biological Assessment attached as Appendix 4 of this document). A power line crosses the access road at the eastern end, near US 491. Vegetation is sparse along the access route and is predominated by salt desert scrub with species such as shadscale (*Atriplex confertifolia*) and alkali sacaton (*Sporobolus airoides*).

The pit expansion site is located on the top of Grey Mesa. The dominant plants are shadscale and alkali sacaton with areas of galleta (*Pleuraphis jamesii*). Winterfat (*Krascheninnikovia lanata*) is common in the west third of the area. Russian-thistle (*Salsola tragus*) and false buffalo-grass (*Munroa squarrosa*) are scattered throughout and are occasionally dominant. The plant community along the rocky rim of the southern boundary of the project area is dominated by purple three-awn (*Aristida purpurea*).

Refer to the Biological Assessment in Appendix 4 for more information.

### **3.7.1. Direct and Indirect Effects**

The Proposed Action would clear 83.73 acres of new disturbance.

### **3.7.2. Mitigation**

Reclamation of the Proposed Action as outlined in Section 6 or appendix 2 would mitigate impacts to vegetation and forestry from the construction of the Proposed Action. Reseeding would replace vegetation removed during operation of the pit. Successful reclamation is expected to take two to three years.

### **3.8 Invasive, Non-native Species**

A Biological Assessment of the area of the Proposed Action (Appendix 4) indicated the presence of halogeton (*Halogeton glomeratus*), an invasive non-native species. No other invasive or non-native species were found in the project area.

#### **3.8.1. Direct and Indirect Effects**

Noxious weeds may become established in disturbed areas within the Proposed Action.

#### **3.8.2. Mitigation**

Recon will make every effort to ensure that noxious weeds do not spread over disturbed areas. If noxious weeds become established within the Proposed Action, Recon would contact the Navajo Nation EPA Pesticides Program, Glenna Lee, Program Manager (928) 871-7815 for list of approved herbicides and applicators.

### **3.9 Wildlife**

There are several residences along the southeast edge of the site, near the beginning of the access road, as well as a horse corral at the south edge. Domestic horses were on site during the wildlife survey. With the exception of the mesa sides and some grassland habitat, there are few habitat features of wildlife value in the general area. Although there is a small drainage lined with several small salt cedar (*Tamarix sp.*) in the basin, there are no wetlands, perennial flows, or apparent water sources.

Refer to the Biological Assessment in Appendix 4 for more information.

#### **3.9.1. Direct and Indirect Effects**

The wildlife that uses the site may be displaced during construction. Removal of vegetation for construction of the Proposed Action would reduce wildlife forage in the area.

#### **3.9.2. Mitigation**

Reclamation of the Proposed Action as outline in Section 6 of Appendix 2 would reduce the long-term impacts to wildlife that use the area. Reseeding disturbed areas would replace vegetation removed during operation of the pit. In some instances, there is a benefit from successful reclamation due to an increase in vegetative cover and wildlife forage. Successful reclamation is expected to take two to three years.

### **3.10 Visual Resources**

Visual Resource Management (VRM) on public lands is conducted in accordance with BLM Handbook 8410 and BLM Manual 8411. Further details of the Farmington Field Office VRM Program are contained on pages 2-9 to 2-10 and 3-61 to 3-63 of the Farmington PRMP/FEIS. The proposed project falls outside the VRM designation. The Proposed Action would sit on top of Grey Mesa Southwest of Newcomb, New Mexico. All staging and crushing would be located on top of the mesa at the pit location. There are houses located south of the Proposed Action below the mesa top.

#### **3.10.1. Direct and Indirect Effects**

Impacts to visual quality would come from dust, truck traffic and placement of heavy equipment during operation of the pit.

#### **3.10.2. Mitigation**

1. Reclaiming the Proposed Action as outlined in Section 6 of Appendix 2 will reduce impacts to visual resources.
2. Reseeding will stabilize the soil and reduce blowing dust, Recon will apply water for dust control if necessary until vegetation is re-established.
3. Limiting vehicle traffic/haul trucks to designated areas will also reduce visual impacts.

### **3.11 Cultural or Historical Values**

A Cultural Resources Inventory of the Proposed Action was performed by Complete Archeology Service Associates. Three previously recorded sites are located along the existing access. No new Cultural Resource, eligible properties, non-eligible properties or archaeological resources were found in the area. A Cultural Resources Compliance Form is attached as Appendix 5.

#### **3.11.1. Direct and Indirect Effects**

1. There is a potential impact to the three previously recorded sites during upgrades of the existing access.
2. Potential exists for the Proposed Action to impact undiscovered or improperly inventoried cultural resources that may be discovered during construction of the Proposed Action.

#### **3.11.2. Mitigation**

1. No widening of the existing access road will be done to avoid the three previously recorded sites.
2. Any cultural and/or paleontology resource (historic or prehistoric site or object) discovered by Recon or its contractors during the Proposed Action, or any person working on their behalf, would be immediately reported to the Navajo Nation

Historic Preservation Department (NNHPD) at (928) 871-7148 and/or the BLM Farmington Field Office Archaeologist. Recon or its contractors would suspend all operations in the immediate area of such discovery until approval to proceed is issued by NNHPD. An evaluation of the discovery would be made by the NNHPD archaeologist to determine appropriate action to prevent the loss of significant cultural or scientific values.

### **3.12 Environmental Justice**

Executive Order 12898 requires federal agencies to assess projects to ensure there is no disproportionately high or adverse environmental, health, or safety effects on minority and low-income populations. Minorities comprise a large proportion of the population residing inside the boundaries of the Farmington Field Office (see pages 3-106 to 3-107 of the PRMP/FEIS for more details on ethnicity and poverty rates).

#### **3.12.1. Direct and Indirect Effects**

There are no houses located within a quarter mile radius of the Proposed Action. The closest houses are located south of the east end of the proposed pit expansion, below the mesa. It is not expected that minority or low income populations would be directly affected in the vicinity of the Proposed Action. Indirect effects could include positive effects due to overall employment opportunities related to the oil and gas and service support industry in the region as well as the economic benefits to state and county governments related to royalty payments and severance taxes. Negative effects could include a small increase in activity and noise disturbance in areas used for grazing, wood gathering, or hunting. However, these effects would apply to all public land users in the project area. A more detailed description of potential impacts is contained in the PRMP/FEIS p.4-120 and 4-129.

### **3.13 Public Health and Safety**

#### **3.13.1. Direct and Indirect Effects**

Risks to the public associated with the operation of the gravel pit include increased traffic on public roads and potential air emission exposure.

#### **3.13.2. Mitigation**

1. Vehicle traffic will be limited to approved areas and roads.
2. Recon or its contractors will apply water for dust control if necessary.
3. The contractor conducting the crusher/seperator operations will obtain all necessary air permits from the Navajo Nation Environmental Protection Agency.

#### 4. Cumulative Effects

Past impacts to the area include the existing gravel pit and access road, residential development, power lines, and over grazing. The Proposed Action would increase long-term surface impacts by up to 83.73 acres. This proposed disturbance would add to the cumulative impacts to air quality, livestock grazing, noise levels, soil erosion and sedimentation into the local watershed. There are no other known development plans for the project area in the reasonable foreseeable future.

#### 5. Consultation/Coordination

This section includes individuals or organizations from the public, public land users, the interdisciplinary team, and permittees that were contacted during the development of this document.

**Table 5.1 Interdisciplinary Team**

| Interdisciplinary Team |                                                   |                                            |                              |                           |
|------------------------|---------------------------------------------------|--------------------------------------------|------------------------------|---------------------------|
| ID Team Member         | Title                                             | Organization                               | Performed Onsite Inspection? | Date of Onsite Inspection |
| Cynthia A. Dean        | Consultant, Author, Environmental Assessment      | Permits West, Inc.                         | NO                           | NA                        |
| June M. Galloway       | Wildlife Biologist, Author, Biological Assessment | Permits West, Inc.                         | YES                          | 6/9/2009                  |
| Brian Wood             | Consultant, Author, Surface Use Plan              | Permits West, Inc.                         | NO                           | NA                        |
| Marian Rhoman          | Botanist                                          | Permits West, Inc.                         | YES                          | 6/17-19/2009              |
| Laurens Hammack C.     | Archaeologist                                     | Complete Archaeological Service Associates | YES                          | 6-/5-6/2009               |

## 5.1 Contact Information

Permits West, Inc.  
37 Verano Loop  
Santa Fe, NM 87508  
505-466-8120 FAX: 505-466-9682

Recon Oil Company  
920 E. Highway 66  
Gallup, NM 87301

## 6. References

[NMSEO] New Mexico Office of the State Engineer, 2009. "Water Administration Technical Engineering Resource System (W.A.T.E.R.S. Database)"  
<http://www.seo.state.nm.us/water-info/index.html>

U.S. Department of the Interior, Bureau of Land Management. 2003. *Farmington Proposed Resource Management Plan and Final Environmental Impact Statement*. Farmington, New Mexico.

U.S. Department of the Interior, Bureau of Land Management. 2003. *Farmington Resource Management Plan Record of Decision*. Farmington, New Mexico.

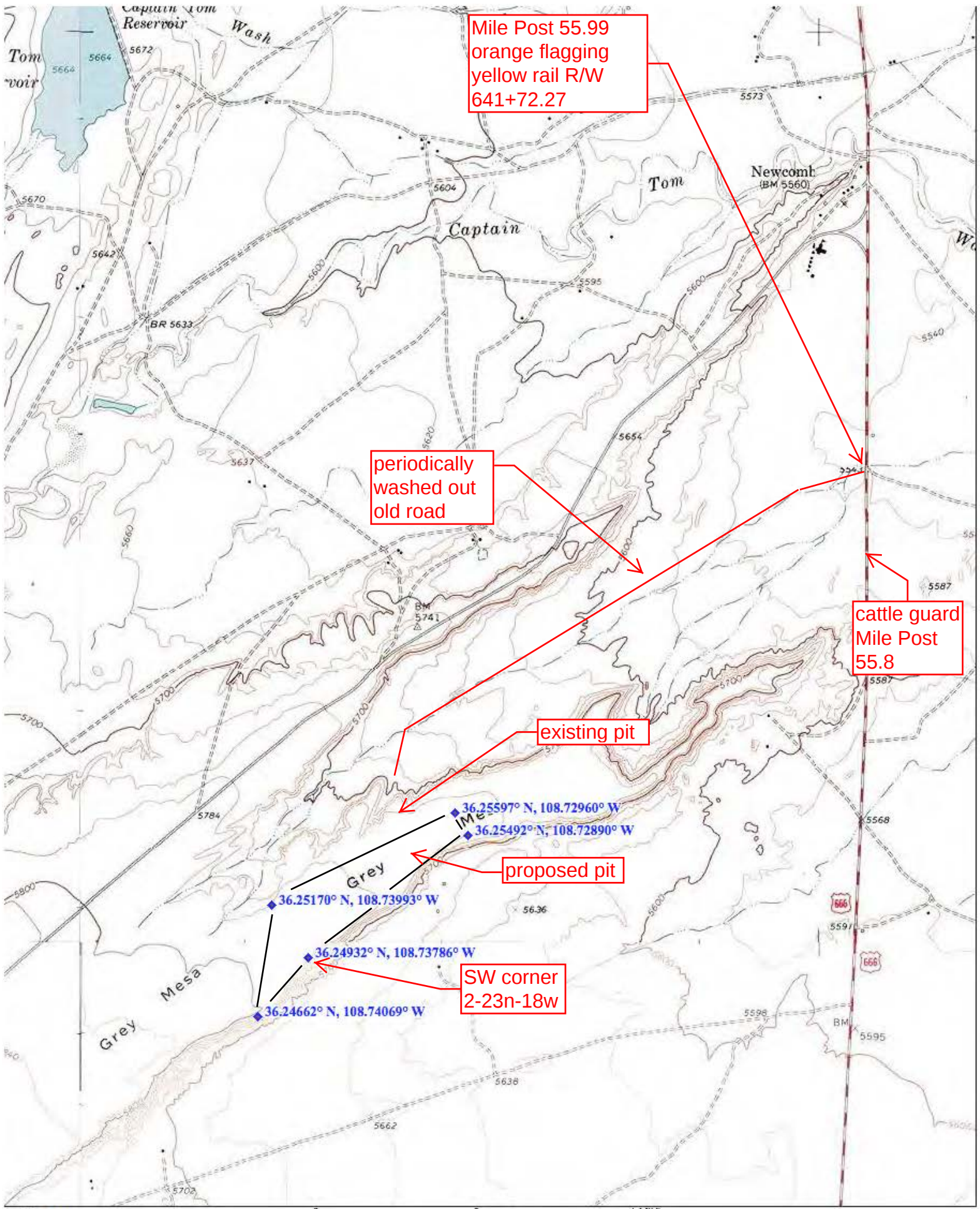
U.S. Department of the Interior (USDOI, 2009), Bureau of Land Management and United States Forest Service. 2008, [www.geocommunicator.gov](http://www.geocommunicator.gov), accessed 7/19/2009.

Web Soil Survey, 2009. National Cooperative Soil Survey, *Soil Survey of San Juan County New Mexico, Eastern Part*. USDA 1980, United States Department of Agriculture, Soil Conservation Service, Soil Survey of San Juan county New Mexico Eastern Part. Accessed 7/17/2009.  
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

WRCC 2009 (Western Regional Climate Center) Newcomb, NEW MEXICO (296098)  
Period of Record Monthly Climate Summary Period of Record: 6/ 6/1948 to 4/30/1971  
<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nmnewc>

## 6.1 Appendices

1. Location Map and Proposed Pit Expansion Plat
2. Surface Use Plan
3. Navajo Fish & Wildlife Correspondence Letter
4. Biological Assessment
5. Cultural Resources Compliance Form
6. Web Soil Survey Map and Soil Unit Descriptions
7. Biological Resources Compliance Form (BRCF)



Mile Post 55.99  
orange flagging  
yellow rail R/W  
641+72.27

periodically  
washed out  
old road

cattle guard  
Mile Post  
55.8

existing pit

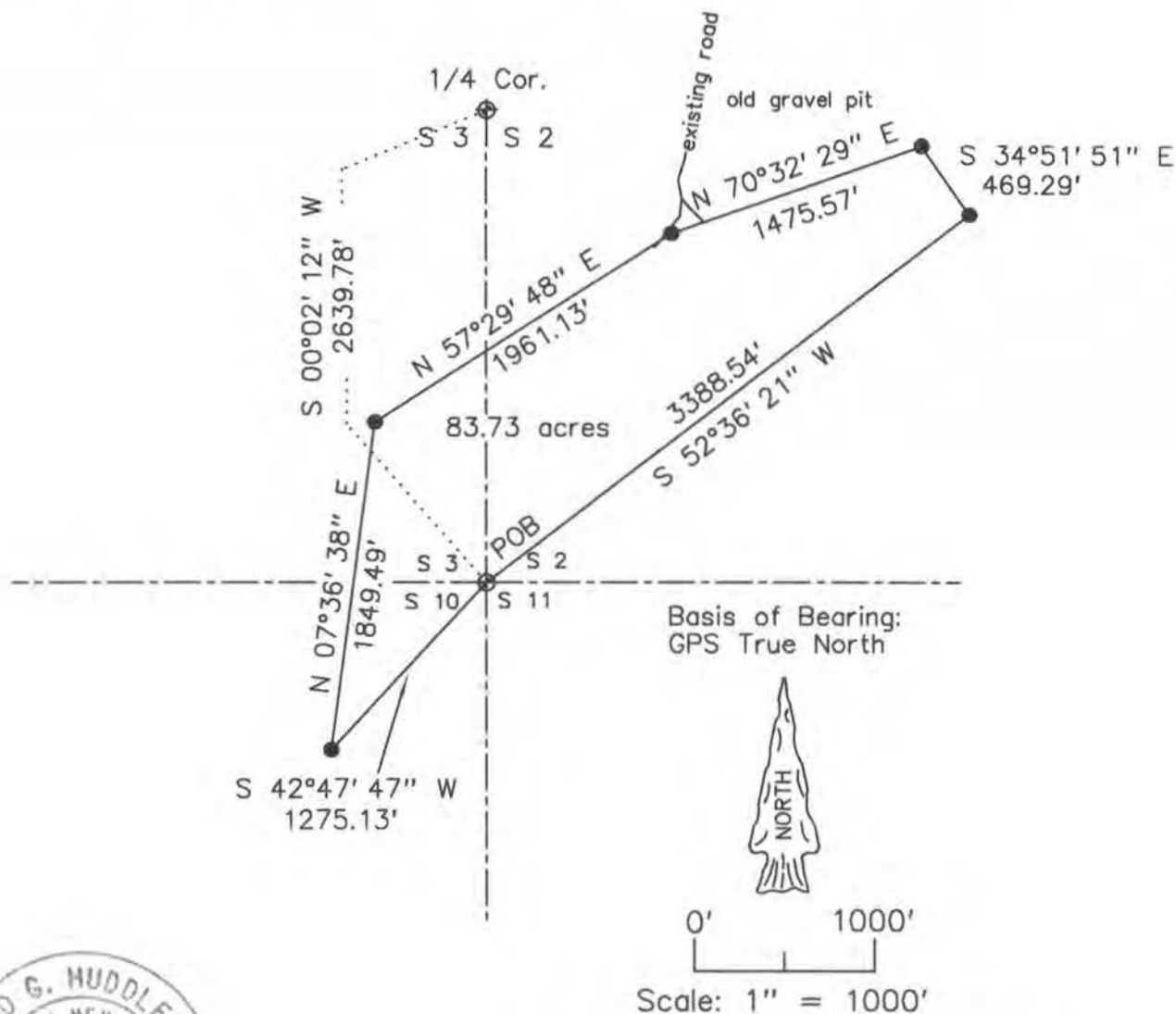
proposed pit

SW corner  
2-23n-18w

LEGAL DESCRIPTION — 83.73 acres more or less

A tract of land contained in Sections 2, 3 and 10, T.23 N., R.18 W., NMPM, San Juan County, New Mexico, more particularly described as follows:

Beginning at the SW Corner of said Section 2;  
thence, S 42°47' 47" W a distance of 1275.13 feet;  
thence, N 07°36' 38" E a distance of 1849.49 feet;  
thence, N 57°29' 48" E a distance of 1961.13 feet;  
thence, N 70°32' 29" E a distance of 1475.57 feet;  
thence, S 34°51' 51" E a distance of 469.29 feet;  
thence, S 52°36' 21" W a distance of 3388.54 feet back to the point of beginning.  
SUBJECT TO all easements of record or prescriptive.



I, Gerald G. Huddleston, a New Mexico registered Professional surveyor certify that I conducted and am responsible for this survey, that this survey is true and correct to the best of my knowledge and belief, and that this survey and plat meet the Minimum Standards for Surveying in New Mexico for a gravel pit.

I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this is a survey of a proposed gravel pit.

HUDDLESTON LAND SURVEYING  
P.O. DRAWER KK / CORTEZ, CO 81321 / 970-565-3330

**1. Pit Location**

Pit area will not exceed 83.73 acres and will be located in Sections 2, 3, & 10, T. 23 N., R. 18 W., San Juan County, NM. This is ≈2-1/2 miles southwest of Newcomb. Proposed pit is immediately south and west of an abandoned depleted pit used from ≈1977 to ≈1983 for construction on US 666 (now 491) and Newcomb High School.

**2. Access**

Existing 2 mile long road will be upgraded. Road was built to access original pits and bypasses all houses. No house is within a quarter mile of the road. Upgrading will consist of rocking low water crossings and installing a cattle guard in the US 491 fence at Mile Post ≈55.99. Low water crossing work will consist of excavating a swath below grade and piling the excavated material atop the arroyo bank. Swath will then be packed with pit run rock. Road dimensions will be 20' x 2 miles = 4.85 acres. Road crosses Section 2, T. 23 N., R. 18 W. and Sections 35 and 36, T. 24 N., R. 18 W.; all San Juan County, New Mexico.

**3. Land User Consent**

Field clearance request for 88.58 acres (83.73 for pit + 4.85 for road) was received by Project Review Office on June 19, 2009. Newcomb Chapter has endorsed the pit  
.

**4. Environmental Assessment**

No Threatened or Endangered species were found during June, 2009 surveys. An environmental assessment (EA) is being prepared.

**5. Archaeology Report**

Report was filed June 15, 2009. Archaeologist recommended clearance, provided the road is not widened beyond 20'. HPD has completed its review and forwarded it to BIA for approval.

**6. a. Mining Sequence & Timing**

Operations will initially move south from the abandoned pit, and then west. No more than 20% (≈16.6 acres) of the pit will be excavated at any one time. As each fifth of the pit is excavated, the previous fifth of the pit will be reclaimed. Full development of each fifth will depend on the gravel market. It is anticipated the initial market will be for construction companies widening US 491 to four lanes.

**6. b. Configuration**

Maximum depth will be  $\approx 8'$ . Maximum width of the 83.73 acres will be  $\approx 1,000'$ . Maximum length of the 83.73 acres will be  $\approx 4,500'$ . Maximum height above original grade will be  $\approx 10'$  (soil piles). Crusher fines and marketable material will be piled in the bottom of the pit.

**6. c. Reserves**

An estimated 860,000 cubic yards (= 1,075,000 tons @ 2,500 pounds per cubic yard) could be excavated. This estimate is based on:

50' wide unexcavated swath on all sides (for soil piles & erosion control)

8' depth - 6" of topsoil to be saved = 7-1/2' of useable material

5:1 slopes

An estimated 215,000 tons could be excavated per year over the five year term of the lease, depending on market conditions.

**6. d. Slope Stability**

Pit slopes will be no steeper than 5:1. There will be no high wall.

**6. e. Pile Stability**

Pile slopes will be no steeper than 1:1. This applies to topsoil, subsoil (overburden), unprocessed rock, gravel, sand, and unmarketable fines.

**6. f. Methods & Equipment**

The top 6" of soil will be stripped by a bulldozer and stockpiled around the perimeter of the area to be excavated. (No material will be pushed over cliffs.) The topsoil pile will be broadcast seeded and covered with mulch. Geotextile fences or straw bale barriers will be installed on the outside (opposite side of pile from pit) of the topsoil piles to control storm water runoff.

Subsoil (overburden), if any, will be excavated by a bulldozer and piled between the topsoil pile and the pit.

Gravel will be ripped with a bulldozer and pushed into the primary crusher, or excavated by a front end loader or tracked excavator and deposited into a dump truck. The dump truck will haul its load to the primary crusher. The load will either be dumped directly into the crusher or beside the crusher from where it will be pushed into the crusher.

The primary crusher will crush the rocks to  $\approx 6"$  or less in diameter. The crushed rock will then go through a sorter which will distribute the rock via conveyor belt(s) to the secondary crusher(s). The secondary crusher(s) will crush the rock even smaller. Rock

discharged from the secondary crusher will either be stockpiled for future sale, or loaded into dump trucks and hauled to the customer's project.

A camper trailer and scales will be set near the pit entrance/exit. Trailer will have self contained water and sewage tanks. Sewage will be hauled to a state approved dump station off the reservation. A trash cage or dumpster will be placed next to the camper and scales. Trash cage or dumpster will be hauled to an approved transfer station or landfill.

**6. g. Drilling & Blasting**

There will be no drilling or blasting.

**6. h. Geology & Hydrology**

The Quaternary gravel deposit overlies the Menefee shale. The gravel appears to have been shed from the Chuska Mountains hundreds of thousands, if not millions, of years ago. There are no water wells within a mile radius. There are no springs on the sides of the mesa which could indicate shallow depth to groundwater. There are no drainage channels or arroyos on the proposed 83.73 acres. Grey Mesa slopes  $\approx 1\%$  from the high point (southwest side at  $\approx 5,800'$ ) to the low point (northeast side at  $\approx 5,760'$ ). Pit will be excavated so storm water runoff slopes inward, not outward.

**6. i. Erosion & Sediment Control**

Erosion and sediment will be controlled in the short term by seeding and mulching soil piles, installing storm water runoff barriers (e. g., straw bales, geotextile fabric fences) around the outside of the soil piles, and sloping the pit towards the interior to form a basin.

Erosion and sediment will be controlled in the long term by contouring slopes to no steeper than 5:1, spreading subsoil, spreading topsoil, ripping compacted areas at least 12" deep on the contour, and seeding.

Road will similarly reclaimed. In addition, road will be blocked at each end and water bars installed. Water bars will be dug at least half in cut and at a  $\approx 45^\circ$  angle. Water bar spacing will be every  $\approx 100$  yards on flat areas and every  $\approx 100'$  the first quarter mile north of the pit.

All disturbed areas will be harrowed and broadcast seeded with the Navajo Department of Agriculture desert grassland mix of 1.5 pounds per acre alkali sacaton, 1.5 pounds per acre curly grass, 2 pounds per acre Indian ricegrass, 1.5 pounds per acre sand dropseed, 3 pounds per acre western wheatgrass, 2 pounds per acre four wing

saltbush, 1.5 pound per acre shadscale, and 1/2 pound per acre bandera penstemon. The seed bed will be drug with a chain or bed spring to cover the seed.

**6. j. Contours**

Reclaimed pit will slope inward at no steeper than 5:1.

**6. k. Bonds**

Navajo Nation Minerals Department will determine the bond amounts. Bonds are expected to be at least \$10,000.

**6. l. Revegetation**

Successful revegetation will be achieved by stockpiling the top ≈6" of soil, stockpiling topsoil separate from the subsoil, seeding and mulching the topsoil pile for interim reclamation, controlling for noxious weeds, ripping compacted areas at least 12" deep to allow easier root growth, ripping on the contour to trap storm water runoff and enhance growth, spreading topsoil evenly, and seeding with the indicated grass, shrub, and forb seed mix. The seed mix variety (8 species) will avoid a monoculture which would be more vulnerable to drought or pests. Once seeded, reclaimed areas will be fenced.

Success will be measured by establishing two fenced control areas. One will be northeast of the pit and the other will be southwest of the pit. Each will be at least 100 yards from the pit, but no more than 200 yards from the pit. Each will be ≈30' x ≈30'. Fences will be livestock proof. The per cent of ground cover in each will be measured. Successful revegetation will be considered achieved if the % of ground cover (excluding noxious weeds) in two random ≈100 yard point intercept transects across the reclaimed area is at least 90% of that found in the two control areas after two years.

**6. m. Top Soil**

The top 6" of top soil will be piled around the perimeter of the pit, seeded, and mulched. The seeding and mulch will preserve the soil fertility and protect it from erosion until it is used in final reclamation.

**7. Health & Safety**

Recon will comply with all Federal and Tribal health and safety regulations. No material will be pushed over cliff edges.

**8. Water Use**

The only water planned to be used at the pit is for the camper trailer. That water will be hauled Recon's office. If any water is needed from Tribal land, then a water use permit will be obtained from the Navajo Nation Department of Water Resources.



THE  
NAVAJO  
NATION

JOE SHIRLEY, JR.  
PRESIDENT  
Ben Shelly  
VICE PRESIDENT

Dept of Fish & Wildlife • P.O. Box 1480 • Window Rock, AZ 86515 • (928) 871-6451 • Fax (928) 871-7069

29 June 2009

File#09PERM17

Brian Wood  
Permits West, Inc.  
37 Verano Loop  
Santa Fe, NM 87508

SUBJECT: RECON OIL COMPANY PROPOSED GREY MESA GRAVEL PIT  
LOCATED IN LEGAL DESCRIPTION SEC. 2, 3, 10 & 11,  
T23N, R18W, SECTIONS 35 & 36, T24N, R18W  
SAN JUAN COUNTY, NM

Mr. Wood:

The following information on species of concern<sup>1</sup> is provided in response to your 02 June 2009 request concerning the subject project, which consists of the Recon Oil Company proposed Grey Mesa gravel pit in San Juan County, NM. The legal description of the project site is T23N, R18W, Sections 2, 3 10 & 11 and T24N, R18W, Sections 35 & 36, San Juan County, NM.

Although the Navajo Fish and Wildlife Department (NFWD) has no record of species of concern occurring on or near the project site(s) at this time, the potential for certain species of concern to occur needs to be evaluated.

Species of concern with potential to occur on the 7.5-minute *Newcomb, NM* quadrangle(s) containing the project boundaries include the following. Potential is based primarily on quadrangle-wide coarse habitat characteristics and species range information. Your project biologist should determine habitat suitability at the project site(s).

1. Antilocapra americana (Pronghorn); NESL group 3.
2. Aquila chrysaetos (Golden Eagle); NESL group 3; MBTA; EPA.
3. Buteo regalis (Ferruginous Hawk); NESL group 3; MBTA.
4. Charadrius montanus (Mountain Plover); NESL group 4; ESA proposed threatened; MBTA.
5. Dipodomys spectabilis (banner-tailed kangaroo rat). Dipodomys spectabilis (banner-tailed kangaroo rat); NESL Group 4.

---

<sup>1</sup>"Species of concern" include protected, candidate, and other rare or otherwise sensitive species, including certain native species and species of economic or cultural significance. For each species, the following tribal and federal statuses are indicated: Navajo Endangered Species List (NESL), federal Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), and Eagle Protection Act (EPA). No legal protection is afforded species with only ESA candidate or NESL group 4 status; please be aware of these species during surveys and inform the NFWD of observations. Documentation that these species are more numerous or widespread than currently known, and addressing these species in project planning and management is important for conservation and may contribute to ensuring they will not be uplisted in the future. Species without ESA or NESL legal protection (e.g., NESL group 4 species) are only included in responses on a regular basis and may not be included in this response. Please refer to the NESL for a list of group 4 species; contact me if you need a copy.

6. Mustela nigripes (Black-footed Ferret); NESL group 2; ESA endangered.
7. Rana pipiens (Northern Leopard Frog); NESL group 2.
8. Vulpes macrotis (Kit Fox); NESL group 4.
9. Sclerocactus mesae-verdae (Mesa Verde Cactus); NESL group 2; ESSA threatened.
10. Puccinellia parishii (Parish's Alkali Grass); NESL group 4.

### AREA 3: LOW SENSITIVITY WILDLIFE RESOURCES

Potential for the black-footed ferret should be evaluated if prairie-dog towns of sufficient size (per NFWD guidelines) occur in the project area.

Potential for Puccinellia parishii should be evaluated if wetland conditions exist that contain white alkaline crusts.

Biological surveys need to be conducted during the appropriate season to ensure they are complete and accurate please refer to NN Species Accounts.<sup>4</sup> Further questions pertaining to surveys should be referred to Species Account. Surveyors on the Navajo Nation must be permitted by the Director, NFWD. Contact Jeff Cole at (928) 871-7068 for permitting procedures. Questions pertaining to surveys should be directed to the NFWD Zoologist (David Mikešic) for animals at 871-7070, and Botanist (Daniela Roth) for plants at (928) 523-8445. Questions regarding biological evaluation should be directed to Jeff Cole (Acting Environmental Reviewer) at 871-7060.

Any settling or evaporation pits that could hold contaminants should be lined and covered. Covering pits, with a net or other material, will deter waterfowl and other migratory bird use. Lining pits will protect ground water quality.

Potential impacts to wetlands should also be evaluated. The U.S. Fish & Wildlife Service's National Wetlands Inventory (NWI) maps should be examined to determine whether areas classified as wetlands are located close enough to the project site(s) to be impacted. In cases where the maps are inconclusive (e.g., due to their small scale), field surveys must be completed. For field surveys, wetlands identification and delineation methodology contained in the "Corps of Engineers Wetlands Delineation Manual" (Technical Report Y-87-1) should be used. When wetlands are present, potential impacts must be addressed in an environmental assessment and the Army Corps of Engineers, Phoenix office, must be contacted. NWI maps are available for examination at the NFWD's Natural Heritage Program (NHP) office, or may be purchased through the U.S. Geological Survey (order forms are available through the NHP). The NHP has complete coverage of the Navajo Nation, excluding Utah, at 1:100,000 scale; and coverage at 1:24,000 scale in the southwestern portion of the Navajo Nation.

The information in this report was identified by the NFWD's biologists and computerized database, and is based on data available at the time of this response. If project planning takes more than two (02) years from the date of this response, verification of the information provided herein is strongly recommended. It should not be regarded as the final statement on the occurrence of any species, nor should it substitute for on-site surveys. Also, because the NFWD's information is continually updated, any given information response is only wholly appropriate for its respective request.

For a list of sensitive species on the Navajo Nation in addition to the species listed on the Navajo Endangered

---

<sup>4</sup> Available free of charge on our website at <http://nnhp.navajofishandwildlife.org/>

Species List (NESL) please refer to our website at [www.nndfw.org](http://www.nndfw.org).

An invoice for this information is attached.

If you have any questions I may be reached at (928) 871-6472.



Sonja Detsoi, Wildlife Tech.  
Natural Heritage Program  
Department of Fish and Wildlife

xc: file/chrono



**BIOLOGICAL ASSESSMENT  
FOR RECON OIL'S PROPOSED GREY MESA GRAVEL PIT  
EXPANSION AND ACCESS ROAD  
SAN JUAN COUNTY, NEW MEXICO**

**PREPARED FOR**

**RECON OIL COMPANY  
920 E. HIGHWAY 66  
GALLUP, NM 87301**

**01 JULY 2009  
BY JUNE M. GALLOWAY**

## SUMMARY

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing 'abandoned' gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Sections 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb.

No threatened, endangered, or special status species were observed within or adjacent to the project area during the wildlife and botanical surveys conducted on June 08, 09, and 19, 2009.

## **1.0 INTRODUCTION**

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing 'abandoned' gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Section 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The proposed gravel pit expansion is in the NE/4 of Section 10, the SE/4 of Section 3, and the NE/4 of Section 2 (T. 23 N., R. 18 W.). The northern boundary is along an existing two-track road, with the existing abandoned gravel pit on the north side of the road at the east end. The eastern boundary is along an existing two-track road. The southern boundary is along the south edge of Grey Mesa. The western boundary is across undisturbed land.

The access road is in the SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and the SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.). It begins on the west side of US Highway 491 in the NE/4 of Section 36 (T. 24 N., R. 18 W.) and heads west around the north side of a residential area. It continues southwest and then south to end at the proposed gravel pit expansion in the SW/4 of Section 2 (T. 23 N., R. 18 W.).

The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb (Appendix A).

This Biological Assessment (BA) was prepared to determine potential impacts of the proposed action to endangered, threatened, and candidate wildlife and plant species and habitats within the Grey Mesa project area, in accordance with Section 10 of the Endangered Species Act (ESA). Wildlife and plant surveys were conducted to determine potential presence of suitable habitat and/or site occupation of federally and Navajo Nation-listed threatened, endangered, or special status species.

## **2.0 METHODOLOGY**

Prior to implementation of fieldwork and report preparation, the current lists of federal (USFWS, NM Ecological Field Services Office, 2009) and Navajo Nation (NMDGF, 2009) listed and special status/ sensitive animal species known to occur in San Juan County were reviewed (Tables 4.1a, 4.3a).

Wildlife surveys were conducted at the existing pit, proposed pit, and access road by walking transect lines, including a 1/2 mile buffer. Areas within a one mile radius with potentially suitable nesting habitat for raptors were also surveyed. The surveyor used 8 x 42 standard binoculars and a spotting scope for wildlife observation purposes. All vertebrate species detected by sight, sound, and sign were recorded. Weather conditions, altitude, and identifiable plant species were also recorded. Global positioning coordinates were recorded for any prominent features such as nest sites.

The botanical survey of the access road was accomplished by walking zigzag transects on either side of the existing road to a distance of 40 feet on each side. The expansion area was surveyed

by walking parallel transects across the area at a spacing of 50 to 100 feet apart. The emphasis of the survey was to inspect for listed species of concern. In addition, all plant species were identified in order to provide a more complete description of the environment

### **3.0 EXISTING HABITAT**

#### **3.1 EXISTING ABANDONED GRAVEL PIT**

Habitat at the existing pit consists of relatively barren, arid landscape with patchy vegetation and  $\geq 75\%$  bare ground in some areas. The site is previously disturbed from gravel pit activities, which took place roughly 25 years ago, and grazing. Soils are gravelly and heavily eroded (Figure 1 - Appendix B). The abandoned gravel pit is located in a shallow, level wash with drainage to the southwest. What sparse vegetation exists at the site shows signs of moderate to heavy grazing from domestic horses and sheep. There are no perennial streams or wetlands.

#### **3.2 PROPOSED GRAVEL PIT EXPANSION AND ACCESS ROAD**

The access road is located in the shallow basin adjacent to Grey Mesa and begins on the west side of US 491. The road then travels south-southwest, climbing up the mesa side to the north side of the gravel pit expansion. Existing habitat at the access road consists of barren, sandy gravel surfaces with sparse vegetation (Figure 2 - Appendix B). A power line crosses the access road at the eastern end, near US 491. Vegetation is sparse along the access route and is predominated by salt desert scrub with species such as shadscale (*Atriplex confertifolia*) and alkali sacaton (*Sporobolus airoides*).

The pit expansion site is located on the top of Grey Mesa. The dominant plants are shadscale and alkali sacaton with areas of galleta (*Pleuraphis jamesii*). Winterfat (*Krascheninnikovia lanata*) is common in the west third of the area. Russian-thistle (*Salsola tragus*) and false buffalo-grass (*Munroa squarrosa*) are scattered throughout and are occasionally dominant. The plant community along the rocky rim of the southern boundary of the project area is dominated by purple three-awn (*Aristida purpurea*).

The soil is predominantly sandy clay loam with gravel and cobbles in the basin, with areas of clay loam and loamy sand. The mesa top is mostly sandy loam with a heavy gravel content. The soils are derived from the underlying Menefee formation (NMBGMR, 2003). Elevation throughout the project area ranges from approximately 5540 to 5800 feet.

There are several residences along the southeast edge of the site, near the beginning of the access road, as well as a horse corral at the south edge. Domestic horses were on site during the wildlife survey. With the exception of the mesa sides and some grassland habitat, there are few habitat features of wildlife value in the general area. Although there is a small drainage lined with several small salt cedar (*Tamarix sp.*) in the basin, there are no wetlands, perennial flows, or apparent water sources. The overall site is moderately to heavily disturbed from previous gravel pit activities, grazing, and human activities such as refuse dumping, with almost no disturbance along the western boundary of the expansion site.

### **4.0 SURVEY RESULTS**

## 4.1 THREATENED, ENDANGERED AND SPECIAL STATUS WILDLIFE SPECIES

During the late afternoon of June 08 and morning of June 09, 2009, Wildlife Biologist June M. Galloway conducted a pedestrian survey at the project site. Weather was clear and breezy, with temperatures fluctuating greatly due to heavy thunder storms in the area.

No threatened, endangered, or special status wildlife species were documented within or adjacent to the project area during the wildlife surveys (Table 4.1a) (Appendix B). One species protected by the Migratory Bird Treaty Act (1918), common raven (*Corvus corax*), was observed nesting on-site at the time of the surveys. In addition, a red fox vixen with two kits was also documented.

Table 4.1a. Federal and Navajo Nation listed (NESL) threatened, endangered, and special status wildlife species with the potential to occur within the vicinity of the Proposed Action (San Juan County, NM) (2009).

| Common Name<br>(scientific name)                                 | Federal<br>Status | NESL    | HABITAT ASSOCIATIONS                                                                                                                                               | POTENTIAL<br>TO OCCUR<br>IN THE<br>PROJECT<br>AREA |
|------------------------------------------------------------------|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>MAMMALS</b>                                                   |                   |         |                                                                                                                                                                    |                                                    |
| Townsend's big-eared bat<br>( <i>Corynorhinus townsendii</i> )   | SOC               | NESL 4  | On the Navajo Nation, roosts and hibernates primarily in sandstone or limestone caves, lava tubes, mine tunnels, and man-made structures in a variety of habitats. | NP                                                 |
| Banner-tailed kangaroo rat<br>( <i>Dipodomys spectabilis</i> )   |                   | Group 4 | Lowland desert grasslands, sand dunes.                                                                                                                             | NP                                                 |
| Black-footed ferret ( <i>Mustela nigriceps</i> )                 | E                 | Group 2 | Open grasslands with large established prairie dog colonies.                                                                                                       | NP                                                 |
| Kit fox ( <i>Vulpes macrotis</i> )                               |                   | Group 4 | Open, arid lowland habitats.                                                                                                                                       | NP                                                 |
| Pronghorn ( <i>Antilocapra americana</i> )                       |                   | Group 3 | Grasslands, brushlands, bunch-grass and sagebrush areas of open plains and deserts.                                                                                | NP                                                 |
| <b>BIRDS</b>                                                     |                   |         |                                                                                                                                                                    |                                                    |
| Golden eagle<br>( <i>Aquila chrysaetos</i> )                     |                   | Group 3 | A wide variety of open habitats, typically nests in steep cliffs > 30 meters in height.                                                                            | NP                                                 |
| Ferruginous hawk<br>( <i>Buteo regalis</i> )                     |                   | Group 3 | Open grasslands and deserts, typically nests atop rocky pinnacles, small buttes and cliffs                                                                         | NP                                                 |
| Northern goshawk<br>( <i>Accipiter gentiles</i> )                |                   | Group 4 | Forest species – typically nests along drainages, canyon bottoms, or north-facing forested slopes with high canopy cover.                                          | NP                                                 |
| American peregrine falcon<br>( <i>Falco peregrinnus anatum</i> ) | SOC               | Group 4 | Nests in sheer cliff faces typically > 30 meters in height, usually near water or mesic canyons. In migration, occurs in a variety of lowland, wetland habitats.   | NP                                                 |
| Artic peregrine falcon<br>( <i>Falco peregrinus tundrius</i> )   | SOC               |         | Highly migratory, nests on alpine islands and tundra regions.                                                                                                      | NP                                                 |
| Black tern                                                       | SOC               |         | Breeding habitat includes marshes,                                                                                                                                 | NP                                                 |

|                                                                         |     |         |                                                                                                                                                         |    |
|-------------------------------------------------------------------------|-----|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| ( <i>Chlidonias niger</i> )                                             |     |         | sloughs, rivers, lakeshores and impoundments. Prefers sheltered offshore waters and bays for non-breeding habitat.                                      |    |
| Mountain plover<br>( <i>Charadrius montanus</i> )                       | SOC | Group 4 | Seeks dry, disturbed, or intensively grazed, open, flat tablelands. Bare ground, short vegetation, and flat topography are indicators of ideal habitat. | NP |
| Western burrowing owl<br>( <i>Athene cunicularia hypugaea</i> )         | SOC |         | Grasslands and basin-prairie shrub, normally associated with prairie dog towns.                                                                         | NP |
| Yellow-billed cuckoo<br>( <i>Coccyzus americanus</i> )                  | C   |         | Moist, dense riparian thickets, willow stands, overgrown pastures and orchards.                                                                         | NP |
| Southwestern willow flycatcher ( <i>Empidonax trailii extimus</i> )     | E   | Group 2 | Cottonwood-willow riparian corridors.                                                                                                                   | NP |
| Baird's sparrow<br>( <i>Ammodramus bairdii</i> )                        | SOC |         | Grasslands, weedy fields.                                                                                                                               | NP |
| <b>HERPETOFAUNA</b>                                                     |     |         |                                                                                                                                                         |    |
| Northern leopard frog<br>( <i>Rana pipiens</i> )                        |     | Group 2 | Breeds in wetlands with aquatic vegetation. Found in irrigation ditches, small streams, rivers. Newcomb, NM included in NN historical records.          | NP |
| <b>FISH</b>                                                             |     |         |                                                                                                                                                         |    |
| Roundtail chub<br>( <i>Gila robusta</i> )                               | SOC |         | Throughout Colorado River Basin. Inhabits open areas in deep pools and eddies in middle-sized and larger streams.                                       | NP |
| <b>INVERTEBRATES</b>                                                    |     |         |                                                                                                                                                         |    |
| New Mexico silverspot butterfly<br>( <i>Speyeria nokomis nitocris</i> ) | SOC |         | Alpine meadows.                                                                                                                                         | NP |
| San Juan checkerspot<br>( <i>Euphydryas anicia chuskae</i> )            | SOC |         | No habitat information available.                                                                                                                       | NP |

**Status**

*E* Endangered      *T* Threatened      *C* Candidate      NESL Navajo Endangered Species List      SOC Species of Concern

**Presence**

*K* Known, documented observation within project area.

*S* Habitat suitable and species suspected to occur within the project area.

*NS* Habitat suitable but species is not suspected to occur within the project area.

*NP* Habitat not present and species unlikely to occur within the project area.

## 4.2 MIGRATORY BIRDS

Native migratory birds are protected under the Migratory Bird Treaty Act. Birds protected under the Act include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows and others, including their body parts (feathers, plumes etc.), nests, and eggs. The Act protects migratory birds from “take”, with take being defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities”. A “take” does not include habitat destruction or alteration, as long as

these is not a direct taking of birds, nests, eggs, or parts thereof.

The overall project area is relatively denuded and there is additional disturbance from close proximity to local roads, a highway, and homes. Five (5) avian species documented during the wildlife surveys are protected under the Migratory Bird Treaty Act; turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), western bluebird (*Sialia mexicana*), horned lark (*Eremophila alpestris*), and canyon wren (*Catherpes mexicanus*). If project activities take place after the primary nesting season (April 01 – July 31), no take of migratory birds is anticipated as a result of the proposed action.

#### 4.3 THREATENED, ENDANGERED, AND SPECIAL STATUS PLANT SPECIES

The project area was surveyed on June 19, 2009, by botanist Marian Rohman. This report discusses the potential for disturbance to Mesa Verde cactus (*Sclerocactus mesae-verdae*) and Parish's alkali grass (*Puccinellia parishii*), plants identified by the Navajo Nation Natural Heritage Program (NNHP) as species of concern (Table 4.2a). Both species have the potential to occur on the Newcomb, NM, 7.5-minute quadrangle, which contains the boundaries of the project area (Detsoi, 2009).

Table 4.3a. Plants cited by the Navajo Natural Heritage Program: Mesa Verde cactus and Parish's alkali grass are identified by the Navajo Natural Heritage Program as species of concern that could occur in the project area. (Detsoi, 2009)

|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parish's alkali grass<br>( <i>Puccinellia parishii</i> )  | Alkaline springs, seeps, or seasonally wet areas such as washes at 5000-7200 feet. The species requires continuously damp soils during its late winter to spring growing period. (McDonald, 1999a; Roth, 2001a)                                                                                                                                                                                     | No appropriate habitat: there are no alkaline springs, seeps, or seasonally wet areas in the project area. (NP)                                                                                                                                                                                                                                                                                                            |
| Mesa Verde cactus<br>( <i>Sclerocactus mesae-verdae</i> ) | Sparsely vegetated salt desert scrub communities on low rolling clay hills formed from the Mancos or Fruitland Shale formations, occasionally on Menefee overlaying Mancos formation. It is most frequently found on the tops of hills or benches and along slopes at 4,900-5,500 feet. Known from San Juan County from the Colorado border south to near Naschitti. (McDonald, 1999b; Roth, 2001b) | No appropriate habitat: there is salt desert scrub in the project area; however, the access road is too sparsely vegetated and heavily graveled and cobbled, or too sandy. The mesa top is a transitional community and the soil is too sandy. The area is in the Menefee formation, with no nearby Mancos or Fruitland shale. The project area is slightly to well above the known elevational range of the species. (NP) |

Potential to Occur\*\*

K – Known, documented observation within project area.

S – Habitat suitable and species suspected to occur within the project area.

NS – Habitat suitable but species is not suspected to occur within the project area.

NP – Habitat not present and species unlikely to occur within the project area

Mesa Verde cactus is a small, usually solitary cactus. It is oval to depressed globose in shape and usually 3 to 11 cm tall and 4 to 8 cm in diameter. Central spines are generally absent. The flowers are yellowish-cream to pinkish and appear from early-April to early-May. This plant grows in sparsely vegetated shale or adobe clay badlands typically in the Fruitland and Mancos Shale formations, but has also been found to growing in the Menefee formation overlaying Mancos shale. It is commonly associated with mat saltbush (*Atriplex corrugata*), shadscale (*Atriplex confertifolia*), frankenia (*Frankenia jamesii*), and starvation prickly pear (*Opuntia polyacantha*) at elevations of 4900 to 5500 feet. (Roth, 2001b; McDonald, 1999b)

Parish's alkali grass is a short-lived winter or spring annual grass that is easily distinguished from its perennial relatives. It grows in alkaline springs, seeps, and seasonally wet areas, from elevations of 5000 to 7200 feet. The species requires continuously damp soils during its late winter to spring growing period. (McDonald, 1999a) On Navajo lands, it flowers from late April to early June. (Roth, 2001a) Sufficient alkalinity for the species is indicated by a white alkaline crust along the edges of its habitat when wet and covering the area when dry. (Detsoi, 2009; personal observation).

#### **4.4 NOXIOUS AND INVASIVE WEEDS**

The Bureau of Indian Affairs lists three species of noxious weeds as potential invaders and fourteen species as new invaders on the Navajo Reservation (USDI, OSM, 1999). Of these, only halogeton (*Halogeton glomeratus*) is present. It was documented as scattered plants along the access road in the residential area at the start of the project site and also several feet east of the road's turn south to the mesa and west of that turn. Halogeton is a Priority B species, indicating that is known to have invaded isolated locales on the reservation. Emphasis is placed on immediate control, prevention of seed spread, and eradication. Education, awareness, identification, control, and monitoring are the priorities (USDI, OSM, 1999).

### **5.0 EFFECTS OF THE PROPOSED ACTION**

#### **5.1 INDIRECT/DIRECT EFFECTS**

The proposed action will remove soil, grasses, and some shrubs.

#### **5.2 CUMULATIVE EFFECTS**

The project area is surrounded by paved and unpaved roads, power lines, residences, corrals, and tribal lands. Construction activity may increase ambient noise level, erosion, and air pollution in the immediate area.

## **6.0 CONCLUSIONS**

It is anticipated that the proposed action will have no impact on threatened, endangered, and special status species. As mentioned previously, the site is previously disturbed and does not appear to provide suitable habitat for many native plant and wildlife species.

Thirteen (13) listed or special status wildlife species are known to inhabit, or have the potential to occur, in San Juan County, New Mexico. None of these species were observed during the survey. Because of the existing on-site disturbance and the project area's lack of suitable habitat for many species, it is unlikely that implementation of the project will result in impact to local animal populations and their associated habitats.

## **7.0 RECOMMENDATIONS**

In order to comply with the Migratory Bird Treaty Act (1918), it is recommended that construction take place outside of the primary nesting season (approximately April through July), if nests are present. Five (5) avian species observed during the surveys are protected under the Act. The act protects migratory birds from "take", which is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities". A "take" does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. No take of migratory birds is anticipated from the proposed project.

The proposed project will not impact Mesa Verde cactus or Parish's alkali grass, two Navajo Natural Heritage Program Species of Concern with the potential to occur in the project area.

## 8.0 REFERENCES

Allred, Kelly, 2007. *A Working Index of New Mexico Vascular Plant Names*. Range Science Herbarium at New Mexico State University. Las Cruces, New Mexico. <http://web.nmsu.edu/~kallred/herbweb/Working%20Index-title.htm>

Benyus, Janine M. 1989. The Field Guide to Wildlife Habitats of the Western United States. Simon and Schuster, New York, New York.

Detsoi, Sonja. 2009. *Recon Oil Company Proposed Grey Mesa Gravel Pit. Located in Legal Description Sec. 2, 3, 10, 11 T23N, R18W, Sections 35 & 36, T24N, R18W*. Wildlife Technician, Navajo Natural Heritage Program. Letter of June 29 to Brian Wood, Permits West, Inc.

Ivey, Robert DeWitt. 2003. *Flowering Plants of New Mexico*. R. D. & V. Ivey, Publishers, Albuquerque, NM.

New Mexico Dept. Game & Fish (NMDGF). 2009. BISON-M. <http://nmnhp.unm.edu/bisonm/BISONM.CFM>.

New Mexico Native Plant Protection Advisory Committee. 1984. *A Handbook of Rare and Endemic Plants of New Mexico*. University of New Mexico Press, Albuquerque, NM.

New Mexico Ornithological Society. 2009. <http://www.nmosbirds.org/updates.html>

Wilson, DE, and Reeder, DM. 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference*. Third Edition. The Johns Hopkins University Press, Baltimore.

## 9.0 APPENDICES

Appendix A - Site Map

Appendix B - Site Photos

Appendix C - Wildlife species documented at project site

Appendix D - Plant species documented at project site

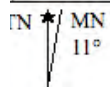
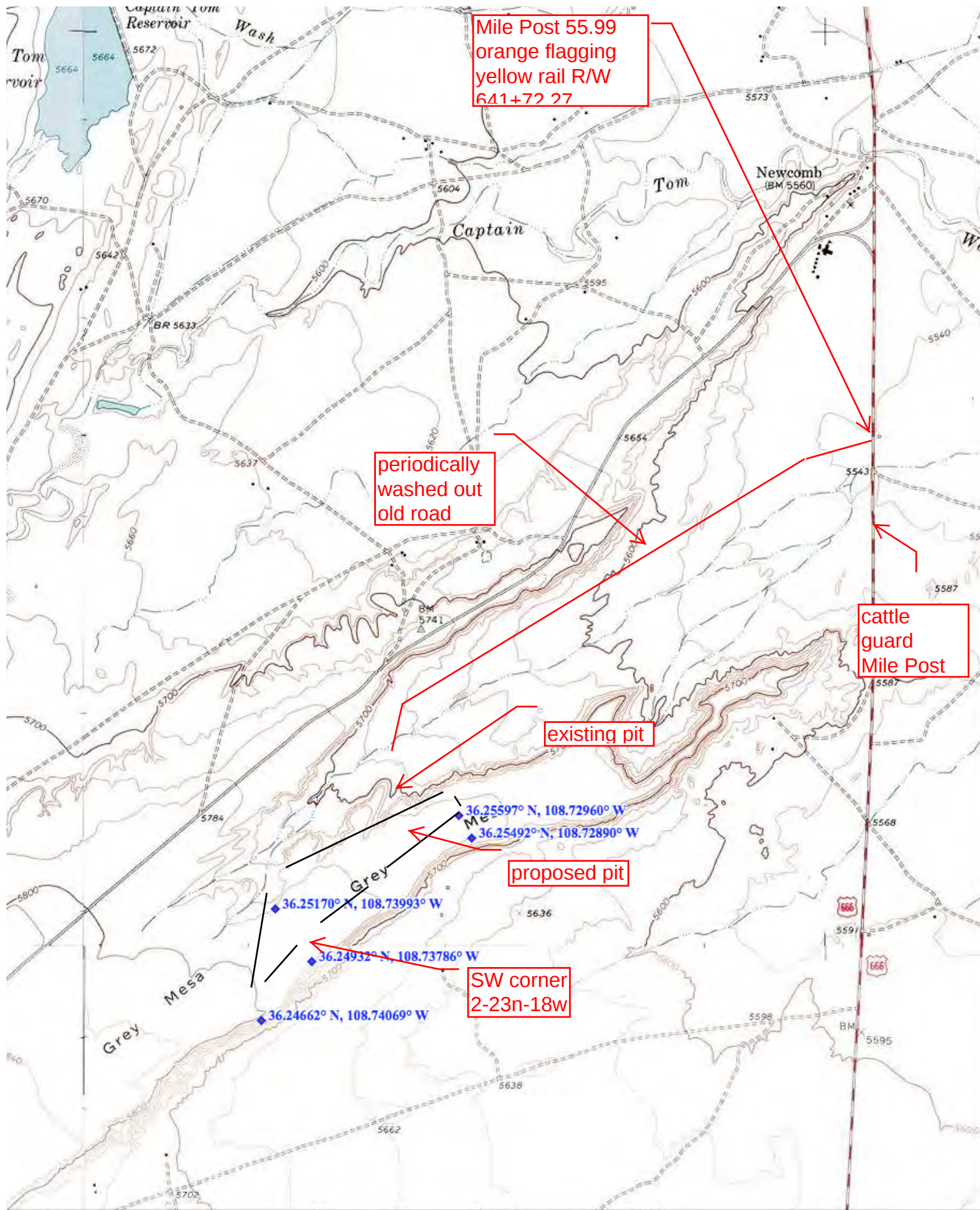




Figure 1. Looking southeast from existing gravel pit (San Juan County, NM).



Figure 2. Habitat around existing road – looking northeast (San Juan County, NM).

**WILDLIFE SPECIES DOCUMENTED AT THE PROPOSED GREY MESA GRAVEL  
PIT EXPANSION SITE AND ACCESS ROAD**

(NE/4 of Section 10, SE/4 of Section 3,  
and SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and  
SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.)

**Avian species:**

Turkey vulture (*Cathartes aura*)

Common raven (*Corvus corax*)\*

Western bluebird (*Sialia mexicana*)

Horned lark (*Eremophila alpestris*)

Canyon wren (*Catherpes mexicanus*)\*

**Mammalian species:**

Desert cottontail (*Sylvilagus audubonii*)

Red fox (*Vulpes fulvus*)\*

\*breeding documented on site

## PLANT SPECIES DOCUMENTED AT THE PROPOSED GREY MESA GRAVEL PIT EXPANSION SITE AND ACCESS ROAD

Scientific and common names according to Allred, 2007. Identifications based on Ivey 2003 and Weber and Wittman 2001.

### ***Shrubs and Subshrubs***

|                                              |                     |
|----------------------------------------------|---------------------|
| <i>Artemisia bigelovii</i>                   | Bigelow's sagebrush |
| <i>Atriplex canescens</i>                    | Four-wing saltbush  |
| <i>Atriplex gardneri</i> var. <i>cuneata</i> | Valley saltbush     |
| <i>Atriplex confertifolia</i>                | Shadscale           |
| <i>Gutierrezia sarothrae</i>                 | Broom snakeweed     |
| <i>Krascheninnikovia lanata</i>              | Winterfat           |
| <i>Lycium pallidum</i>                       | Pale wolfberry      |

### ***Cacti***

|                            |                                |
|----------------------------|--------------------------------|
| <i>Opuntia polyacantha</i> | <i>Starvation prickly pear</i> |
|----------------------------|--------------------------------|

### ***Grasses***

|                                |                     |
|--------------------------------|---------------------|
| <i>Achnatherum hymenoides</i>  | Indian ricegrass    |
| <i>Aristida purpurea</i>       | Purple threeawn     |
| <i>Bouteloua curtipendula</i>  | Sideoats grama      |
| <i>Bromus tectorum</i>         | Cheatgrass          |
| <i>Munroa squarrosa</i>        | False buffalo-grass |
| <i>Pleuraphis jamesii</i>      | Galleta             |
| <i>Scleropogon brevifolius</i> | Burrograss          |
| <i>Sporobolus airoides</i>     | Alkali sacaton      |
| <i>Sporobolus cryptandrus</i>  | Sand dropseed       |

### ***Forbs***

|                                                         |                       |
|---------------------------------------------------------|-----------------------|
| <i>Ambrosia acanthicarpa</i>                            | Bur ragweed           |
| <i>Chaetopappa ericoides</i>                            | Sand aster            |
| <i>Chamaesaracha coronopus</i>                          | Green-leaf five-eyes  |
| <i>Chamaesyce</i> sp.                                   | Spurge                |
| <i>Chenopodium album</i>                                | Lamb's quarter        |
| <i>Chenopodium leptophyllum</i>                         | Narrowleaf goosefoot  |
| <i>Cryptantha crassisejala</i> var. <i>crassisejala</i> | Thick-sepal cat's-eye |
| <i>Cymopterus</i> sp.                                   | Spring-parsley        |
| <i>Dieteria</i> sp.                                     | Spine-aster           |

|                                                            |                        |
|------------------------------------------------------------|------------------------|
| <i>Halogeton glomeratus</i>                                | Halogeton              |
| <i>Machaeranthera tanacetifolia</i>                        | Tahoka daisy           |
| <i>Mentzelia multiflora</i>                                | Adonis blazingstar     |
| <i>Platyschuhria integrifolia</i> var. <i>oblongifolia</i> | Basin-daisy            |
| <i>Salsola tragus</i>                                      | Russian-thistle        |
| <i>Senecio</i> sp.                                         | Groundsel              |
| <i>Sphaeralcea coccinea</i>                                | Scarlet globemallow    |
| <i>Sphaeralcea fendleri</i>                                | Fendler's globemallow  |
| <i>Sphaeralcea grossulariifolia</i>                        | Gooseberry globemallow |
| <i>Stephanomeria exigua</i>                                | Twiggy wire-lettuce    |
| <i>Verbesina encelioides</i>                               | Golden crownbea        |

ARCHAEOLOGICAL INVENTORY REPORT DOCUMENTATION PAGE (HPD JAN/91)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------|-------------------------------------|---------------------|-------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------|
| 1. HPD REPORT NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2. (FOR HPD USE ONLY)                                                                                                                  | 3. RECIPIENTS ACCESSION NO.                                            |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| 4. TITLE OF REPORT: Cultural Resource Inventory<br>Recon Oil Company's Grey Mesa Pit and Haul<br>Road Near Newcomb, Navajo Nation Lands,<br>San Juan County, New Mexico .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                        | 5. FIELDWORK DATES<br>June 5 and 6, 2009                               |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| Author(s): Laurens C. Hammack                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                        | 6. REPORT DATE:<br>June 15, 2009                                       |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| 7. CONSULTANT NAME AND ADDRESS:<br>Gen'l Charge: Laurens C. Hammack<br>Org. Name: Complete Archaeological Service Associates<br>Org. Address: P.O. Box 1777<br>Cortez CO 81321<br>Phone: (970) 565-9229                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                        | 8. PERMIT NO.<br>B09256                                                |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                        | 9. CONSULTANT REPORT NO.<br>CASA 09-50                                 |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| 10. SPONSOR NAME AND ADDRESS:<br>Ind. Responsible: Brian Wood, Permits West agent for Recon<br>Oil Company, Inc<br>Org. Address: 37 Verano Loop, Santa Fe, NM 87508<br>Phone: (505) 466 8120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                        | 11. SPONSOR PROJECT NO.                                                |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                        | 12. AREA OF EFFECT: <u>91.03 ac</u><br>AREA SURVEYED: <u>107.95 ac</u> |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| 13. LOCATION (MAP ATTACHED):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| <table border="0"> <tr> <td>a. Chapter: Newcomb</td> <td>e. Land Status: Navajo Tribal Trust</td> </tr> <tr> <td>b. Agency: Shiprock</td> <td>f. UTM Center: Zone 12 (see continuation sheet)</td> </tr> <tr> <td>c. County: San Juan</td> <td>g. Area: Section 2, 3, and 10.T23N, R18W and Section 35<br/>and 36,T24N, R18W , San Juan County, New Mexico<br/>(see continuation sheet)</td> </tr> <tr> <td>d. State: New Mexico</td> <td>h. 7.5' Map Name(s): Newcomb N.Mex 1966<br/>Sheep Springs, N.Mex.-1966</td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                        |                                                                        | a. Chapter: Newcomb | e. Land Status: Navajo Tribal Trust | b. Agency: Shiprock | f. UTM Center: Zone 12 (see continuation sheet) | c. County: San Juan | g. Area: Section 2, 3, and 10.T23N, R18W and Section 35<br>and 36,T24N, R18W , San Juan County, New Mexico<br>(see continuation sheet) | d. State: New Mexico | h. 7.5' Map Name(s): Newcomb N.Mex 1966<br>Sheep Springs, N.Mex.-1966 |
| a. Chapter: Newcomb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | e. Land Status: Navajo Tribal Trust                                                                                                    |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| b. Agency: Shiprock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | f. UTM Center: Zone 12 (see continuation sheet)                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| c. County: San Juan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | g. Area: Section 2, 3, and 10.T23N, R18W and Section 35<br>and 36,T24N, R18W , San Juan County, New Mexico<br>(see continuation sheet) |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| d. State: New Mexico                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | h. 7.5' Map Name(s): Newcomb N.Mex 1966<br>Sheep Springs, N.Mex.-1966                                                                  |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| 14. REPORT /X/ OR SUMMARY (REPORT ATTACHED) // OR PRELIMINARY REPORT //                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| <p>a. Description of Undertaking: The project consists of the expansion of an existing gravel pit on Grey Mesa and refurbishing the existing haul road from US 491 to the pit area. A total of 83.75 acres was surveyed in the proposed pit expansion area and a 100-ft wide (24.20 acres) corridor was inventoried for the 30-ft wide (7.28 acres) haul road for a distance of 2 miles.</p> <p>b. Existing Data Review: HPD on 6/3/09 with two sites previously recorded within a 500-ft radius of the proposed pit and haul road and three previous inventories in the immediate vicinity (see continuation sheet for details)</p> <p>c. Area Environmental &amp; Cultural Setting: The proposed pit is located on Grey Mesa, a relatively narrow, flat topped mesa separating two tributaries of Capt Tom Wash. At an elevation of 5780±10-ft, a desert scrub vegetation of shadscale, and grasses growing in a gravelly sand is present. The proposed pit borders the previously utilized pit areas to the south. The access road begins at right-of-way fence the current alignment of US 491 and proceeds westerly over washed and eroded colluvial sands on the partially washed-out existing haul road which parallels a wash channel. The terrain is barren and relatively level with small areas of sandstone outcrops present. Shadscale and grasses with some russian thistle comprise the vegetation. For data on Cultural Setting, see continuation sheet.</p> <p>d. Field Methods: Two persons walking parallel transects spaced at 15 meters apart along the haul road. Three persons walking parallel transects across the proposed pit area spaced no greater than 15 meters apart</p> |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| 15. CULTURAL RESOURCE FINDINGS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| <p>a. Location/Identification of Each Resource: Three previously recorded sites (see continuation sheet for details)</p> <p>b. Evaluation of Significance of Each Resource (above): See continuation sheet for details</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| 16. MANAGEMENT SUMMARY (RECOMMENDATIONS): All of the sites are located along the existing haul road. With the stipulation that no widening of the existing haul road be undertaken in the vicinity of the sites, a determination of "no historic properties affected" for the project areas at the locations described in this report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| 17. CERTIFICATION: SIGNATURE: <u>Laurens C. Hammack</u> DATE: <u>6/15/09</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| General Charge Name: <u>Laurens C. Hammack</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| SIGNATURE: <u>Laurens C. Hammack</u> DATE: <u>6/15/09</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |
| Direct Charge Name: <u>Laurens C. Hammack</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                        |                                                                        |                     |                                     |                     |                                                 |                     |                                                                                                                                        |                      |                                                                       |

## Continuation Sheet

### Item 13f UTM Locations (all Zone 12):

|            |              |                                                                  |
|------------|--------------|------------------------------------------------------------------|
| Haul Road: | BOL:         | E 706130/N 4016276- at US 491 right-of way marker on fence line. |
|            | angle point: | E 703794/N 4014856                                               |
|            | EOL:         | E 703775/N 4014537                                               |
| Pit:       | NE Corner:   | E 704043/N 4014528                                               |
|            | SE Corner:   | E 704130/N 4014414                                               |
|            | SW Corner:   | E 703072/N 4014520                                               |
|            | NW Corner:   | E 703128/N 4014034                                               |

### Item 13g Area

|            |              |                                                                                                                                              |
|------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Haul Road: | BOL:         | protracted SW, NE Section 36, T24N, R18W                                                                                                     |
|            | angle point: | protracted SE, NW Section 2, T23N, R18W                                                                                                      |
|            | EOL:         | protracted NE, SW Section 2, T23N, R18W                                                                                                      |
| Pit:       |              | portions of the SW 1/4 Section 2; SE, SE, SE Section 3, and NE, NE, NE Section 10, T23N, R18W, San Juan County, New Mexico (Figures 2 and 3) |

### Item 14b Existing Data Review:

The records search conducted at HPD indicated that two sites had been recorded within 500-ft of the survey areas. LA 7554 and 7556. Both sites were recorded by a Museum of New Mexico Survey in 1963 during the inventory of Chuska Valley and the Chaco Plateau as part of the Navajo Indian Irrigation Project (Harris and others 1967). Site LA 7554 is a probable Anasazi P II field house along the existing haul road and LA 7565 was recorded as a petroglyph site on the northern side of Grey Mesa. Site LA 7554 was relocated during the current inventory and was rerecorded as NM-H-46-75. Site LA 7565 is no longer present, apparently removed by previous operations in the existing pit areas (Dykeman 1983). Three previous inventories have been undertaken on Grey Mesa adjacent to the current project. The original inventory was done in 1977 for a New Mexico Highway Department Project [FLH-12(18)] on US 666 (now US 491). The haul road and pit area on Grey Mesa was surveyed. There was apparently no report prepared with only a clearance letter to the Highway Department indicating that no sites were recorded and that clearance was recommended. This was the initial survey of the haul road which will be utilized on this project. In 1983, additional acreage on Grey Mesa and a new haul road was inventoried for a gravel pit and equipment yard for Sells Sand and Gravel. No sites were located on the 5 acre survey parcel on Grey Mesa or the proposed haul road which begins on Navajo Route 19, approximately 3.5 miles west of Newcomb (Watson 1983). The third inventory involved the monitoring of construction of the Newcomb High School. This monitoring project also included inspection of the existing haul road to the existing gravel pit on Grey Mesa which was to be used in construction of the high school. (Dykeman 1983) Three sites were located along the haul road which are the same three sites described in this report and rerecorded with Navajo Nation Site Numbers.

### Item 14c Area Cultural Setting

Background information on the prehistory of the general area is presented in a number of monographs which should be consulted for details (Amsden 1992, Vivian 1990). The project area is within the northwest portion of the San Juan Basin dominated by the major prehistoric pueblos in Chaco Canyon to the east. Known as the Chuska Valley portion of the Chacoan World, the project area is surrounded by extensive Anasazi settlements including three major Chacoan Outliers, Newcomb, Skunk Springs, and Crumbled House. Each of these large sites include great houses and hundreds of associated small sites along with probable Chacoan Roads. All of these outliers are located within two miles of the current survey parcels. The Chuska Valley and Chaco Plateau Survey conducted by the Museum of New Mexico in the early 1960s (Harris and others 1967) recorded 1,697 sites with more recent surveys recording additional sites. The three Chacoan Outliers have been briefly described by Marshall others (1979).

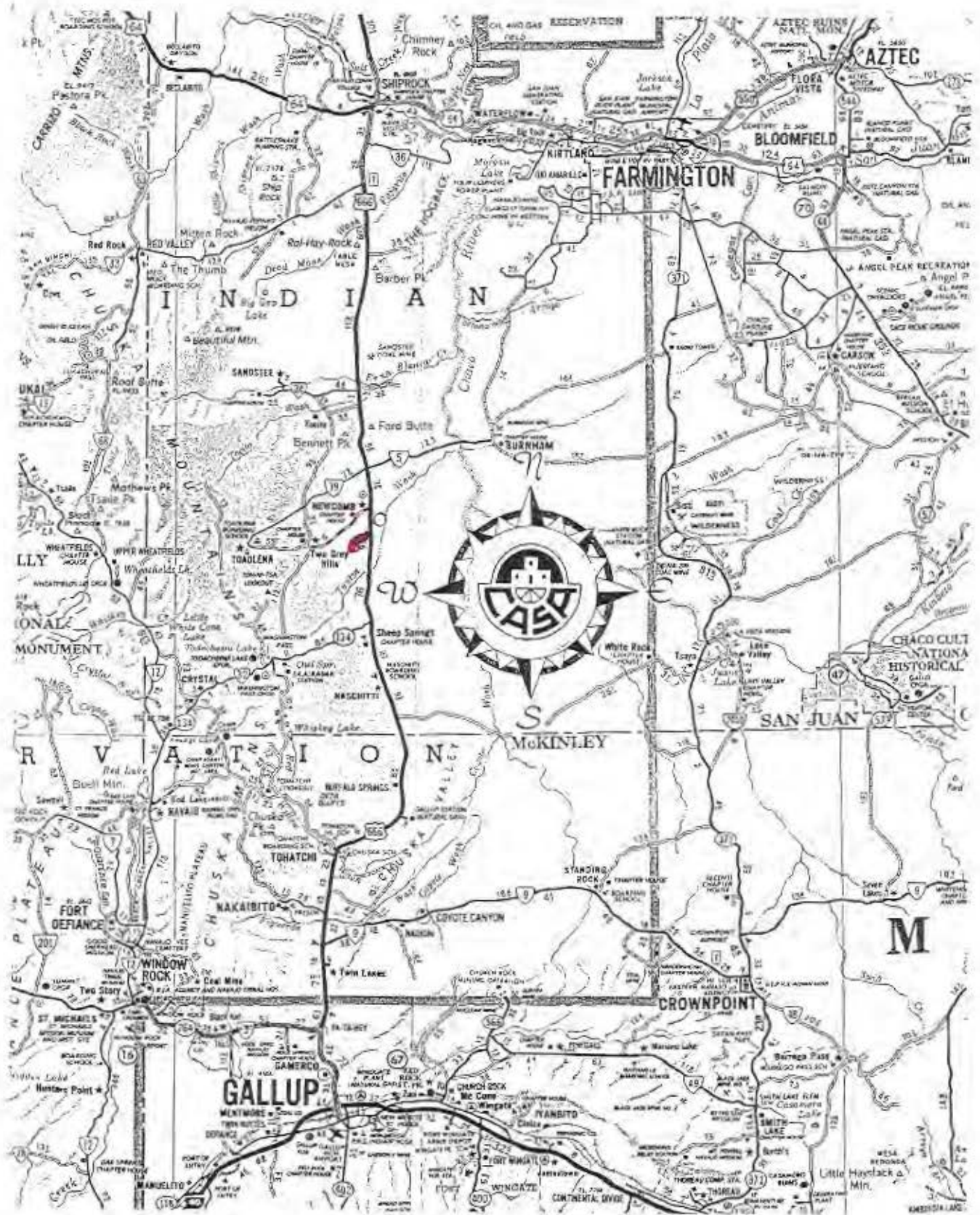


Figure 1. Project location map, northwestern New Mexico.

NEWCOMB, N. MEX.

N3615—W10837.5/7.5

1966



SHEEP SPRINGS, N. MEX.

N3607.5—W10837.5/7.5

1966

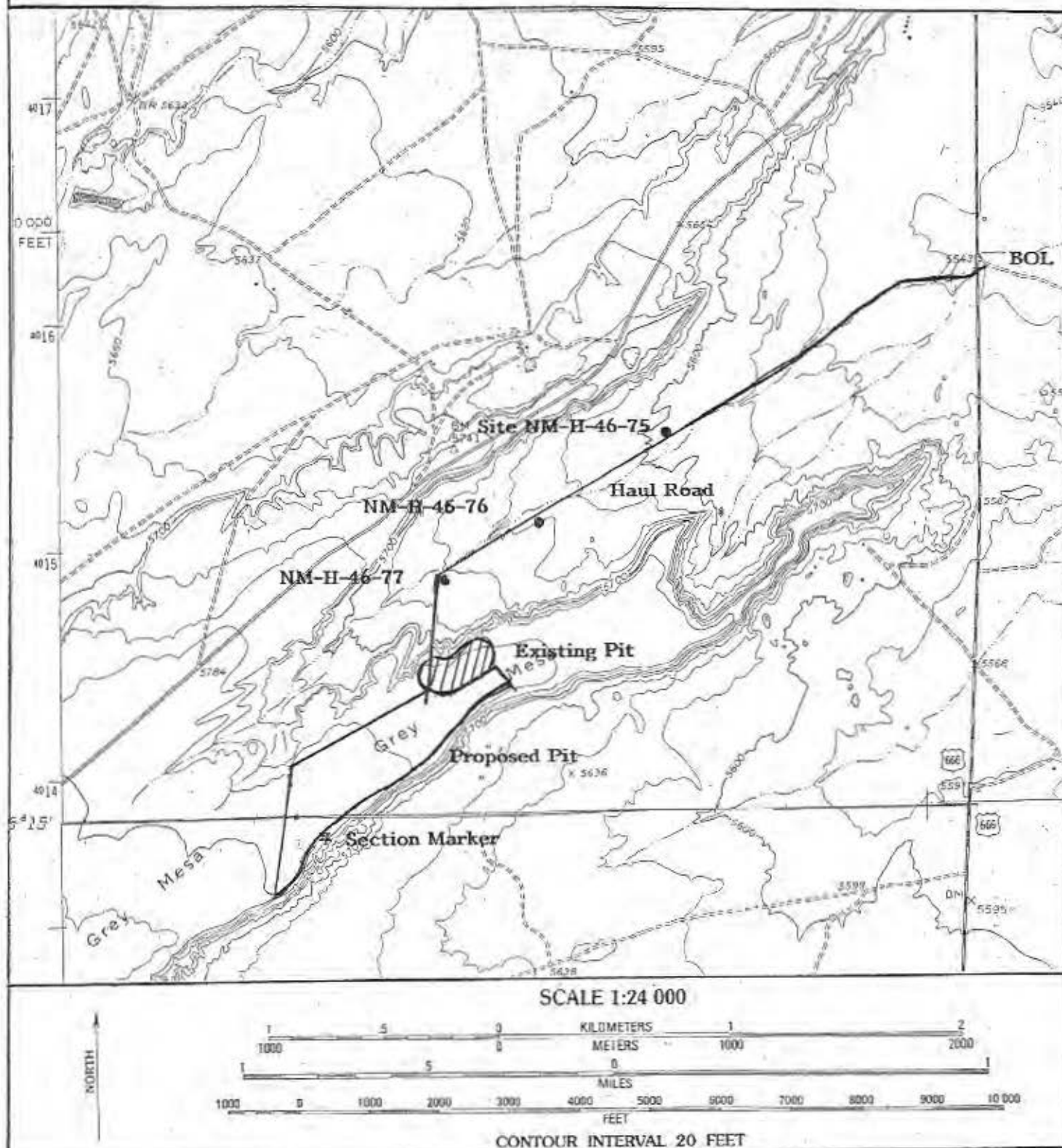
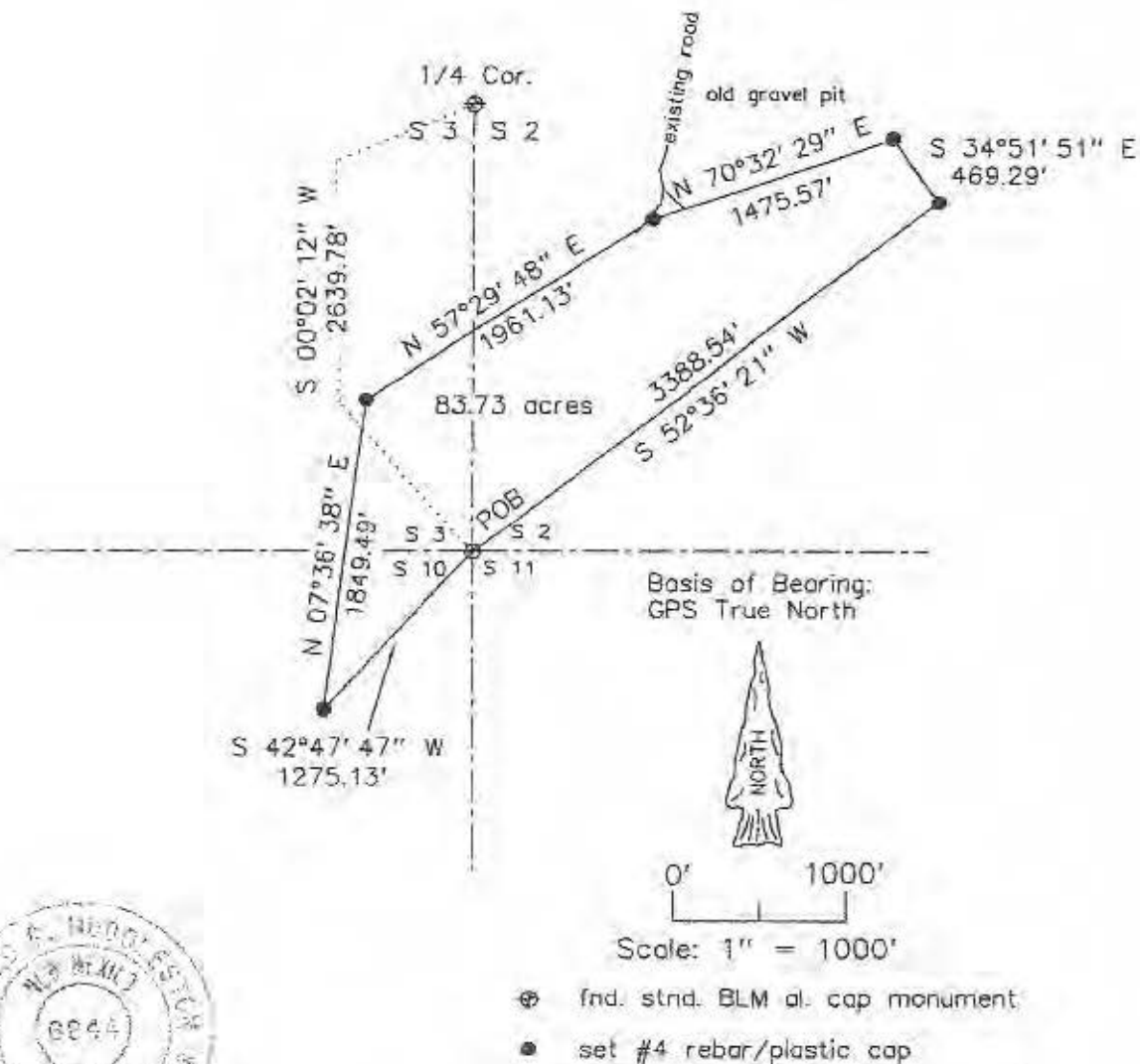


Figure 2. Survey location map, Grey Mesa Pit, Haul Road and Sites NM-H-46-75, NM-H-46-76 and NM-H-46-77.

LEGAL DESCRIPTION — 83.73 acres more or less

A tract of land contained in Sections 2, 3 and 10, T.23 N., R.18 W., NMPM, San Juan County, New Mexico, more particularly described as follows:

Beginning at the SW Corner of said Section 2;  
 thence, S 42°47' 47" W a distance of 1275.13 feet;  
 thence, N 07°36' 38" E a distance of 1849.49 feet;  
 thence, N 57°29' 48" E a distance of 1961.13 feet;  
 thence, N 70°32' 29" E a distance of 1475.57 feet;  
 thence, S 34°51' 51" E a distance of 469.29 feet;  
 thence, S 52°36' 21" W a distance of 3388.54 feet back to the point of beginning.  
 SUBJECT TO all easements of record or prescriptive.



I, Gerald G. Huddleston, a New Mexico registered Professional surveyor certify that I conducted and am responsible for this survey, that this survey is true and correct to the best of my knowledge and belief, and that this survey and plat meet the Minimum Standards for Surveying in New Mexico for a gravel pit.

I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this is a survey of a proposed gravel pit.

HUDDLESTON LAND SURVEYING  
 P.O. DRAWER KK / CORTEZ, CO 81321 / 970-565-3330

Figure 3. Plat of Grey Mesa Pit.

Item 15a Location and Identification of Each Resource

Site Descriptions:

Site Number: NM-H-46-75 [LA 7554]

Location: protracted SE, SE Section 35, T24N, R18W, San Juan County, New Mexico (Figure 2).  
UTM Location: Zone 12, E 704745/N 4015540  
Map Reference: Newcomb, N. Mex. 1966  
Cultural/Temporal Affiliation: Anasazi, P II  
Site Type: Field house/artifact scatter  
Setting: The site is situated on the slope of a small sandstone outcrop bordering an arroyo on the west and south. At an elevation of 5610±10 feet, tamarisk grow in the washes with sparse shadscale, grasses and russian thistle nearby.  
Description: This small site (Figure 4) consists of a probable collapsed field house situated on the slope of a clay and sandstone outcrop. No obvious wall outlines are visible but a pile of sandstone rubble suggests that a structure was present. There is a light sherd scatter on the east slope of the outcrop with several sherds noted on the south slope. Ceramics number about 100 and are mostly Newcomb Corrugated with a few small carbon paint B/w sherds. Only three lithics were noted, a piece of white chalcedony shatter, a reddish quartzite tertiary flake, and a blue/gray petrified wood uniface. There is also some naturally occurring petrified wood. The site was initially recorded in 1963 during the Chuska Valley Survey (Harris and others 1967).  
Significance: The site has little research potential and is not considered significant or eligible due to its limited short term nature, lack of subsurface deposits, and poor condition. The site does not appear to warrant consideration under AIRFA.  
Project Effect: None, the existing haul road is located at the base of the outcrop on the east and south sides and use of the road will not impact the site area.

\*\*\*\*\*

Site Number: NM-H-46-76 (LA 45953)

Location: protracted NW, NE Section 2, T23N, R18W, San Juan County, New Mexico (Figure 2).  
UTM Location: Zone 12, E 704200/N 4015160  
Map Reference: Newcomb, N. Mex. 1966  
Cultural/Temporal Affiliation: Anasazi, P II  
Site Type: Field house  
Setting: This site is situated on the northwest slope of a low dune and sandstone outcrop above and overlooking a small wash to the north. At an elevation of 5640-ft, the vegetation is sparse and consist of shadscale, grasses, and russian thistle growing in aeolian sands and silts partially covering the sandstone outcrop.  
Description: This small site (Figure 5) consists of a one or two room field house constructed of sandstone slabs and built on the sandstone outcrop. Only 12 sherds were noted, all but two Chuska gray ware, with one sherd of Newcomb corrugated and one sherd of sand tempered gray ware. No decorated ceramics noted. One basalt cobble hammerstone and a small fragment of a serrated projectile point of white chert were the only lithic items noted. The site was initially recorded in 1983 as part of the monitoring program done in conjunction with the construction of Newcomb High School (Dykeman 1983).  
Significance: The site is considered significant and eligible for nomination to the NRHP under Criterion d. The site does not appear to warrant consideration under AIRFA.  
Project Effect: None, the existing haul road is located 10 meters north and below the site, however, a detour has been established within the site area to avoid a large wash-out on the existing haul road. With the repair of the existing haul road, the detour will be abandoned.

\*\*\*\*\*

Site Number: NM-H-46-77 (LA 7556 and LA 45952)

Location: protracted SE, NW Section 2, T23N, R18W, San Juan County, New Mexico (Figure 2)  
UTM Location: Zone 12, E 703810/N 4014890  
Map Reference: Newcomb, N. Mex. 1966  
Cultural/Temporal Affiliation: Anasazi, middle to late P II

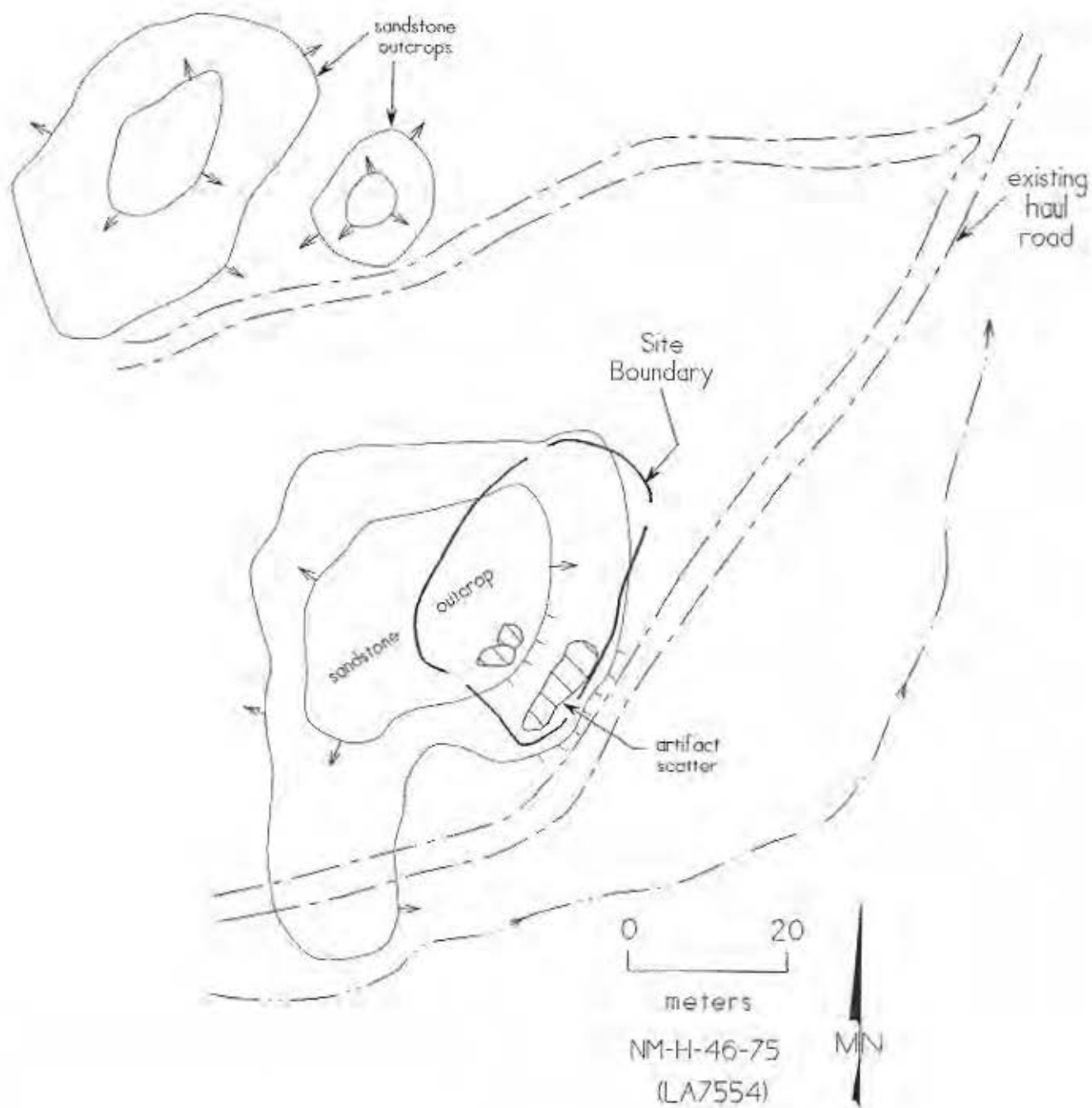


Figure 4. Site plan, NM-H-46-75.

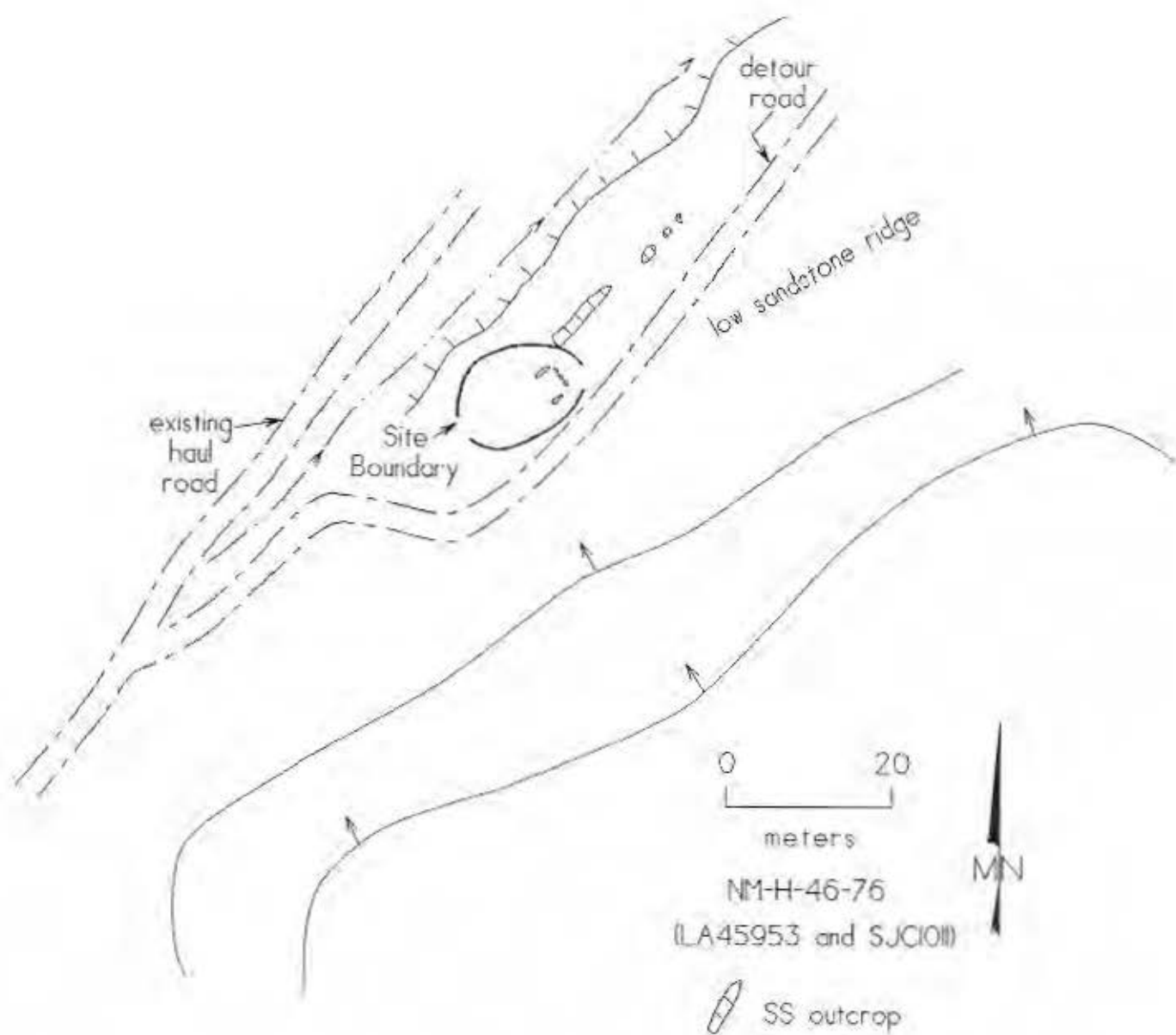


Figure 5. Site plan, NM-H-46-76

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Type:      | Small habitation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Setting:        | The site is situated on a wind-deflated, washed and eroded gravel-covered flat in the valley bottom north of and below Grey Mesa. At an elevation of 5675±5-ft, a very sparse vegetation of shadscale and bunch grass is present growing in hard packed-gravel covered sand.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description:    | This site (Figure 6) consists of two or three rooms constructed of sandstone slabs surrounded by wall fall. The room area is a 3 meter square and contains a large ant hill on the southern end. A midden area is present to the east and contains a large number of sherds and lithics along with burned rock. A small rock alignment noted southeast of roomblock may be an additional room. The site was originally recorded as LA 7556 in 1963 during the Chuska Valley survey and described as a "probable two room field house of slab masonry... sparse trash... with a large ant hill at the south end of the room block". The site was rerecorded as LA 45952 in 1983 and described as a "two-three room pueblo with an associated trash midden, and possible kiva.... The midden area extends east and south of the rubble mound.... and contains copious quantities of ceramics, lithics, particularly Chuska wares, and Washington Pass chert." The current recording did not identify a kiva depression, however, erosional forces could have obliterated all indications in the 26 years since last recorded. Ceramics number over 100 and consist Red Mesa B/w, Mancos B/w, Toadlena B/w, Chuska B/w, and Capt. Tom Corrugated. Lithic materials found in a core-chopper and a pecking tone manufactured from a black metamorphic shale, a material which is locally available. |
| Significance:   | The site is considered significant and eligible for nomination to the NRHP under Criterion d. The site does not appear to warrant consideration under AIRFA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Project Effect: | None, the site is located north and east of the existing haul road as the road turns south before climbing Grey Mesa and into the proposed pit area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

The three sites will not be affected by road reconstruction if stipulations confining such reconstruction to the existing road prism in the vicinity of each site are followed. The project has been discussed with officials and residents of the Newcomb Chapter at a chapter meeting earlier this year with representative of Recon Oil Company, Inc. The expansion of the existing pit on Grey Mesa and reconstruction of the existing haul road was approved unanimously during this meeting.

### References

Amsden, Charles W.

- 1992 Across the Colorado Plateau: Anthropological Studies for the Transwestern Pipeline Expansion Project. Volume V. Archaeological Survey, Site Testing and Ethnological Research Along the San Juan Lateral. UNM Project No. 185-423A, University of New Mexico, Albuquerque.

Dykeman, Douglas D.

- 1983 Archaeological Monitoring of Construction at Newcomb High School, Northwest New Mexico. Report No. 83-SJC-065A, CRMP, San Juan College, Farmington.

Harris, Arthur H., James Schoenwetter, A.H. Warren, Stewart Peckham, and John P. Wilson

- 1967 An Archaeological Survey of the Chuska Valley and the Chaco Plateau. Museum of New Mexico Laboratory Notes No. 216A&b, Santa Fe.

Marshall, Michael P., John R. Stein, Richard W. Loose, and Judith E. Novotny

- 1979 Anasazi Communities of the San Juan Basin. Public Service Company of New Mexico and the New Mexico Historic Preservation Bureau, Santa Fe.

Vivian, R. Gwinn

- 1990 The Chacoan Prehistory of the San Juan Basin. Academic Press, New York.

Watson, Richard P.

- 1983 An Archaeological Survey of a Proposed Access Road to A Gravel Pit Site and Equipment Yard in San Juan County, New Mexico, Conducted for Sells Sand and Gravel. Report No. 83-SJC-080, CRMP, San Juan College, Farmington.

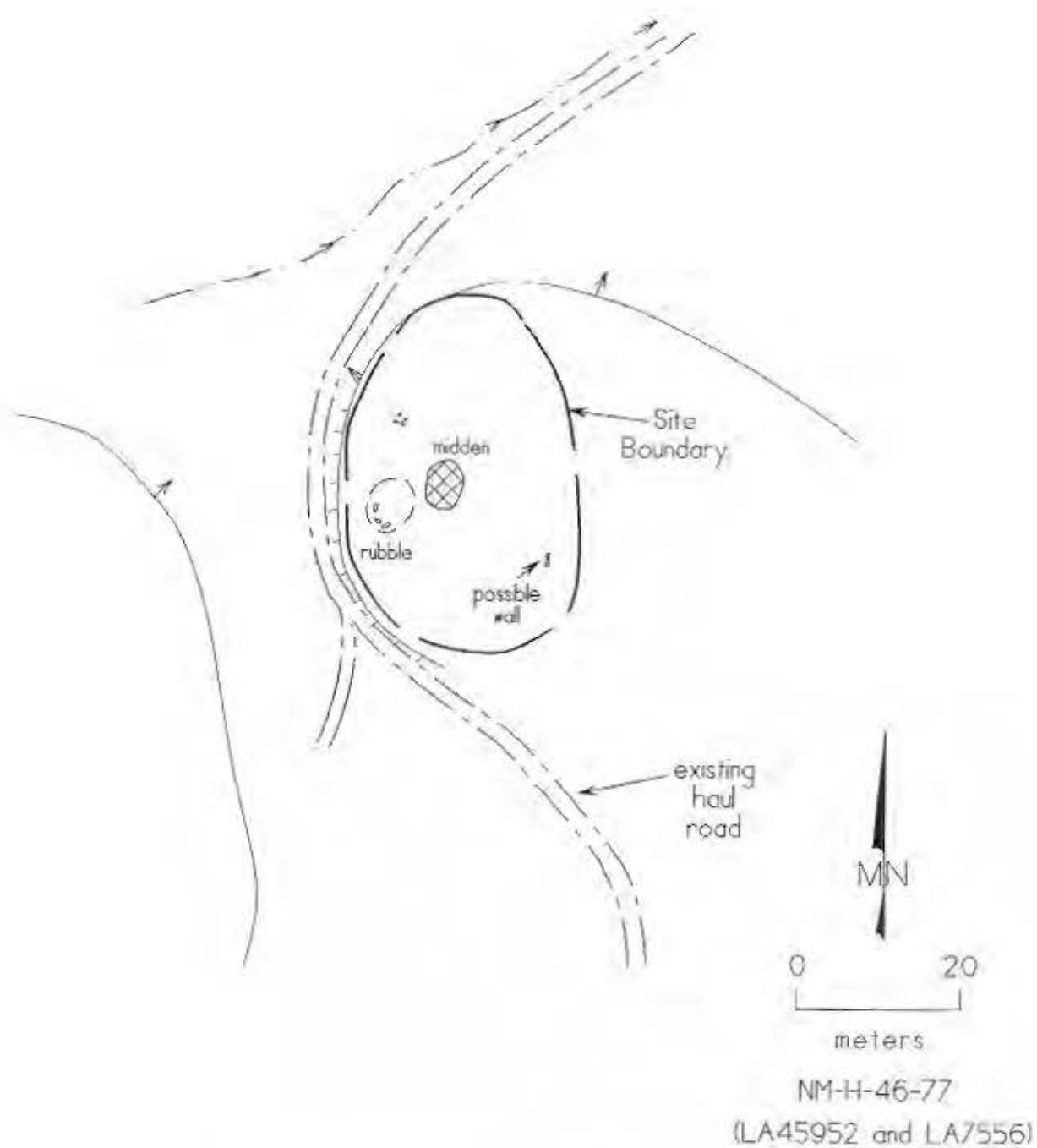
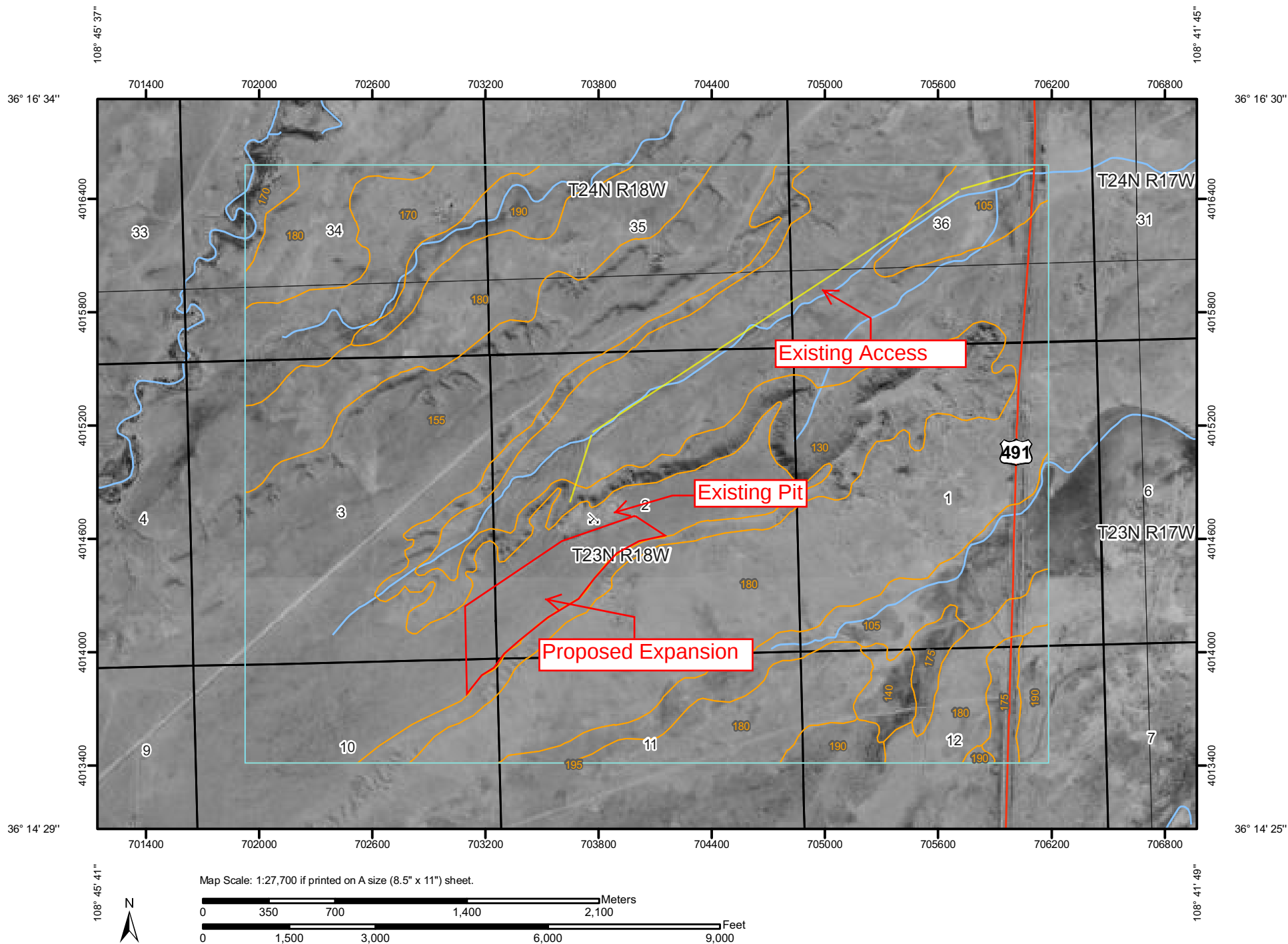
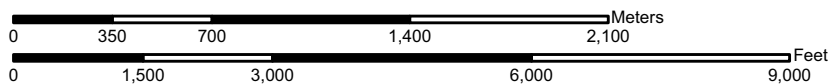


Figure 6. Site plan, NM-II-46-77.

Soil Map—Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona



Map Scale: 1:27,700 if printed on A size (8.5" x 11") sheet.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Units

### Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot



Very Stony Spot



Wet Spot



Other

### Special Line Features



Gully



Short Steep Slope



Other

### Political Features



Cities



PLSS Township and Range



PLSS Section

### Water Features



Oceans



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

## MAP INFORMATION

Map Scale: 1:27,700 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona

Survey Area Data: Version 9, Dec 9, 2008

Date(s) aerial images were photographed: 10/9/1997

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

| Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona (NM717) |                                                      |                |                |
|----------------------------------------------------------------------------------------|------------------------------------------------------|----------------|----------------|
| Map Unit Symbol                                                                        | Map Unit Name                                        | Acres in AOI   | Percent of AOI |
| 105                                                                                    | Hamburn clay loam, 0 to 1 percent slopes             | 233.4          | 7.0%           |
| 130                                                                                    | Badland-Genats complex, 35 to 60 percent slopes      | 350.1          | 10.5%          |
| 140                                                                                    | Benally loamy sand, 1 to 3 percent slopes, overblown | 27.7           | 0.8%           |
| 155                                                                                    | Mesa fine sandy loam, 1 to 4 percent slopes          | 865.4          | 26.0%          |
| 170                                                                                    | Notal sandy clay loam, 0 to 1 percent slopes         | 163.8          | 4.9%           |
| 175                                                                                    | Suwanee loam, 0 to 1 percent slopes                  | 49.1           | 1.5%           |
| 180                                                                                    | Kimbeto-Huerfano complex, 1 to 4 percent slopes      | 1,514.5        | 45.5%          |
| 190                                                                                    | Jeddito loamy fine sand, 0 to 2 percent slopes       | 125.6          | 3.8%           |
| 195                                                                                    | Tewa fine sandy loam, 2 to 15 percent slopes         | 0.0            | 0.0%           |
| <b>Totals for Area of Interest</b>                                                     |                                                      | <b>3,329.5</b> | <b>100.0%</b>  |

## Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona

### 105—Hamburn clay loam, 0 to 1 percent slopes

#### Map Unit Setting

*Elevation:* 5,200 to 6,000 feet  
*Mean annual precipitation:* 5 to 8 inches  
*Mean annual air temperature:* 52 to 54 degrees F  
*Frost-free period:* 140 to 160 days

#### Map Unit Composition

*Hamburn and similar soils:* 80 percent

#### Description of Hamburn

##### Setting

*Landform:* Flood plains  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from sandstone and shale

##### Properties and qualities

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water*  
*(Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* Frequent  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 5 percent  
*Gypsum, maximum content:* 1 percent  
*Maximum salinity:* Very slightly saline to strongly saline (4.0 to 25.0  
mmhos/cm)  
*Sodium adsorption ratio, maximum:* 45.0  
*Available water capacity:* Low (about 5.1 inches)

##### Interpretive groups

*Land capability (nonirrigated):* 6s  
*Ecological site:* Saline Bottom 6-10" (R035XB024NM)

##### Typical profile

*0 to 3 inches:* Clay loam  
*3 to 9 inches:* Sandy clay loam  
*9 to 24 inches:* Sandy clay loam

*24 to 70 inches: Clay loam*

## **Data Source Information**

Soil Survey Area: Shiprock Area, Parts of San Juan County, New Mexico and  
Apache County, Arizona

Survey Area Data: Version 9, Dec 9, 2008



## Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona

### 130—Badland-Genats complex, 35 to 60 percent slopes

#### Map Unit Setting

*Elevation:* 5,300 to 6,000 feet  
*Mean annual precipitation:* 5 to 8 inches  
*Mean annual air temperature:* 52 to 54 degrees F  
*Frost-free period:* 140 to 160 days

#### Map Unit Composition

*Badland:* 40 percent  
*Genats and similar soils:* 35 percent

#### Description of Badland

##### Setting

*Landform:* Breaks  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex

##### Properties and qualities

*Slope:* 8 to 10 percent  
*Depth to restrictive feature:* 0 to 3 inches to paralithic bedrock  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low  
to moderately high (0.00 to 0.20 in/hr)

##### Interpretive groups

*Land capability (nonirrigated):* 8s

##### Typical profile

*0 to 60 inches:* Bedrock

#### Description of Genats

##### Setting

*Landform:* Escarpments, cuestras  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Parent material:* Slope alluvium over residuum weathered from shale

##### Properties and qualities

*Slope:* 35 to 60 percent  
*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low  
to moderately high (0.00 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 3 percent



*Gypsum, maximum content:* 5 percent

*Maximum salinity:* Slightly saline to moderately saline (8.0 to 16.0  
mmhos/cm)

*Sodium adsorption ratio, maximum:* 30.0

*Available water capacity:* Very low (about 2.7 inches)

**Interpretive groups**

*Land capability (nonirrigated):* 7e

*Ecological site:* Shale Hills 6-10" p.z. Sodic (R035XB268AZ)

**Typical profile**

*0 to 3 inches:* Channery silt loam

*3 to 9 inches:* Silty clay loam

*9 to 22 inches:* Silty clay

*22 to 26 inches:* Bedrock

## Data Source Information

Soil Survey Area: Shiprock Area, Parts of San Juan County, New Mexico and  
Apache County, Arizona

Survey Area Data: Version 9, Dec 9, 2008

## Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona

### 155—Mesa fine sandy loam, 1 to 4 percent slopes

#### Map Unit Setting

*Elevation:* 5,700 to 6,300 feet  
*Mean annual precipitation:* 5 to 8 inches  
*Mean annual air temperature:* 52 to 54 degrees F  
*Frost-free period:* 140 to 160 days

#### Map Unit Composition

*Mesa and similar soils:* 85 percent

#### Description of Mesa

##### Setting

*Landform:* Stream terraces, fan remnants  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave, convex  
*Across-slope shape:* Linear, convex  
*Parent material:* Fan alluvium derived from sandstone and shale

##### Properties and qualities

*Slope:* 1 to 4 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water*  
*(Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 40 percent  
*Gypsum, maximum content:* 1 percent  
*Maximum salinity:* Nonsaline to very slightly saline (2.0 to 4.0 mmhos/  
cm)  
*Sodium adsorption ratio, maximum:* 13.0  
*Available water capacity:* Moderate (about 6.9 inches)

##### Interpretive groups

*Land capability (nonirrigated):* 7c  
*Ecological site:* Loamy Upland 7-10" (R035XB021NM)

##### Typical profile

*0 to 2 inches:* Fine sandy loam  
*2 to 21 inches:* Sandy clay loam  
*21 to 37 inches:* Very cobbly sandy loam  
*37 to 47 inches:* Very gravelly sandy loam

*47 to 63 inches: Clay loam*

## **Data Source Information**

Soil Survey Area: Shiprock Area, Parts of San Juan County, New Mexico and  
Apache County, Arizona

Survey Area Data: Version 9, Dec 9, 2008



## 2015 Environmental Assessment



**UPDATED  
BIOLOGICAL EVALUATION  
FOR RECON OIL'S PROPOSED GREY MESA GRAVEL PIT  
EXPANSION AND ACCESS ROAD  
SAN JUAN COUNTY, NEW MEXICO**

**PREPARED FOR:**

**RECON OIL COMPANY  
920 E. HIGHWAY 66  
GALLUP, NM 87301**

**MAY 31, 2015**

## SUMMARY

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Sections 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. The location of the proposed Grey Mesa gravel pit is approximately three miles southwest of the town of Newcomb.

No threatened, endangered, or special status species were observed within or adjacent to the project area during the wildlife and botanical surveys conducted on June 08, 09, and 19, 2009.

A recent request for application for a General Air Quality Permit for a New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities in Indian Country requires that a Biological Evaluation be completed to address updated information on the potential effects of threatened, endangered, and special status species recognized by the U.S. Endangered Species Act, and the Navajo Nation Fish and Wildlife Endangered Species List.

## **1.0 BACKGROUND/HISTORY**

The Grey Mesa Gravel Pit was proposed in 2009 (Proposed Action). An Environmental Assessment was prepared and a Finding of No Significant Impact (FONSI) [Appendix A] was issued by the Bureau of Indian Affairs Division of Environmental, Cultural, and Safety Management, Navajo Regional Office March 18, 2010 [EA-09-236]. A recent request by Recon Oil Company (Recon) for an Environmental Protection Agency General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities in Indian Country requires that the project area be cleared for U.S. Endangered Species Act (ESA) listed threatened or endangered species prior to issuance of coverage under a General Permit. Most of these species have been addressed in prior documents relating to the original Proposed Action, including the *Biological Assessment for Recon Oil's Proposed Grey Mesa Gravel Pit Expansion and Access Road* dated July 1, 2009 (Appendix B).

The purpose of this Biological Evaluation (BE) is to address currently listed ESA species for the purposes of meeting the EPA requirements for obtaining a General Air Quality Permit for crushing and screening facilities proposed at the Grey Mesa Gravel Pit. Within this BE, determinations will be made on potential impacts to currently listed threatened and endangered species (USFWS, 2015) [Appendix C]. Concurrence with these determinations by EPA will enable Recon to obtain the necessary air quality permits to proceed with the Proposed Action.

## **2.0 PROJECT DESCRIPTION**

Recon is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing abandoned gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Section 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The proposed gravel pit expansion is in the NE/4 of Section 10, the SE/4 of Section 3, and the NE/4 of Section 2 (T. 23 N., R. 18 W.). The northern boundary is along an existing two-track road, with the existing abandoned gravel pit on the north side of the road at the east end. The eastern boundary is along an existing two-track road. The southern boundary is along the south edge of Grey Mesa. The western boundary is across undisturbed land [Figure 1].

The access road is in the SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and the SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.). It begins on the west side of US Highway 491 in the NE/4 of Section 36 (T. 24 N., R. 18 W.) and heads west around the north side of a residential area. It continues southwest and then south to end at the proposed gravel pit expansion in the SW/4 of Section 2 (T. 23 N., R. 18 W.).



**Photo 1: Proposed Grey Mesa Gravel Pit**

The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb (Figure 1).

### **3.0 METHODOLOGY**

The original Biological Assessment addressing listed species, as well as general wildlife and plants that occur at the site was prepared in June 2009 (Appendix B). Since that

report was prepared, additional species recognized by the USFWS have become listed, thus requiring this additional Biological Evaluation. After a review of existing conditions at the project site and an evaluation of required habitats of the additional ESA listed species potentially impacted by the proposed Grey Mesa Gravel Pit, it has been determined that no further field surveys are required to provide a determination for any ESA listed species. The ESA listed species with potential to occur in the project area are based on results from U.S. Fish and Wildlife's Information Planning and Conservation website and will be evaluated for potential impacts from the Proposed Action in Section 6.2 [USFWS, 2015](Appendix C).

### **4.0 HABITAT CONDITIONS OF PROPOSED ACTION AND ACTION AREA**

In the 2009 BE, the Proposed Action analysis area included the boundaries of the existing pit and expansion area and the access road, as well as 0.5 mile Action Area beyond these construction areas. The Action Area is included so as to evaluate impacts such as dust, noise, activity, and other factors that would impact the environment beyond the physical boundaries of the project area.

Habitat at the existing pit consists of relatively barren, arid landscape with patchy vegetation and ≥ 75% bare ground in some areas. The site is previously disturbed from gravel pit activities, which took place approximately twenty-five years ago, and grazing. Soils are gravelly and heavily eroded (Photo 1). The abandoned gravel pit is located in a shallow, level wash with drainage to the southwest. What sparse vegetation exists at the site shows signs of moderate to heavy grazing from domestic livestock. There are no perennial streams or wetlands within the project area or Action Area.



The access road is located in the shallow basin adjacent to Grey Mesa and begins on the west side of US 491. The road then travels south-southwest, climbing up the mesa side to the north side of the gravel pit expansion. Existing habitat at the access road consists of barren, sandy gravel surfaces with sparse vegetation (Photo 2). Vegetation is sparse along the access route and is

**Photo 2: Access and Action Area habitat northeast of the Proposed Grey Mesa Gravel Pit**

predominated by salt desert scrub with species such as shadscale (*Atriplex confertifolia*) and alkali sacaton (*Sporobolus airoides*).

The pit expansion site is located on the top of Grey Mesa. The dominant plants are shadscale and alkali sacaton with areas of galleta (*Pleuraphis jamesii*). Winterfat (*Krascheninnikovia lanata*) is common in the west third of the area. Russian-thistle (*Salsola tragus*) and false buffalo-grass (*Munroa squarrosa*) are scattered throughout and are occasionally dominant. The plant community along the rocky rim of the southern boundary of the project area is dominated by purple three-awn (*Aristida purpurea*).

The soil is predominantly sandy clay loam with gravel and cobbles in the basin, with areas of clay loam and loamy sand. The mesa top is mostly sandy loam with a heavy gravel content. The soils are derived from the underlying Menefee formation (NMBGMR, 2003). Elevation throughout the project area ranges from approximately 5540 to 5800 feet.

There are several residences along the southeast edge of the site, near the beginning of the access road, as well as a horse corral at the south edge. Grazing livestock regularly use the project area and Action Area. With the exception of the mesa sides and some grassland habitat, there are few habitat features of wildlife value in the general area. Although there is a small drainage lined with several small salt cedar (*Tamarix sp.*) in the basin formed by the abandoned gravel pit, there are no wetlands, perennial flows, or other apparent water sources. The overall site is moderately to heavily disturbed from previous gravel pit activities, grazing, and human activities such as refuse dumping.

## 5.0 THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

### 5.1 WILDLIFE

No threatened, endangered, or special status wildlife species or critical habitats were documented within or adjacent to the project area during the 2009 wildlife surveys (Appendix B).

The following Table 1 summarizes current ESA listed wildlife species and Navajo Department of Fish and Wildlife Natural Heritage Program NNDFW-NNHP wildlife species with potential to occur in the Action Area and their status.

**Table 1. Listed Wildlife Species with Potential Occurrence near the Proposed Grey Mesa Gravel Pit**

| Common Name<br>(scientific name)                               | Federal<br>Status | Navajo<br>Nation<br>Status | Habitat Associations                                                                                                                     | *Potential<br>to Occur<br>in Project<br>Area |
|----------------------------------------------------------------|-------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| MAMMALS                                                        |                   |                            |                                                                                                                                          |                                              |
| Canada Lynx<br>( <i>Lynx rufus</i> )                           | T                 | n/a                        | High elevation conifer forests and mountainous areas.                                                                                    | NP                                           |
| Banner-tailed kangaroo rat<br>( <i>Dipodomys spectabilis</i> ) | n/a               | Group 4                    | Lowland desert grasslands, sand dunes.                                                                                                   | NP                                           |
| Black-footed ferret<br>( <i>Mustela nigripes</i> )             | E                 | Group 2                    | Open grasslands with large established prairie dog colonies.                                                                             | NP                                           |
| Kit fox<br>( <i>Vulpes macrotis</i> )                          | n/a               | Group 4                    | Open, arid lowland habitats.                                                                                                             | NP                                           |
| Pronghorn<br>( <i>Antilocapra americana</i> )                  | n/a               | Group 3                    | Grasslands, brushlands, bunch-grass and sagebrush areas of open plains and deserts.                                                      | NP                                           |
| BIRDS                                                          |                   |                            |                                                                                                                                          |                                              |
| Golden eagle<br>( <i>Aquila chrysaetos</i> )                   | EPA               | Group 3                    | A wide variety of open habitats, typically nests in steep cliffs > 30 meters in height.                                                  | NP                                           |
| Ferruginous hawk<br>( <i>Buteo regalis</i> )                   | n/a               | Group 3                    | Open grasslands and deserts, typically nests atop rocky pinnacles, small buttes and cliffs                                               | NP                                           |
| Mountain plover<br>( <i>Charadrius montanus</i> )              | n/a               | Group 4                    | Seeks dry, disturbed, or intensively grazed, open, flat tablelands. Bare ground, short vegetation, and flat topography are indicators of | NP                                           |

|                                                                     |     |         |                                                                                                                        |    |
|---------------------------------------------------------------------|-----|---------|------------------------------------------------------------------------------------------------------------------------|----|
|                                                                     |     |         | ideal habitat.                                                                                                         |    |
| Western burrowing owl<br>( <i>Athene cunicularia hypugaea</i> )     | n/a |         | Grasslands and basin-prairie shrub, normally associated with prairie dog towns.                                        | NP |
| Yellow-billed cuckoo<br>( <i>Coccyzus americanus</i> )              | T   | Group 2 | Dense riparian thickets and woodlands, orchards, and woodlots.                                                         | NP |
| Southwestern willow flycatcher ( <i>Empidonax trailii extimus</i> ) | E   | Group 2 | Dense cottonwood-willow or tamarisk-Russian olive habitats along streams and rivers, wetlands and marshes              | NP |
| Sprague's pipit<br>( <i>Ammodramus bairdii</i> )                    | C   | n/a     | Dry open grasslands with native grass species of intermediate height and thickness.                                    | NP |
| <b>HERPETOFAUNA</b>                                                 |     |         |                                                                                                                        |    |
| Northern leopard frog<br>( <i>Rana pipiens</i> )                    | n/a | Group 2 | Breeds in wetlands with aquatic vegetation. Found in irrigation ditches, small streams, rivers. Known from Newcomb, NM | NP |
| <b>FISH</b>                                                         |     |         |                                                                                                                        |    |
| Razorback sucker<br>( <i>Xyrauchen texanus</i> )                    | E   | Group 2 | Rivers with deep runs, eddies, backwaters, and flooded off-channels                                                    | NP |
| Zuni bluehead sucker<br>( <i>Catostomus discobolus yarrow</i> )     | E   | n/a     | Slow meandering streams with sandy beds and emergent aquatic vegetation.                                               | NP |
| Colorado pikeminnow<br>( <i>Ptychocheilus Lucius</i> )              | E   | Group 2 | Medium to large rivers with eddies and backwaters                                                                      | NP |

#### Status

ESA: E –Endangered      T -Threatened      C –Candidate

EPA: Bald and Golden Eagle Protection Act

NESL = Navajo Endangered Species List (G1 species – no longer occurs on Navajo Nation lands; G2 and G3 species – “endangered”; G4 species – “species of concern”.

#### \*Potential to Occur

K -Known, documented observation within project area.

S -Habitat suitable and species suspected to occur within the project area.

NS -Habitat suitable but species is not suspected to occur within the project area.

NP- Habitat not present and species unlikely to occur within the project area.

## 5.2 Eagle Protection Act and Migratory Bird Treaty Act

Bald eagles and golden eagles are protected by the Bald and Golden Eagle Protection Act (16 USC 668-668c) enacted in 1940 which prohibits “taking” of any eagle (bald or golden). Though the bald eagle (*Haliaeetus leucocephalus*) is no longer listed under the ESA it is still protected through this Act.

All migratory birds are protected under the Migratory Bird Treaty Act of 1918 as amended (MBTA)[16 USC §703-712]. Birds protected include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows, and others, including their body parts (feathers, plumes etc.), nests, and eggs. The MBTA protects migratory birds from a “take”. Take is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities”. A “take” does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof.

The overall project area is relatively denuded and there is additional disturbance from close proximity to local roads, a highway, and homes. Five (5) avian species documented during the wildlife surveys are protected under the Migratory Bird Treaty Act; turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), western bluebird (*Sialia mexicana*), horned lark (*Eremophila alpestris*), and canyon wren (*Catherpes mexicanus*).

## 5.3 PLANTS

No threatened, endangered, or special status plant species or critical habitats were documented within or adjacent to the project area during the 2009 plant surveys (Appendix B).

The following Table 2 summarizes current ESA listed plant species and NNDFW-NNHP listed plant species with potential to occur in the Action Area and their status.

**Table 2. Listed Plant Species with Potential Occurrence near the Proposed Grey Mesa Gravel Pit.**

| Species                                             | Federal Status | Navajo Nation Status | Habitat Associations                                                                                                                                                                            | *Potential to Occur in Project Area |
|-----------------------------------------------------|----------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Knowlton’s cactus ( <i>Pediocactus knowltonii</i> ) | E              | n/a                  | On rolling, gravelly hills in a piñon-juniper-sagebrush community at about 6,200-6,300 ft. This species is known only from the type locality very near the NM/CO border. Flowers April and May. | NP                                  |
| Mancos milk-vetch ( <i>Astragalus</i>               | E              | Group 2              | Cracks or eroded depressions on or near sandstone rimrock                                                                                                                                       | NP                                  |

|                                                        |     |         |                                                                                                                                                                                                                                                                                                                                                                      |    |
|--------------------------------------------------------|-----|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <i>humillimus</i> )                                    |     |         | ledges and mesa tops in Point Lookout and Cliffhouse Sandstone. Elev. 5000-6000 ft. Blooms late April to early May.                                                                                                                                                                                                                                                  |    |
| Mesa Verde cactus ( <i>Sclerocactus mesae-verdae</i> ) | T   | Group 2 | Sparsely vegetated salt desert scrub communities on low rolling clay hills formed from the Mancos or Fruitland Shale formations, occasionally on Menefee overlaying Mancos formation. It is most frequently found on the tops of hills or benches and along slopes at 4,900-5,500 feet. Known from San Juan County from the Colorado border south to near Naschitti. | NP |
| Parish's alkali grass ( <i>Puccinellia parishii</i> )  | n/a | Group 4 | Alkaline springs, seeps, or seasonally wet areas such as washes at 5000-7200 feet. The species requires continuously damp soils during its late winter to spring growing period.                                                                                                                                                                                     | NP |

#### Status

ESA: E -Endangered T -Threatened C -Candidate

NESL species = Navajo Endangered Species List (G1 species – no longer occurs on Navajo Nation lands; G2 and G3 species – “endangered”; G4 species – “species of concern”.

#### \*Potential to Occur

K -Known, documented observation within project area.

S -Habitat suitable and species suspected to occur within the project area.

NS -Habitat suitable but species is not suspected to occur within the project area.

NP- Habitat not present and species unlikely to occur within the project area.

## **6.0 EFFECTS OF THE PROPOSED ACTION**

### **6.1 GENERAL WILDLIFE AND PLANTS**

Effects of the Grey Mesa Gravel Pit on the environment, including wildlife and plants have been addressed and analyzed in the *Environmental Assessment for Recon Oil Corporation, Inc., Proposed Grey Mesa Gravel Pit and Access Road (EA-09-236)* dated July 19, 2009. Additional analysis and mitigation has been provided in *Recon Oil Co., Inc. Grey Mesa Gravel Pit Mining, Production, and Reclamation Plan* dated October 12, 2009. Within these documents, mitigation strategies are outlined that would provide protection for general wildlife and restore habitat and

resources for wildlife. These strategies include:

1. No blasting or drilling
2. Applying magnesium chloride or similar dust suppressor to control dust.
3. Stockpiling topsoil for later use in reclamation
4. Leaving slopes no steeper than 5:1
5. Using Best Management Practices to control rilling and erosional deposition within and outside the pit according to the EPA approved Stormwater Pollution Prevention Plan.
6. Reseeding and monitoring seedling success.
7. Following speed limits along access roads.
8. Properly containing all hazardous materials according to EPA and Navajo EPA requirements.
9. Controlling noxious weeds.

Despite mitigation there will be a loss of habitat in the project area and there will be a disruption of wildlife breeding, foraging, and general movement patterns as a result of the Proposed Action. Individual losses to wildlife populations are anticipated as well, due to collisions with equipment and vehicular traffic and other human activities.

## **6.2 LISTED SPECIES**

Based on habitat requirements and an analysis of the available habitat within the Proposed Action boundaries and Action Area, no listed species are expected to occur in the area and no impacts to listed species are anticipated from the Proposed Action. The following determinations are made based on the absence of available suitable habitat for listed species within the proposed Grey Mesa Gravel Pit project area:

### **Colorado Pikeminnow, Razorback Sucker, and Zuni Bluehead Sucker**

The Colorado Pikeminnow (endangered), the razorback sucker (endangered), and the Zuni bluehead sucker (endangered) will not be impacted by the Proposed Action because there are no rivers, lakes, streams, or other water ways in which they would occur. The closest suitable habitat for these fishes is greater than 30 miles from the Proposed Action Area. Due to lack of suitable habitat for these three listed fish species at the Grey Mesa Gravel Pit site, a “no effect” determination is proposed.

### **Southwestern Willow Flycatcher and Yellow-billed Cuckoo**

The southwestern willow flycatcher (endangered) and yellow-billed cuckoo (candidate) will not be impacted by the Proposed Action because there are no riparian corridors, wetlands, woodlots, orchards, or riparian vegetation within the Proposed Action area. The closest suitable habitat for these two species would be along the San Juan River corridor some 30 miles north of the project area. Due to lack of suitable habitat for these two bird species at the Grey Mesa Gravel Pit site, a “no effect” determination is proposed.

### **Sprague’s Pipit**

In New Mexico, the Sprague’s pipit occurs in winter in southern desert grassland habitats primarily in the lower Pecos River Valley, Otero Mesa, and the Animas Valley (NMACP, 2015).

Though it has not been well surveyed in other areas of the state, it prefers grasslands supporting native species of intermediate height and density; neither of which are available at the proposed Grey Mesa Gravel Pit project area or Action Area. Habitat within the project area is highly disturbed from historic grazing resulting in a large percentage of bare ground as well as the presence of opportunistic non-native species. Due to lack of suitable habitat for Sprague's pipit at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

### **Canada Lynx**

The Canada lynx (threatened) is a medium sized wild cat that inhabits high elevation, mountainous regions with large tracts of intact coniferous forests and long lasting snow fields. None of these habitat elements are present at the proposed Grey Mesa Gravel Pit project area. The closest suitable habitat for the Canada lynx is approximately 100 miles north northeast in the San Juan Mountains. Due to lack of suitable habitat for Canada lynx at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

### **Mesa Verde Cactus**

Mesa Verde cactus (threatened) is a small, usually solitary cactus and flowers from early-April to early-May. This plant grows in sparsely vegetated shale or adobe clay badlands typically in the Fruitland and Mancos Shale formations, but has also been found to growing in the Menefee formation overlaying Mancos shale. It is commonly associated with mat saltbush (*Atriplex corrugata*), shadscale (*Atriplex confertifolia*), frankenia (*Frankenia jamesii*), and starvation prickly pear (*Opuntia polyacantha*) at elevations of 4900 to 5500 feet. (Roth, 2001; McDonald, 1999). Habitat at the Grey Mesa Gravel Pit is not a suitable substrate for this species. Though the area offers some salt desert scrub associations, soils are too sandy and gravelly. Additionally, the project area is above the elevation where this species is typically found (4,900-5,500 feet (McDonald, 1999; Roth, 2001). Due to lack of suitable habitat for Mesa Verde Cactus at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

### **Mancos Milkvetch**

Mancos milkvetch (endangered) is an *Astragalus* species which blooms in late April to early May and occurs in cracks or eroded depressions on or near sandstone rimrock ledges and mesa tops in Point Lookout and Cliffhouse Sandstone at elevations of 5000-6000 feet (McDonald, 1999; Roth, 2001). Though the project area is within the elevational range for this species, there are no sandstone rimrock ledges or mesa tops and no Point Lookout or Cliffhouse Sandstone in the project area. Due to lack of suitable habitat for Mancos milkvetch at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

### **Knowlton Cactus**

Knowlton cactus (endangered) grows on rolling, gravelly hills in a pinyon-juniper -sagebrush community with an elevational range of 6,200-6,300 feet, and is known only from a locality matching this habitat type near the NM/CO border (McDonald and Ferguson, 1999). Habitat at the Grey Mesa Gravel pit is not within a pinyon-juniper -sagebrush habitat and is below the elevation at which this species is found. Due to lack of suitable habitat for Knowlton cactus at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

### **Eagle Protection Act Migratory Bird Treaty Act**

Bald eagles and golden eagles are protected by the Bald and Golden Eagle Protection Act (16 USC 668-668c) enacted in 1940 which prohibits “taking” of any eagle (bald or golden). Though the bald eagle (*Haliaeetus leucocephalus*) is no longer listed under the ESA it is still protected through this Act. Additionally, the golden and bald eagle are both protected under the Navajo Endangered Species List (NNDFW, 2008).

Golden eagles are known to nest within 30 miles of the Grey Mesa project area and could use the project area for foraging; however, there are no suitable structures for nesting golden eagles within 1.0 miles of the project area. Construction activities at the pit and removal of vegetation that could be used by golden eagle prey may impact local golden eagles that forage in the project area. However, due to the presence of vast areas of open grasslands and scrub that likely offer alternate hunting opportunities in this region, it is unlikely that implementation of the Proposed Action would result in a golden eagle “take”.

There is no suitable nesting habitat for bald eagles in or near the project area. Bald eagles typically nest along timbered lakeshores or rivers. Therefore it is unlikely that any bald eagles would be impacted by the Proposed Action.

### **Migratory Bird Treaty Act**

All migratory birds are protected under the Migratory Bird Treaty Act of 1918 as amended (MBTA)[16 USC §703-712]. Birds protected include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows, and others, including their body parts (feathers, plumes etc.), nests, and eggs. The MBTA protects migratory birds from a “take”. Take is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities”. A “take” does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof.

Five (5) avian species documented during the 2009 wildlife surveys are protected under the Migratory Bird Treaty Act; turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), western bluebird (*Sialia mexicana*), horned lark (*Eremophila alpestris*), and canyon wren (*Catherpes mexicanus*).

The overall project area is relatively denuded and there is additional disturbance from close proximity to local roads, a highway, and homes resulting in the project area offering little in the way of preferred migratory bird nesting habitat. However, it is possible that some grassland and low nesting species can occur on the site during the breeding season. If project activities are initiated prior to or take place after the primary nesting season (March 1 –August 31), no take of migratory birds is anticipated as a result of the proposed action. If project initiation falls within the primary nesting season, a breeding bird survey is recommended within 2 weeks of construction or opening of the pit to determine the presence of any nesting birds. Active nests would need to be protected by a buffer (to be determined by qualified biologist) to avoid violation of the MBTA and possible take of a migratory bird.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

Due to lack of available suitable habitat, the proposed Grey Mesa Gravel Pit should have no negative impacts on any listed or special status species.

It is recommended that the project be initiated prior to or after the primary nesting season (March 1 –August 31) to avoid take of potential nesting migratory birds. If project initiation falls within the primary nesting season, a breeding bird survey is recommended within 2 weeks of construction or opening of the pit to determine the presence of any nesting birds. Active nests would need to be protected by a buffer (to be determined by qualified biologist) to avoid violation of the MBTA and possible take of a migratory bird.

Other recommendations outlined in the *Environmental Assessment for Recon Oil Corporation, Inc., Proposed Grey Mesa Gravel Pit and Access Road (EA-09-236)* dated July 19, 2009 and the *Recon Oil Co., Inc. Grey Mesa Gravel Pit Mining, Production, and Reclamation Plan* dated October 12, 2009 should also be implemented to protect general wildlife and restore habitat and resources for wildlife.



Wildlife Biologist  
Permits West, Inc.

**May 31, 2015**

## 8.0 REFERENCES

- Dean, Cynthia. July 19, 2009. *Environmental Assessment (EA) for Recon Oil Co., Inc. Plan of Development Grey Mesa Gravel Pit and Access Road*. Permits West, Inc. 37 Verano Loop, Santa Fe, New Mexico 87508.
- Galloway, June M. July 1, 2009. *Biological Assessment for Recon Oil's Proposed Grey Mesa Gravel Pit Expansion and Access Road, San Juan County, New Mexico*. Permits West, Inc. 37 Verano Loop, Santa Fe, New Mexico 87508.
- McDonald, Charlie. 1999. Taxon report for *Astragalus humillimus* (Mancos milkvetch). in New Mexico Rare Plant Technical Council. 1999. New Mexico Rare Plants. Albuquerque, NM: New Mexico Rare Plants Home Page. <http://nmrareplants.unm.edu> (Latest update: 20 April 2015).
- McDonald, Charlie and David J. Ferguson. 1999, last updated 2008. Taxon report for *Pediocactus knowltonii* (Knowlton cactus). in New Mexico Rare Plant Technical Council. 1999. New Mexico Rare Plants. Albuquerque, NM: New Mexico Rare Plants Home Page. <http://nmrareplants.unm.edu> (Latest update: 20 April 2015).
- Navajo Nation Division of Natural Resources Department of Fish and Wildlife (NNDFW). 2008. *Navajo Endangered Species List Resources Committee Resolution No. RCS-41-08*. September 10, 2008. Navajo Department of Fish and Wildlife, Window Rock, Arizona.
- New Mexico Aviation Conservation Partners (NMACP). Sprague's Pipit (*Anthus spragueii*). Species Account. Web. <http://www.nmpartnersinflight.org/spraguespipit.html>. Accessed May 2015.
- New Mexico Bureau of Geology and Mineral Resources, 2003, Geologic Map of New Mexico 1:500, 000: New Mexico Bureau of Geology and Mineral Resources.
- Roth, Daniela. 2001. Species account for *Astragalus humillimus*. Navajo Natural Heritage Program. <http://www.nndfw.org/nnhp/Plants/ashu.pdf>. (revised 15 May 2008).
- U.S. Fish and Wildlife Service Information Planning and Conservation Website (USFWS-IPAC). *My Project San Juan County, New Mexico*. Web. <http://ecos.fws.gov/ipac/project/N3GSY-7RJOB-G3RHQ-L5DZT-7NKZBM/resources>. Accessed May 2015.

## ATTACHMENTS:

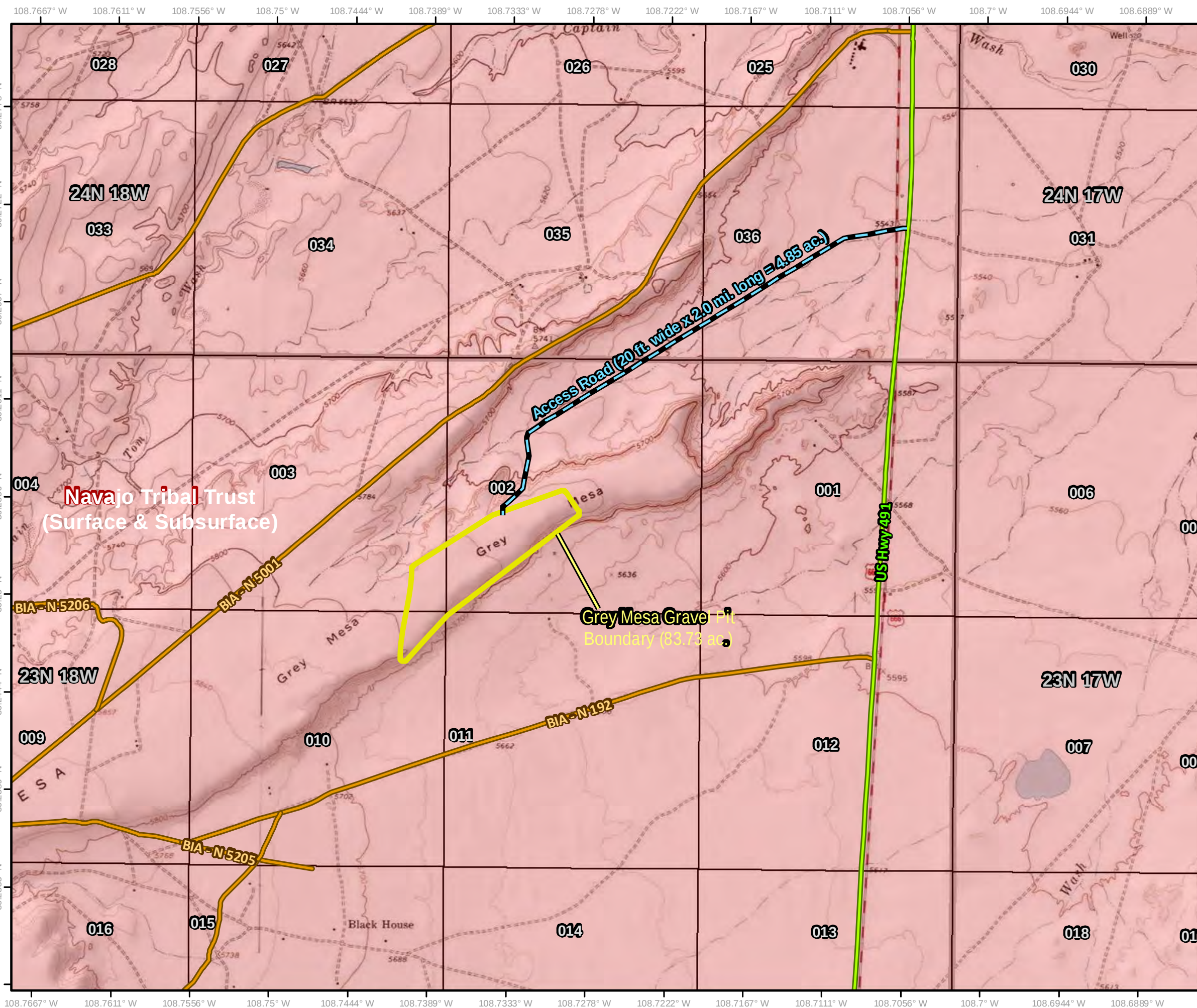
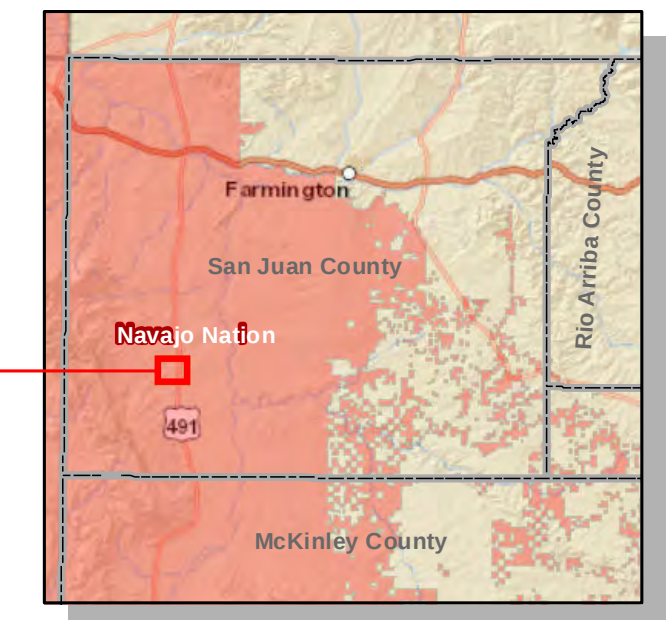
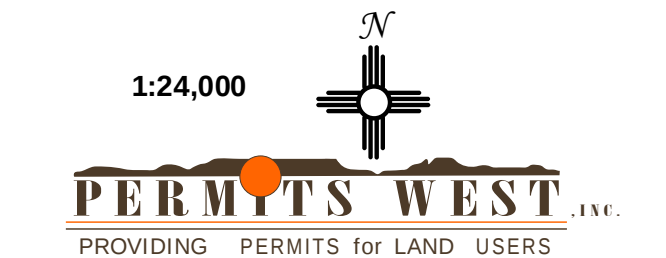
Figure 1- Site Map  
Appendix A – 2010 FONSI  
Appendix B – 2009 Biological Evaluation  
Appendix C – USFWS IPAC List

**Figure 1**  
**RECON OIL CO., INC.**  
**Grey Mesa Gravel Pit**

Sections 2, 3, & 10, T. 23 N., R. 18 W., and  
Sections 35 & 36, T. 24 N., R. 18 W.,  
San Juan County, New Mexico

- Access Road (4.85 ac.)
- U.S. Highway (NavDOT 2008)
- BIA Public Road (NavDOT 2008)
- Grey Mesa Pit Boundary (83.73 ac.)
- Navajo Tribal Trust (Surface & Subsurface)
- Section
- Township

NAD 1983 State Plane New Mexico West FIPS 3003 Feet  
0 1,400 2,800 5,600  
Feet





# United States Department of the Interior

Bureau of Indian Affairs  
Navajo Region  
P. O. Box 1060  
Gallup, New Mexico 87305



MC 620: Division of Environmental, Cultural & Safety Management

## MEMORANDUM

MAR 18 2010

To: Regional Realty Officer  
Attention: Ms. Mary Lujan

From: NEPA Coordinator */s/ Harrilene J. Yazzie*

Through: Regional Environmental Scientist */s/ George Padilla*

Subject: FONSI-Recon Oil Co., Inc Grey Mesa Gravel Pit and Access Road **EA-09-236**

The Environmental Assessment (EA), EA-09-236, for Recon Oil Corporation, Inc, proposed Grey Mesa Gravel Pit and Access Road on 88.58 acres of Navajo Tribal Trust land located roughly 0.5-3 miles southwest of Newcomb, San Juan County, New Mexico, has been reviewed in the Division of Environmental, Cultural and Safety Management, Navajo Regional Office. A Finding of No Significant Impact (FONSI) has been determined for the proposed action. It will not have a significant impact on the quality of the natural and human environment. An environmental impact statement for the proposed project is not required.

If you have questions, you may contact Ms. Harrilene J. Yazzie, Regional NEPA Coordinator, at (505) 863-8287.

Attachment

cc: Mr. Brian Wood, Permits West, Inc. 37 Verano Loop, Santa Fe, NM 87508

**FINDING OF NO SIGNIFICANT IMPACT  
ENVIRONMENTAL ASSESSMENT DOCUMENT, EA-09-236  
GREY MESA GRAVEL PIT AND ACCESS ROAD**

**RECON OIL CORPORATION, INC**

**Location: Newcomb and Sheep Springs Quadrangles, USGS 7.5 Minute Series Maps  
Sections 2, 3 & 10, T23N, R18W, NMPM  
Sections 35 & 36, T24N, R18W, NMPM  
Southwest of Newcomb, San Juan County, New Mexico**

The proposed action is approval of a right-of-way (ROW) grant, by the Bureau of Indian Affairs, for gravel pit expansion and access road. The expansion for the gravel pit will be 83.73 acres and upgrade of access road will be 20-feet by 2 miles (4.85 acres). No more than 20% ( $\approx$ 16.6 acres) of the pit will be excavated at any one time. Upgrading will consist of rocking low water crossings and installing a cattle guard in the U.S. 491 fence at Mile Post  $\approx$ 55.99. There will be no drilling or blasting. The project will affect 88.58 acres of Navajo Tribal Trust land located roughly 0.5-3 miles southwest of Newcomb, San Juan County, New Mexico. The project is sponsored by Recon Oil Corporation, Inc., 920 E. Highway 66, Gallup, New Mexico 87301.

The project environmental assessment (EA) was reviewed by the Division of Environmental, Cultural and Safety Management, Navajo Regional Office. Based on the environmental assessment and the mitigation measures specified in the document, it is determined that the proposed action will not have a significant impact on the natural and human environment. Therefore, in accordance with the National Environmental Policy Act, Section 102 (2) (C), an environmental impact statement will not be required.

The following references, incorporated in the environmental assessment, serve as the bases for this decision:

1. Agency and public involvement was solicited. Environmental issues relative to right-of-way approval for the proposed project were identified. Alternative courses of action and mitigation measures were developed in response to environmental concerns and issues.
2. The EA disclosed the environmental consequences of the proposed and "no action" alternatives.
3. In compliance with the Endangered Species Act, informal consultation was held with the Navajo Nation Department of Fish and Wildlife (NNDFW), Natural Heritage Program (NHP). Although the NNDFW has no record of species of concern occurring on or near the project site at this time, it provided a list of species of concern having the *potential* to occur on the *Newcomb, NM*, USGS 7.5-Minute Quadrangle containing the project boundaries (June 29, 2009). In accordance with the NNDFW Biological Resource Land Clearance Policies and Procedures (BRLCPP), the proposed project is located within a low sensitivity wildlife resources zone and therefore the NNDFW issued Biological Compliance Form (BRCF), NNDF & WL Review No. 09/21/09Q indicating **Compliance** with Tribal and Federal laws protecting biological resource (EA-Appendix 7-BRCF).

## APPENDIX A

4. Potential impacts to flood plains and wetlands by the proposed project have been evaluated in accordance with Executive Orders 11988 and 11990 respectively. According to the Federal Emergency Management Agency Flood Insurance Rate Map the proposed action is not located in a floodplain. Therefore, there will be no involvement with any 100-year floodplain as a result of the construction of the proposed action (EA, Part 3.0-Table A).

5. Water Resources- surface flows are associated with small ephemeral drainage from snow melt and summer thunderstorms. Local drainage in the area is northeast off of Grey Mesa into an unnamed ephemeral wash that drains into Captain Tom Wash then on to the Chaco River. There are no springs on the sides of the mesa which could indicate shallow depth to groundwater. Potential impacts from the proposed action include: 1) increased sediment loading to the adjacent surface drainages through runoff of disturbed soils; and, 2) produced water and/or drilling fluids getting into surface or ground hydrology. Mitigation measures shall include: 1) protecting water zones and fresh water; 2) cleaning spilled contaminants quickly; and 3) reclaiming disturbed areas (EA, Parts 3.3, 3.3.1 & 3.3.2).

6. In compliance with the National Historic Preservation Act of 1966, as amended, Section 106 and 36 CFR 800.9 (b), a cultural resources inventory was conducted on the project area by Complete Archeology Service Associates (CASA). The Navajo Nation Historic Preservation Department (NNHPD) issued Cultural Resources Compliance Form (CRCF), NNHPD No. HPD-09-572 indicating, *No historic properties will be affected if the conditions are followed that are cited within the CRCF (Appendix-5-CRCF). The operator shall comply with the effects and conditions of compliance cited in the CRCF (Appendix-5-CRCF).*

In the event of a discovery [discovery means any previously unidentified or incorrectly identified cultural resources including, but not limited to, archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices] all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Historic Preservation Department must be notified.

7. RCRA, Subtitles C and D, Hazardous and Non-Hazardous Solid Waste- generation of hazardous waste is not expected. If hazardous waste is inadvertently generated, the proper authorities shall be consulted regarding disposal. Solid waste materials will be generated as a result of construction, drilling and operation of the project (EA, Part 3.5.). All trash shall be placed in a portable trash cage and hauled to an approved landfill. Trash shall not be buried or burned. Chemical toilets shall be used for human waste. The waste shall be disposed at approved dump stations (EA, Part 3.5.2).

8. Air Resources- there will be a short-term increase in dust during construction of the proposed project and there will be a local increase in combustive emissions from operating vehicles and earth moving equipment. Water shall be applied for dust control and vehicular traffic shall be limited to reduce combustive emissions and dust. Crushing and separating operations at the gravel pit will be performed by a contractor. The contractor shall be responsible for the obtaining the required permits and shall practice best management practices (EA, Parts 3.2.1 & 3.2.2).

## APPENDIX A

9. Noise levels- the proposed action will be located in a relatively isolated location and is not within 400 feet of a BLM designated Noise Sensitive Area (NSA), nor is the pit located within 400 feet of any dwelling, residence, or building. There is no house located within a quarter mile of the proposed action (EA, Part 3.0-Table b).

10. Noxious Weeds- the Biological Assessment of the proposed action indicated the presences of halogeton, and invasive non-native species; however, no other invasive or non-native species were found in the project area. Noxious weeds may become established in disturbed areas within the proposed action. However, the operator shall make every effort to ensure that noxious weeds do not spread over disturbed areas (EA, Part 3.8.1, 3.8.2). If noxious weeds become established in the project area, the operator shall contact the Navajo Nation Department of Agriculture regarding management and control of noxious weeds. The NNEPA, Pesticide Enforcement and Development Program may be contacted regarding pesticide/herbicide applicators.

11. Cumulative and secondary effects on soil, water, air, noise, vegetation, cultural resources, and wildlife resources (species and habitat) were considered, and the proposed mitigation measures were found to be acceptable.

12. In accordance with Executive Order 12898 on Environmental Justice, impacts to minority and low-income populations and communities have been considered by the Regional NEPA Coordinator, as have impacts to Indian Trust Resources.

The proposed action would allow the development and production of mineral resources to meet national, regional and local energy needs.

---

Regional NEPA Coordinator

18 2016  
Date



**BIOLOGICAL ASSESSMENT  
FOR RECON OIL'S PROPOSED GREY MESA GRAVEL PIT  
EXPANSION AND ACCESS ROAD  
SAN JUAN COUNTY, NEW MEXICO**

**PREPARED FOR**

**RECON OIL COMPANY  
920 E. HIGHWAY 66  
GALLUP, NM 87301**

**01 JULY 2009  
BY JUNE M. GALLOWAY**

## SUMMARY

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing 'abandoned' gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Sections 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb.

No threatened, endangered, or special status species were observed within or adjacent to the project area during the wildlife and botanical surveys conducted on June 08, 09, and 19, 2009.

## 1.0 INTRODUCTION

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing 'abandoned' gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Section 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The proposed gravel pit expansion is in the NE/4 of Section 10, the SE/4 of Section 3, and the NE/4 of Section 2 (T. 23 N., R. 18 W.). The northern boundary is along an existing two-track road, with the existing abandoned gravel pit on the north side of the road at the east end. The eastern boundary is along an existing two-track road. The southern boundary is along the south edge of Grey Mesa. The western boundary is across undisturbed land.

The access road is in the SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and the SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.). It begins on the west side of US Highway 491 in the NE/4 of Section 36 (T. 24 N., R. 18 W.) and heads west around the north side of a residential area. It continues southwest and then south to end at the proposed gravel pit expansion in the SW/4 of Section 2 (T. 23 N., R. 18 W.).

The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb (Appendix A).

This Biological Assessment (BA) was prepared to determine potential impacts of the proposed action to endangered, threatened, and candidate wildlife and plant species and habitats within the Grey Mesa project area, in accordance with Section 10 of the Endangered Species Act (ESA). Wildlife and plant surveys were conducted to determine potential presence of suitable habitat and/or site occupation of federally and Navajo Nation-listed threatened, endangered, or special status species.

## 2.0 METHODOLOGY

Prior to implementation of fieldwork and report preparation, the current lists of federal (USFWS, NM Ecological Field Services Office, 2009) and Navajo Nation (NMDGF, 2009) listed and special status/ sensitive animal species known to occur in San Juan County were reviewed (Tables 4.1a, 4.3a).

Wildlife surveys were conducted at the existing pit, proposed pit, and access road by walking transect lines, including a 1/2 mile buffer. Areas within a one mile radius with potentially suitable nesting habitat for raptors were also surveyed. The surveyor used 8 x 42 standard binoculars and a spotting scope for wildlife observation purposes. All vertebrate species detected by sight, sound, and sign were recorded. Weather conditions, altitude, and identifiable plant species were also recorded. Global positioning coordinates were recorded for any prominent features such as nest sites.

The botanical survey of the access road was accomplished by walking zigzag transects on either side of the existing road to a distance of 40 feet on each side. The expansion area was surveyed

by walking parallel transects across the area at a spacing of 50 to 100 feet apart. The emphasis of the survey was to inspect for listed species of concern. In addition, all plant species were identified in order to provide a more complete description of the environment

### 3.0 EXISTING HABITAT

#### 3.1 EXISTING ABANDONED GRAVEL PIT

Habitat at the existing pit consists of relatively barren, arid landscape with patchy vegetation and  $\geq 75\%$  bare ground in some areas. The site is previously disturbed from gravel pit activities, which took place roughly 25 years ago, and grazing. Soils are gravelly and heavily eroded (Figure 1 - Appendix B). The abandoned gravel pit is located in a shallow, level wash with drainage to the southwest. What sparse vegetation exists at the site shows signs of moderate to heavy grazing from domestic horses and sheep. There are no perennial streams or wetlands.

#### 3.2 PROPOSED GRAVEL PIT EXPANSION AND ACCESS ROAD

The access road is located in the shallow basin adjacent to Grey Mesa and begins on the west side of US 491. The road then travels south-southwest, climbing up the mesa side to the north side of the gravel pit expansion. Existing habitat at the access road consists of barren, sandy gravel surfaces with sparse vegetation (Figure 2 - Appendix B). A power line crosses the access road at the eastern end, near US 491. Vegetation is sparse along the access route and is predominated by salt desert scrub with species such as shadscale (*Atriplex confertifolia*) and alkali sacaton (*Sporobolus airoides*).

The pit expansion site is located on the top of Grey Mesa. The dominant plants are shadscale and alkali sacaton with areas of galleta (*Pleuraphis jamesii*). Winterfat (*Krascheninnikovia lanata*) is common in the west third of the area. Russian-thistle (*Salsola tragus*) and false buffalo-grass (*Munroa squarrosa*) are scattered throughout and are occasionally dominant. The plant community along the rocky rim of the southern boundary of the project area is dominated by purple three-awn (*Aristida purpurea*).

The soil is predominantly sandy clay loam with gravel and cobbles in the basin, with areas of clay loam and loamy sand. The mesa top is mostly sandy loam with a heavy gravel content. The soils are derived from the underlying Menefee formation (NMBGMR, 2003). Elevation throughout the project area ranges from approximately 5540 to 5800 feet.

There are several residences along the southeast edge of the site, near the beginning of the access road, as well as a horse corral at the south edge. Domestic horses were on site during the wildlife survey. With the exception of the mesa sides and some grassland habitat, there are few habitat features of wildlife value in the general area. Although there is a small drainage lined with several small salt cedar (*Tamarix sp.*) in the basin, there are no wetlands, perennial flows, or apparent water sources. The overall site is moderately to heavily disturbed from previous gravel pit activities, grazing, and human activities such as refuse dumping, with almost no disturbance along the western boundary of the expansion site.

### 4.0 SURVEY RESULTS

#### 4.1 THREATENED, ENDANGERED AND SPECIAL STATUS WILDLIFE SPECIES

During the late afternoon of June 08 and morning of June 09, 2009, Wildlife Biologist June M. Galloway conducted a pedestrian survey at the project site. Weather was clear and breezy, with temperatures fluctuating greatly due to heavy thunder storms in the area.

No threatened, endangered, or special status wildlife species were documented within or adjacent to the project area during the wildlife surveys (Table 4.1a) (Appendix B). One species protected by the Migratory Bird Treaty Act (1918), common raven (*Corvus corax*), was observed nesting on-site at the time of the surveys. In addition, a red fox vixen with two kits was also documented.

Table 4.1a. Federal and Navajo Nation listed (NESL) threatened, endangered, and special status wildlife species with the potential to occur within the vicinity of the Proposed Action (San Juan County, NM) (2009).

| Common Name<br>(scientific name)                                 | Federal<br>Status | NESL    | HABITAT ASSOCIATIONS                                                                                                                                               | POTENTIAL<br>TO OCCUR<br>IN THE<br>PROJECT<br>AREA |
|------------------------------------------------------------------|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>MAMMALS</b>                                                   |                   |         |                                                                                                                                                                    |                                                    |
| Townsend's big-eared bat<br>( <i>Corynorhinus townsendii</i> )   | SOC               | NESL 4  | On the Navajo Nation, roosts and hibernates primarily in sandstone or limestone caves, lava tubes, mine tunnels, and man-made structures in a variety of habitats. | NP                                                 |
| Banner-tailed kangaroo rat<br>( <i>Dipodomys spectabilis</i> )   |                   | Group 4 | Lowland desert grasslands, sand dunes.                                                                                                                             | NP                                                 |
| Black-footed ferret ( <i>Mustela nigriceps</i> )                 | E                 | Group 2 | Open grasslands with large established prairie dog colonies.                                                                                                       | NP                                                 |
| Kit fox ( <i>Vulpes macrotis</i> )                               |                   | Group 4 | Open, arid lowland habitats.                                                                                                                                       | NP                                                 |
| Pronghorn ( <i>Antilocapra americana</i> )                       |                   | Group 3 | Grasslands, brushlands, bunch-grass and sagebrush areas of open plains and deserts.                                                                                | NP                                                 |
| <b>BIRDS</b>                                                     |                   |         |                                                                                                                                                                    |                                                    |
| Golden eagle<br>( <i>Aquila chrysaetos</i> )                     |                   | Group 3 | A wide variety of open habitats, typically nests in steep cliffs > 30 meters in height.                                                                            | NP                                                 |
| Ferruginous hawk<br>( <i>Buteo regalis</i> )                     |                   | Group 3 | Open grasslands and deserts, typically nests atop rocky pinnacles, small buttes and cliffs                                                                         | NP                                                 |
| Northern goshawk<br>( <i>Accipiter gentiles</i> )                |                   | Group 4 | Forest species – typically nests along drainages, canyon bottoms, or north-facing forested slopes with high canopy cover.                                          | NP                                                 |
| American peregrine falcon<br>( <i>Falco peregrinnus anatum</i> ) | SOC               | Group 4 | Nests in sheer cliff faces typically > 30 meters in height, usually near water or mesic canyons. In migration, occurs in a variety of lowland, wetland habitats.   | NP                                                 |
| Artic peregrine falcon<br>( <i>Falco peregrinus tundrius</i> )   | SOC               |         | Highly migratory, nests on alpine islands and tundra regions.                                                                                                      | NP                                                 |
| Black tern                                                       | SOC               |         | Breeding habitat includes marshes,                                                                                                                                 | NP                                                 |

|                                                                         |     |         |                                                                                                                                                         |    |
|-------------------------------------------------------------------------|-----|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| ( <i>Chlidonias niger</i> )                                             |     |         | sloughs, rivers, lakeshores and impoundments. Prefers sheltered offshore waters and bays for non-breeding habitat.                                      |    |
| Mountain plover<br>( <i>Charadrius montanus</i> )                       | SOC | Group 4 | Seeks dry, disturbed, or intensively grazed, open, flat tablelands. Bare ground, short vegetation, and flat topography are indicators of ideal habitat. | NP |
| Western burrowing owl<br>( <i>Athene cunicularia hypugaea</i> )         | SOC |         | Grasslands and basin-prairie shrub, normally associated with prairie dog towns.                                                                         | NP |
| Yellow-billed cuckoo<br>( <i>Coccyzus americanus</i> )                  | C   |         | Moist, dense riparian thickets, willow stands, overgrown pastures and orchards.                                                                         | NP |
| Southwestern willow flycatcher<br>( <i>Empidonax trailii extimus</i> )  | E   | Group 2 | Cottonwood-willow riparian corridors.                                                                                                                   | NP |
| Baird's sparrow<br>( <i>Ammodramus bairdii</i> )                        | SOC |         | Grasslands, weedy fields.                                                                                                                               | NP |
| HERPETOFAUNA                                                            |     |         |                                                                                                                                                         |    |
| Northern leopard frog<br>( <i>Rana pipiens</i> )                        |     | Group 2 | Breeds in wetlands with aquatic vegetation. Found in irrigation ditches, small streams, rivers. Newcomb, NM included in NN historical records.          | NP |
| FISH                                                                    |     |         |                                                                                                                                                         |    |
| Roundtail chub<br>( <i>Gila robusta</i> )                               | SOC |         | Throughout Colorado River Basin. Inhabits open areas in deep pools and eddies in middle-sized and larger streams.                                       | NP |
| INVERTEBRATES                                                           |     |         |                                                                                                                                                         |    |
| New Mexico silverspot butterfly<br>( <i>Speyeria nokomis nitocris</i> ) | SOC |         | Alpine meadows.                                                                                                                                         | NP |
| San Juan checkerspot<br>( <i>Euphydryas anicia chuskae</i> )            | SOC |         | No habitat information available.                                                                                                                       | NP |

**Status**

E Endangered

T Threatened

C Candidate

NESL Navajo Endangered Species List

SOC Species of Concern

**Presence**

K Known, documented observation within project area.

S Habitat suitable and species suspected to occur within the project area.

NS Habitat suitable but species is not suspected to occur within the project area.

NP Habitat not present and species unlikely to occur within the project area.

## 4.2 MIGRATORY BIRDS

Native migratory birds are protected under the Migratory Bird Treaty Act. Birds protected under the Act include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows and others, including their body parts (feathers, plumes etc.), nests, and eggs. The Act protects migratory birds from “take”, with take being defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities”. A “take” does not include habitat destruction or alteration, as long as

these is not a direct taking of birds, nests, eggs, or parts thereof.

The overall project area is relatively denuded and there is additional disturbance from close proximity to local roads, a highway, and homes. Five (5) avian species documented during the wildlife surveys are protected under the Migratory Bird Treaty Act; turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), western bluebird (*Sialia mexicana*), horned lark (*Eremophila alpestris*), and canyon wren (*Catherpes mexicanus*). If project activities take place after the primary nesting season (April 01 – July 31), no take of migratory birds is anticipated as a result of the proposed action.

#### 4.3 THREATENED, ENDANGERED, AND SPECIAL STATUS PLANT SPECIES

The project area was surveyed on June 19, 2009, by botanist Marian Rohman. This report discusses the potential for disturbance to Mesa Verde cactus (*Sclerocactus mesae-verdae*) and Parish's alkali grass (*Puccinellia parishii*), plants identified by the Navajo Nation Natural Heritage Program (NNHP) as species of concern (Table 4.2a). Both species have the potential to occur on the Newcomb, NM, 7.5-minute quadrangle, which contains the boundaries of the project area (Detsoi, 2009).

Table 4.3a. Plants cited by the Navajo Natural Heritage Program: Mesa Verde cactus and Parish's alkali grass are identified by the Navajo Natural Heritage Program as species of concern that could occur in the project area. (Detsoi, 2009)

|                                                           |                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parish's alkali grass<br>( <i>Puccinellia parishii</i> )  | Alkaline springs, seeps, or seasonally wet areas such as washes at 5000-7200 feet. The species requires continuously damp soils during its late winter to spring growing period. (McDonald, 1999a; Roth, 2001a)                                                                                                                                                                                     | No appropriate habitat: there are no alkaline springs, seeps, or seasonally wet areas in the project area. (NP)                                                                                                                                                                                                                                                                                                            |
| Mesa Verde cactus<br>( <i>Sclerocactus mesae-verdae</i> ) | Sparsely vegetated salt desert scrub communities on low rolling clay hills formed from the Mancos or Fruitland Shale formations, occasionally on Menefee overlaying Mancos formation. It is most frequently found on the tops of hills or benches and along slopes at 4,900-5,500 feet. Known from San Juan County from the Colorado border south to near Naschitti. (McDonald, 1999b; Roth, 2001b) | No appropriate habitat: there is salt desert scrub in the project area; however, the access road is too sparsely vegetated and heavily graveled and cobbled, or too sandy. The mesa top is a transitional community and the soil is too sandy. The area is in the Menefee formation, with no nearby Mancos or Fruitland shale. The project area is slightly to well above the known elevational range of the species. (NP) |

## Potential to Occur\*\*

K – Known, documented observation within project area.

S – Habitat suitable and species suspected to occur within the project area.

NS – Habitat suitable but species is not suspected to occur within the project area.

NP – Habitat not present and species unlikely to occur within the project area

Mesa Verde cactus is a small, usually solitary cactus. It is oval to depressed globose in shape and usually 3 to 11 cm tall and 4 to 8 cm in diameter. Central spines are generally absent. The flowers are yellowish-cream to pinkish and appear from early-April to early-May. This plant grows in sparsely vegetated shale or adobe clay badlands typically in the Fruitland and Mancos Shale formations, but has also been found to growing in the Menefee formation overlaying Mancos shale. It is commonly associated with mat saltbush (*Atriplex corrugata*), shadscale (*Atriplex confertifolia*), frankenia (*Frankenia jamesii*), and starvation prickly pear (*Opuntia polyacantha*) at elevations of 4900 to 5500 feet. (Roth, 2001b; McDonald, 1999b)

Parish's alkali grass is a short-lived winter or spring annual grass that is easily distinguished from its perennial relatives. It grows in alkaline springs, seeps, and seasonally wet areas, from elevations of 5000 to 7200 feet. The species requires continuously damp soils during its late winter to spring growing period. (McDonald, 1999a) On Navajo lands, it flowers from late April to early June. (Roth, 2001a) Sufficient alkalinity for the species is indicated by a white alkaline crust along the edges of its habitat when wet and covering the area when dry. (Detsoi, 2009; personal observation).

#### 4.4 NOXIOUS AND INVASIVE WEEDS

The Bureau of Indian Affairs lists three species of noxious weeds as potential invaders and fourteen species as new invaders on the Navajo Reservation (USDI, OSM, 1999). Of these, only halogeton (*Halogeton glomeratus*) is present. It was documented as scattered plants along the access road in the residential area at the start of the project site and also several feet east of the road's turn south to the mesa and west of that turn. Halogeton is a Priority B species, indicating that is known to have invaded isolated locales on the reservation. Emphasis is placed on immediate control, prevention of seed spread, and eradication. Education, awareness, identification, control, and monitoring are the priorities (USDI, OSM, 1999).

### 5.0 EFFECTS OF THE PROPOSED ACTION

#### 5.1 INDIRECT/DIRECT EFFECTS

The proposed action will remove soil, grasses, and some shrubs.

#### 5.2 CUMULATIVE EFFECTS

The project area is surrounded by paved and unpaved roads, power lines, residences, corrals, and tribal lands. Construction activity may increase ambient noise level, erosion, and air pollution in the immediate area.

## **6.0 CONCLUSIONS**

It is anticipated that the proposed action will have no impact on threatened, endangered, and special status species. As mentioned previously, the site is previously disturbed and does not appear to provide suitable habitat for many native plant and wildlife species.

Thirteen (13) listed or special status wildlife species are known to inhabit, or have the potential to occur, in San Juan County, New Mexico. None of these species were observed during the survey. Because of the existing on-site disturbance and the project area's lack of suitable habitat for many species, it is unlikely that implementation of the project will result in impact to local animal populations and their associated habitats.

## **7.0 RECOMMENDATIONS**

In order to comply with the Migratory Bird Treaty Act (1918), it is recommended that construction take place outside of the primary nesting season (approximately April through July), if nests are present. Five (5) avian species observed during the surveys are protected under the Act. The act protects migratory birds from "take", which is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities". A "take" does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. No take of migratory birds is anticipated from the proposed project.

The proposed project will not impact Mesa Verde cactus or Parish's alkali grass, two Navajo Natural Heritage Program Species of Concern with the potential to occur in the project area.

## 8.0 REFERENCES

Allred, Kelly, 2007. *A Working Index of New Mexico Vascular Plant Names*. Range Science Herbarium at New Mexico State University. Las Cruces, New Mexico. <http://web.nmsu.edu/~kallred/herbweb/Working%20Index-title.htm>

Benyus, Janine M. 1989. *The Field Guide to Wildlife Habitats of the Western United States*. Simon and Schuster, New York, New York.

Detsoi, Sonja. 2009. *Recon Oil Company Proposed Grey Mesa Gravel Pit. Located in Legal Description Sec. 2, 3, 10, 11 T23N, R18W, Sections 35 & 36, T24N, R18W*. Wildlife Technician, Navajo Natural Heritage Program. Letter of June 29 to Brian Wood, Permits West, Inc.

Ivey, Robert DeWitt. 2003. *Flowering Plants of New Mexico*. R. D. & V. Ivey, Publishers, Albuquerque, NM.

New Mexico Dept. Game & Fish (NMDGF). 2009. BISON-M. <http://nmnhp.unm.edu/bisonm/BISONM.CFM>.

New Mexico Native Plant Protection Advisory Committee. 1984. *A Handbook of Rare and Endemic Plants of New Mexico*. University of New Mexico Press, Albuquerque, NM.

New Mexico Ornithological Society. 2009. <http://www.nmosbirds.org/updates.html>

Wilson, DE, and Reeder, DM. 2005. *Mammal Species of the World: A Taxonomic and Geographic Reference*. Third Edition. The Johns Hopkins University Press, Baltimore.

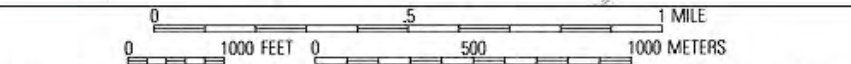
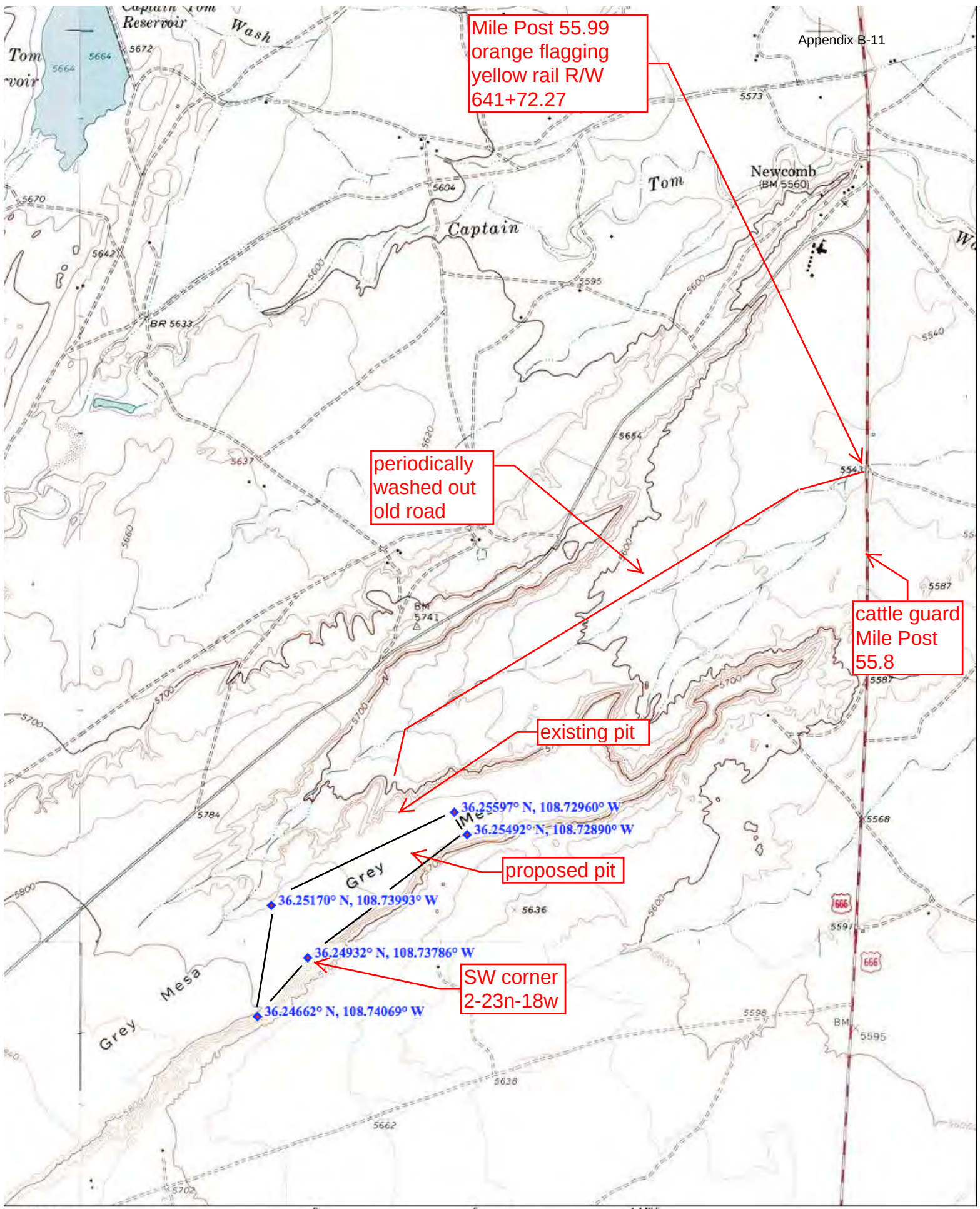
## 9.0 APPENDICES

Appendix A - Site Map

Appendix B - Site Photos

Appendix C - Wildlife species documented at project site

Appendix D - Plant species documented at project site



Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)



Figure 1. Looking southeast from existing gravel pit (San Juan County, NM).



Figure 2. Habitat around existing road – looking northeast (San Juan County, NM).

**WILDLIFE SPECIES DOCUMENTED AT THE PROPOSED GREY MESA GRAVEL  
PIT EXPANSION SITE AND ACCESS ROAD**

(NE/4 of Section 10, SE/4 of Section 3,  
and SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and  
SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.)

**Avian species:**

Turkey vulture (*Cathartes aura*)

Common raven (*Corvus corax*)\*

Western bluebird (*Sialia mexicana*)

Horned lark (*Eremophila alpestris*)

Canyon wren (*Catherpes mexicanus*)\*

**Mammalian species:**

Desert cottontail (*Sylvilagus audubonii*)

Red fox (*Vulpes fulvus*)\*

\*breeding documented on site

## PLANT SPECIES DOCUMENTED AT THE PROPOSED GREY MESA GRAVEL PIT EXPANSION SITE AND ACCESS ROAD

Scientific and common names according to Allred, 2007. Identifications based on Ivey 2003 and Weber and Wittman 2001.

### ***Shrubs and Subshrubs***

|                                              |                     |
|----------------------------------------------|---------------------|
| <i>Artemisia bigelovii</i>                   | Bigelow's sagebrush |
| <i>Atriplex canescens</i>                    | Four-wing saltbush  |
| <i>Atriplex gardneri</i> var. <i>cuneata</i> | Valley saltbush     |
| <i>Atriplex confertifolia</i>                | Shadscale           |
| <i>Gutierrezia sarothrae</i>                 | Broom snakeweed     |
| <i>Krascheninnikovia lanata</i>              | Winterfat           |
| <i>Lycium pallidum</i>                       | Pale wolfberry      |

### ***Cacti***

|                            |                                |
|----------------------------|--------------------------------|
| <i>Opuntia polyacantha</i> | <i>Starvation prickly pear</i> |
|----------------------------|--------------------------------|

### ***Grasses***

|                                |                     |
|--------------------------------|---------------------|
| <i>Achnatherum hymenoides</i>  | Indian ricegrass    |
| <i>Aristida purpurea</i>       | Purple threeawn     |
| <i>Bouteloua curtipendula</i>  | Sideoats grama      |
| <i>Bromus tectorum</i>         | Cheatgrass          |
| <i>Munroa squarrosa</i>        | False buffalo-grass |
| <i>Pleuraphis jamesii</i>      | Galleta             |
| <i>Scleropogon brevifolius</i> | Burrograss          |
| <i>Sporobolus airoides</i>     | Alkali sacaton      |
| <i>Sporobolus cryptandrus</i>  | Sand dropseed       |

### ***Forbs***

|                                                         |                       |
|---------------------------------------------------------|-----------------------|
| <i>Ambrosia acanthicarpa</i>                            | Bur ragweed           |
| <i>Chaetopappa ericoides</i>                            | Sand aster            |
| <i>Chamaesaracha coronopus</i>                          | Green-leaf five-eyes  |
| <i>Chamaesyce</i> sp.                                   | Spurge                |
| <i>Chenopodium album</i>                                | Lamb's quarter        |
| <i>Chenopodium leptophyllum</i>                         | Narrowleaf goosefoot  |
| <i>Cryptantha crassisejala</i> var. <i>crassisejala</i> | Thick-sepal cat's-eye |
| <i>Cymopterus</i> sp.                                   | Spring-parsley        |
| <i>Dieteria</i> sp.                                     | Spine-aster           |

|                                                             |                        |
|-------------------------------------------------------------|------------------------|
| <i>Halogeton glomeratus</i>                                 | Halogeton              |
| <i>Machaeranthera tanacetifolia</i>                         | Tahoka daisy           |
| <i>Mentzelia multiflora</i>                                 | Adonis blazingstar     |
| <i>Platyschkuhria integrifolia</i> var. <i>oblongifolia</i> | Basin-daisy            |
| <i>Salsola tragus</i>                                       | Russian-thistle        |
| <i>Senecio</i> sp.                                          | Groundsel              |
| <i>Sphaeralcea coccinea</i>                                 | Scarlet globemallow    |
| <i>Sphaeralcea fendleri</i>                                 | Fendler's globemallow  |
| <i>Sphaeralcea grossulariifolia</i>                         | Gooseberry globemallow |
| <i>Stephanomeria exigua</i>                                 | Twiggy wire-lettuce    |
| <i>Verbesina encelioides</i>                                | Golden crownbea        |

U.S. Fish & Wildlife Service

# My project

---

## *IPaC Trust Resource Report*

Generated June 01, 2015 03:09 PM MDT



US Fish &amp; Wildlife Service

# IPaC Trust Resource Report

---



## Project Description

NAME

My project

PROJECT CODE

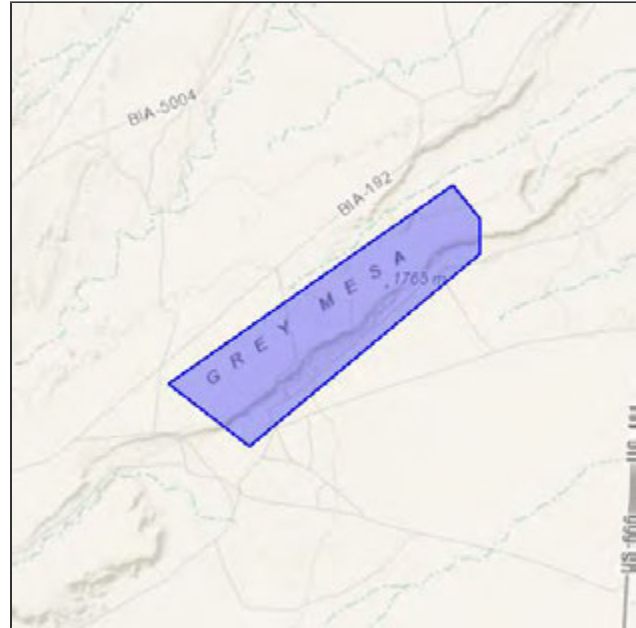
JXO5E-N3TNJ-EITGQ-5AVEF-M67J2M

LOCATION

San Juan County, New Mexico

DESCRIPTION

No description provided



## U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

**New Mexico Ecological Services Field Office**

2105 Osuna Road Ne

Albuquerque, NM 87113-1001

(505) 346-2525

# Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

## Birds

### Southwestern Willow Flycatcher *Empidonax traillii extimus*

**Endangered**

#### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B094>

### Sprague's Pipit *Anthus spragueii*

**Candidate**

#### CRITICAL HABITAT

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0GD>

### Yellow-billed Cuckoo *Coccyzus americanus*

**Threatened**

#### CRITICAL HABITAT

There is **proposed** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06R>

## Fishes

### Colorado Pikeminnow (=squawfish) *Ptychocheilus lucius*

**Endangered**

#### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E006>

### Razorback Sucker *Xyrauchen texanus*

**Endangered**

#### CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E054>

### Zuni Bluehead Sucker *Catostomus discobolus yarrowi*

**Endangered**

#### CRITICAL HABITAT

There is **proposed** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E063>

## Flowering Plants

### **Knowlton's Cactus** *Pediocactus knowltonii*

**Endangered****CRITICAL HABITAT**

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1ZY>

### **Mancos Milk-vetch** *Astragalus humillimus*

**Endangered****CRITICAL HABITAT**

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1T9>

### **Mesa Verde Cactus** *Sclerocactus mesae-verdae*

**Threatened****CRITICAL HABITAT**

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q21J>

## Mammals

### **Canada Lynx** *Lynx canadensis*

**Threatened****CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A073>

## Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

## 6. HISTORIC PROPERTIES SCREENING PROCESS

---

The assessment performed in 2009 as part of the environmental assessment determined that, with the stipulation that no widening of the existing haul road be undertaken in the vicinity of the sites, there would be “no historic properties affected” for the project areas. Any cultural and/or paleontology resource discovered by the property owner, its contractors, or anyone working on their behalf during the proposed action would be immediately reported to the Navajo Nation Historic Preservation Department (NNHPD) and/or the BLM Farmington Field Office Archaeologist. All operations would be suspended in the immediate area until approval to proceed is issued by NNHPD. More information on the historic properties screening process is included in the 2010 environmental assessment included in Section 5 of this application.