United States Department of Agriculture

Forest Service Eastern Region

Hiawatha National Forest

ENVIRONMENTAL ASSESSMENT FOR THE SMITHERS RAPRA SPECIAL USE PERMIT REISSUANCE

U.S. FOREST SERVICE,

SAULT STE. MARIE RANGER DISTRICT

For more information:
Robert West, St. Ignace District Ranger
phone 906.643.7900
USDA Forest Service
1900 West U.S. 2
St. Ignace, MI 49840

March 2015

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ACRONYMS AND ABBREVIATIONS

AST	Aboveground storage tank
BMIC	Bay Mills Indian Community
BMP	Best Management Practices
CAA	Clean Air Act
CCRC	Chippewa County Road Commission
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO_2	Carbon dioxide
DBH	Diameter at breast height
DN	Decision Notice
DNR	Michigan Department of Natural Resources
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
Forest Plan	Land and Resource Management Plan
Forest Service	U.S. Forest Service
FSM	Forest Service Manual
FUDS	Formerly Used Defense Site
GHG	Greenhouse gas
HNF	Hiawatha National Forest
MA	Management Area
MDEQ	Michigan Department of Environmental Quality
MIS	Management Indicator Species
MNFI	Michigan Natural Features Inventory
msl	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NNIP	Non-native invasive plant species
NRHP	National Register of Historic Places
RFSS	Regional Forester Sensitive Species
ROW	Right-of-way
SHPO	State Historic Preservation Officer
SIR	Supplemental Information Report
Smithers RAPRA	Smithers Rubber and Plastic Research Association
SPCC	Spill Prevention, Control, and Countermeasure Plan
SO_2	Sulfur dioxide
SUP	Special Use Permit
TCE	Trichloroethylene
TES	Threatened, Endangered, and Sensitive species
THPO	Tribal Historic Preservation Officer
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture

USFWS	U.S. Fish and Wildlife Service
VOC	Volatile organic compound
WNS	White-nose syndrome
VQO	Visual Quality Objective

EXECUTIVE SUMMARY

The U.S. Forest Service (Forest Service) Sault Ste. Marie Ranger District is proposing to reissue to Smithers Scientific Services Incorporated (now d/b/a Smithers Rubber and Plastic Research Association) (Smithers RAPRA) a 20-year Special Use Permit (SUP) for use of the abandoned National Guard airbase in Raco, Michigan (Raco Airbase).

This Environmental Assessment (EA) documents the potential environmental effects as a result of SUP reissuance. This EA complies with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations.

This EA discloses the direct, indirect, and cumulative environmental effects and any irreversible or irretrievable commitment of resources that would result from the Proposed Action and No-Action Alternative. An interdisciplinary team of resource specialists used a systematic approach for analyzing project alternatives, evaluating the environmental effects, and preparing this EA. Based on this EA, the District Ranger will decide whether or not to issue a modified SUP as requested by the applicant. The Forest Supervisor will decide whether or not a project-specific Forest Plan amendment is needed to reclassify lands suitable for timber production and unsuitable for timber production within the proposed permit area.

The Modified Permit Reissuance Alternative would require a project-specific Forest Plan amendment to reclassify lands within the proposed permit area. This alternative would not result in significant adverse effects to potentially affected resources and would have the beneficial economic impact of adding additional jobs.

No modifications or changes to the site beyond currently permitted activities would occur as a result of the No Action Alternative. The No Action Alternative would also not result in significant adverse effects to potentially affected resources and would generally have no effects over the existing conditions within the existing permit area. However, this alternative would not allow Smithers RAPRA to implement additional activities that are required to meet their clients' needs.

1.0 PROJECT BACKGROUND AND PURPOSE AND NEED

1.1 INTRODUCTION AND BACKGROUND

The U.S. Forest Service (Forest Service) Sault Ste. Marie Ranger District is proposing to reissue to Smithers Scientific Services Incorporated (now d/b/a Smithers Rubber and Plastic Research Association) (Smithers RAPRA) a 20-year Special Use Permit (SUP) for use of the abandoned National Guard airbase in Raco, Michigan (Raco Airbase) (Project). The airbase is located in Chippewa County, along Highway 28 approximately 18 miles west of Sault Ste. Marie (Figure 1-1).

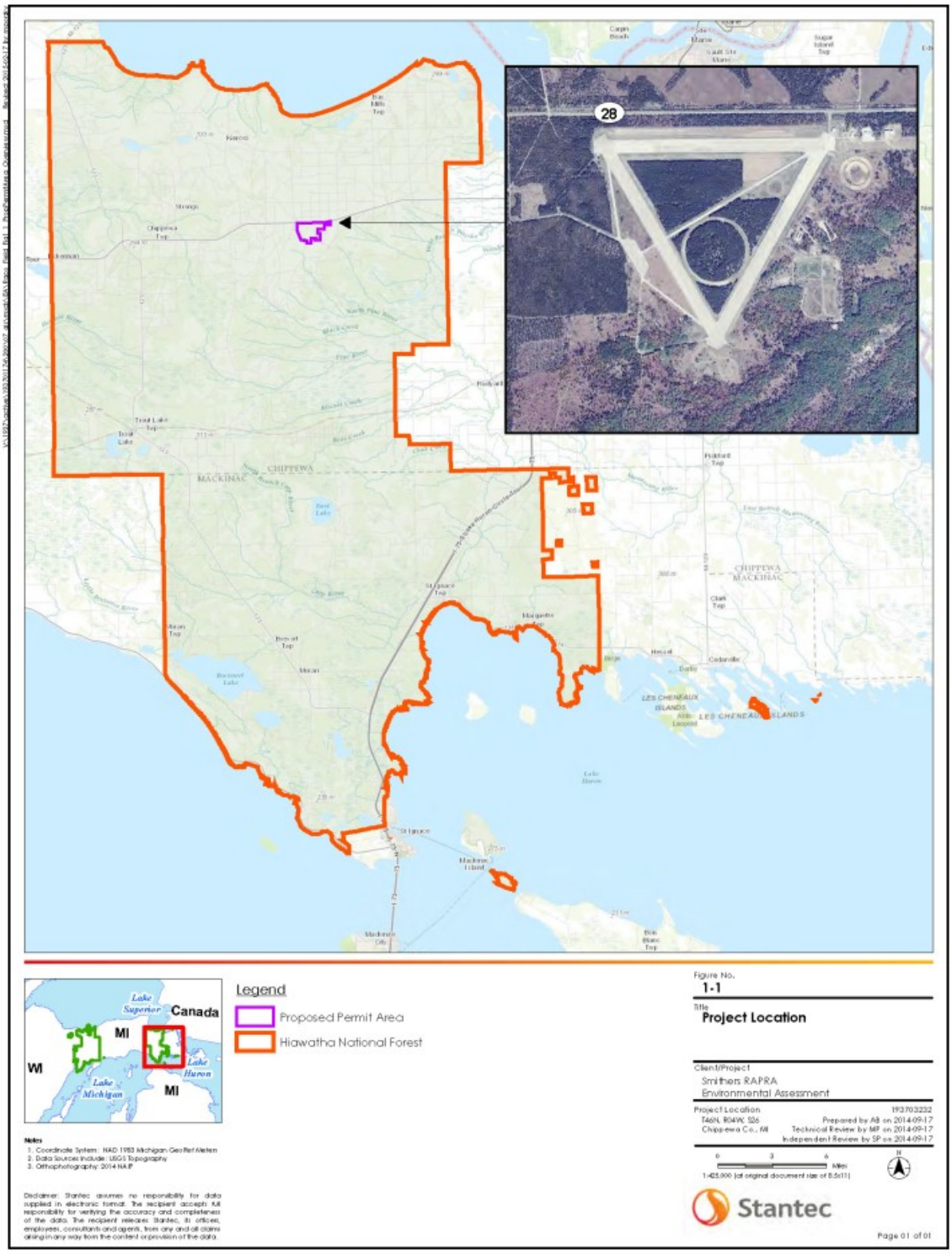
Smithers RAPRA has used the Raco Airbase for vehicle and vehicle component testing continuously since 1972 under a series of SUPs. The existing permit, Permit Number FS-2700-4, was put in place on October 4, 1996, and expires on October 4, 2016.

1.2 DOCUMENT STRUCTURE

This Environmental Assessment (EA) documents the potential environmental effects resulting from issuance of the SUP. This EA complies with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. A list of related laws and policies are included in Appendix A.

This EA discloses the direct, indirect, and cumulative environmental effects that would result from the Proposed Action and No Action alternatives. The document is organized into four parts:

- *Chapter 1 – Purpose of and Need for the Project*: This section includes information on the history of the Project proposal, the purpose of and need for the Project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Chapter 2 – Alternatives*: This section provides a detailed description of the agency's proposed action, as well as alternative methods for achieving the stated purpose. This discussion also includes possible mitigation measures where applicable. Finally, this section provides a summary table comparing the environmental consequences associated with each alternative.
- *Chapter 3 – Affected Environment and Environmental Consequences*: This section describes in detail the environmental effects of implementing the proposed action and other alternatives. The analysis is organized by resource area. Within each section, the affected environment is described first, followed by the effects of each alternative. The No Action Alternative provides the baseline for evaluating and comparing the potential effects of the Proposed Action.
- *Chapter 4 – Consultation and Coordination*: This section provides a list of agencies and individuals consulted during the development of the EA, as well as a list of preparers.
- *Appendices*: The appendices provide detailed information to support the analyses presented in the EA.


28
CHIPPEWA
MACKINAC
LES CHENEAUX ISLANDS
Legend
Proposed Permit Area
Hiawatha National Forest
Lake Superior
Canada
MI
WI
Lake Michigan
Lake Huron
Figure No.
1-1
Title
Project Location
Client/Project
Smithers RAPRA
Environmental Assessment
Project Location
T46N, R04W, S26
Chippewa Co., MI
193703232
Prepared by AB on 2014-09-17
Technical Review by MP on 2014-09-17
Independent Review by SP on 2014-09-17
Notes
1. Coordinate System: NAD 1983 Michigan GeoRef Meters
2. Data Sources Include: USGS Topography
3. Orthophotography: 2014 NAIP
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1.3 PURPOSE OF AND NEED FOR THE PROJECT

Smithers RAPRA has requested the Forest Service consider reissuance of a SUP for use of the Raco Airbase. In addition to the currently permitted activities, Smithers RAPRA has requested additional activities be added to the SUP. Smithers RAPRA made this request based on changes in the following conditions since the existing permit (Permit No. FS-2700-4) was put in place on October 4, 1996:

- The automotive marketplace has become increasingly competitive during the past several decades, and government and industry testing requirements have become more demanding and complex;
- New automotive components are continuously being developed, requiring Smithers RAPRA to adapt their testing methods and abilities to meet their clients' changing needs and expectations;
- In order to comply with standard testing surface requirements, and for safety, asphalt surfaces need to be continually maintained. In addition, more lighting is needed to increase visibility at the site;
- The addition of increased asphalt and snow-packed areas will allow testing under mixed surface conditions and provide for rotation of surface use; and
- Additional fencing will allow for adequate privacy for Smithers RAPRA's clients.

The Forest Service's purpose and need is to consider and respond to the Smithers RAPRA request to reissue the SUP for use of the Raco Airbase.

1.4 DECISION FRAMEWORK

The District Ranger of the Sault Ste. Marie and St. Ignace Ranger Districts of Hiawatha National Forest will make the following decisions based on the interdisciplinary analysis, pursuant to the NEPA:

- Evaluate the probable environmental effects of the Proposed Action and the No Action alternatives.
- Determine whether likely effects are significant.
- Determine which of the following will occur:
    - Preparation of an Environmental Impact Statement (EIS) should significant effects be determined;
    - Reissuance of the SUP with implementation of one of the alternatives considered; or
    - Take no action at this time.

The Forest Supervisor of Hiawatha National Forest will decide whether a project-specific amendment is needed to reclassify lands suitable or unsuitable for timber production based on the interdisciplinary analysis pursuant to the NEPA and the Land Management Planning Handbook (2015).

1.5 RELATION TO FOREST PLAN

As required by the National Forest Management Act (16 USC 1604) for Forest Plan revision, all HNF land is classified as either "suitable for timber production", or one of many classes of "unsuitable for timber production".

The Raco Airbase is part of Management Area[1] (MA) 4.4. MA 4.4 is HNF land classified as suitable for timber production, which is approximately 121,425 acres in size (USDA 2006a) (Figure 1-2). The general purposes of this MA are to:

- Provide habitat that is favored by upland wildlife species, such as sharp-tailed grouse (*Tympanuchus phasianellus*)*;*
- Manage conifers for fiber production; and
- Provide opportunities for recreation, such as driving for pleasure, berry picking, hunting and fishing.

To meet these objectives, the desired future condition of the land includes large pine dominated stands interspersed with grassy openings and savannahs, paper birch (*Betula papyrifera*) and oak (*Quercus* spp.) areas, and stands of hardwoods on more mesic (moderately moist) sites. Large openings of up to 300 acres, important for sharp-tailed grouse management, may also be found in this area.

"Openings" are defined as unsuitable non-forested upland wildlife habitat and total 28,531 acres on the HNF. The 2006 Forest Plan set vegetative composition goals or habitat goals for "openings" in each MA. In contrast, "Stage 1" is a general designation that includes unsuited land, often non-forested, that is used primarily for non-habitat purposes such as power-lines, roads, SUP, administrative use, etc. Stage 1 lands do not have a Forest Plan goal and are not considered upland wildlife habitat as they have conflicting use patterns and total 216,227 acres on the HNF.

One of the goals for land use management set forth by the Hiawatha National Forest 2006 Forest Plan (the Forest Plan) (USDA 2006a) is to provide and maintain SUPs in accordance with resource management direction and to meet identified Forest and public needs.

1.6 TRIBAL CONSULTATION AND PUBLIC INVOLVEMENT

Project scoping was initiated on September 22, 2014, to identify potential issues of concern related to the Project and to identify potential alternatives requiring analysis in the EA. The Forest Service distributed approximately 190 scoping letters to adjacent landowners, individuals, and organizations on the Hiawatha National Forest (HNF) mailing list. Tribal entities and state and federal agencies were also contacted as part of the scoping process. The comment period extended through October 22, 2014.

[1] A portion of the HNF with specific management direction in the Forest Plan that is designed to reach a desired future condition appropriate for that area. The HNF is divided into 21 MAs.

The Forest Service carefully reviewed comments received during the scoping process. One comment letter, sent from the Executive Branch of Tribal Government for the Mille Lacs Band of Ojibwe, indicated no recorded sites of religious or cultural importance to this tribe are known from the Project site. This letter will be included in the Administrative Record for this EA. See Chapter 4.0 for a list of tribal entities contacted during the scoping process.

Four comments were received from the public during the scoping period. These comments are addressed in the EA and are summarized here:

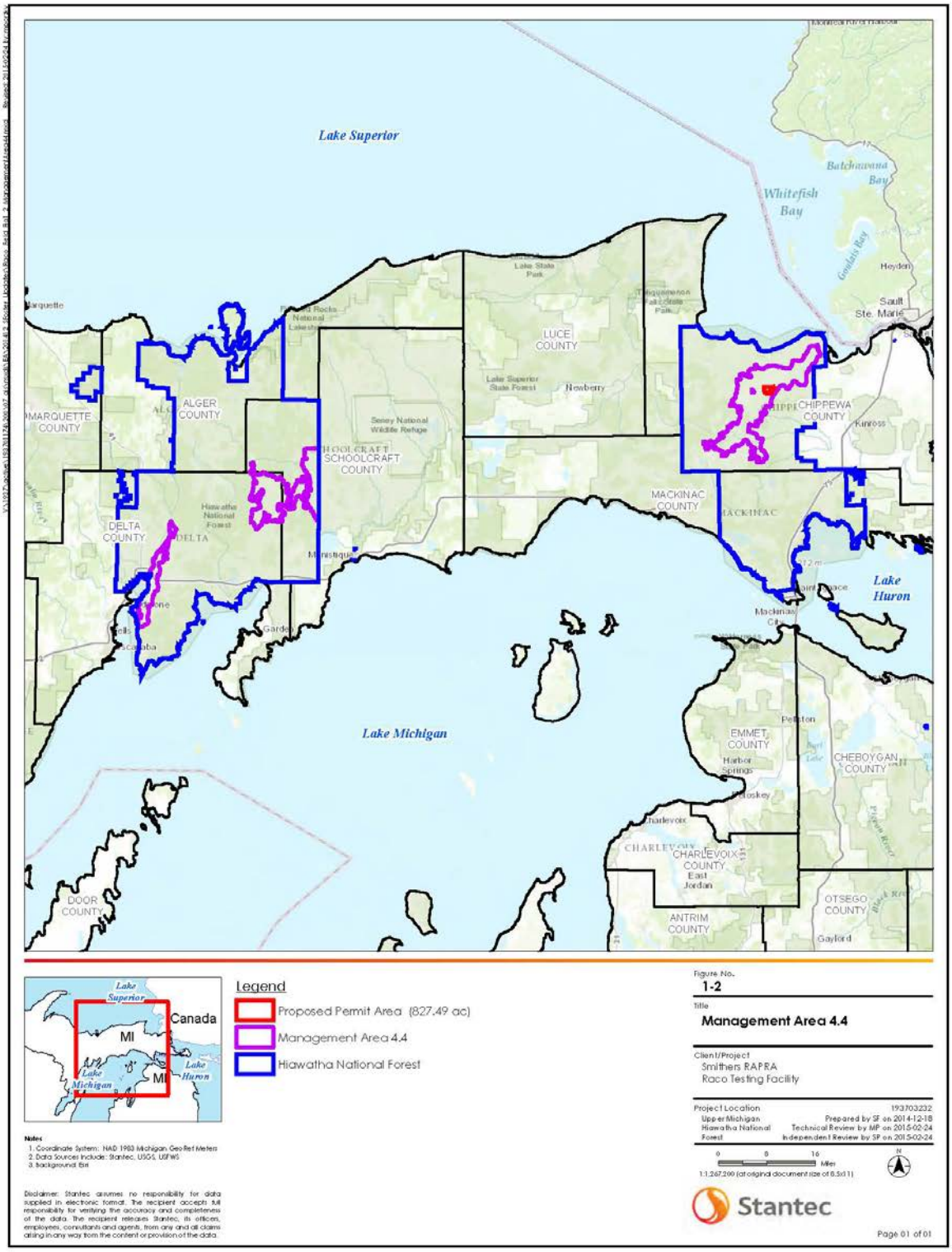
- One reviewer asked for clarification on the acronym for the Formerly Used Defense Site (FUDS) shown in the scoping figure.
- One reviewer indicated additional information was needed, including a description of site characteristics, topography and additional maps.
- One reviewer stated support for reissuance of the SUP and requested additional information related to proposed expenditures, workforce data, timber resources, and potential effects to wildlife.
- One comment was received in support of reissuance of the SUP and the economic benefits it would provide.

These comments were addressed with individual reviewers where applicable and are evaluated as part of the alternatives analysis in Chapter 3.0; however, no new alternatives were developed as a result of these comments. All scoping comments received are included in the Administrative Record for this EA.

Resource specialists within the Forest Service provided preliminary review comments on the following environmental topics in the Project Review Form dated October 27, 2014:

- Invasive plant species may increase at the site due to construction of improvements. More information is needed to identify how to limit the introduction and spread of invasive plant species and address mitigation and monitoring measures as needed.
- Improvements to forest roads on the site may result in an increase in required maintenance. In addition, the project may result in a conflict of uses as these forest roads would be bisected by proposed test tracks.
- Potential decrease in recreational opportunities (e.g., blueberry picking) at the Raco Airbase could occur.
- Potential effects to wildlife, plants, forested areas, and timber lands should be evaluated.

These topics are addressed as part of alternatives analysis in Chapter 3.0 and development of mitigation measures, as applicable.


Lake Superior
Whitefish Bay
Batchawana Bay
Goulais Bay
Heyden
Sault Ste. Marie
LUCE COUNTY
Newberry
Lake Superior State Forest
ALGER COUNTY
MARQUETTE COUNTY
SCHOOLCRAFT COUNTY
Seney National Wildlife Refuge
CHIPPEWA COUNTY
Kinross
MACKINAC COUNTY
DELTA COUNTY
Hiawatha National Forest
Lake Huron
Lake Michigan
EMMET COUNTY
Harbor Springs
Petoskey
CHEBOYGAN COUNTY
Pellston
CHARLEVOIX COUNTY
East Jordan
ANTRIM COUNTY
OTSEGO COUNTY
Gaylord
DOOR COUNTY
Lake Superior
Canada
MI
Lake Michigan
Lake Huron
Legend
Proposed Permit Area (827.49 ac)
Management Area 4.4
Hiawatha National Forest
Figure No.
1-2
Title
Management Area 4.4
Client/Project
Smithers RAPRA
Raco Testing Facility
Project Location
Upper Michigan
Hiawatha National Forest
193703232
Prepared by SF on 2014-12-18
Technical Review by MP on 2015-02-24
Independent Review by SF on 2015-02-24
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Page 01 of 01
Notes
1. Coordinate System: NAD 1983 Michigan GeoRef Meters
2. Data Sources Include: Stantec, USGS, USFWS
3. background: Esri
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2.0 ALTERNATIVES

The NEPA requires that environmental documents prepared for a proposed action discuss alternatives. Therefore, this chapter describes the alternatives considered in the EA relevant to the proposed action (i.e., reissuance of a 20-year SUP by the Forest Service). The range of alternatives analyzed in this EA was determined according to the direction set forth by the Forest Service Handbook, the Forest Plan, and comments received during scoping and project development. Based on these documents, two alternatives were retained for detailed analysis in this EA: the No Action Alternative and the Permit Reissuance Alternative (Applicant Proposed Action). These alternatives are described in the following sections.

2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Forest Service would reissue a SUP to Smithers RAPRA for use of the Raco Airbase. Smithers RAPRA would continue operations as permitted in the existing SUP as amended (see 5.0 Appendix B); however, additional activities would not be authorized. For the purposes of impact analysis and comparison of alternatives, it is assumed that currently permitted activities would continue until January 4, 2016, under the existing permit and that these activities would be authorized to continue under a new 20-year SUP after January 4, 2016. No modifications or changes to the site beyond currently permitted activities would occur as a result of the No Action Alternative.

2.2 MODIFIED PERMIT REISSUANCE ALTERNATIVE (PROPOSED ACTION)

Under the Modified Permit Reissuance Alternative, a project-specific Forest Plan amendment would be required that would reclassify land within and adjacent to the proposed permit area. The amendment would be implemented to increase management efficiency and move the HNF toward Forest Plan vegetation goals (Table 2-1). Under this alternative, the Forest Service would reissue to Smithers RAPRA a 20-year SUP for use of the Raco Airbase. Issuance of a modified SUP would allow Smithers RAPRA to continue operations as permitted in the existing SUP as amended (5.0 Appendix B) and to implement additional activities as described in this section.

Table 2-1 Land Reclassification - Project-specific Forest Plan Amendment

Acres	Change in Total Acreage HNF	Reclassification	Description/Justification
543	27,988 (1.9% decrease) in HNF openings and 216,770 (0.25% increase) in Stage 1	Reclassify unsuited openings to unsuited administrative use (Stage 1) - SUP	This is a highly disturbed area under SUP that contains marginal wildlife habitat. Opening composition would remain within Forest Plan vegetation goals.
144	121,070 (0.29% decrease) in HNF MA 4.4	Reclassify timber (suitable) to unsuited administrative use (Stage 1) - SUP	Most of the trees would be removed from the proposed project area to enable use for SUP purposes.

Additional activities that would be covered by the SUP under the Modified Permit Reissuance Alternative are shown on Figure 2-1 and would include:

- The addition of approximately 61 acres of currently non-permitted area immediately west of the existing permit area (approximately 828 acres total);

- An increase in the total number of allowed buildings from 7 to 12; an increase in total square footage from 120,000 square feet to 250,000 square feet; and the addition of security fencing, asphalt parking areas, and drives for these structures. Buildings constructed would be similar to those currently at the site (see photo in Section 3.7.3). Per the existing SUP conditions, these buildings would be removed if Smithers RAPRA vacates the site. Blueprints for each structure would be submitted to the Forest Service for approval prior to construction. Proposed structures may include:
    - A new storage and maintenance building located on the east side of the existing operations office located east of the main entrance. The proposed dimensions of this building are 100 feet long by 110 feet wide with a 200 amp electrical service stemming from a main power source along Highway 28. The building would be constructed similar to existing storage buildings at the Raco Airbase: wood frame construction with metal siding and metal roof. Colors would match the existing structures.
    - A new freezer building at the east end of the existing east-west runway to improve testing ability and improve safety. The dimensions of this building would be 70 feet long by 65 feet wide with an 800–1200 amp electrical service to power six compressors. This building would be built with energy efficient materials to maintain a temperature of -40ºF (-40ºC).
    - Other buildings may be constructed to separate competitive clients. Buildings would consist of garage or office structures similar to existing buildings at the Raco Airbase.
    - Security fencing would consist of 6-foot high chain link fence around the perimeter of individual buildings in order to deter trespassing.
    - Two tent structures with canvas covers for hiding prototype vehicles and cold storage would be erected. These structures would be approximately 20 feet long by 20 feet wide. Canvas covers would be removed at the end of the season, but metal frames would remain.
- Removal of approximately 131 acres of timber to develop additional testing areas. Timber removal would occur as follows:
    - 84 acres of red pine (*Pinus resinosa*) from the middle of the site to create a packed snow testing area
    - 47 acres of mixed pine and red pine from the west side of the site to create additional packed snow and asphalt testing areas.
    - Tree clearing activities would occur outside of the bat maternity season (October 1 through March 31) when bats are not present in the Upper Peninsula of Michigan (USFWS 2013)

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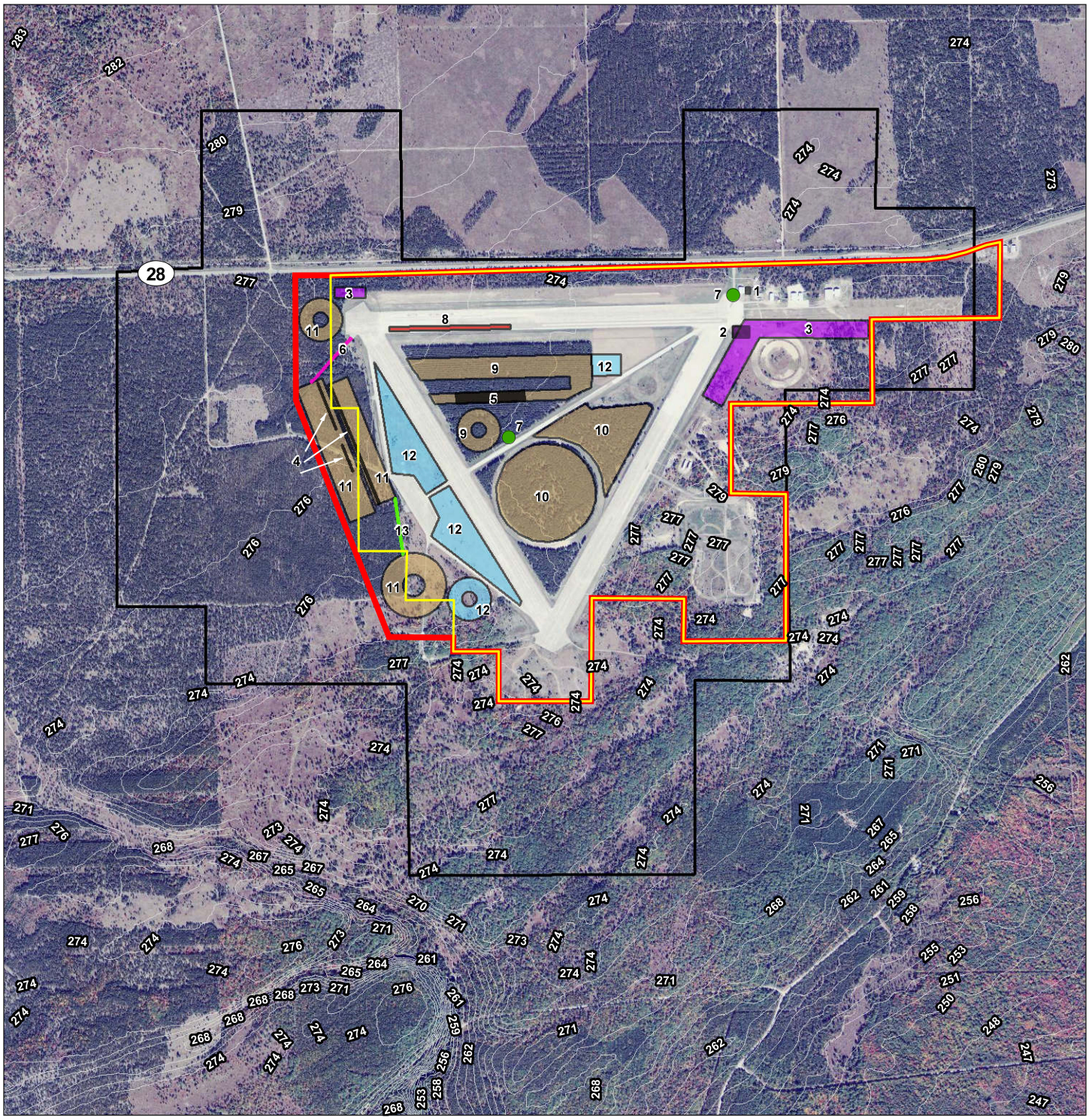

Notes
1. Coordinate System: NAD 1983 Michigan GeoRef Meters
2. Data Sources Include: Stantec, ESRI
3. Orthophotography: 2012 NAIP

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Legend

General Site Features
- Existing Permit Area (766.45 ac)
- Proposed Permit Area (827.49 ac)
- Formerly Used Defense Site

Activities Requiring Surface Disturbance
- Proposed Tree Removal Area (131.31 ac)
- Prosposed Asphalt Lanes (3.97 ac)
- Proposed Building Sites
- Improved Decommissioned Forest Road (0.37 ac)
- Construction of an 800' access road (0.36 ac)

Activities Not Requiring Surface Disturbance
- Packed Snow/Ice Area on Top of Existing Grass (37.32 ac)
- Proposed Asphalt Over Existing Runway (2.22 ac)

5ft Contours

Figure No.
2-1

Title
Modified Permit Reissuance Alternative

Client/Project
Smithers RAPRA
Environmental Assessment

Project Location
T46N, R04W, S26
Chippewa Co., MI

193703232
Prepared by AB on 2014-09-17
Technical Review by MP on 2014-09-17
Independent Review by SP on 2014-09-17

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- Construction of four asphalt lanes as follows:
    - Three asphalt lanes measuring 12 feet wide by 400 feet long, 12 feet wide by 700 feet long, and 12 feet wide by 1800 feet long on the west side of the site and one asphalt lane measuring 150 feet wide by 950 feet long north of the proposed observation tower.
    - Installation would consist of removal of trees and stumps, excavation and stockpiling the top soil, grading the test area to the final contours, spreading a gravel base with 8 inches of 22A or recommended aggregate, installation of 4 inches of hot mixed asphalt based on contractor recommendation, and installation of a tapered edge consisting of gravel around the asphalt. Stockpiled topsoil would be spread at designated packed snow/ice areas and seeded with recommended seed mix.
- Improvement of approximately 930 feet of previously decommissioned forest road and construction of one 800-foot access road. In constructing the new access road, trees and vegetation would be removed within a 35-foot wide right-of-way (ROW). Slash and other non-merchantable material from cutting would be removed from the site or piled and burned according to standards set by the forest's Fire Management personnel. Firewise recommendations would be implemented, and a 30-foot buffer would be maintained around all buildings following removal the trees. The ground surface would be graded flat and disturbed areas would be revegetated with native or desirable non-native plant species as approved by the Forest Service. The access roads would only be used in the winter months and would consist of packed snow on top of grass. Improvement to the previously decommissioned forest road would consist of widening the road to 35 feet, as necessary.
- Construction of two access roads is required to access the new asphalt lanes on the west side of the site. A maximum of 12 inches of gravel would be applied to a previously decommissioned forest road and one new access road to allow for a stable road base at this location.
- Placement of asphalt over existing concrete lanes and around current buildings and drives to buildings would occur, as needed, and would cover an area approximately 60 feet wide by 1,700 feet long on the existing north runway. Asphalt would be placed directly over the concrete runway. Asphalt is the appropriate testing surface for vehicle testing and is required by Smithers RAPRA's clients.
- The addition of safety and security lighting to existing runways.
    - Lighting would consist of halogen lights set atop 35- to 50-foot metal poles spaced evenly along the runway lengths. Lights would be used from December 1 through March 31 as necessary to illuminate the runway during night testing. Underground electrical required for lighting would be installed directly adjacent to the runways.
    - Strategies to reduce light pollution would be incorporated into the design of light fixtures at the site where possible, including installation of down-shielding on light fixtures to prevent direct upward light, implementation of appropriate lighting levels for the task (i.e., avoid using higher lighting levels than needed) and limiting the use of lighting to the location and duration of time that is suitable for the task.

- The addition of three snow/ice circles on the west side of the existing western runway. Two of the snow/ice circles would be 600 feet in diameter and the third snow/ice circle would be 900 feet in diameter. The snow/ice circles would be placed over top of grass once trees are removed.
- Allowance for the entrance gates on the north and east side of the property to remain in place year-round and be open throughout non-operations periods.

2.3 DESIGN CRITERIA AND BEST MANAGEMENT PRACTICES COMMON TO EACH ALTERNATIVE

Both alternatives must meet the intent of the guidelines contained in the Forest Plan (unless the Forest Plan is amended through a formal decision process) and other Forest Service policies and regulations. Best Management Practices (BMPs) outlined in the U.S. Department of Agriculture (USDA) Non-Native Species BMP Guidance for the Forest Service Eastern Region and National BMPs for Water Quality Management on National Forest System Lands would be implemented where applicable.

2.3.1 Soils

The following BMPs which are consistent with the Soil Resources Guidelines found in the Forest Plan (USDA 2006a) would be implemented during construction activities at the site to limit soil erosion and protect soil resources. These BMPs would be implemented regardless of the alternatives chosen:

- Establish designated area for equipment staging, stockpiling materials, and parking to minimize the area of ground disturbance.
- Locate landings on firm, well-drained soil to avoid compaction and rutting.
- Limit the amount of exposed or disturbed soil at any one time to the minimum necessary to complete construction operations.
- Establish and maintain construction area limits to the minimum area necessary for completion of the activity and confine disturbance to within this area.
- Install sediment and stormwater controls before initiating surface-disturbing activities to the extent practicable. At a minimum, controls will follow Part 91 MDEQ Soil Erosion and Sediment Control Workplan, if required.
- Use established trails or roads where possible to avoid soil disturbance.
- Schedule, to the extent practicable, construction activities to avoid direct soil and water disturbance during periods of the year when heavy precipitation and runoff are likely to occur.
- Avoid using roads for timber hauling or heavy traffic during wet or thaw periods on roads not designed and constructed for these conditions.
- During construction activities, construction equipment, including skidders used to move harvested trees to loading areas, would operate on dry or frozen ground when soils are capable of supporting equipment without incurring detrimental compaction, puddling or rutting wherever practicable.
- Break up long straight skid trails to prevent erosion.

- Inspect skid trails following storm event to ensure water is not running down skid trails and take corrective action if necessary.
- Where practicable, whole-tree timber harvest methods would not be used on sites with inherently low soil fertility and low organic matter reserves, including the Rubicon soil series. Rather, slash would be evenly distributed across the site.
- Heavy equipment will not be operated on slopes greater than 35 percent gradient.
- During dry periods, potential soil blowing will be minimized by use of BMPs including construction site staging, prompt seeding and mulching of disturbed areas and, if necessary application of water to the soil surface.
- Following timber harvest, the area would be graded flat and revegetated with native or desirable non-native plant species as approved by the Forest Service.

2.3.2 Vegetation

In addition to following the BMPs described above, the following measure would be implemented following tree clearing activities:

- Slash and other non-merchantable material from cutting will be removed from the site or piled and burned according to standards set by the HNF's Fire Management personnel. Firewise recommendations would be implemented, and a 30 foot buffer would be maintained around all buildings following removal the trees.

The following BMPs would be implemented to limit the introduction and spread of non-native invasive plant species (NNIP) regardless of the alternative chosen:

- One application of Pramitol 25E (herbicide) would be applied by a Forest Service-approved contractor at one test track location in the summer months. The application is used primarily to ensure a smooth test track surface and eliminate weeds from growing up through surface cracks.
- Smithers RAPRA would treat NNIP using a combination of methods at multiple locations within the proposed permit area as approved by the Forest Service. Control methods would include mechanical techniques (i.e., mowing) or herbicide applications, or a combination of these methods. Mowing would generally occur where off-road vehicle testing is proposed and in areas adjacent to paved roads and test tracks. Mowing would occur annually during the peak flowering periods of NNIP species known to occur within the proposed permit area, and multiple entries per year may be needed to prevent NNIP seed development. Herbicide treatments would be focused around the perimeter of the proposed permit area or in other areas as needed to avoid NNIP spread beyond the proposed permit area. Herbicide would be applied selectively to NNIP infestations by a Forest Service-approved contractor using a backpack sprayer or other target-specific methods.
- Disturbed areas would be revegetated with native or desirable non-native plant species as approved by the Forest Service. Preference would be given to locally native plant materials. Gravel, mulch, topsoil, or seed used at the Project site would be obtained, to the greatest extent practical, from a source that implements an NNIP management program.

- During construction, prior to moving equipment onto or off of an activity area, exterior surfaces of all equipment would be cleaned of soil and debris, to the extent practical, to minimize the risk of transporting NNIP. In addition, personnel would remove soil from shoes, clothing, or tools prior to entering or exiting an activity area.
- Designate equipment storage areas where NNIP are not present.
- Where possible, construction and transport equipment would use the existing concrete lanes and hardened surfaces to reduce the potential for transporting NNIP within the proposed permit area.

2.3.3 Heritage Resources

The following measure would be implemented regardless of the alternative chosen:

- Protect through site avoidance all heritage sites determined eligible for the National Register of Historic Places (NRHP) or whose NRHP status remains unevaluated, in accordance with the standards, objectives, and goals of the HNF Heritage Program as outlined in the Forest Plan (USDA 2006a). Sites will be protected through the establishment of a protection zone extending 100 feet beyond the boundaries of the site, wherein no earth disturbing activities, including the staging of logs and equipment, will be permitted. One hundred feet represents the average height of a mature tree and has proven to be an effective distance for ensuring site avoidance and protection.

2.4 OTHER ALTERNATIVES CONSIDERED BUT DROPPED FROM FULL ANALYSIS

The following alternatives were considered but dismissed from further consideration:

- The Forest Service and Smithers RAPRA discussed the sale of the Raco Airbase property to Smithers RAPRA. The Forest Service does not have a mechanism to sell Forest Service property to a private entity; therefore, a land exchange was considered. Private land of similar size and characteristics would have been difficult to locate and likely would have resulted in negotiations with multiple private landowners. This alternative was dismissed from consideration as a potential alternative given the low likelihood of success, lengthy site identification process, and high financial cost.
- Construction of the proposed modifications on property owned by Smithers RAPRA was considered. This property is located directly northeast of the currently permitted area. This property is less than 2 acres in size and does not meet the space requirements necessary to implement the additional modifications proposed in Section 2.2. This alternative does not meet the purpose and need.
- Construction of a new facility on private land was considered. However, a site of suitable size and environmental characteristics could not be identified. In addition, a willing seller could not be found within the climate zone necessary for successful winter testing. Building a new facility on another Forest Service property was also considered; however, development of a new site would have resulted in potentially higher environmental impacts to develop a new site. Therefore, this alternative was dismissed in favor of the existing site, which as a FUDS was previously disturbed and has already been developed for vehicle testing activities.

- Proposed modifications east and southeast of the current permitted area were evaluated. This alternative was abandoned as it went outside the footprint of the FUDS, which represents areas already subjected to surface disturbances. In addition, the U.S. Army Corps of Engineers (USACE) is currently assessing the trichloroethylene (TCE) groundwater plume as a result of former military use at the airbase. Therefore, this alternative was not feasible as it would have presented potential construction issues related to the existing and proposed USACE monitoring well network.
- Different alternative configurations of the proposed modifications were evaluated in an attempt to stay within the currently permitted area. The currently permitted area would not meet the space requirements necessary to implement the proposed modifications and meet client confidentiality requirements. This alternative does not meet the purpose and need.
- An alternative that did not include reissuing a SUP for use of the Raco Airbase was considered but was determined by the Forest Service to not be a reasonable alternative (46 Fed Reg. 18026; Section 1502.14a [http://energy.gov/sites/prod/files/G-CEQ-40Questions.pdf]); therefore, this alternative was dismissed from further consideration.

2.5 SUMMARY OF ALTERNATIVES

Table 2-1 provides a summary of potential effects associated with the Project alternatives. Information in the table focuses on those effects or outputs that can be distinguished quantitatively or qualitatively among the alternatives.

Table 2-2 Potential Effects of the Modified Permit Reissuance and No Action Alternatives

Resource	Modified Permit Reissuance Alternative	No-Action Alternative
Soils (Section 3.3)	Soil disturbance would occur on up to 139 acres as a result of tree clearing, building construction, and creation of asphalt or ice track surfaces. Up to 8 acres of soil would be removed for the placement of asphalt or construction of buildings. Given the BMPs that would be implemented, no significant adverse effects to soils.	No additional effects to soils beyond currently permitted levels.
Vegetation (Section 3.4)	Tree removal would convert approximately 128 acres to herbaceous cover and 3 acres to impervious surface (asphalt). No occupied habitat present for federal- or state-listed plant species; unoccupied habitat for 7 Regional Forester Sensitive Species (RFSS) is present; however, these species were not found during botanical surveys within the proposed permit area.	No adverse effects to state or federal threatened or endangered plant species or RFSS.
Wildlife (Section 3.5)	Occupied habitat present for federally endangered gray wolf and the federally proposed endangered northern long-eared bat. Unoccupied habitat present for the federally threatened Canada lynx. Tree removal would result in conversion of approximately 128 acres of suitable habitat to herbaceous cover and 3 acres to impervious surface (asphalt). Occupied habitat for two RFSS, little brown bat and sharp-tailed grouse, is present within the proposed permit area.	No changes to existing habitat conditions. No adverse effects to federal threatened or endangered species or RFSS.
Water Resources (Section 3.6)	No streams, lakes, ponds, wetlands, riparian corridors, or floodplains are present within the proposed permit area; therefore, no effects to these resources would occur. No additional water withdrawals from the Raco Aquifer would occur beyond currently permitted levels.	No streams, lakes, ponds, wetlands, riparian corridors, or floodplains are present within the proposed permit area; therefore, no effects to these resources would occur. No additional water withdrawals from the Raco Aquifer would occur beyond currently permitted levels.
Visual Quality (Section 3.7)	No change to visual quality.	No change to visual quality.
Heritage Resources (Section 3.8)	No adverse effects to heritage resources.	No adverse effects to heritage resources.
Recreation (Section 3.9)	No change to recreational opportunities.	No change to recreational opportunities.
Transportation System (Section 3.10)	No change to existing transportation system. One decommissioned forest road would be improved.	No change to existing transportation system.
Hazardous Materials (Section 3.11)	No effects	No effects.
Socioeconomics and Environmental Justice (Section 3.12)	No effects to low income or minority populations. Beneficial effect of adding 10 jobs and other indirect beneficial economic effects.	No effects to low income or minority populations. No changes in workforce conditions. Indirect beneficial economic effects.
Air Quality and Greenhouse Gases (Section 3.1.3)	Short-term, minor effects to air quality during construction activities; slight increase in vehicle emissions due to vehicle testing activities. No new sources of air pollutants.	No change in effects to air quality.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This section describes the existing condition of potentially affected resources and discloses the potential effects of each alternative. Information provided in this section allows readers to measure or evaluate the alternatives.

The sections below contain information that applies to all resources and facilitates and provides an understanding of the rationale for effects determinations made for each resource.

3.1.1 Analysis Methodology

The Forest Service prepared the effects analyses and disclosures in Chapter 3.0 based on the requirements of the NEPA and the Council on Environmental Quality (CEQ) regulations (40 CFR 1500 et seq.) and Forest Service regulations (36 CFR 220) for implementing the NEPA. In Chapter 3.0, the direct, indirect, and cumulative effects, mitigation measures, provisions for monitoring, and appropriate consideration of sensitive species, soil and water resources, recreational resources and opportunities, and other important resources are evaluated.

For the purposes of this chapter, resources were assessed using different spatial extents depending on the character of the resource and the extent to which reissuance of a SUP may potentially affect the resource. The geographic boundary for direct, indirect, and cumulative effects analysis is noted at the beginning of the discussion of each resource.

3.1.2 Direct and Indirect Effects

Direct effects are those effects that are caused by the action and occur at the same time and place. Indirect effects are those effects caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

3.1.3 Cumulative Effects

Cumulative effects are those effects that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively important actions taking place over a period of time.

In 1997, the CEQ published *Considering Cumulative Effects under the National Environmental Policy Act* as a comprehensive guidance document for cumulative effects analyses. The CEQ guidelines acknowledge that while “in a broad sense all the impacts on affected resources are probably cumulative,” it is important to “count what counts” and narrow the focus of the analysis to important national, regional, and local issues. While the CEQ recommends this be done through scoping, they also caution that “not all potential cumulative effects issues identified during scoping need to be included” in an EA but only those effects with direct influence on the Project and Project decision-making.

Per the CEQ guidelines (1997), a screening process was used to determine the resources included in the cumulative effects analysis. This process is summarized in Table 3-1. Cumulative effects for each resource, and the magnitude of those effects, are described in Sections 3.3 through 3.13 below.

Table 3-1 Checklist for Identifying Potential Cumulative Effects[1]

Resource	Construction	Vehicle Testing Activities	Mitigation	Past Actions	Other Present Actions	Future Actions	Cumulative Impact
Soils	X			X	X	X	X
Vegetation	X	X	X	X	X	X	X
Wildlife	X	X		X	X	X	X
Water Resources		X		X	X	X	X
Visual Quality				X			
Heritage Resources							
Recreation		X		X	X		X
Transportation		X		X	X		X
Hazardous Materials				X			
Socioeconomics				X	X	X	
Air Quality	X	X		X	X	X	X

[1]Each alternative affects the same resource categories. The alternatives differ only in the magnitude of the impact.

Past, Present and Reasonably Foreseeable Future Actions

Past activities at the site include former military uses and Smithers RAPRA vehicle testing activities. The site is currently being used by Smithers RAPRA for vehicle testing in accordance with existing SUP conditions set forth in the 1996 permit, 2005 DN/FONSI, and 2011 Supplemental Information Report (SIR) (5.0 Appendix B). These documents identify all currently permitted activities that are either complete or planned. These activities are confined to the existing permit area (Figure 2-1)

Past and present Forest Service projects within MA 4.4 and openings include several vegetation and habitat management projects on the HNF listed in the Forest Service Tracking System. Several utility improvement projects, SUP projects, and road projects have also been implemented in Stage 1.

Some of these projects have resulted in a change in land classifications (e.g., suitable for timber production, unsuitable for timber production/wildlife openings, and Stage 1 administrative use) through implementation of the Forest Plan (USDA 2006a). The Rudyard Project DN/FONSI reclassified 158 acres of opening to MA 1.2, 50 acres of MA 1.2 to opening, and 14 acres of opening to unsuitable for timber production old growth, resulting in a net decrease of 122 acres of opening.

The Raco Natural Resources Management project is a reasonably foreseeable future Forest Service project that has the potential to result in reclassification of lands within MA 4.4. As stated in the February 24, 2015, scoping document the proposal includes the reclassification of 30 acres from opening to Stage 1, the reclassification of 569 acres of opening to MA 4.4, and the reclassification of 819 acres from MA 4.4 to opening, resulting in a decrease in the acreage

of MA 4.4 and an increase in the opening and Stage 1 acreage. The EA for this project will be available in Fall 2015.

State or local projects may also occur within MA 4.4, openings, and Stage 1 during the proposed permit term, including activities such as road improvements, bridge projects, and public utility projects.

Other previously analyzed actions (2005 DN/FONSI and 2011 SIR) include currently permitted activities that Smithers RAPRA has not yet completed, but will complete, including:

- Resurfacing of a 50-foot by 500-foot area on the south side of the existing east/west runway with asphalt.
- Construction of asphalt surfaces (an approximate 100-foot by 1,000-foot area) for various configurations of ice/snow/asphalt test surfaces on the northeast side of the east/west runway.
- Addition of two traction split Mμ (low friction [ice] and high friction [asphalt]) hills in the same area as the existing hills. Four traction split Mμ hills are authorized in the current SUP; however, only two have been added since the 1996 SUP was issued.
- Addition of a heated split Mμ traction hill (creation of a new hill and placement of approximately 20,000 square feet of asphalt) to be tied to the existing heated asphalt area.
- Increase of the total number of allowed buildings. Approximately 70,000 square feet of structures to be constructed east of the existing buildings have not been constructed but are authorized in the current SUP.
- Construction of a 600-foot by 700-foot vehicle dynamics pad.
- Construction of one 0.25-mile circular unpaved test track. Two circular tracks are authorized in the current SUP; however, only one has been added since the 1996 SUP was issued.

The Michigan Department of Transportation website[2] indicates no road or bridge projects within 5 miles of the Project until at least 2018. With the exception of routine snow plowing in the winter months, no future road projects or improvements are known for Chippewa County Road Commission (CCRC) or Superior Township, which includes the proposed permit area (CCRC, personal communication).

3.2 PROJECT AREA SETTING AND HISTORICAL CONTEXT FOR EXISTING CONDITIONS

The Raco Airbase site was in operation during WWII and the Cold War. The Department of Defense (DoD) used the site as an airfield for 21 years and as a missile base for about 13 years, ending in 1972. The site consisted of a triangular-shaped airfield, missile silos, and associated support facilities[3]. The airfield was constructed between 1942 and 1943; the missile base was constructed

[2] http://michigan.gov/mdot/0,4616,7-151-9621_11008---,00.html

[3] http://www.lrl.usace.army.mil/Missions/Environmental/RacoArmyAirfield.aspx

southeast of the airfield around 1960. In January 1964, the U.S. Air Force released the airfield property to the Forest Service; the missile area was released in June 1973. Since then, activities at the site include forest management activities, wildlife monitoring, public recreation and development of surfaces and facilities related to vehicle testing (USDA 2004). Recreational opportunities within the proposed permit area include, but are not limited to, hunting, wildlife watching, blueberry picking, and snowmobiling in winter.

The location of the proposed permit area at the existing Raco Airbase provides Smithers RAPRA with a unique combination of appropriate testing surface and weather conditions and provides a secluded location that meets Smithers RAPRA's client needs for vehicle testing. The proposed permit area is approximately 828 acres in size and contains three 1-mile long runways configured in the shape of a triangle (Figure 2-1). Each runway is approximately 300 feet wide by 5,250 feet long and is constructed out of high strength concrete approximately 12–18 inches thick. The existing concrete runways provide extremely durable cold weather testing surfaces for commercial and passenger vehicles. The concrete runways allow for immediate winter test surfaces once temperatures reach the freezing point. In comparison, testing surfaces constructed directly on soil typically take an additional two to three weeks to meet surface requirements for testing. The remoteness of the facility provides seclusion to Smithers RAPRA's clients while testing prototype vehicles. The location of the facility is also within a lake-effect snow belt, limiting the amount of groundwater needed to manually make snow/ice for testing surfaces, making it ideal for cold weather vehicle testing.

Vegetative communities and coniferous tree stands are present within the existing Raco Airbase and are described in detail in Section 3.3. Access to the site is through an entrance off of Highway 28 located at the northeast corner of the runway system. The site consists of several buildings, testing surfaces and courses constructed of native material. Facilities within the current and proposed permit area unrelated to Smithers RAPRA use include Forest Service two-track roads, pads, other vestiges of military use, and monitoring wells (USDA 2004).

Smithers RAPRA has used the Raco airbase for vehicle and vehicle component testing continuously since 1972 under a series of SUPs. In 1996, the HNF Supervisor approved several applicant-requested modifications to the covered activities in order to meet then-current testing requirements and address client demands for secure and modern testing facilities. The current SUP (FS-2700-4) was issued on October 4, 1996 (Appendix B), and authorizes vehicle testing activities to occur from August 1 through March 31.

In 2003, Smithers RAPRA requested additional changes to permitted activities that were necessary to meet the needs of present and future clients. An EA was prepared by the Forest Service in 2004 to evaluate requested modifications to the 1996 SUP. The Decision Notice (DN) and Finding of No Significant Impact (FONSI) were published by the Forest Service in August 2005 (5.0 Appendix B). In June 2011, previously approved, but not yet constructed, site elements were reevaluated through a SIR (Appendix B) that addressed Smithers RAPRA's request to conduct testing on the northern and southeastern runways between April 1 and July 31. Testing during this period was approved with the stipulation that only one track may be used at a time and the other tracks must remain open to the public during this time.

3.3 SOILS

3.3.1 Introduction

The Project would follow Forest Service guidelines for the protection of soil resources within the HNF (USDA 2006a). The State of Michigan regulates soil erosion and sedimentation through legislation found in Part 91, Soil Erosion and Sediment Control (SESC) of the Natural Resources and Environmental Protection Act, 1994, as amended (NREPA). Smithers RAPRA will obtain any applicable permits prior to construction activities at the site; given that some projects may be greater than 1-acre in size and are located outside of the timber harvest area, a permit for soil erosion under the NREPA may be required.

Impacts to soils may have indirect and secondary effects on other resources. The NEPA and CEQ guidelines indicate that soil erosion should be minimized. Design criteria and BMPs related to soils are described in Section 2.3.1. Section 3.3.3 contains information on the mapped soil types found within the existing and proposed permit area.

No concerns related to soils were identified during the scoping period.

3.3.2 Analysis Areas

Direct and Indirect Analysis Area

The analysis area for direct and indirect effects includes the existing and proposed permit area (Figure 2-1) because all currently permitted and proposed activities would occur within these areas. No soil disturbance would occur outside of the proposed permit area as a result of either alternative. The temporal period for the direct and indirect effects analysis is 10 years, which is the approximate time it will take for vegetation to become reestablished on disturbed areas.

Cumulative Effects Analysis Area

The analysis area for cumulative effects includes the existing and proposed permit area (Figure 2-1) because all currently permitted and proposed activities would occur within these areas and the potential effects to this resource would not be quantitatively or qualitatively meaningful outside of this boundary. The temporal boundary for cumulative effects is 40 years based on the past and future SUP timeframe.

3.3.3 Affected Environment

The Raco Airbase lies on a flat outwash plain of stratified sand and gravel, approximately 907 feet above mean sea level (msl) (USDA 2004). Soils within the existing and proposed permit area are classified as Rubicon sand, 0–6% slopes (18B), and 6-15% slopes (18D), both of which are non-hydric (Figure 3-1; USDA 2012). Rubicon soils formed in sandy outwash plains and ground moraines and are deep, coarse, and excessively drained (USDA 2004). The log for a 105-foot deep well installed by the U.S. Air Force at the airbase in 1942 shows 40 feet of stratified sand above the water table, followed by 65 feet of red sand and red fine sand extending to the well depth (VanLier and Deutch 1958 as cited in USDA 2004). Because the soils are coarse-textured, infiltration rates are high and the risk of compaction and erosion is low. However, the Rubicon soil is designated "Wind Erodibility Group I," which is the soil group most susceptible to blowing. Depth to bedrock is unknown (USDA 2004). However, a seismic

study of the bedrock surface in Chippewa County places bedrock approximately a mile east of the airbase at an elevation of approximately 650' msl (VanLier and Deutch 1958 as cited in USDA 2004). Although there is little discussion of wind erosion in the USFS National Core BMP or Michigan BMP manuals, addressing the issue through planning, implementation and monitoring would likely promote the successful seeding and re-establishment of ground cover during construction.

However, due to the sandy textures found in the soils mapped at the site, the Soil Conservation Service (SCS) (1992) has identified limitations of the soil types within the proposed permit area. Construction equipment limitations refer to loss of wheel traction in dry sandy soils during dry periods. The low water holding capacity and relatively low fertility of the sandy soils presents potential problems for the seed mix used during post construction revegetation. Germination may be delayed or prevented due to lack of moisture.

Soil compaction resulting from human activities, particularly operation of heavy vehicles and machinery, can have adverse ecological effects. Soil compaction changes the chemical, physical, hydrologic, and biological properties of the soil by rearranging soil particles and reducing soil porosity. Reduction of soil porosity restricts gas exchange, particularly the flow of carbon dioxide and oxygen, within the soil profile, which in turn affects soil chemistry and biological organisms beneficial to soil health. Collapse of pore spaces also restricts water infiltration and causes water to remain on the soil surface and produce runoff and soil erosion.

Susceptibility of soils to compaction is greatly influenced by soil texture, organic matter and moisture content. Coarse textured soils with relatively uniform grain size are less susceptible to compaction compared to mixed-textured soils, which have a variety of particle sizes that can fill any size pore (Coder 2000). The Rubicon soil found within the proposed permit area is texturally classified as sand with very low percentages of silt and clay. The Rubicon is also low in organic matter content.

Sandy soils have larger pore spaces than finer textured soils, which relates to tree root penetration and overall forest health. Without finer particles to fill in the pores between sand grains, the permeability of sandy soils remains high, even after compression, allowing gas exchange and water infiltration. Due to the predominance of coarse textured soils within the proposed permit area, the risk of adverse ecological effects due to soil compaction is minimal. Therefore, compaction is not analyzed further in this section.

3.3.4 No Action Alternative

Direct and Indirect Effects

No new activities beyond those already permitted in the SUP would occur as a result of this alternative. Given the BMPs and design criteria implemented at the site as part of currently permitted activities, no direct or indirect effects to soils would occur as a result of the No Action alternative.

Cumulative Effects

No direct or indirect effects to soils would occur; therefore, no cumulative effects would occur as a result of the No Action alternative.

3.3.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

This alternative would directly affect soil by physically disturbing approximately 131 acres as a result of tree clearing activities under the Modified Permit Reissuance alternative. In addition to the proposed tree clearing activities, up to 3 acres of soil disturbance would occur as a result of proposed building construction and up to 5 acres of soil disturbance would occur as a result of construction of the proposed ice tracks and asphalt surfaces for vehicle testing. Therefore, this alternative would result in the removal of up to 8 acres of soil from the productive land base.

The loss of topsoil by wind erosion during and following soil disturbance may result in loss of fertility and soil water holding capacity, which would have a negative impact on re-establishment of ground cover vegetation. These indirect effects are anticipated to be short-term because the proposed permit area is relatively flat with little to no grade in any direction and the sandy soils onsite provide adequate drainage, soil erosion by water as a result of this alternative would be minimal. During dry weather periods, significant potential for wind erosion exists due to the sandy texture of the Rubicon soil and its minor soil series components. Given that the BMPs and design criteria currently being implemented at the site would continue and expand under this alternative, and given the minimal loss of soil from the productive land base, no significant adverse effect to soils would occur as a result of this alternative.

Cumulative Effects

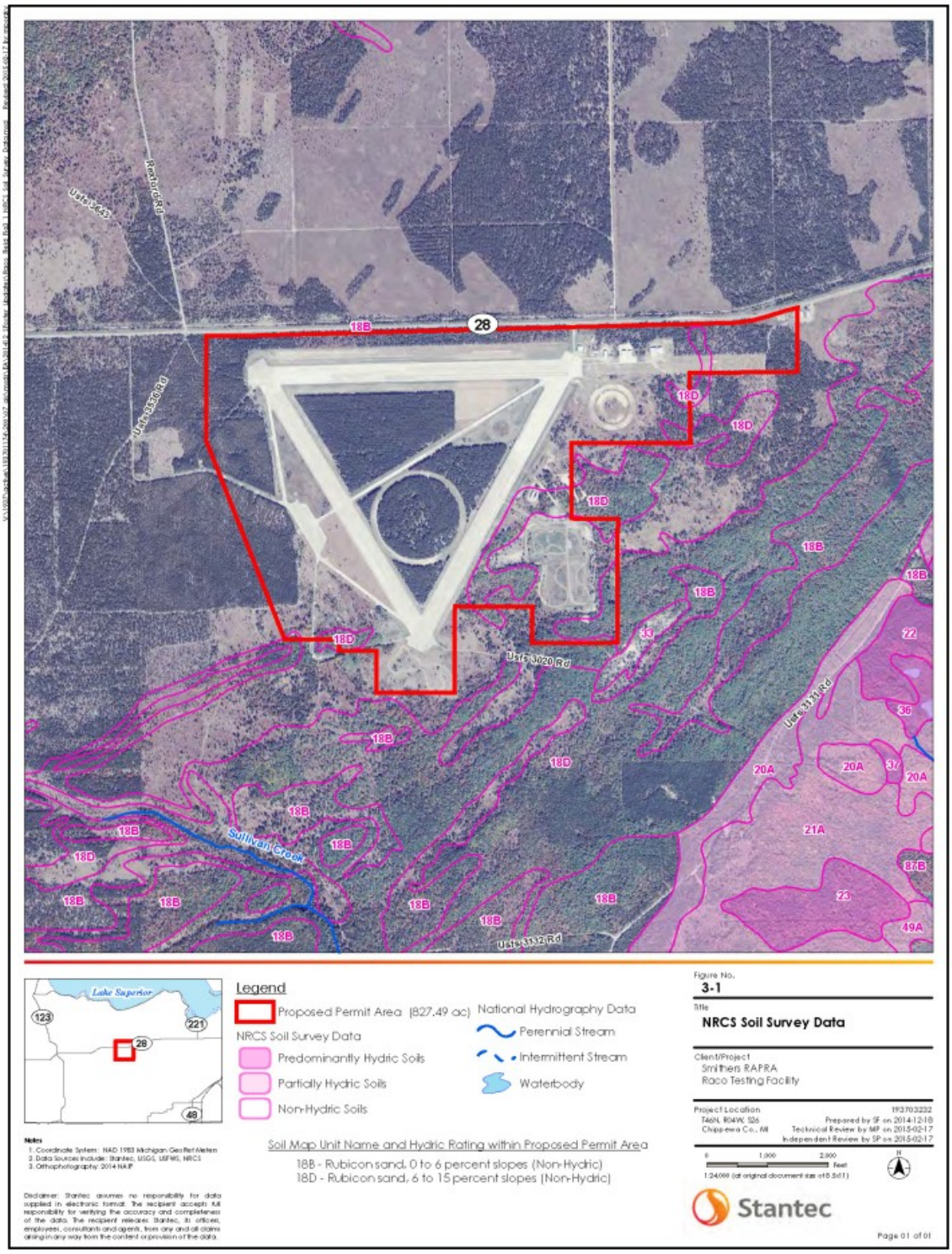
Past activities at the site, such as military uses, building construction, and forest road improvements have resulted in soil disturbance and removal of soil from the productive land base. There are no reasonably foreseeable future actions other than those described in the direct and indirect effects section that would affect soil within the analysis area. The proposed activities under the Modified Permit Reissuance alternative would have an additive effect when combined with past projects; however, the incremental impact of this alternative on soils when added to past actions would be minor and insignificant.

3.4 VEGETATION

3.4.1 Introduction

A discussion of threatened, endangered and sensitive (TES) plant species known from or with suitable habitat within the proposed permit area are evaluated as part of the effects analysis for vegetation. See Section 3.4.3 for a discussion of the existing conditions within the proposed permit area.

One public comment was received during public scoping that requested additional information about timber stands within the proposed permit area. Another was received indicating that some of the timber stands within the proposed permit area may require reclassification as a result of the Project. A discussion of vegetation communities present within the proposed permit area is included in Section 3.4.3 and potential effects to these communities are discussed in Section 3.4.4. No additional comments were received related to vegetation during the scoping process.


Lake Superior
123
221
28
49
Legend
Proposed Permit Area (827.49 ac)
NRCS Soil Survey Data
Predominantly Hydric Soils
Partially Hydric Soils
Non-Hydric Soils
National Hydrography Data
Perennial Stream
Intermittent Stream
Waterbody
Soil Map Unit Name and Hydric Rating within Proposed Permit Area
18B - Rubicon sand, 0 to 6 percent slopes (Non-Hydric)
18D - Rubicon sand, 6 to 15 percent slopes (Non-Hydric)
Figure No.
3-1
Title
NRCS Soil Survey Data
Client/Project
Smithers RAPRA
Raco Testing Facility
Project Location
T46N, R04W, S26
Chippewa Co., MI
193703232
Prepared by SF on 2014-12-18
Technical Review by MP on 2015-02-17
Independent Review by SP on 2015-02-17
1:24,000 (at original document size of 8.5x11)
Stantec
Page 01 of 01
Sullivan Creek
Redland Rd
Usfs 3020 Rd
Usfs 3173 Rd
Usfs 3132 Rd

Measures for comparison of alternatives relating to vegetation include the change in abundance of habitat types within the proposed permit area, percentage of permit area subject to soil disturbance during construction and operation of the facility and potential for the introduction or spread of NNIP.

3.4.2 Analysis Areas

Direct and Indirect Analysis Area

The analysis area for direct and indirect effects includes the existing and proposed permit area (Figure 2-1) because all currently permitted and proposed activities would occur within these areas. The temporal boundary for direct and indirect effects analysis is 8 years following the end of soil-disturbing activities because seeds of spotted knapweed (*Centaurea biebersteinii*) are viable for up to 8 years (Davis et al. 1993). Spotted knapweed, a NNIP species, is found throughout the proposed permit area.

Cumulative Effects Analysis Area

The HNF is divided into 21 MAs, each with specific management direction in the Forest Plan designed to reach a desired future condition appropriate for that MA. The MAs are the smallest geographic unit within which the Forest Service manages vegetation. Therefore, the cumulative effects analysis area for vegetation resources is MA 4.4, which includes the proposed permit area. The temporal boundary for cumulative effects is 40 years based on the past and future SUP timeframe.

3.4.3 Affected Environment

Vegetation within Management Area 4.4

The Forest Plan (2006a) indicates topography within MA 4.4 ranges from nearly level to gently sloping with gradients in most areas less than 5%. Soils are (described in Section 3.3.3) are primarily dry sands with low to moderate productivity. Jack pine (*Pinus banksiana*) is the most common tree species found within the MA; however, other species present include oak species (*Quercus* spp.), aspen (*Populus* spp.), paper birch (*Betula papyrifera*), red pine, white pine (*Pinus strobus*), and various lowland hardwoods (USDA 2006a).

The proposed permit area is found within the Raco Plains ecosystem, which includes natural community types such as pine barrens and dry northern forest. The Michigan Natural Features Inventory (MNFI) indicates the pine barrens community type is found primarily in outwash plain, sand lake plains and sandy riverine terraces (Kost et al. 2007 as cited by the MNFI website.[4] Jack pine dominates this community type, but other species, including white pine, may be present. Historically, dry sand prairie was occasionally found among pine barrens. Small pockets of dry sand prairie in pine-dominated landscapes could also be classified as pine barrens.[5] Dry northern forest communities consist of pine or pine-hardwood communities found on dry sand soils and occurring principally on sandy glacial outwash and sandy glacial lake plains and less often on sand ridges in peatland complexes on glacial outwash or glacial lake plains.[6]

[4] http://mnfi.anr.msu.edu/abstracts/ecology/Pine_barrens.pdf
[5] Ibid
[6] http://mnfi.anr.msu.edu/abstracts/ecology/Dry_northern_forest.pdf

Vegetation Community Types Within Proposed Permit Area

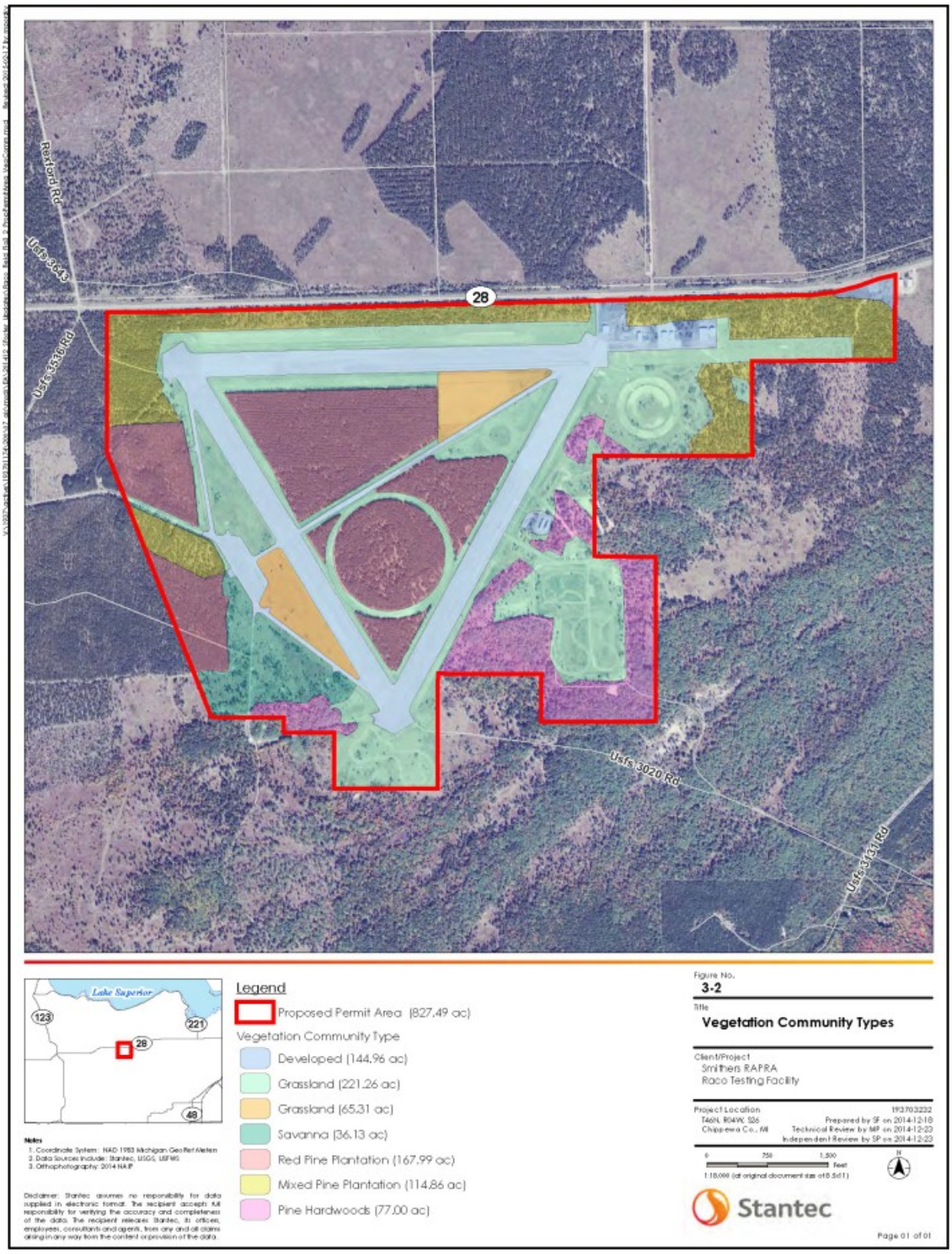
Site investigations, including a habitat assessment, botanical survey, focused rare plant survey, and invasive plant survey, were conducted within the proposed permit area in 2012 and 2014. The results of these investigations are summarized in one report (Stantec 2014).

Six vegetative communities were documented within the proposed permit area during 2014 field surveys: three forested communities (red pine plantation, mixed pine plantation, and pine-hardwood forest) and three relatively open communities (grassland/herbaceous, grassland, and savannah) (Figure 3-2). Developed areas such as paved runways, roads, and buildings occupy the remainder of the permit area (Table 3-2).

Grassland/Herbaceous – The grassland community is located immediately adjacent to the existing runways (Figure 3-2). The grassland community consists of disturbance adapted species such as poverty grass (*Danthonia spicata*), spotted knapweed, smooth brome (*Bromus inermis*), white sweet clover (*Melilotus alba*), quackgrass (*Elymus repens*), common ragweed (*Ambrosia artemisiifolia*), yarrow (*Achillea millifolium*), hairy goldenrod (*Solidago hispida*), bracken fern (*Pteridium aquilinum*), and field hawkweed (*Hieracium caespitosum*). Low-growing shrubs such as sand cherry (*Prunus pumila*), sweet fern (*Comptonia peregrina*), and blueberry (*Vaccinium angustifolium*) are also present. Invasive species such as spotted knapweed cover approximately 40–60% of this community.

A second grassland community, identified simply as “grassland” on Figure 3-2 to distinguish it from the other grassland community, was planted with native grasses following soil disturbance as a result of currently permitted activities and is found at three locations immediately adjacent to the existing runways (Figure 3-2). Big bluestem (*Andropogon gerardii*) dominates this community with sweet fern, sand cherry, spotted knapweed, field hawkweed and bracken fern present but not dominant. Invasive species comprise <1% cover across this community and consist primarily of spotted knapweed.

Red Pine Plantation – This community is found on flat areas within the triangular runways as well as the western edge of the proposed permit area (Figure 3-2). Soils within this community are sandy with regularly spaced furrows as a result of historic pine establishment efforts. The community is dominated by a closed canopy (80–90% canopy cover) of red pine. Size class varies from 6- to 16-inch diameter at breast height (DBH), with the mature stands found primarily within the interior of the existing runways. The herbaceous layer is dominated by sweet fern, blueberry, sand cherry, hawkweed, bracken fern and wild strawberry (*Fragaria virginiana*). Non-dominant species present in the herbaceous layer include spotted knapweed, common St. John’s-wort (*Hypericum perforatum*) and white sweet clover. Invasive species comprise <1% cover within this community.


Redford Rd
Usfs 3643
Usfs 3336 Rd
28
Usfs 3020 Rd
Usfs 3731 Rd
Lake Superior
123
221
28
48
Legend
Proposed Permit Area (827.49 ac)
Vegetation Community Type
Developed (144.96 ac)
Grassland (221.26 ac)
Grassland (65.31 ac)
Savanna (36.13 ac)
Red Pine Plantation (167.99 ac)
Mixed Pine Plantation (114.86 ac)
Pine Hardwoods (77.00 ac)
Figure No.
3-2
Title
Vegetation Community Types
Client/Project
Smithers RAPRA
Raco Testing Facility
Project Location
T46N, R04W, S26
Chippewa Co., MI
193703232
Prepared by SF on 2014-12-18
Technical Review by MP on 2014-12-23
Independent Review by SP on 2014-12-23
0
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Page 01 of 01

Table 3-2 Vegetative community types within the Smithers RAPRA Proposed Permit Area

Vegetative type	Acres
Grassland/Herbaceous	221
Red Pine Plantation	168
Developed	145
Mixed Pine Plantation	115
Pine Hardwood Forest	77
Grassland	65
Savannah	36
Total	**827**

Mixed Pine Plantation – This community is located primarily along the northern and northeastern portions of the proposed permit area along Highway 28 (Figure 3-2). Soils within this community are sandy with regularly spaced furrows as a result of historic pine establishment efforts. This community is dominated by an open canopy (30–60% canopy cover) of red pine (8- to 12-inch DBH) and jack pine (6- to 10-inch DBH). Subcanopy species are absent and the herbaceous layer is dominated by sweet fern, blueberry, spotted knapweed (more abundant in canopy openings), sand cherry, bearberry (*Arctostaphylos uva-ursi*), wintergreen (*Gaultheria procumbens*), hawkweed, bracken fern, lichens, poverty grass and wild strawberry. Invasive species comprise <1% cover within this community and consist primarily of spotted knapweed and common St. John's-wort.

Pine-Hardwood Forest – This community is located primarily east of the easternmost runway within the proposed permit area; however, a smaller area is found in the southwest portion of the site (Figure 3-2). This community consists of a variable canopy ranging from 40–80% cover and is dominated by red oak (*Quercus rubra*) (10- to 12-inch DBH), paper birch with big tooth aspen (*Populus grandidentata*), trembling aspen (*Populus tremuloides*), red maple (*Acer rubrum*) and red pine. The subcanopy is comprised of smaller (4- to 6-inch DBH) aspen species (*Populus* spp). The shrub layer consists primarily of hazelnut (*Corylus cornuta*). Bracken fern, poverty grass, Kentucky bluegrass (*Poa pratensis*), wintergreen and blueberry dominate the herbaceous layer in this community. Invasive species comprise <1% cover within this community and consist primarily of spotted knapweed and common St. John's-wort.

Savannah – This community is found in the southwest portion of the proposed permit area (Figure 3-2) and is similar to the disturbed grassland community in species composition with the addition of woody encroachment. Woody species comprise approximately 10–15% cover within this community and consist of red pine, jack pine and red maple. Invasive species such as spotted knapweed, common St. John's-wort and white sweet clover make up approximately 5% cover across this community.

Threatened, Endangered, and Sensitive Plants

Federally listed species are afforded protection under the Endangered Species Act of 1973, as amended (ESA). State-listed threatened and endangered species are protected by the Endangered Species Act of the State of Michigan (Part 365 of PA 451, 1994 Michigan Natural Resources and Environmental Protection Act). RFSS are those species for which the Regional Forester has acknowledged concern for population viability.

TES plant species were placed into one of three groups for the purposes of analysis in this EA:

- **Occupied Habitat –** Species whose presence has been reported in the proposed permit area or were identified during current field studies.
- **Unoccupied Habitat –** Species whose presence has not been reported but that have suitable habitat within or immediately adjacent to the proposed permit area.
- **Species Without Suitable Habitat –** Species whose presence has not been documented and that do not have suitable habitat in the permit area, or species not present and whose known range does not extend into the permit area.

Potential effects to species with occupied or unoccupied habitat are evaluated in this section. Appendix C includes a table of plant species included on the RFSS list for HNF but have not been documented within and do not have suitable habitat within the proposed permit area. Given the lack of suitable habitat, no effects to these species would occur as a result of either alternative. These species are not analyzed further in this chapter.

Federally listed plant species whose ranges include Chippewa County[7] are:

- American Hart's-tongue Fern (*Asplenium scolopendrium* var. *americanum*) – Threatened (State Endangered)
- Pitcher's Thistle (*Cirsium pitcheri*) – Threatened (State Special Concern)
- Dwarf Lake Iris (*Iris lacustris*) – Threatened (Federal and State)
- Houghton's Goldenrod (*Solidago houghtonii*) – Threatened (Federal and State)

No suitable habitat for any of these species is present within the proposed permit area; therefore, no effects to these species would occur as a result of either alternative. These species are not analyzed further in this chapter.

A query of the MNFI, which included the proposed permit area and the nine one-mile sections that surround the proposed permit area, identified one record of Pine Barrens, a designated natural community. This community type is found within MA 4.4.

No federal or state TES plant species are known from the proposed permit area (HNF Project Review Form 2014) and none were found during the 2012 or 2014 botanical surveys conducted within the proposed permit area (Stantec 2014).

Unoccupied habitat for 12 RFSS plant species is present within the proposed permit area. These species include:

- Prairie Dunewort (*Botrychium campestre*)
- Michigan Moonwort (*Botrychium michiganense*)
- Pale Moonwort (*Botrychium pallidum*)

[7] http://www.fws.gov/midwest/endangered/lists/michigan-cty.html

- Ternate Grape Fern (*Botrychium rugulosum*)
- Spoon-leaf Moonwort (*Botrychium spathulatum*)
- Douglas Hawthorn (Crataegus douglasii)
- Ram's-head Lady's Slipper (*Cypripedium arietinum*)
- Woodland Cudweed (Gnaphalium sylvaticum)
- Ashy Sunflower (Helianthus mollis)
- Canada Mountain Grass (Piptatherum canadense)
- Giant Pinedrops (Pterospora andromedea)
- Dwarf Huckleberry (*Vaccinium cespitosum*)

Non-Native Invasive Plant Species (NNIP)

NNIP are disturbance-adapted species that have the potential to out-compete native species and reduce species diversity in many community types. The HNF recognizes the potential for introduction and spread of NNIP through the implementation of Project activities within the proposed permit area. The Forest Plan (USDA 2006a) emphasizes the need to control the spread of NNIP infestations. NNIP observed during the 2014 survey (Stantec 2014) include spotted knapweed, tall hawkweed (*Hieracium piloselloides*), smooth brome, white sweet clover, and common St. John's wort. Invasive species contribute approximately 40–60% cover in the grassland community and approximately 5% cover in the savannah community (Figure 3-2). Invasive species make up approximately 1% cover in the remaining communities within the proposed permit area.

In 2009, the HNF established two bio-control sites for the control of spotted knapweed at the Raco Airbase. These sites are located immediately adjacent to the existing runways and would not be impacted by testing activities which are already ongoing in that area. These sites were chosen because of the disturbed nature of the airbase and the coverage of spotted knapweed at the site. Bio-control weevils (*Larinus* spp. and *Cyphocleonus* spp.) were released at the site each year between 2009 and 2012. No weevils were available for release in 2013 and the sites have not been monitored since 2012 due to lack of funding.

Management Indicator Species

The Forest Service Manual (FSM) defines management indicators as "Plant and animal species, communities, or special habitats selected for emphasis in planning, and which are monitored during forest plan implementation in order to assess the effects of management activities on their populations and the populations of other species with similar habitat needs which they may represent" (FSM 2620.5). Management indicators are those selected, "…that best represent the issues, concerns, and opportunities to support recovery of federally listed species, provide continued viability of sensitive species, and enhance management of wildlife and fish for commercial, recreational, scientific, subsistence, or aesthetic values or uses" (FSM 2621.1).

No plant species are identified as Management Indicator Species (MIS) within MA 4.4 or HNF in the Final Environmental Impact Statement (FEIS) (USDA 2006b) published concurrently with the Forest Plan.

3.4.4 No Action Alternative

Direct and Indirect Effects

Under the No Action alternative, a SUP for the existing permit area would be reissued but no new activities would be authorized. No additional changes, other than those activities currently permitted, would be implemented within the existing permit area. No tree clearing activities would occur and no changes to existing vegetation communities would occur. The introduction of additional NNIP populations would be limited given that no additional soil disturbance would occur beyond what is currently permitted. In addition, no direct or indirect effects to the spotted knapweed bio-control release sites would occur as a result of the No Action alternative.

No federal or state threatened or endangered plant species occur within the proposed permit area, and no habitat is present for these species. Unoccupied habitat for 12 RFSS species is present within the proposed permit area; however, these species were not found during botanical surveys conducted within the proposed permit area (Stantec 2014). Therefore, no direct or indirect effects to these species would occur as a result of the No Action alternative.

Cumulative Effects

No direct or indirect effects to vegetation would occur as a result of the No Action alternative; therefore, this alternative would have no cumulative effect on vegetation within MA 4.4.

3.4.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

Timber Resources

Approximately 131 acres of timber would be removed to accommodate the development of additional testing areas (see Figure 2-1) and would include:

- Approximately 84 acres of red pine plantation (0.2% of red pine plantation found within MA 4.4 (approximately 34,306 acres)) would be removed from the interior of the existing runways to create a packed snow testing area
- Approximately 47 acres of mixed pine and red pine plantation (less than 0.02% of mixed pine and red pine plantation found within MA 4.4 (approximately 37,740 acres combined)) would be removed from the west side of the site to create additional packed snow and asphalt testing areas.

Smithers RAPRA would contract the clearing of these trees by a Forest Service-approved contractor. The timber value is estimated to be approximately $175,000 to $250,000 (Robert West, District Ranger, personal email communication) and the revenue from the timber would be paid to the Forest Service. The tree removal contractor would remove all stumps, slash and non-merchantable materials and would dispose of these materials at an off-site location or use them for mulch.

Tree removal would result in the conversion of 128 acres to herbaceous cover and approximately 3 acres to an impervious surface (i.e., asphalt). The conversion of land classification within the proposed permit area would require a site-specific amendment to the

Forest Plan. As a result of this proposed amendment, land within the existing and proposed permit area would be reclassified as follows:

- Approximately 144 acres of timber (including the 131 acres proposed to be cleared) within the proposed permit area would be reclassified from suitable for timber production to unsuitable for timber production administrative opening (Stage 1). Following reclassification of the timber stands and subsequent timber sale, no future timber sales would occur.
- Approximately 543 acres of land classified as unsuitable for timber production wildlife openings would be reclassified to unsuitable for timber production Stage 1 administrative use.

The reclassification of lands within the proposed permit area and the resulting removal of 131 acres of timber would not result in a significant adverse effect to timber resources within MA 4.4.

TES Plants

No federal or state threatened or endangered plant species occur within the proposed permit area, and no habitat is present for these species; therefore, no adverse effect to TES plants would occur. Unoccupied suitable habitat for 12 RFSS plants is present within the proposed permit area; however, these species were not found during the 2012 and 2014 botanical surveys conducted within the proposed permit area (Stantec 2014). The determination of effect for each of these species as a result of the Modified Permit Reissuance alternative is summarized in Table 3-3.

Table 3-3 Determination of Effect for RFSS Plant Species – Modified Permit Reissuance Alternative

Species	Determination of Effect[1]
Prairie Dunewort	MINL
Michigan Moonwort	MINL
Pale Moonwort	MINL
Ternate Grape Fern	MINL
Spoon-leaf Moonwort	MINL
Ram's-head Lady's Slipper	MINL
Douglas Hawthorn	NI
Woodland Cudweed	NI
Ashy Sunflower	NI
Canada Mountain Grass	MINL
Giant Pinedrops	MINL
Dwarf Huckleberry	MINL

[1]No impact (NI); Beneficial Impact (BI); May impact individuals but is not likely to cause a trend toward federal listing or loss of viability (MINL); May impact individuals or cause a trend toward federal listing or loss of viability (MILT)

NNIP Species

NNIP such as spotted knapweed already cover approximately 40–60% of the existing grassland communities present within the proposed permit area. The introduction and spread of NNIP could have direct effects on native vegetation communities by reducing species diversity

through competition with native species. Of the vegetation community types found within the proposed permit area, the herbaceous communities currently have the highest percentage of invasive species cover. Tree removal would result in the conversion of these habitats to herbaceous cover and may cause an increase in the NNIP population. Management activities including mowing and limited herbicide application are currently being implemented at the site to reduce the spread of NNIP (see Section 2.2 for design criteria and BMPs for NNIP). Herbicide use is conducted by a Forest Service-approved contractor at one test track location and is limited to one application of Pramitol 25E in the summer months. The application is used primarily to ensure a smooth test track surface and eliminate weeds from growing up through surface cracks.

The additional activities requested as a result of this alternative may have an effect on the spread of knapweed and other NNIP within the proposed permit area due to the additional soil disturbance from construction and increased vehicle use of the site; however, given the continued implementation of BMPs to minimize the introduction and spread of NNIP, this effect is expected to be minimal. In addition, no direct or indirect effects to the spotted knapweed bio-control release sites would occur as a result of this alternative. The success of the bio-control release sites in controlling the NNIP populations are unknown given the sites have not been monitored since 2012.

To compensate for the conversion of habitat and habitat loss within the proposed permit area, the Forest Service requested that Smithers RAPRA implement treatment measures for NNIP within the proposed permit area. In order to minimize the effect of Project activities on NNIP infestations, Smithers RAPRA would treat NNIP using a combination of methods at multiple locations within the proposed permit area as approved by the Forest Service. Control methods would include mechanical techniques (i.e., mowing) or herbicide applications, or a combination of these methods. Mowing would generally occur where off-road vehicle testing is proposed and in areas adjacent to paved roads and test tracks. Mowing would occur annually during the peak flowering periods of NNIP species known to occur within the proposed permit area, and multiple entries per year may be needed to prevent NNIP seed development. Herbicide treatments would be focused around the perimeter of the proposed permit area or in other areas as needed to avoid NNIP spread beyond the proposed permit area. Herbicide would be applied selectively to NNIP infestations by a Forest Service-approved contractor using a backpack sprayer or other target-specific methods.

NNIP treatments implemented under this alternative would be monitored by Smithers RAPRA as directed by the Forest Service to evaluate the efficacy of treatments on target infestations. Repeated treatments would be implemented if initial treatments do not adequately control the target infestations; some treatments would require repeated applications at the same sites in succeeding years. NNIP infestations would be monitored and treated, if necessary, for the entire duration that the special use permit is administered.

Herbicide use and treatment efficacy would be monitored annually and during periods of herbicide application. Herbicide application records would include information on the date and location of application, applicator qualifications, type of herbicide, concentration and total amount of the herbicide used, method of application, and species treated. Treated areas would be monitored to ensure that control methods and site protection measures meet objectives.

Based on the design criteria and BMPs that would be implemented at the site, as well as the mitigation measures proposed, no significant increase of NNIP within the proposed permit area is anticipated.

Cumulative Effects

In addition to the 499 acres of land to be converted to Stage 1 as a result of this alternative, past projects within MA 4.4 have also resulted in reclassification of land. Other reasonably foreseeable future Forest Service projects within MA 4.4 include a vegetation management project within the Raco Plains, which has the potential to result in reclassification of lands within that area. Other state and local projects may also occur. Cumulatively, these past, present and future actions have, or will, result in fewer acres available for timber production and a decrease in the overall acreage of MA 4.4. Forest Service projects may result in an increase to wildlife openings through the reclassification of lands suitable for timber production to lands that would serve as wildlife openings.

No federal or state threatened or endangered plant species occur within the proposed permit area, and no habitat is present for these species. Because no direct or indirect effects to these species would occur as a result of this alternative, no cumulative effects to these species would occur as a result of this alternative. Unoccupied habitat for 12 RFSS plants is found within the proposed permit area and there are known occurrences of these species from MA 4.4. Past projects and management activities within MA 4.4 have affected habitat for these species. The reasonably foreseeable Raco Plains vegetation management project has the potential to affect suitable habitat for these species by resulting in a change in land cover type (e.g., forest to grassland or grassland to forest, which could result in either a loss or gain of habitat for these species.

This alternative has the potential to increase the presence of NNIP within MA 4.4; however, given the implementation of design criteria and BMPs, as well as the proposed mitigation, the effect is expected to minimal.

3.5 WILDLIFE

3.5.1 Introduction

A discussion of those TES and RFSS wildlife species known from or with suitable habitat within the proposed permit area are evaluated as part of the effects analysis for wildlife. See Section 3.5.3 for a discussion of the existing conditions within the proposed permit area.

Reclassification of land as a result of the Forest Plan amendment proposed as part of the Modified Permit Reissuance alternative would affect wildlife only if the reclassification would result in a removal of habitat or change in wildlife use of the area. Therefore, the analysis in this section focuses on the changes to habitat and wildlife use as a result of Smithers RAPRA activities within the proposed project area.

One question was received during public scoping related to fencing proposed as a result of the Modified SUP Reissuance Alternative and how it might affect movement of wildlife across the site. A discussion of potential effects to wildlife is found in Section 3.5.3. No other comments related to wildlife were received as a result of public scoping.

Measures for comparison of alternatives relating to wildlife include the change in habitat types, more specifically the conversion of forest habitat to herbaceous cover and herbaceous cover to developed lands, and any potential changes in wildlife use of the proposed permit area as a result of the Project alternatives

3.5.2 Analysis Areas

Direct and Indirect Analysis Area

The analysis area for direct and indirect effects includes the existing and proposed permit area (Figure 2-1) because all currently permitted and proposed activities would occur within these areas. The temporal boundary for direct and indirect effects is based on the length of the SUP, which is 20 years.

Cumulative Effects Analysis Area

The HNF is divided into 21 MAs, each with specific management direction in the Forest Plan designed to reach a desired future condition appropriate for that MA. The MAs are the smallest geographic unit within which the Forest Service manages wildlife. Therefore, the cumulative effects analysis area for wildlife resources is MA 4.4, which includes the proposed permit area. Since the potential contribution of the direct and indirect effects is based on the timeframe of the SUP, the temporal timeframe of the cumulative effects analysis will also be 20 years. After 20 years, habitat would continue to change, but predictions on habitat availability become increasingly speculative.

3.5.3 Affected Environment

Vegetative communities present within the existing and proposed permit areas that provide habitat for wildlife species are described in Section 3.4.3. No streams, wetlands or riparian areas were identified within the proposed permit area as a result of field surveys (Stantec 2014); therefore, no habitat is present for wildlife species that prefer these habitats. Fencing at the site is located around the perimeter of buildings at the Raco Airbase and does not restrict movement of wildlife that travel through the existing or proposed permit area to adjacent habitats.

Threatened, Endangered, and Sensitive Animals

Federally listed species are afforded protection under the ESA. State-listed threatened and endangered species are protected by the Endangered Species Act of the State of Michigan (Part 365 of PA 451, 1994 Michigan Natural Resources and Environmental Protection Act). RFSS are those species for which the Regional Forester has acknowledged concern for population viability.

Federally listed wildlife species whose ranges include Chippewa County[8] include:

- Gray Wolf (*Canis lupus*) – Endangered (Federal)
- Piping Plover (*Charadrius melodus*) – Endangered (Federal and State)
- Kirtland's Warbler (*Dendroica kirtlandii*) – Endangered (Federal and State)
- Northern Long-eared Bat (*Myotis septentrionalis*) – Proposed Endangered (Federal)
- Rufa Red Knot (*Calidris canutus rufa*) – Threatened (Federal)
- Canada Lynx (*Lynx canadensis*) – Threatened (Federal) (State Endangered)

Occupied Habitat

[8] http://www.fws.gov/midwest/endangered/lists/michigan-cty.html

Occupied habitat for the gray wolf and northern long-eared bat is present within the proposed permit area.

Gray Wolf

The gray wolf was listed as endangered by the U.S. Fish and Wildlife Service (USFWS) on March 11, 1967, for the lower 48 states (32 FR 4001). The gray wolf was delisted on May 9, 2009 (74 FR 15069-15123); however, due to a federal court decision, wolves in the western Great Lakes area (including Michigan, Minnesota and Wisconsin) were relisted as endangered under the ESA effective December 19, 2014.

Gray wolves use a variety of habitats within HNF, including both forested and non-forested areas. In Michigan, beaver and white-tailed deer are the primary prey species for the gray wolf; however, they also feed on snowshoe hare (*Lepus americanus*), red squirrel (*Tamiasciurus hudsonicus*), mice (e.g., *Peromyscus sp.)*, voles (*Microtus sp.*) and ruffed grouse (*Bonasa umbellus*) (USDA 2003). The USFWS indicates territory size can range from 25 to 1,500 square miles and individual wolves can travel distances of up to approximately 600 miles.[9] Gray wolves are known from Management Area (MA) 4.4 (Forest Service, personal communication). No known wolf den sites are located within the Action Area. Approximately 360 acres of forest habitat is found within the proposed permit area that provides suitable habitat for the gray wolf.

Northern Long-eared Bat

On October 2, 2013, the USFWS announced a 12-month finding on a petition to list the northern long-eared bat as endangered or threatened under the ESA and to designate critical habitat (78 FR 61046 – 61080). After review of the best available scientific and commercial information, the USFWS proposes to list the northern long-eared bat as endangered throughout its range, which includes Michigan. No critical habitat is proposed or designated at this time.

The status review conducted by the USFWS identified white-nose syndrome (WNS) as the primary threat to the northern long-eared bat, although other threats do exist as well (USFWS 2013). WNS is an emerging infectious disease caused by the fungus *Pseudogymnoascus destructans* and is responsible for unprecedented mortality in some hibernating insectivorous bats in the northeastern United States, including dramatic and rapid population declines in northern long-eared bat populations of up to 99% from pre-WNS levels. WNS is spreading rapidly throughout the eastern United States and is currently spreading through the Upper Midwest. The fungus has been identified in Michigan.[10]

On January 6, 2014, an Interim Conference and Planning Guidance document on the northern long-eared bat (USFWS 2014) was published to address how the USFWS will handle consultations and assessments concerning the northern long-eared bat prior to the final listing ruling.

[9] http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A00D#lifeHistory
[10] http://www.whitenosesyndrome.org/about/where-is-it-now

On January 16, 2015, the USFWS proposed a special rule under the ESA that would provide the maximum benefit to the species while limiting the regulatory burden on the public (80 FR 2371 – 2378). If finalized, the rule, under section 4(d) of the ESA, would apply only in the event the USFWS lists the northern long-eared bat as threatened. Although originally proposed to be listed as endangered, the USFWS acknowledges that the ongoing scientific review of threats to the northern long-eared bat could possibly lead to a final listing determination of threatened rather than endangered. For species listed as threatened, the USFWS may issue a 4(d) rule to provide protections that are deemed necessary and advisable for conservation of the species. Such a rule ensures that private landowners and citizens are not unduly burdened by regulations that do not further the conservation of the species and are exempted from take prohibitions when conducting activities that actively benefit the species. The public comment period on the proposed 4(d) rules ends March 17, 2015. The USFWS anticipates a listing decision in early April 2015.

Northern long-eared bats use a wide variety of forested habitats for roosting, foraging and traveling, and may also utilize some adjacent and interspersed non-forested habitat such as emergent wetlands and edges of fields. This species has also been found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable). The bats emerge at dusk to forage in upland and lowland woodlots and tree-lined corridors, feeding on insects, which they catch while in flight using echolocation. This species also feeds by gleaning insects from vegetation and water surfaces (USFWS 2014).

Roosting habitat includes forested areas with live trees and/or snags with a DBH of at least 3 inches with exfoliating bark, cracks, crevices and/or other cavities. Trees are considered suitable if they meet those requirements, and are located within 1000 feet of other forested/wooded habitat (USFWS 2014). Maternity habitat is defined as suitable summer habitat that is used by juveniles and reproductive females. The summer maternity season in Michigan is considered to be April 1 through September 30 (USFWS 2014).

Winter habitat includes underground caves and cave-like structures such as abandoned or active mines and railroad tunnels. These hibernacula typically have high humidity, minimal air current, large passages with cracks and crevices for roosting, and maintain a relatively cool temperature (32–48°F [0–9°C]) (USFWS 2014).

The northern long-eared bat is a commonly encountered species throughout the majority of the Midwest, being commonly captured in mist-net surveys (USFWS 2013). However, they are found in low numbers in hibernacula in the Midwest. The northern long-eared bat is more commonly encountered in the eastern portions of its range (USFWS 2013).

The proposed permit area is within the known geographic range of the northern long-eared bat; however, no site-specific surveys have been conducted. Therefore, for the purposes of this EA, it is assumed that northern long-eared bats are present within the proposed permit area. Approximately 360 acres of forest habitat that provides suitable habitat for the northern long-eared bat is present within the proposed permit area.

Unoccupied Habitat

Unoccupied habitat for the Canada lynx is found within the proposed permit area; however, no records of this species are known from the Raco Airbase (HNF Project Review Form 2014). No suitable habitat for the remaining federal TES species is found within the proposed permit area. Kirtland's warblers have not been documented within the proposed permit area (HNF 2014) and

no suitable habitat is present; however, given the likelihood that suitable habitat is found adjacent to the Action Area, it was analyzed in this category.

A query of the MNFI, which included the proposed permit area and the nine one-mile sections that surround the proposed permit area, identified records of one great blue heron (*Ardea herodias*) rookery and one migrant loggerhead shrike (*Lanius ludovicianus*) within the query area. In addition, a historic sharp-tailed grouse lek site (i.e., dancing ground for mating) is found in the northwest portion of the existing permit area. This lek site has been inactive since 2008 (HNF Project Review Form 2014). This species may also use pine plantations around the lek site for roosting, hiding, and brood rearing (USDA 2004).

Appendix C includes a table of wildlife species included on the RFSS list for HNF that have not been documented within, and do not have suitable habitat within, the proposed permit area. Given the lack of suitable habitat, no effects to these species would occur as a result of either alternative and therefore these species are not analyzed further in this chapter.

Occupied Habitat

Occupied habitat is present within the proposed permit area for two RFSS wildlife species (Appendix C):

- Little Brown Bat (*Myotis lucifugus*)
- Sharp-tailed Grouse

Little Brown Bat

The habitat requirements of the little brown bat are similar to the northern long-eared bat (see above); however, unlike northern long-eared bats, little brown bats are less dependent upon forest cover and are known to roost in man-made structures in the summer months. Typical summer foraging areas include forest edges, along streams and lakes, and sometimes in cultivated fields. This species hibernates primarily in caves and mine shafts; however, hollow trees are sometimes used.

The proposed permit area is within the known geographic range of the little brown bat; however, no site-specific surveys have been conducted. Therefore, for the purposes of this EA, it is assumed that little brown bats are present within the proposed permit area. Approximately 360 acres of forest habitat that provides suitable habitat for the little brown bat is present within the proposed permit area.

Sharp-tailed Grouse

The sharp-tailed grouse requires a complex of dense grass and shrubs with rich forb and insect foods during nesting and brood-rearing. During winter, this species often relies on riparian areas and other sites that support deciduous trees and shrubs for feeding, roosting, and escape cover. It also utilizes non-native cultivated grains and hedgerow species for food and cover. A historic sharp-tailed grouse lek site is present within the proposed permit area; however, the lek site has not been active since 2008 (HNF Project Review Form 2014).

A noise study was conducted at the Raco Airbase in 2011 to determine the potential effects of vehicular testing noise on the sharp-tailed grouse, and specifically to determine if noise played a

factor in abandonment of the lek site. The results of the survey indicate that noise levels were found to be the same between testing and non-testing periods (Stantec 2011). The data suggest that automotive testing on the tracks used during the noise evaluation would not have an impact on sharp-tailed grouse behavior in the vicinity of the lek site (Stantec 2011). Therefore, potential noise effects as they relate to wildlife are not evaluated further in this EA.

Unoccupied Habitat

Unoccupied habitat is present within the proposed permit area for eight RFSS wildlife species (Appendix C):

- Northern Goshawk (*Accipiter gentilis*)
- Le Conte's Sparrow (*Ammodramus leconteii*)
- Short-eared Owl (*Asio flammeus*)
- Prairie Warbler (*Dendroica discolor*)
- Loggerhead Shrike (*Lanius ludovicianus migrans*)
- Nobokov's Blue (*Plebejus idas nabokovi*)
- Connecticut Warbler (*Oporornis agilis*)
- Black-backed Woodpecker (*Picoides arcticus*)

Management Indicator Species

The Forest Plan FEIS (USDA 2006b) identified four wildlife species as MIS within the HNF (see Section 3.4.3 for definition of MIS): sharp-tailed grouse, American marten (*Martes americana*), ruffed grouse, and brook trout (*Salvelinus fontinalis*).

The sharp-tailed grouse was identified as an MIS because of its association with open land habitat. The American marten is known from deciduous forest and communities with a mix of deciduous and coniferous habitat. The ruffed grouse is known from deciduous forest communities. Brook trout are known from cold water streams (USDA 2006b)

The proposed permit area provides suitable habitat for the sharp-tailed grouse; however, the deciduous forest communities used by both the American marten and the ruffed grouse are not present within the proposed permit area. In addition, no cold water streams are present within the proposed permit area (see Section 3.6 for a discussion of water resources). Given that the sharp-tailed grouse is the only MIS for which suitable habitat is present within the proposed permit area, it is the only MIS evaluated further in this section.

3.5.4 No Action Alternative

Direct and Indirect Effects

The No Action alternative would result in no changes to the existing conditions within the existing permit area and would result in no adverse effects to federal or state TES or RFSS. No conversion of habitats would occur beyond what is currently permitted. No changes to the current fencing configuration would occur as a result of the No Action alternative. Fencing within the existing permit area is found around the perimeter of existing buildings; however, no fences

are present that restrict the movement of wildlife across the site. No direct or indirect effects to wildlife would occur as a result of the No Action alternative.

Cumulative Effects

No direct or indirect effects to wildlife would occur as a result of the No Action alternative; therefore, no cumulative effects would occur as a result of this alternative.

3.5.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

No changes to the current fencing configuration would occur as a result of the Modified Permit Reissuance alternative. Fencing within the existing permit area is found around the perimeter of existing buildings; however, no fences are present that restrict the movement of wildlife across the site.

Occupied habitat for the federally endangered gray wolf and the federally proposed endangered northern long-eared bat is found within the proposed permit area. Direct and indirect effects to these species are discussed below.

Gray Wolf

Direct mortality from collision with construction equipment or testing vehicles is unlikely because individual wolves that may be present in the vicinity of the Project likely already avoid the area given the disturbed nature of the site and ongoing, currently permitted activities conducted by Smithers RAPRA. Wolves are alert, wary, and highly mobile and, if present, would likely avoid the proposed permit area due to increased human activity during construction and the winter testing periods. The Forest Plan (USDA 2006a) requires the protection of known denning sites; however, no known denning sites are found within the proposed permit area (Forest Service, personal communication). Approximately 131 acres of woodland would be cleared from the proposed permit area as a result of this alternative, which would result in the loss of suitable gray wolf habitat. Tree clearing may also increase the amount of suitable foraging habitat for prey species, which may increase hunting opportunities for the gray wolf. This alternative may have the indirect effect of preventing individual wolves from moving into the proposed permit area in the future.

This alternative may affect wolves but effects are considered to be insignificant in that they are not anticipated to reach a scale where take occurs. Therefore, this alternative **May Affect, but is not Likely to Adversely Affect** the gray wolf.

Northern Long-eared Bat

Direct mortality from collision with construction equipment or testing vehicles is unlikely given that these activities would occur during daylight hours when the bats are not active. If northern long-eared bats are present in the proposed permit area, tree clearing as a result of the Modified Permit Reissuance alternative would directly affect this species by the removal of summer maternity and foraging habitat. Approximately 131 acres of mixed pine plantation and red pine plantation would be cleared as a result of the this alternative, representing approximately 36 percent of forest cover within the proposed permit area (360 acres) (131/360 = 36.3 percent) and 3.0 percent of forest cover within a 2.5-mile radius of the site (4,367 acres)

(4,367 x 0.03 = 131). The 2.5-mile radius represents the maximum foraging distance from a maternity roost (USFWS 2014). Tree clearing activities as a result of the this alternative would occur outside of the northern long-eared bat maternity season (October 1 through March 31) when the bats are not present in the Upper Peninsula of Michigan (USFWS 2013) resulting in no direct take of this species.

This alternative may affect northern long-eared bats but effects are considered to be insignificant in that they are not anticipated to reach a scale where take occurs. Therefore, this alternative **May Affect, but is Not Likely to Adversely Affect** the northern long-eared bat.

Unoccupied habitat for one species, the federally threatened Canada lynx, is found within the proposed permit area. Direct and indirect effects to this species are discussed below.

Canada Lynx

Unoccupied habitat for this species is found within the proposed permit area; however, no records of this species are known for the Raco Airbase. Approximately 131 acres of woodland would be cleared as a result of the Modified Permit Reissuance alternative, which would result in the loss of unoccupied suitable Canada lynx habitat. Tree clearing may also increase the amount of suitable foraging habitat for the snowshoe hare, increasing hunting opportunities for the Canada lynx. This species is known to be secretive; therefore, given the amount of human activity at the Raco Airbase and the proximity to Highway 28, there is limited potential for this species to occur within the proposed permit area. This alternative **May Affect but is not Likely to Adversely Affect** the Canada lynx.

Kirtland's Warbler

No suitable habitat for this species is present within the proposed permit area; therefore, no direct or indirect effects to this species would occur as a result of the Modified Permit Reissuance alternative. Give the lack of suitable habitat within the proposed action area, this alternative would have **No Effect** on this species.

Occupied habitat for two RFSS animals is present within the proposed permit area. Direct and indirect effects to these species are discussed by species below.

Little Brown Bat

Direct mortality from collision with construction equipment or testing vehicles is unlikely given that these activities would occur during daylight hours when the bats are not active. If little brown bats are present in the analysis area, tree clearing as a result of the Modified Permit Reissuance alternative would directly affect little brown bats by the removal of summer maternity and foraging habitat. Approximately 131 acres of mixed pine plantation and red pine plantation would be cleared as a result of this alternative, representing approximately 36 percent of forest cover within the proposed permit area (360 acres) (131/360 = 36.3 percent). However, trees would be cleared outside of the summer maternity season (October 1 through March 31) resulting in no take of this species.

Little brown bats are slightly less dependent upon forest cover than the northern long-eared bat and are known to roost in man-made structures during the summer months. Typical summer foraging areas include forest edges, along streams and lakes, and cultivated fields. No buildings would be demolished as a result of this alternative; therefore, if bats are roosting in buildings, no

changes would occur to the existing condition. Buildings proposed for construction as part of this alternative may provide future roosting sites for this species.

This alternative **may impact individuals, but is not likely to cause a trend to federal listing or loss of viability** to the little brown bat.

Sharp-tailed Grouse

Direct mortality from collision with construction equipment or testing vehicles is unlikely given the previous abandonment of the historic lek site. Should the lek site again become active in the future, vehicle testing would not occur while the birds are present per existing permit conditions.

Individual sharp-tailed grouse that may be present in the vicinity of the proposed permit area may avoid the area due to increased human activity that would temporarily occur during construction. Approximately 131 acres consisting of red pine plantation and mixed pine plantation would be cleared as a result of this alternative resulting in the permanent conversion of approximately 128 acres to herbaceous vegetation. Removal of the timber and understory vegetation may reduce nesting habitat for the sharp-tailed grouse but may simultaneously create more open habitat that could be suitable for lek sites.

Winter testing activities would have no direct or indirect effects on the sharp-tailed grouse as the birds are not concentrated at lek sites during the winter months and would be expected to more widely disperse during that time. This alternative would likely result in a determination of **may impact individuals, but is not likely to cause a trend to federal listing or loss of viability** to the sharp-tailed grouse.

Unoccupied suitable habitat for eight RFSS wildlife species is present within the proposed permit area (see Section 3.5.3). The determination of effect for each of these species as a result of the Modified Permit Reissuance alternative is summarized in Table 3-4.

Table 3-4 Determination of Effect for RFSS Wildlife Species – Modified Permit Reissuance Alternative

Species	Determination of Effect[1]
Northern Goshawk	MINL
LeConte's Sparrow	NI
Short-eared Owl	MINL
Prairie Warbler	NI
Loggerhead Shrike	MINL
Nobokov's Blue	NI
Connecticut Warbler	MINL
Black-backed Woodpecker	MINL

[1]No impact (NI); Beneficial Impact (BI); May impact individuals but is not likely to cause a trend toward federal listing or loss of viability (MINL); May impact individuals or cause a trend toward federal listing or loss of viability (MILT)

Cumulative Effects

The proposed permit area provides habitat for both federally listed wildlife species and species identified as RFSS (see discussion above). Each of these species is known from or has the potential to occur within MA 4.4. Past projects within MA 4.4 have affected wildlife habitat for

these species. The reasonably foreseeable Raco Plains vegetation management project has the potential to affect wildlife habitat by resulting in a change in land cover type (e.g., forest to grassland, grassland to forest, grassland to administrative use), which could result in either a loss or gain of habitat depending on the species. Forest Service project could results in reclassification of lands as wildlife openings which would provide habitat for these species. Conversion of existing wildlife habitat to administrative use would result in an overall net loss of wildlife habitat.

3.6 WATER RESOURCES

3.6.1 Introduction

This section addresses potential effects to water resources including surface water (i.e., streams), groundwater, wetlands, and floodplains. Measures for comparison of alternatives related to water resources include the potential for impacts to water resources and changes in existing groundwater use as a result of the proposed alternatives.

No water quality concerns were raised during public scoping for this project. One comment received as a result of preliminary internal scoping by the Forest Service (HNF Project Review Form 2014) indicated the EA should discuss proposed activities that would occur near USACE monitoring wells at the Raco Airbase (see Section 3.6.3).

3.6.2 Analysis Areas

Direct and Indirect Analysis Area

The analysis area for direct and indirect effects on surface waters, wetlands and floodplains includes the existing and proposed permit area (Figure 2-1) because all currently permitted and proposed activities with potential to affect these resources would occur within these areas. The analysis area for direct and indirect effects on groundwater includes the existing and proposed permit area (Figure 2-1) and the 1,000-foot radius of influence that surrounds the existing high capacity well at the site because the effects of water withdrawals are effectively limited to the radius of influence (Peterson 2003). The temporal boundary for direct and indirect effects is based on the length of the SUP, which is 20 years.

Cumulative Effects Analysis Area

No surface waters, wetlands or floodplain are located within the proposed permit area (see Section 3.6.3 and 3.6.4) and no direct effects would occur to these resources. Therefore, cumulative effects analysis is not warranted.

The cumulative effects analysis for water resources focuses entirely on potential cumulative effects to groundwater resources. The cumulative effects analysis area for groundwater resources is the portion of the Raco Aquifer within the 1,000-foot radius of influence that surrounds the existing high capacity well because all groundwater used for site operations is withdrawn from this well and the potential effects to the aquifer would not be quantitatively or qualitatively meaningful outside of this boundary.

Based on the extent of the Raco Aquifer identified from a map of surficial geologic deposits in Chippewa County, Michigan (Vanlier and Deutsch 1958 as cited in USDA 2004), the Raco Aquifer occupies approximately three townships (108 square miles, 70,000 acres) in Chippewa County. However, the extent of water withdrawal effects are limited to a cone of depression that

Peterson (2003) estimated to be approximately 1,000 feet from the point of withdrawal based on the pumping rates currently implemented and proposed to be implemented at the site. The temporal boundary for cumulative effects is 40 years based on the past and future SUP timeframe.

3.6.3 Affected Environment

Surface Waters, Wetlands and Floodplain

No lakes, ponds, or streams are located within the proposed permit area. The nearest surface waters to the Raco Airbase are Clear Creek, Prey Creek, Sullivan Creek, Soldier's Lake, and East Soldier's Lake (Figure 3-3). Sullivan Creek is located approximately 0.6 mile from the Raco Airbase at its closest point and approximately 2 miles from the existing high capacity well. Estimated drawdown of the aquifer at proposed pumping rates is not anticipated to affect surface flows in Sullivans Creek or groundwater baseflow input to the creek (Peterson 2003).

No wetlands were identified during a wetland determination conducted at the site in August 2014 (Stantec 2014). No riparian corridors are present within or immediately adjacent to the proposed permit area and no springs were identified during walking surveys of the proposed permit area. Federal Emergency Management Agency (FEMA) maps indicate that the site is located outside of the 100-year floodplain (Figure 3-3).

Groundwater

Four groundwater wells are located within the existing permit area: one 6-inch high-capacity well and three domestic wells (USDA 2004). Under the current SUP, Smithers RAPRA pumps water via a high-capacity well (see below) from the Raco Aquifer that underlies the site to create ice and snow-pack testing surfaces in preparation for winter vehicle testing. The three domestic wells are primarily used for drinking water and other daily office/garage activities. No additives are used in the creation of ice and snow-pack testing surfaces.

Smithers RAPRA uses an average of 52,000 gallons of water per day during a typical winter testing season (7 million gallons total during a 4.5-month testing period) in accordance with the existing SUP. Water is drawn from the high capacity well located in the northeast corner of the runway system, pumped into trucks, and then taken to different locations within the existing permit area and used to create ice and snow-pack testing surfaces. Water use peaks in December when ice runways are created, and then declines. During seasons when natural snow pack is of sufficient quantity that creation of snow is not necessary, less water is consumed. Table 3-5 shows water withdrawal data from the high capacity well at the site. Seasonal variations can be directly attributed to the increase and decrease of the volume of extracted groundwater on an annual basis.

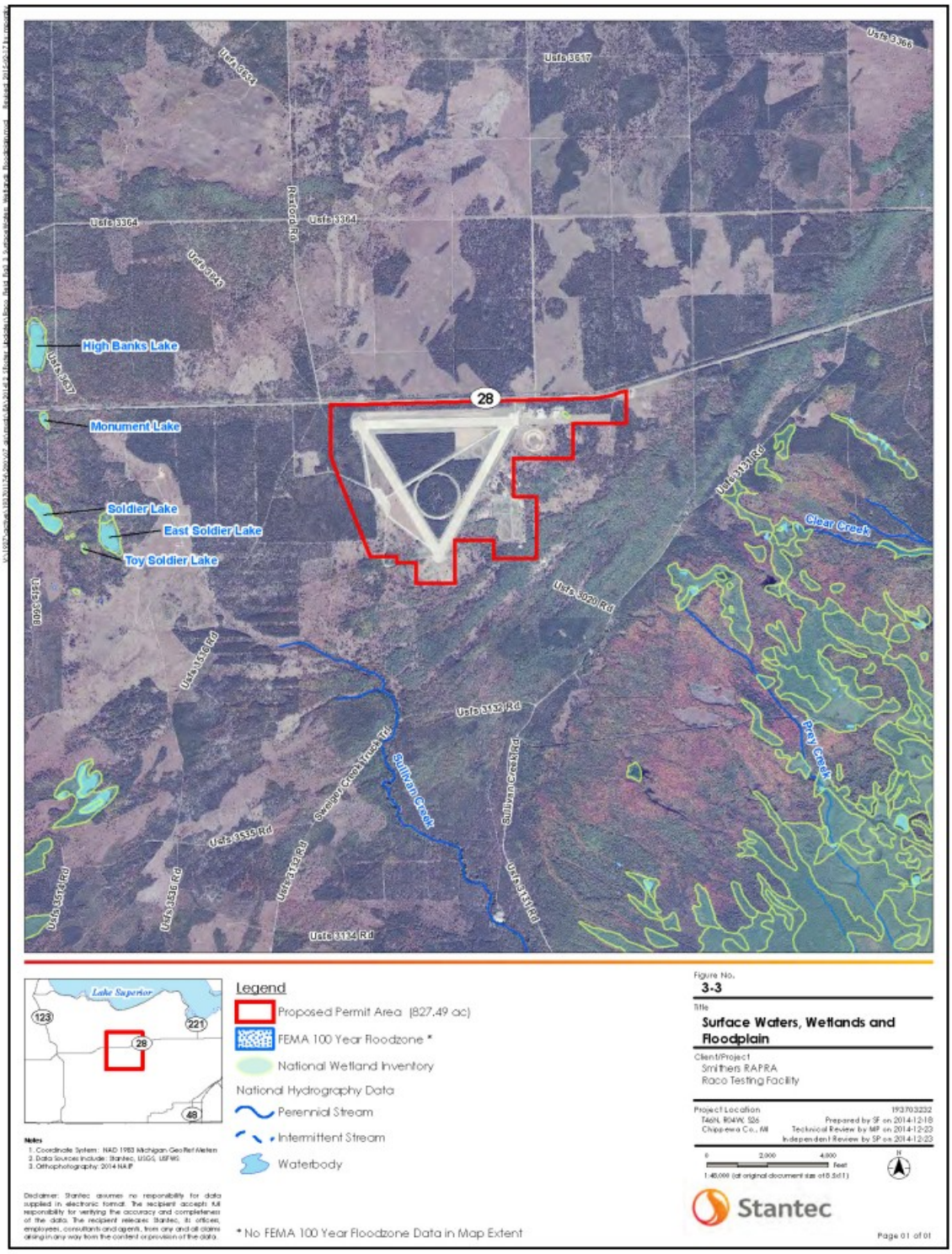
High Banks Lake
Monument Lake
Soldier Lake
East Soldier Lake
Toy Soldier Lake
28
Clear Creek
Prey Creek
Sullivan Creek
Swamper Creek
Lake Superior
123
221
28
48
Legend
Proposed Permit Area (827.49 ac)
FEMA 100 Year Floodzone *
National Wetland Inventory
National Hydrography Data
Perennial Stream
Intermittent Stream
Waterbody
* No FEMA 100 Year Floodzone Data in Map Extent
Figure No.
3-3
Title
Surface Waters, Wetlands and Floodplain
Client/Project
Smithers RAPRA
Raco Testing Facility
Stantec
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Table 3-5 Volume of Water Withdrawn from the Smithers RAPRA High Capacity Well over the Past 5 Years

Year	Gallons
2010	9,915,768
2011	7,874,712
2012	4,243,608
2013	3,784,320
2014	5,907,276

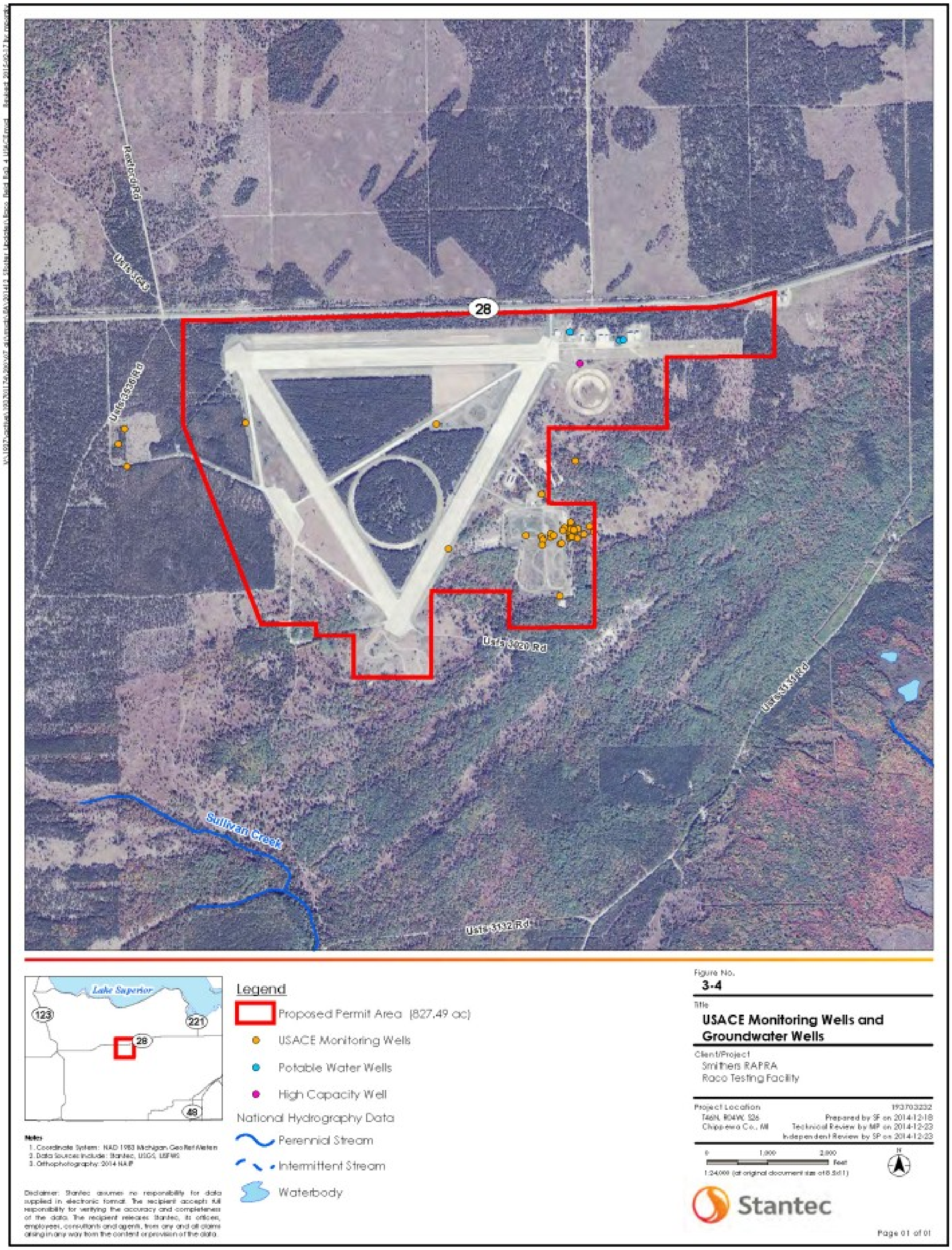
Water is applied to the ground surface as snow or ice and infiltrates back into the ground following spring melt. Since the water withdrawal is non-consumptive (i.e., water is removed and returned to the aquifer through infiltration of spring meltwater near the point of withdrawal) and less than threshold quantities described under Part 327 of the Natural Resources and Environmental Protection Act, 1994 PA 451, a water withdrawal permit is not required by the State of Michigan. The water withdrawal is in accordance with the 2005 DN and FONSI, which allows for up to 14 million gallons of extracted water annually. The approximately 6,300,000 gallon average withdrawal over the past five years is less than half the allowed water extraction. The maximum withdrawal of nearly 10 million gallons per year in 2010 represents only 71 percent of the maximum allowed withdrawal under the SUP.

The Raco Airbase is found within the Orrs Creek subwatershed (Michigan Watershed ID 62-7) of the Waiska River watershed that drains to Lake Superior. Sullivans Creek (located approximately 0.6 mile away at its closest point) is a component of the North Pine River subwatershed (Michigan Watershed ID 54-4) of the Carp-Pine River watershed that ultimately drains to Lake Michigan. A groundwater connection between the proposed permit area and Sullivans Creek is unlikely because the two are in different watersheds and are on the opposite site of the Lake Superior/Lake Michigan watershed divide. Topographic factors also support the conclusion that the existing high capacity well appropriations would have a minimal influence on groundwater inputs to Sullivan Creek (Peterson 2003).

U.S. Army Corps of Engineers Groundwater Monitoring

Groundwater within the FUDS (i.e., the former Raco Airbase footprint) is currently being investigated by the USACE to delineate and monitor the eastern extent of the TCE groundwater plume that developed as a result of past military use of the site. Groundwater monitoring wells were installed by the USACE at the site (Figure 3-4) and soil and water samples are tested periodically for contaminants. The groundwater monitoring wells are located in close proximity to the existing runways and other infrastructure at the Raco Airbase; however, the 2004 EA for the existing SUP, and subsequent DN/FONSI, determined that the current Smithers RAPRA activities currently have no effects to the monitoring wells or the USACE monitoring system.

USACE monitoring wells are located near Smithers off-road course located in the southeast portion of the permitted area (Figure 3-4). To prevent damage to these monitoring wells and USACE property, Smithers has established a 20-foot buffer around all existing monitoring wells and Smithers RAPRA's ongoing operations. Smithers RAPRA will continue to coordinate with the USACE to determine if Smithers RAPRA activities would potentially affect the integrity of USACE monitoring wells. If found that additional protection measures are required, Smithers RAPRA would be responsible for any incremental costs associated with added bollards, jersey barriers, or other suitable physical protection measures at the wells.


28
Usfs 3020 Rd
Sullivan Creek
Usfs 3132 Rd
Lake Superior
Legend
Proposed Permit Area (827.49 ac)
USACE Monitoring Wells
Potable Water Wells
High Capacity Well
National Hydrography Data
Perennial Stream
Intermittent Stream
Waterbody
Figure No.
3-4
Title
USACE Monitoring Wells and Groundwater Wells
Client/Project
Smithers RAPRA
Raco Testing Facility
Project Location
Prepared by SF on 2014-12-18
Technical Review by MP on 2014-12-23
Independent Review by SP on 2014-12-23
0
1,000
2,000
Feet
Stantec
Page 01 of 01

Based on the 2003 Hydrologic Study (Peterson 2003), potable water well sampling completed in 2009 and 2012, and as approved by the 2005 DN/FONSI, the current volume of water and rate of extraction from the 6-inch high capacity water well does not influence groundwater flow regimes near the USACE monitoring wells. Groundwater samples collected in the existing permit area by the USACE in 2009[11] and Smithers RAPRA in 2012 (high capacity well and three domestic wells) resulted in a non-detect for volatile organic compounds (VOCs), which support the conclusion that groundwater extracted by Smithers RAPRA is not affected by the TCE plume. The 2012 sampling results collected by Smithers can be found in Appendix D.

Smithers RAPRA will continue to monitor the four groundwater wells on an annual basis. If at any time, groundwater samples contain detections above residential drinking water criteria, as presented in Table 1, Groundwater: Residential and Non-Residential, Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, water extraction will be immediately discontinued and the Forest Service and USACE will be notified.

3.6.4 No Action Alternative

Direct and Indirect Effects

The No Action alternative would result in no changes to the existing condition at the site related to water resources. No streams, lakes, ponds, wetlands, riparian corridors, or floodplains are present within the proposed permit area or within the 1,000-foot radius of influence surrounding the existing high capacity well; therefore, no direct or indirect effects to these resources would occur as a result of the No Action alternative.

The existing SUP conditions related to groundwater use would remain in effect and Smithers RAPRA would directly affect the Raco Aquifer by continuing to withdraw water from the aquifer at an average rate of 52,000 gallons per day during the 4.5-month winter testing period per the conditions set forth in the SUP. Given the protection of the existing USACE wells, the currently permitted Smithers RAPRA activities would continue to have no adverse effects to the USACE monitoring system. The effects of water withdrawals from the Raco Aquifer would be limited to the 1,000-foot radius of influence that surrounds the existing high capacity well. Because of the minimal withdrawal rate, no indirect effects resulting from the withdrawal of water from the aquifer are anticipated.

Cumulative Effects

The withdrawal of an average of 52,000 gallons per day, which occurs primarily within the 4.5-month winter testing period, has occurred over the past 20 years per the conditions set forth in the SUP. No changes to the existing permitted activities would occur, and no additional water withdrawals are proposed; therefore, no additive effect to groundwater would occur as a result of the No Action alternative.

No direct or indirect effect to streams, lakes, ponds, wetlands, riparian corridors, or floodplains would occur as the resources are not present within the proposed permit area or within the

[11] http://www.lrl.usace.army.mil/Missions/Environmental/RacoArmyAirfield.aspx

radius of influence of the high capacity well; therefore, no cumulative effects to these resources would occur as a result of this alternative.

3.6.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

The Modified Permit Reissuance Alternative would result in no changes to the existing condition at the site related to water resources. No streams, lakes, ponds, wetlands, riparian corridors or floodplains are present within the proposed permit area or within the 1,000-foot radius of influence surrounding the existing high capacity well; therefore, no direct or indirect effects to these resources would occur as a result of the Modified Permit Reissuance alternative.

The existing SUP permit conditions related to water use would remain in effect and Smithers RAPRA would directly affect the Raco Aquifer by continuing to withdraw water from the aquifer at an average rate of 52,000 gallons per day during the 4.5-month winter testing period per the conditions set forth in the SUP. No additional water withdrawals above the existing are proposed as a result of this alternative. The effects of water withdrawals from the Raco Aquifer would be limited to the 1,000-foot radius of influence that surrounds the existing high capacity well. Because of the minimal withdrawal rate, no indirect effects resulting from the withdrawal of water from the aquifer are anticipated.

Peterson Environmental Consulting, Inc. (2003) conducted a hydrology study at the site to determine the effect of Smithers RAPRA's water withdrawals on the water table. At that time, the purpose of the study was to determine if the addition of a second high capacity well at the site would adversely affect the USACE monitoring wells or groundwater flow. A second high capacity well was never added to the site, and is no longer proposed.

In an effort to quantify the rate of annual recharge to the Raco Aquifer, data from the Michigan DNR[12] was used that suggests the average annual recharge to groundwater systems in the northern part of the Lower Peninsula is 8.41 inches. The estimate of 8.41 inches of recharge per year is probably low for the Raco Aquifer given the coarse textures, high infiltration, and low runoff rates associated with glacial outwash.

Recharge to the aquifer is balanced by discharge from the groundwater system to local lakes and streams. Based on the conservative annual recharge of 8.41 inches, the estimated recharge to the Raco Aquifer would be 448.5 acre feet (146 million gallons) of water added per square mile of the aquifer system. Smithers RAPRA activities at the former Raco Airbase (which covers approximately one square mile) withdraw approximately 7 million gallons to provide ice for runways, or only 4.8% of the annual recharge occurring on the facility grounds (approximately one square mile). Most of this water is returned to the aquifer system as infiltration during spring. Therefore, recharge would be balanced by discharge (Peterson Environmental Consulting, Inc. 2003). Based on this data, it was determined that the addition of a second high capacity well at the site, if determined to be necessary, would not influence groundwater flow or the USACE groundwater monitoring wells. However, a second well is not a component of this alternative. Therefore, the currently permitted water withdrawals would not influence groundwater flow and would not adversely affect groundwater resources.

[12] http://www.deq.state.mi.us/erd/gwater/gwm.html

Given the protection of the existing USACE wells, the current and proposed Smithers RAPRA activities would have no adverse effects to the USACE monitoring system.

Cumulative Effects

Water withdrawals from the existing Smithers RAPRA high capacity well have had a minimal direct effect on water levels within the Raco Aquifer and this effect is limited to the 1,000-foot radius of influence of the existing well. There are no reasonably foreseeable future projects that would install groundwater withdrawal wells within the cumulative effects analysis area. Although this alternative would have a minimal direct effect to the Raco Aquifer, there are no cumulative effects as a result of this alternative because there are no other projects within the cumulative effects analysis that would affect the aquifer.

3.7 VISUAL QUALITY

3.7.1 Introduction

The Forest Plan established standards for integrating visual quality considerations into land management using the Visual Management System (VMS) (as cited in USDA 2004). An initial visual inventory was mapped as part of the forest planning process. This inventory was used as a baseline for establishing Visual Quality Objectives (VQOs) in the Forest Plan in conjunction with other resource objectives.

Measures for comparison of alternatives related to visual quality include changes in features visible to travelers along Highway 28 and whether or not proposed activities would be consistent with the existing visual quality objective for the proposed permit area.

No issues were raised during public scoping related to visual quality.

3.7.2 Analysis Areas

Direct and Indirect Analysis Area

The analysis area for direct and indirect effects includes the proposed permit area (Figure 2-1) as well as the Highway 28 corridor along the north edge of the proposed permit area because no visual receptors occur outside of these areas. The temporal boundary for direct and indirect effects is based on the length of the SUP, which is 20 years.

Cumulative Effects Analysis Area

The cumulative effects analysis area includes the proposed permit area (Figure 2-1) as well as the Highway 28 corridor along the north edge of the proposed permit area because visual impacts would not be quantitatively or qualitatively meaningful outside of this boundary. The temporal boundary for cumulative effects is 40 years based on the past and future SUP timeframe.

3.7.3 Affected Environment

The proposed permit area, and adjacent lands, primarily have a VQO identified as “modification”, which the Forest Plan describes as those sites that have “management activities that may dominate the original characteristic landscape. These activities must borrow from the

naturally established form, line, color, and texture to appear natural or compatible to natural surroundings. Few visual enhancements or rehabilitation projects will be planned in modification areas." A narrow segment of the proposed permit area immediately adjacent to Highway 28 has a VQO of "partial retention", which is described in the Forest Plan as sites where "management activities must remain visually subordinate to the characteristic landscape. Reductions in contrast to line, form, color, or texture should be accomplished within the first year or as soon after project completion as possible."

Human activities and development dominate the landscape within the proposed permit area (USDA 2004). Features at the site include elements of previous military use, recreational uses and permitted activities conducted by Smithers RAPRA. Features visible at the site include three concrete runways in the form of a triangle, a concrete taxi strip, a concrete parking pad area, several native surface roads, an open missile silo area, and pads from former housing units. In addition to these former military features, Smithers RAPRA has added circle tracks, a series of small traction hills, asphalt testing surfaces and office buildings (Figure 3-5) and garages.

Figure 3-5 View of typical building within the existing permit area.

The viewshed along Highway 28 at the north edge of the proposed permit area is dominated by pine forest, which is composed of red pine and jack pine of differing heights and minimal understory in the immediate vicinity of the proposed permit area (USDA 2004). The only location where travelers along Highway 28 can see into the proposed permit area is at the northeast corner of the facility near the entrance. The speed limit along this stretch of highway is 55 miles per hour (mph) and at this speed viewers may get a brief glimpse of the runways and some of the existing buildings (USDA 2004).

3.7.4 No Action Alternative

Direct and Indirect Effects

This alternative would result in no changes to existing conditions in the existing permit area other than those activities already authorized by the current SUP. The existing landscape is already dominated by developed features of the former military base and current vehicular testing facilities resulting in virtually no changes to the current views from Highway 28. Therefore, implementation of this alternative would meet the VQOs identified in the Forest Plan.

Cumulative Effects

Pine communities along Highway 28 would continue to mature, eventually losing branches near the ground and altering views of the airbase from the road and allowing viewers to see portions of the airbase under the tree canopy. No effects to the visual quality would occur beyond what is already occurring under the existing condition.

3.7.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

Implementation of this alternative may result in construction of up to five additional buildings within the proposed permit area. Some of these buildings, which would be similar in color and style to the existing buildings on site, may be visible from the Highway 28 corridor. Approximately 131 acres of pine plantation would be cleared from the interior of the existing runways; however, trees along Highway 28 would remain. Therefore, no change to the visual landscape from the perspective of the highway corridor as a result of proposed tree clearing activities would occur.

The visual landscape of the proposed permit area is already dominated by developed features of the existing testing facilities. Therefore, implementation of the Modified Permit Reissuance alternative should not result in significant changes to the existing conditions at the site. Implementation of this alternative would meet the VQOs for the site.

Cumulative Effects

Future proposals to manage surrounding Forest Service lands may occur; however, any such activities would require evaluation of impacts under the NEPA. Pine communities along Highway 28 would continue to mature, eventually losing branches near the ground and altering views of the airbase from the road and allowing viewers to see portions of the airbase under the tree canopy. No effects to the visual quality would occur beyond what is already occurring under the existing condition.

3.8 HERITAGE RESOURCES

3.8.1 Introduction

In compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), and in accordance with 36 CFR 800, all public lands involved with actions proposed for this project have been inventoried for heritage resources through numerous cultural resource surveys and monitoring visits conducted between 1985 and 2012. Pursuant to 36 CFR 800.2(c-f), the results of this heritage analysis, along with all cultural resource survey reports covering the areas of potential effects have been submitted to the Michigan State Historic Preservation Officer (SHPO) for review and consultation. Under the authority of Section 106 of NHPA, the Michigan SHPO has concurred that this proposed project would have “no adverse effect on historic properties” within the area of potential effects for the Project (SHPO compliance letter, July 8, 2014; Appendix E).

In accordance with 36 CFR 800 and Executive Order 13007, the Tribal Historic Preservation Officer (THPO) for the Bay Mills Indian Community (BMIC) was consulted regarding the potential location of American Indian cultural and/or religious sites. The BMIC THPO did not respond to the Forest Service’s request for comments. According to 36 CFR 800.3(c)(4), “If the SHPO/THPO fails to respond within 30 days of receipt of a request for review of a finding or

determination, the agency official may proceed to the next step in the process based on the finding or determination." Consequently, pursuant to 36 CFR 800.3(c) (4), this proposed project may operate under the SHPO's concurrence of "no adverse effect on historic properties".

No heritage resource concerns were raised during public scoping for this project.

3.8.2 Analysis Areas

Direct and Indirect Analysis Area

The geographical boundary used to determine the direct, indirect, and cumulative effects for heritage resources includes an area measuring 1,760 acres that is centered about the former Raco Airfield and incorporates all additional activities proposed as part of the Modified Permit Reissuance alternative. At minimum, this boundary extends 100 feet beyond the area of potential effects for each proposed undertaking described in Section 2.2. One hundred feet represents the average height of a mature tree and has proven to be an effective distance for ensuring site avoidance and protection.

The temporal reference frame for the heritage effects analysis includes a 5-year projection from the day on which the final DN for this proposed project is signed by the deciding official. Five years is assumed to be the timeframe in which the activities proposed for the Modified Permit Reissuance alternative would be implemented.

Cumulative Effects Analysis Area

The cumulative effects analysis area for heritage resources is the same as the analysis area for direct and indirect effects (see Section 3.7.2) given that all proposed activities would fall within this boundary

3.8.3 Affected Environment

Three heritage resources were identified in the analysis of effects for the Project. One site was determined "not eligible" for the NRHP and does not require protection. Another site is listed as archival and its existence has not been field verified despite the efforts of numerous cultural resource surveys. Unless otherwise encountered during the project layout and implementation, this archival site should be regarded as either already destroyed, lacking significant remains, or outside of the proposed permit area.

A third site located within the proposed permit area would require protection through the implementation of heritage site avoidance measures. Avoidance measures are discussed in Section 3.8.5.

3.8.4 No Action Alternative

Direct and Indirect Effects

No changes to the existing conditions related to heritage resources would occur as a result of the No Action alternative. Therefore, no direct or indirect effects to heritage resources would occur as a result of the No Action Alternative.

Cumulative Effects

No direct or indirect effects to heritage resources would occur as a result of the No Action alternative; therefore, no cumulative effects to heritage resources would occur.

3.8.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

One site located within the proposed permit area would require protection through implementation of heritage site avoidance measures. A 100-foot protection zone would be established around the site, wherein no earth disturbance would be permitted resulting in site avoidance. Therefore, no direct or indirect effects would occur as a result of the Modified Permit Reissuance alternative.

Cumulative Effects

No direct or indirect effects would occur due to the implementation of effective heritage resource protection measures (i.e., site avoidance), which ultimately removes the site from the area of potential effects associated with the activities proposed as a result of the Modified Permit Reissuance alternative. Therefore, no cumulative effects to heritage resources would result from this alternative.

3.9 RECREATION

3.9.1 Introduction

Measures for comparison of alternatives relating to recreation include the potential for temporary access changes that would limit recreational activities at the site.

One comment was received during preliminary internal scoping by the Forest Service that indicated potential effects to recreational uses, including blueberry picking, should be evaluated in the EA (HNF Project Review Form 2014).

3.9.2 Analysis Areas

Direct and Indirect Analysis Area

The analysis area for direct and indirect effects includes the existing and proposed permit area (Figure 2-1) because all currently permitted and proposed activities would occur within these areas. The temporal boundary for direct and indirect effects is based on the length of the SUP, which is 20 years.

Cumulative Effects Analysis Area

The cumulative effects analysis area includes the existing and proposed permit area because neither alternative would affect recreation outside of the proposed permit area. The temporal boundary for cumulative effects is 40 years based on the past and future SUP timeframe.

3.9.3 Affected Environment

The Forest Plan (USDA 2006a) outlines a series of desired conditions related to recreation management within the HNF. These conditions allow for many outdoor recreational activities within the HNF and strive to meet recreation demands and settings, minimize user conflicts and sustain natural resources. Within the proposed permit area, recreational uses include, but are not limited to hunting, wildlife watching, hiking, blueberry picking, cross country skiing, snowshoeing and snowmobiling.

Forest Service roads provide recreational users with access to the proposed permit area year round; however, the existing permit allows for these roads to be temporarily closed during times when vehicle testing is being conducted at the site. A discussion of the existing transportation system is found in Section 3.9.

3.9.4 No Action Alternative

Direct and Indirect Effects

Recreational use of the site may be temporarily disrupted during periods of vehicle testing when forest roads are temporarily blocked for safety and security purposes (see Section 3.9). However, no changes to the existing conditions would occur as a result of the No Action alternative.

Cumulative Effects

Vehicle testing activities have occurred at the site under a series of SUPs for many years. During this time, access to the site has been provided to recreational users. Recreational use is only temporarily disrupted during periods of vehicle testing (see Section 3.9). No changes over the existing conditions would occur as a result of the No Action alternative.

3.9.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

Recreational use of the site may be temporarily disrupted during periods of vehicle testing when forest roads are temporarily blocked for safety and security purposes (see Section 3.9). No changes in access to the site would occur over the existing conditions.

Conversion of 84 acres of red pine plantation to herbaceous cover may reduce the blueberry population present within the interior of the runways; however, blueberry picking opportunities are still present within the pine communities along the west edge of the proposed permit area. Given the proximity of other Forest Service lands which provide recreational opportunities, effects to recreational users of the site would be minor as a result of this alternative.

Cumulative Effects

Vehicle testing activities have occurred at the site under a series of SUPs for many years. During this time, access to the site has been provided to recreational users. Recreational use is only temporarily disrupted during periods of vehicle testing (see Section 3.9). With the exception of Smithers RAPRA activities (described above), there are no reasonably foreseeable future actions that would affect recreation within the analysis area.

3.10 TRANSPORTATION SYSTEM

3.10.1 Introduction

The Forest Plan (page 2-25, USDA 2006a) indicates the “transportation system within the HNF is designed to consider the environmental, social and health concerns of the public” by providing a system of roads to accomplish “management activities and meet the needs of a variety of uses.”

Measures for comparison of alternatives relating to the transportation system include potential changes in use of these roads and potential changes in access to the site.

Comments related to the existing transportation system were received as a result of preliminary internal scoping by the Forest Service (HNF Project Review Form 2014). Specifically, the comment identified several roads within the proposed permit area that are open year round to motorized use (described below). The comment indicated a potential conflict in use of these Forest Service roads, as well as safety concerns and potential security issues, and indicated potential road closures should be evaluated (HNF Project Review Form 2014).

3.10.2 Analysis Areas

Direct and Indirect Analysis Area

The analysis area for direct and indirect effects includes the existing and proposed permit area (Figure 2-1) because all currently permitted and proposed activities would occur within these areas. No effects to transportation would occur outside of this boundary. The temporal boundary for direct and indirect effects is the timeframe of the SUP, which is 20 years.

Cumulative Effects Analysis Area

The cumulative effects analysis area includes the existing and proposed permit area because all current and proposed activities would occur within these areas and the potential effects to transportation would not be quantitatively or qualitatively meaningful outside of this boundary. The temporal boundary for cumulative effects is 40 years based on the past and future SUP timeframe.

3.10.3 Affected Environment

Five existing Forest Service roads are located within the proposed permit area: 3223, 3224A, 3536A, 3536AC and 3020. Under the current SUP, Forest Roads 3224A, 3536A, 3536AC and 3020 are temporarily closed when vehicle testing activities are conducted at the site. Forest Road 3223 provides access to the site at the existing Raco Airbase through a gated entrance. The entrance is closed in the winter months and access is allowed by use of a key-card system, which provides security to Smithers RAPRA and their clients. This entrance remains open during the summer months. The remaining forest roads within the proposed permit area are open to the public for motorized vehicle use throughout the year and are classified as Operational Maintenance Level 2. Improvements to one previously decommissioned road are proposed as part of the Modified Permit Reissuance alternative (see Section 2.2).

Temporary road closures are marked with signs to alert the public that roads are closed and vehicle testing is occurring in the area. These roads may be further blocked with snow piles during the winter months to ensure the safety of the public that may use these roads for snowmobile use in the winter months.

The general public may use these roads for a variety of recreational uses including, but not limited to, hunting, wildlife watching, and blueberry picking (summer) and cross country skiing, snowshoeing, and snowmobiling (winter).

3.10.4 No Action Alternative

Direct and Indirect Effects

No changes to the existing Forest Service transportation system would occur as a result of the No Action alternative.

Cumulative Effects

No significant cumulative effects to the transportation system would occur as a result of the No Action alternative given the temporary nature of the road closures as permitted under the existing SUP. With the exception of Smithers RAPRA activities (described above), there are no reasonably foreseeable future actions that would affect transportation within the analysis area.

3.10.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

No changes to the existing Forest Service transportation system would occur as a result of the Modified Permit Reissuance alternative. Improvements to approximately 930 feet of previously decommissioned forest road would consist of widening the road to 35 feet, as necessary (see Section 2.2).

Cumulative Effects

No significant adverse cumulative effects to the transportation system would occur as a result of Modified Permit Reissuance alternative given the temporary nature of the road closures as permitted under the existing SUP. With the exception of Smithers RAPRA activities (described above), there are no reasonably foreseeable future actions that would affect transportation within the analysis area.

3.11 HAZARDOUS MATERIALS

3.11.1 Introduction

Hazardous materials within the proposed permit area are limited to fuels used by construction, maintenance and testing vehicles, and fuel storage on site. No changes to the existing condition related to fuel storage would occur as a result of either alternative.

No comments related to hazardous materials were received during the scoping period.

3.11.2 Analysis Areas

Direct and Indirect Analysis Area

The analysis area for direct and indirect effects includes the existing and proposed permit area (Figure 2-1) because all currently permitted and proposed activities would occur within these areas. The temporal boundary for direct and indirect effects is based on the length of the SUP, which is 20 years.

Cumulative Effects Analysis Area

The cumulative effects analysis area includes the existing and proposed permit area because all currently and proposed activities would occur within these areas and the potential effects to this resource would not be quantitatively or qualitatively meaningful outside of this boundary. The

temporal boundary for cumulative effects is 40 years based on the past and future SUP timeframe.

3.11.3 Affected Environment

Smithers RAPRA stores an aggregate volume greater than 10,000 gallons of oil in 11 1,000-gallon aboveground storage tanks (ASTs) within the existing permit area. The tanks are used for the storage of gasoline and diesel fuels for vehicles at the test facility. Smithers RAPRA has four ASTs used for facility operations and maintenance activities. The remaining ASTs are controlled by individual clients.

Smithers RAPRA receives gasoline and diesel fuel via tanker truck. The frequency of fuel deliveries is variable and is conducted on an as-needed basis depending upon the needs of each client. The gasoline and diesel are each dispensed from a single fuel dispenser attached to the side of each tank. All ASTs are designed to meet secondary containment requirements and are a double-walled tank with integral secondary shell designed to contain 110% of the inner shell capacity. The facility also stores a varying stock of 55-gallon drums and flammable cabinets with varying household-sized cans in each building. The facility does not have any underground storage tanks or partially buried tanks.

Per Title 40, Code of Federal Regulations, Part 112 (40 CFR part 112) and Michigan Department of Environmental Quality (MDEQ) 1994 PA 451 Part 31 (Part 5 Rules), the facility is required to maintain a Spill Prevention, Control, and Countermeasure Plan (SPCC). The plan describes measures implemented by Smithers RAPRA to prevent oil discharges from occurring, and to prepare Smithers personnel to respond in a safe, effective, and timely manner to mitigate the impacts of a discharge. In accordance with 40 CFR 112.3(e), a complete copy of this SPCC Plan is maintained at the facility in Building #3 at the Service Desk." No additional permits are required for this resource.

3.11.4 No Action Alternative

Direct and Indirect Effects

No changes to the existing conditions would occur as a result of the No Action alternative. Therefore, no direct or indirect effects to hazardous materials would occur as a result of the No Action alternative.

Cumulative Effects

Fuel delivery and storage has been occurring at the site over the 20-year life of the existing SUP. No changes to the existing conditions would occur; therefore, no cumulative effects would occur as a result of the No Action alternative.

3.11.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

No changes to the existing conditions would occur as a result of the No Action alternative. Therefore, no direct or indirect effects to hazardous materials would occur as a result of the No Action alternative.

Cumulative Effects

Fuel delivery and storage has been occurring at the site over the 20-year life of the existing SUP. No changes to the existing conditions would occur; therefore, no cumulative effects would occur as a result of the Modified Permit Reissuance alternative.

3.12 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.12.1 Introduction

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, states that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations."

This section emphasizes the Project's potential effects to economic conditions in the region in response to two comments received during the public scoping period related to socioeconomics. Both comments received were in support of permit reissuance to Smithers RAPRA. One comment inquired about project economics, including workforce data, which is included in this section.

3.12.2 Analysis Areas

Direct and Indirect Analysis Area

The analysis area for direct and indirect effects to socioeconomics and environmental justice is Chippewa County, which includes the proposed permit area. Environmental justice requirements were evaluated by identifying and analyzing minority and low-income populations within Chippewa County. The temporal boundary for direct and indirect effects is based on the length of the SUP, which is 20 years. The analysis is based on current data. No projections were done.

Cumulative Effects Analysis Area

The cumulative effects analysis area for socioeconomics and environmental justice is Chippewa County, a logical geographic boundary for which socioeconomic data are compiled. The temporal boundary for cumulative effects is 40 years based on the past and future SUP timeframe. The analysis is based on current data. No projections were done.

3.12.3 Affected Environment

Population Data

Table 3-6 summarizes the general population characteristics of Chippewa County compared to the state of Michigan. Table 3-7 and Table 3-8 summarize characteristics of ethnicity and income, respectively.

Table 3-6 Socioeconomic Characteristics of Chippewa County Compared to the State of Michigan

Socioeconomic Indicator	Chippewa County	State of Michigan
Population[1] (2010)	38,520	9,883,640
Percent Change in Population (2000-	0.0%	-0.1%

Socioeconomic Indicator	Chippewa County	State of Michigan
2010)[1]		
Median Household Income (2008-2012)[2]	$41,114	$48,471
Civilian Labor Force (2008-2012)[2]	17,402	4,889,594
Unemployment Rate (2008-2012)[2]	7.6%	7.8%

[1]Michigan Information Center (http://www.michigan.gov/documents/cgi/cgi_census_countypop1012_414148_7.xls)
[2]US Census Bureau, 2012 American Community Survey
(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF)

Table 3-7 Ethnicity of Chippewa County Residents Reported in the 2010 Census[1]

Race	Number	Percent
One Race	36,734	95.4%
White	27,837	72.3%
Black or African American	2,509	6.5%
American Indian and Alaska Native	6,068	15.8%
American Indian, specified	5,319	13.8%
Alaska Native	9	0.0%
Both American Indian and Alaska Native, specified	1	0.0%
American Indian or Alaska Native, unspecified	739	1.9%
Asian	230	0.6%
Native Hawaiian and Other Pacific Islander	24	0.1%
Some Other Race	66	0.2%
Two or more Races	1,786	4.6%
Two Races with some Other Race	43	0.1%
Two Races without some Other Race	1,665	4.3%
Three or more races with Some Other Race	8	0.0%
Three or more Races without Some Other Race	70	0.2%
Total Population	**38,520**	**100%**

[1]http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF

Table 3-8 Household Income in Chippewa County, Michigan as Reported in the 2012 American Community Survey[1]

Income Category	Number of Families	Percent
Less than $10,000	1,523	10.4%
$10,000 - $14,999	968	6.6%
$15,000 – $24,999	2,084	14.2%
$25,000 - $34,999	1,789	12.2%
$35,000 - $49,999	2,242	15.3%
$50,000 - $74,999	2,787	19.0%
$75,000 - $99,999	1,785	12.2%
$100,000 - $149,999	1,066	7.3%
$150,000 - $199,999	219	1.5%
$200,000 or more	199	1.4%
Total households	**14,662**	**100%**

[1] http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml

The population of Chippewa County, which includes the proposed permit area, represents approximately 0.38% of Michigan's total population (Table 3-6). The populations of both Chippewa County and Michigan have remained stable since the 2000 census data were recorded; however, median household income for Chippewa County is approximately $7,357 lower than the state average. Unemployment rates were essentially the same for the county and state level (Table 3-6). A summary of low-income and minority populations is found in Chippewa County (Table 3-7 and Table 3-8).

Smithers RAPRA Economic and Workforce Data

As documented in the 2004 EA, use of the Raco Airbase by Smithers RAPRA generated over $2.7 million in total economic output in Chippewa County, including $1.77 million in direct expenditures and another $0.93 million in indirect economic activity. Additionally, Smithers RAPRA employs 92 local employees at the test site and indirectly supports an estimated 56 additional jobs through their clients.

3.12.4 No Action Alternative

Direct and Indirect Effects

Readily available demographic information on minority and low-income populations indicates that it would be unreasonable to conclude there is a disproportionate risk to those populations as a result of the No Action alternative. Although Chippewa County includes residents, employees, and local businesses belonging to the minority and low-income groups of concern, those individuals would not be impacted by the Project at a rate that appreciably exceeds or is likely to appreciably exceed the risk or rate to the general population or other appropriate comparison group. If environmental impacts occur to some minority or low-income individuals and rise to the level of "significance" under the NEPA, it is highly improbable the impacts would disproportionately burden these groups. Therefore, further consideration of the environmental justice policy under the NEPA is not required. The potential effects, both positive and negative, would be neither disproportionately gained nor borne by minority or low-income populations under the No Action alternative.

No changes to the existing workforce conditions would occur as a result of the No Action alternative. Employment at the Raco facility and the purchase of goods and services by Smithers RAPRA and their clients has a direct economic effect to Chippewa County, including Chippewa Township, Kinross Township, and the City of Sault Ste. Marie. Economic benefits, such as expenditures on lodging, restaurants, and retail, are also associated with testing facilities at the Raco Airbase. Much of the employment and expenditures supported by activities at the site occur during the winter months, when overall employment and trade is low in the Chippewa County area. Changes that indirectly impact the local and regional socioeconomic environment include the introduction of new and improved technologies in the transportation industry.

Cumulative Effects

The cumulative effects to the local economy have been beneficial over the life of the existing SUP and it is reasonably foreseeable that these benefits would continue through implementation of this alternative.

3.12.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

Direct and indirect effects as a result of the Modified Permit Reissuance alternative would have the same direct and indirect effects as the No Action alternative (see Section 3.12.4). In addition, this alternative would have the beneficial effect of adding up to 10 jobs as a result of additional activities at the site.

Cumulative Effects

The cumulative effects to the local economy have been beneficial over the life of the existing SUP and it is reasonably foreseeable that these benefits would continue through implementation of this alternative.

3.13 AIR QUALITY AND GREENHOUSE GASES

3.13.1 Introduction

The federal Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered harmful to public health and the environment.[13] Criteria pollutants are the pollutants for which the EPA must describe the characteristics and potential health and welfare effects. The six criteria pollutants are monitored by the MDEQ, Air Quality Division. These criteria pollutants are: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter smaller than 10 and 2.5 microns in diameter (PM10 and PM2.5, respectively), and sulfur dioxide (SO_2).

The MDEQ monitors air quality at monitoring stations across the state and publishes the results in an annual monitoring report (MDEQ 2014). One monitoring station is located approximately 55 miles west of the Raco Airbase in Seney National Wildlife Refuge; a second monitoring station is located approximately 20 miles northeast of the airbase in Sault Ste. Marie, Michigan. Greenhouse gases (GHGs) are gases that warm the earth's atmosphere by absorbing solar radiation reflected from the earth's surface. The most common greenhouse gases are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). According to the EPA[14], scientists know that increasing greenhouse gas concentrations are warming the planet and rising temperatures may, in turn, produce changes in precipitation patterns, storm severity, and sea level, commonly referred to as "climate change."

Recent federal GHG policy has focused on voluntary initiatives to reduce GHG emissions. In 2010, the CEQ drafted guidance regarding GHG emissions in evaluating federal actions under the NEPA. The guidance indicated that if a project leads to 25,000 metric tons or more of carbon dioxide equivalent emissions then it may warrant some description in the appropriate NEPA analysis.

No comments related to air quality or greenhouse gases were received during the scoping period.

[13] http://michigan.gov/documents/deq/deq-aqd-amu-2013_Annual_Air_Quality_Report_464108_7.pdf
[14] http://www.epa.gov/climatechange/science/

3.13.2 Analysis Areas

Direct and Indirect Analysis Area

The direct and indirect effects analysis area for air quality includes the existing and proposed permit area because it is anticipated that vehicle emissions will dissipate quickly and significant concentrations of vehicle emissions will not extend beyond the permit area. The temporal boundary for direct and indirect effects is based on the length of the SUP, which is 20 years.

Cumulative Effects Analysis Area

The cumulative effects analysis area includes the existing and proposed permit area because all currently and proposed activities would occur within these areas and the potential effects to air quality would not be quantitatively or qualitatively meaningful outside of this boundary due to the low number of vehicles in use at any given time during testing. The temporal boundary for cumulative effects is 40 years based on the past and future SUP timeframe.

3.13.3 Affected Environment

Chapter 3, pages 3-80 through 3-81, of the Final Environmental Impact Statement for the Forest Plan (USDA 2006a) details the affected environment air resources across the HNF, which includes the existing and proposed permit areas. These areas are not within a nonattainment area for any measured pollutant (MDEQ 2014). A nonattainment area is an area for which air quality measurements do not meet NAAQS criteria.

Both the existing and proposed permit areas are subject to air pollutants from mobile sources such as vehicles, logging equipment, snowmobiles, and other vehicles that use the existing Highway 28 corridor and the winter testing facilities. Due to dissipation by wind, pollutants from these sources do not attain high enough concentrations to warrant measurement or to result in degradation to sensitive resources. No permits related to air quality are required for vehicle testing at the Raco Airbase.

The atmospheric buildup of CO_2 and other GHGs is largely the result of human (anthropogenic) activities, such as the burning of fossil fuels (USEPA 2013). Of the total amount of United States GHGs emitted in 2010, approximately 87% were energy-related, and 91% of those energy-related gases were CO_2 from the combustion of fossil fuels.[15] Global carbon emissions from fossil fuels have significantly increased since 1900. In addition to carbon, combustion of fossil fuels also produces other air pollutants, such as nitrogen oxides, SO_2, VOCs, and heavy metals, which negatively affect human health, along with air and water quality.

3.13.4 No Action Alternative

Direct and Indirect Effects

No changes to the existing conditions would occur as a result of the No Action alternative. Emissions as a result of vehicle testing activities at the site would occur, but would not increase as a result of this alternative and no new sources of air pollutants would be introduced within the existing permit area.

[15] http://www.eia.gov/energy_in_brief/greenhouse_gas.cfm

Cumulative Effects

Smithers RAPRA vehicle testing activities have resulted in temporary, minor and localized effects to air quality within the analysis area. With the exception of Smithers RAPRA activities, no reasonably foreseeable future projects would occur within the analysis area that would affect air quality.

3.13.5 Modified Permit Reissuance Alternative

Direct and Indirect Effects

Temporary and localized impacts to air quality would result from the operation of construction equipment during implementation of the activities proposed as a result of this alternative. Impacts would occur as a result of emissions from engine exhaust (criteria pollutants and GHGs) and fugitive dust generation during soil disturbance and tree clearing activities and would occur only during construction. This alternative may result in a slight increase in vehicle testing activities, which may result in an insignificant increase to vehicle emissions at the site; however, no new sources of air pollutants would be introduced.

Cumulative Effects

Cumulative effects to air quality as a result of this alternative would be similar to the direct and indirect effects described above. Smithers RAPRA vehicle testing activities have resulted in temporary, minor, and localized effects to air quality within the analysis area. The removal of trees from the project site would also decrease the amount of carbon sequestration. With the exception of Smithers RAPRA activities, no reasonably foreseeable future projects would occur within the analysis area that would affect air quality.

4.0 CONSULTATION AND COORDINATION

As indicated in Section 1.4, tribes, federal and state agencies, and local entities were contacted during the scoping process to ensure that issues and concerns are adequately addressed. This section provides a synopsis of the interactions with the consulting parties. The consultation processes are on-going with the tribes and the USFWS and will be completed prior to signing the final Decision Notice.

4.1 TRIBES

Consultation with several Native American tribes who have a potential interest in the Project began as part of Project scoping on September 22, 2014. Scoping packages were sent to the tribes and tribal entities listed below.

- Bad River Band of Lake Superior Chippewa Indians
- Bay Mills Indian Community (BMIC)
- Chippewa Ottawa Resource Authority
- Fond du Lac Chippewa Tribe
- Grand Traverse Band of Ottawa and Chippewa Indians
- Great Lakes Indian Fish and Wildlife Commission
- Hannahville Indian Community
- Keweenaw Bay Indian Community
- Keweenaw Bay Indian Community Natural Resources Department
- Lac Courte Oreilles Band of Lake Superior Chippewa Indians
- Lac du Flambeau Band of Lake Superior Chippewa Indians
- Lac Vieux Desert Band of Lake Superior Chippewa Indians
- Little River Band of Ottawa Indians
- Little Traverse Bay Band of Odawa Indians
- Mille Lacs Band of Chippewa Indians
- Red Cliff Band of Lake Superior Chippewa Indians
- Sault Ste. Marie Tribe of Chippewa Indians
- Sokoagon Chippewa Community, Mole Lake Chippewa Tribe
- St. Croix Chippewa Indians of Wisconsin

4.1.1 Key Issues or Topics of Interest from Tribes

One comment letter, sent from the Executive Branch of Tribal Government for the Mille Lacs Band of Ojibwe, indicated no recorded sites of religious or cultural importance to this tribe are known from the project site.

In accordance with 36 CFR 800 and Executive Order 13007, the THPO for the BMIC was consulted regarding the potential location of American Indian cultural and/or religious sites. No response was received from the BMIC.

4.2 U.S. FISH AND WILDLIFE SERVICE

A BE was prepared to address potential effects to federally listed and federally proposed species and those species included on the RFSS list for HNF. The BE was submitted to the USFWS for their review concurrent with publication of the draft EA.

4.3 PLANNING TEAM PARTICIPANTS AND DOCUMENT PREPARERS

Name	Title
U.S. Forest Service	
Ginger Molitor	NEPA Planner
Derek Huebner	Wildlife Biologist
Stephanie Blumer	Botanist
Danding Gan	Hydrologist
Lyn Hyslop	Recreation Program Manager
Eric Drake	Heritage Program Manager
Ken Guillard	Supervisory Engineering Technician
U.S. Forest Service TEAMS Enterprise Unit	
Katherine Malengo	Wildlife Biologist
Bruce Davidson	Botanist
Jenny Fryxell	Hydrologist
Corrine Marzulo	Roads Engineer
Charles Cutter	Siviculturist
Glen Lewis	Fire and Fuels Specialist
Stantec Consulting Services Inc.	
Mike Van Loan	Stantec Project Manager
Brent Lucyk	Geologist
Stacey Parks	NEPA and Resource Specialist
Terry VanDeWalle	NEPA and Resource Specialist

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Appendix A Regulatory and Legal Framework

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The following are laws, regulations, policies, executive orders, and direction that provide guidance to the management of the resources on Hiawatha National Forest lands in Chippewa County, Michigan.

1.0 Federal Laws, Regulations, Policies and Executive Orders

1.1 NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act of 1969, as amended (NEPA), in Title 42 U.S. Code Section 4321 *et seq*. (42 U.S.C. 4321 *et seq*.), requires federal agencies to evaluate and disclose the effects of their proposed actions on the natural and human environment. The NEPA process is intended to help federal agencies make decisions that are based on an understanding of potential environmental consequences, and take actions that protect, restore, and enhance the environment. The NEPA regulations provide the direction to achieve that purpose.

The NEPA and the Council for Environmental Quality (CEQ) *Regulations for Implementing NEPA* under Title 40, Code of Federal Regulations, Part 1501 (40 CFR 1501) contain "action-forcing" provisions to ensure that all federal agencies act according to the letter and spirit of the NEPA.

The NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing the NEPA.

The NEPA implementation requires that every federal agency prepare an Environmental Assessment (EA) on any federal action to assist agency planning and decision making (40 CFR 1501.3). The U.S. Forest Service (Forest Service), as the Lead Federal Agency on the Smithers RAPRA Project, has determined that an EA is appropriate to analyze the effects of the proposed action on the natural and human environment. This EA discloses the direct, indirect, and cumulative environmental effects that would result from the issuance of a Special Use Permit (SUP). In accordance with the NEPA, this EA also addresses a “no-action” alternative, which provides an assessment of issuance of a SUP within the requested modifications.

1.2 FEDERAL ENDANGERED SPECIES ACT

Section 7 of the Endangered Species Act of 1973, as amended in 1982 (ESA; 16 U.S.C. 1531 *et seq*.) requires all federal agencies, in consultation with the U.S. Fish and Wildlife Service (USFWS), to ensure that any action “authorized, funded, or carried out” by any such agency “is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification” of critical habitat (16 U.S.C. 1536). The purpose of the ESA is to provide a means whereby the ecosystems upon which threatened and endangered (T&E) species depend may be conserved, and to provide a program for the conservation of such T&E species.

Section 9 of the ESA prohibits the “take” of any fish or wildlife species listed under the ESA as endangered (16 U.S.C.1538). Under federal regulation, take of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation (50 CFR

17.31). "Take", as defined by the ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S.C. 1532(19)).

Section 9 also prohibits the removal and reduction to possession of any listed plant species "under federal jurisdiction," as well as the removal, damage, or destruction of such plants on any other areas in knowing violation of any state law or regulation or in violation of state trespass law (16 U.S.C. 1538). The USFWS' implementing regulations further define the term "harm" to include "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering" (50 CFR 17.3). They also define harass as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering" (50 CFR 17.3).

1.3 MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act of 1918 (MBTA; 16 U.S.C. 703 *et seq*.) prohibits the taking, killing, possession, transportation and importation of migratory birds, their eggs, parts and nests, except when specifically authorized by the USFWS.

1.4 FISH AND WILDLIFE CONSERVATION ACT

The Fish and Wildlife Conservation Act of 1980 (FWCA; 16 U.S.C. 2901 *et seq*.) was enacted "...to encourage all federal departments and agencies to utilize their statutory and administrative authority, to the maximum extent practicable and consistent with each agency's statutory responsibilities to conserve and promote conservation of non-game species and their habitats...." (16 U.S.C. 2901 (b)(2)).

1.5 DEPARTMENTAL REGULATION 9500-4: FISH AND WILDLIFE POLICY

The U.S. Department of Agriculture (USDA) Departmental Regulation 9500-4: Fish and Wildlife Policy issued in 2008 states that the Forest Service's "prime responsibility is to help maintain sufficient and efficient production capability of farm, forest, water, and rangeland resources for the public benefit, now and in the future, and to encourage and support proper use, management, and conservation of those natural resources." The regulation focuses on the management of fish and wildlife and their habitats and to balance competing uses for these resources. The regulation includes policies for lands administered by the Forest Service to assure that the values of fish and wildlife are recognized, and that their habitats, both terrestrial and aquatic, including wetlands, are recognized, and enhanced, where possible; and to assist in the identification and recovery of T&E plant and animal species and to avoid actions which may cause a species to become threatened or endangered.

1.6 NATIONAL FOREST MANAGEMENT ACT

The National Forest Management Act of 1976, as amended (NFMA; 16 U.S.C. 1600) provides for balanced consideration of all resources in National Forest land management planning. The NFMA reorganizes, expands and otherwise amends the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) and is the primary statute governing the administration of National Forests. The NFMA requires the maintenance of productivity of the land and the protection and, where appropriate, improvement of the quality of the soil and water resources. The NFMA specifies that substantial and permanent impairment of productivity must be avoided and has far-reaching implications for watershed management in the National Forest System.

The NFMA specifies the need to protect T&E and sensitive species. Biological Evaluations are the means for reviewing projects and documenting findings to comply with the ESA.

1.7 FOREST AND RANGELAND RENEWABLE RESOURCES PLANNING ACT

The RPA of 1974 (16 U.S.C. 1600-1614), as amended by the NFMA of 1976 (16 U.S.C. 472a), states that the development and administration of the renewable resources of the National Forest System are to be in full accord with the concepts for multiple use and sustained yield of products and services as set forth in the Multiple-Use Sustained Yield Act of 1960 (MUSYA).

The RPA addresses many issues pertaining to timber management. Regeneration of timber harvest areas is addressed in 16 U.S.C. 1604(g)(3)(E): "...insure that timber will be harvested from National Forest System lands only where … there is assurance that such lands can be adequately restocked within five years after harvest."

1.8 FEDERAL LAND POLICY AND MANAGEMENT ACT

The Federal Land Policy and Management Act of 1976, as amended (FLPMA; 43 U.S.C. 1701 *et seq*.) was enacted to "establish public land policy; to establish guidelines for its administration; to provide for the management, protection, development, and enhancement of the public lands; and for other purposes." Subchapter V of the FLPMA authorizes the Secretary of Agriculture to issue permits, leases, or easements to occupy, use, or traverse National Forest System lands (43 U.S.C. 1761 *et seq*.). FLPMA directs the U.S. to receive fair market value unless otherwise provided for by statute and provides for reimbursement of administrative costs in addition to the collection of land use fees (43 U.S.C. 1764(g)).

1.9 MULTIPLE-USE, SUSTAINED-YIELD ACT

The MUSYA of 1960 (16 U.S.C. 528-531) states that the National Forests are to be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. This Act directs the Secretary of Agriculture to manage these resources in the combination that will best meet the needs of the American people; providing for periodic adjustments in use to conform to changing needs and conditions; and harmonious and coordinated management of the resources without impairment of the productivity of the land. Sustained yield means achieving and maintaining into perpetuity a high-level annual or regular periodic output of renewable resources without impairment of the productivity of the land.

1.10 WILDERNESS ACT

The Wilderness Act of 1964, as amended (WA; 16 U.S.C. 1131-1136) establishes the National Wilderness Preservation System, defines a wilderness area and its purpose, addresses the management of wilderness areas, and prescribes the process for adding additional wilderness areas to the system. The act directs the Forest Service to administer wilderness areas to provide for the "preservation of their wilderness character," to retain their "primeval character and influence," and to protect and manage the natural conditions of wilderness areas so that they "generally appear to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." Scenic use is identified as one of the six public purposes of wilderness areas.

1.11 ORGANIC ADMINISTRATION ACT

The Organic Administration Act of 1897, as amended (16 U.S.C. 473-475) authorizes the Secretary of Agriculture to establish regulations to govern the occupancy and use of National Forests and "…to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the U.S.."

1.12 NATIONAL FOREST SYSTEM LAND MANAGEMENT PLANNING RULES

The USDA's National Forest System Land Management Planning rules issued in 2012 (NFSLMP; 36 CFR part 219), guides the development, amendment, and revision of land management plans for all units of the National Forest System (NFS). Under this rule, the Forest Service has released proposed planning directives for public review and comment. The Forest Service's goal is to ensure an adaptive land management planning process that is inclusive, efficient, collaborative and science-based to promote healthy, resilient, diverse and productive National Forests and Grasslands.

1.13 USDA FOREST SERVICE MANUAL AND HANDBOOKS

The Forest Service Directive System consists of the Forest Service Manual (FSM) and Handbooks (FSHs), which codify the Forest Service's policy, practice, and procedure. The system serves as the primary basis for the internal management and control of all programs and the primary source of administrative direction to Forest Service employees.

1.13.1 FSM 2300 – Recreation, Wilderness and Related Resource Management

The USDA FSM 2300 – Recreation, Wilderness and Related Resource Management, effective July 25, 2008, states that the goal of the Forest Service is to "provide social, economic, and environmental benefits to individuals, families, and communities while preserving and protecting the character for which Recreation, Heritage, Wilderness, and Wild and Scenic River Resources are valued or established."

Chapter 2380 – Landscape Management, effective May 2, 2003: Provides guidance, statutory authority and federal regulations for management of landscape aesthetics and scenery within the National Forest System.

Chapter 2380.11a – Resource Management Planning: National Forest System Land and Resource Management Planning rules include requirements for consideration, treatment and protection of intangible resources such as scenery and aesthetics (36 CFR part 219, subpart A). The rules also include requirements for permittees or holders to minimize damage to scenic and aesthetic values (36 CFR part 251, subpart B) and for protection of environmental quality and minimizing adverse effects on, or providing protection for and enhancing, other National Forest System resources (36 CFR part 223).

Chapter 2380.12 – Wilderness and National Recreation Areas: Wilderness rules include requirements for scenic use, preservation and protection of wilderness character, and promotion and perpetuation of specific values including solitude and inspiration (36 CFR part 293). National Recreation Area rules include requirements for preservation, conservation, and protection of natural, scenic, and pastoral values, and other values contributing to public enjoyment of these areas (36 CFR part 292).

Chapter 2380.6 – Technical Publications and References: Outlines publications in the USDA's National Forest Landscape Management Series for technical guidance in managing landscape aesthetics and scenery, including chapters on "Landscape Aesthetics: a Handbook for Scenery Management," Timber, and Recreation in the "Agriculture Handbook 701."

1.13.2 FSM 2500 – Watershed and Air Management

The USDA FSM 2500 – Watershed and Air Management, effective November 23, 2010, states the objective of the Forest Service is to "1) protect and, where appropriate, enhance soil productivity, water quality and quantity, and timing of water flows; and 2) to maintain favorable conditions of streamflow and a continuous production of resources from National Forest System watersheds."

Section 2526.03 (2) – Riparian Area Management: "...manage riparian area under the principles of multiple use and sustained yield, while emphasizing the protection and improvement of soil, water, vegetation and fish and wildlife resources. Give preferential consideration to the riparian dependent resources when conflicts among land use activities occur." The FSM specifies the need to protect T&E and sensitive species. Biological Evaluations are the means for reviewing projects and documenting findings to comply with the ESA.

Section 2526.03 (3): "Delineate and evaluate riparian areas prior to implementing any project activity."

Section 2526.03 (4): "Give attention to land along all stream channels capable of supporting riparian vegetation"

Section 2526.03 (5): "Give special attention to land and vegetation approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water."

Section 2550 – Soil Management: The Forest Service is responsible to "maintain or restore soil quality on National Forest System lands" in order to promote and sustain biological and hydrologic function (Sections 2550.2 – 2550.3). This chapter replaces and removes the FSH 2509.18 – Soil Management Handbook from the directives system (Section 2509.18).

1.13.3 FSM 2600 – Wildlife, Fish and Sensitive Plant Habitat Management

The USDA FSM 2600 – Wildlife, Fish and Sensitive Plant Habitat Management, effective October 22, 1991, states that "habitats for all existing native and desired non-native plants, fish, and wildlife species will be managed to maintain at least viable populations of such species. Land and water management activities will integrate fish and wildlife habitat needs with other resources and programs and will, where possible, mitigate habitat losses, consistent with Forest Plan goals and objectives as developed in the planning process ... The Forest Service will conduct its activities and programs to assist in the identification and recovery of T&E plant and animal species and to avoid actions which may cause a species to become threatened or endangered … The Forest Service will not approve, fund or take any action that is likely to jeopardize the continued existence of T&E species or destroy any habitat necessary for their conservation unless exemption is granted pursuant to subsection 7(h) of the ESA, as amended ... The Forest Service will cooperate with other federal and state agencies in carrying out this policy."

1.13.4 FSM 2700 – Special Uses Management

The USDA FSM 2700 – Special Uses Management, effective January 10, 2011, states the objective of the Forest Service is to “authorize and manage special uses of National Forest System lands in a manner which protects natural resources and public health and safety, consistent with National Forest System Land and Resource Management Plans; and Administer special uses based on resource management objectives and sound business management principles” (Section 2702(1) and (2)).

Section 2710.12: The principal regulations of the Secretary of Agriculture that are applicable to the Forest Service special use authorizations are in 36 CFR part 251. Per Section 251.50, “all uses of National Forest System lands, improvements, and resources, except those authorized by the regulations governing sharing use of roads; grazing and livestock use; the sale and disposal of timber and special forest products, such as greens, mushrooms, and medicinal plants; and minerals are designated “special uses.” Before conducting a special use, individuals or entities must submit a proposal to the authorized officer and must obtain a special use authorization from the authorized officer.”

1.13.5 FSH 2409.26b – Reforestation Handbook

The USDA FSH 2409.26b – Reforestation Handbook describes practices used in a region for the planting of trees, care of planting stock and verification of reforestation success.

An Old Growth Management Memo dated October 11, 1989 contains a generic definition and description of old-growth forests and a position statement on National Forest old-growth values. This memo, issued by Chief of the Forest Service, F. Dale Robertson, was sent to Regional Foresters, Station Directors, and Washington Office Staff. The following statements are taken from this position statement:

- Forests are directed to "provide for a succession of young forests into old-growth forests in light of their depletion due to natural events or harvest."

- "Areas to be managed for old-growth values are to be distributed over individual National Forests with attention given to minimizing the fragmentation of old-growth into small isolated areas."

1.13.6 FSH 2600 – Wildlife, Fish and Sensitive Plant Habitat Management Handbook

The USDA FSH 2600 – Wildlife, Fish and Sensitive Plant Habitat Management Handbook, effective August 4, 2011, provides guidance on the management of T&E and sensitive species; and, in addition, to wildlife and fisheries habitat.

1.13.7 FSH 2709.11 – Special Uses Handbook

The USDA FSH 2709.11 – Special Uses Handbook, effective September 25, 2013, outlines the objectives of the special uses application and authorization process and provides guidance on the legal authorities, authorization documents and terms for authorizing SUPs.

1.13.8 USDA Agriculture Handbook 701

The USDA Agriculture Handbook 701 – This handbook includes Chapter 1 “Landscape Aesthetics, a Handbook for Scenery Management,” which outlines a Scenery Management System, as well as chapters on Timber and Recreation. Scenic integrity objectives are an integral part of Forest plan revisions, environmental assessments, environmental impact statements, and project level planning.

1.14 HIAWATHA NATIONAL FOREST PLAN

The Hiawatha National Forest Plan of 2006 was prepared to establish management direction for forest resources. A Final Environmental Impact Statement accompanies this plan and describes the analysis used in developing the 2006 Forest Plan. Chapter 2 – Forest-wide Management Direction describes “by resource area, the forest-wide desired conditions, goals, objectives, standards and guidelines that will be used in managing the Forest.”

1.15 CLEAN WATER ACT

The objective of the Clean Water Act of 1977 (CWA) is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters (Section 101 (a)). "It is the national policy that programs [best management practices (BMPs)], for the control of non-point sources of pollution, be developed and implemented in an expeditious manner...." (Section 101 (a)(7)).

Section 313 of the CWA requires federal agencies to comply with State and local requirements related to control and abetment of water pollution to the extent that any person is subjected to such requirements.

Under Section 401 of the CWA (33 U.S.C. 1341), an applicant for a federal license or permit to conduct any activity which may result in any discharge into the navigable waters of the U.S. must obtain a certification from the state in which the discharge originates (or will originate) that any such discharge will comply with certain water quality requirements of the CWA.

Section 404 of the CWA, which is administered by the U.S. Army Corps of Engineers (USACE), although portions of this regulatory program may be delegated to States, regulates the placement of fill or dredged material into wetlands and other Waters of the U.S. (WOUS; 33 U.S.C. 1344).

1.16 ANTIDEGRADATION POLICY

Antidegradation Policy (40 CFR 131.12) requires states to develop and adopt a statewide antidegradation policy and identify the methods for implementing such policy. Under Section 131.12 (a)(1): “Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.”

1.17 SOIL AND WATER RESOURCES CONSERVATION ACT

The Soil and Water Resources Conservation Act of 1977 (SWRCA; 16 U.S.C. 2001 *et seq*.) finds there is a growing demand on the soil, water and related resources of the U.S. to meet present and future needs. The SWRCA states "...it is the policy of the U.S. and the purpose of this Act that the conduct of programs administered by the Secretary of Agriculture for the conservation of such resources be responsive to long-term needs of the Nation" (16 U.S.C. 2003(a)).

1.18 NORTH AMERICAN WETLANDS CONSERVATION ACT

The North American Wetlands Conservation Act of 1989, as amended (WCA; 16 U.S.C. 4401 *et seq*.) recognizes the commercial, recreational, scientific and aesthetic values of fish, shellfish, and other wildlife and that wetland ecosystems provide essential and significant habitat for these species; it further recognizes that wetland ecosystems provide aquatic areas which are important for recreational and aesthetic purposes. It directs the head of each federal agency, to the extent consistent with the agency's mission and statutory authorities, to cooperate to restore, protect and enhance the wetland ecosystems and other habitats for migratory birds, fish, and wildlife.

1.19 CLEAN AIR ACT

The Clean Air Act of 1970 (CAA; 42 U.S.C. 7401 *et seq.)* is a comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants.

1.20 NATIONAL HISTORIC PRESERVATION ACT

According to the National Historic Preservation Act of 1966, as amended (NHPA; 16 U.S.C. 470 *et seq*.), "the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people" (16 U.S.C 470(b)(2)). Further, the Federal Government has a responsibility to "foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony" (16 U.S.C. 470-1(1)). As a result of Section 106 of the NHPA and its implementing regulations, federal agencies are required to take into account the impact of federal undertakings upon historic properties in the area of the undertaking (16 U.S.C. 470f; 36 CFR Part 800) (Revised January 2001).

1.21 ARCHAEOLOGICAL RESOURCES PROTECTION ACT

The Archaeological Resources Protection Act of 1979 (ARPA; 16 U.S.C. 470aa *et seq*.) authorizes the Secretary of Agriculture to issue permits for archeological research, investigations, studies, and excavations.

1.22 SPECIAL USE REGULATIONS

Special Use Regulations (36 CFR Part 251, Subpart B) authorize the Forest Service to issue authorizations for use and occupancy of National Forest System lands. These regulations also outline the proposal and application requirements and procedures.

1.23 TRAVEL MANAGEMENT RULE

The Travel Management Rule – Designation of Roads, Trails and Areas for Motor Vehicle Use (36 CFR Part 212, Subpart B) provides for a system of National Forest System roads, National Forest System trails, and areas on National Forest System lands that are designated for motor vehicle use. After these roads, trails, and areas are designated, motor vehicle use, including the class of vehicle and time of year, not in accordance with these designations is prohibited.

1.24 EXECUTIVE ORDERS

1.24.1 Executive Order 11514 – Environmental Management

Executive Order 11514 signed in 1970, as amended by Executive Order 11991 signed in 1977, states that the Federal Government shall provide leadership in protecting and enhancing the quality of the Nation's environment to sustain and enrich human life. This order provides for monitoring, evaluation, and control on a continuing basis of the activities of each federal agency so as to protect and enhance the quality of the environment.

1.24.2 Executive Order 11990 – Wetlands Protection

The purpose of Executive Order 11990, signed in 1977, is to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands" (Section 1(a)). To meet these objectives, it requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.

1.24.3 Executive Order 11988 – Floodplain Management

Executive Order 11988, signed in 1977, requires federal agencies to avoid, to the extent possible, the long-term and short-term adverse impacts associated with the occupancy and modifications of floodplains, and to avoid the direct or indirect support of floodplain development whenever there is a practicable alternative. The preferred method for satisfying this requirement is to avoid sites within the floodplain. If an action must be located within the floodplain, the executive order requires that agencies minimize potential harm to people and property and to natural and beneficial floodplain values by incorporating current floodplain management standards into the project.

1.24.4 Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898, signed in 1994, states that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations" (Section 1-101). It also requires that representatives of any low-income or minority populations that could be affected by the project be given the opportunity to be included in the impact assessment and public involvement process.

1.24.5 Executive Order 13112 – Invasive Species Control

Executive Order 13112, signed in 1999, states that each federal agency is directed to "not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the U.S. or elsewhere unless, pursuant to the guidelines that it has prescribed, the agency has determined and made public its determination that benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions" (Section 2).

The Forest Service developed a Guide to Noxious Weed Prevention Practices (Guide) in 2001 to support the implementation of Executive Order 13112. This Guide is part of the Forest

Service's Noxious Weed Strategy to develop practices for prevention and mitigation during ground-disturbing activities as a long-term emphasis item. The Guide "provides a comprehensive directory of weed prevention practices for use in the Forest Service planning and wildland resource management activities and operations. The Guide will help National Forest and Grassland managers and cooperators identify weed prevention practices that mitigate identified risks of weed introduction and spread for a project or program."

2.0 State Regulations

2.1 NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT

The Natural Resources and Environmental Protection Act of 1994 (NREPA; Public Act 451), as amended, protects the environment and natural resources of the state of Michigan. The NREPA includes laws that regulate the "discharge of certain substances into the environment; to regulate the use of certain lands, waters, and other natural resources of the state; [and] to protect the people's right to hunt and fish."

The NREPA includes Part 91, Soil Erosion and Sedimentation Control, which regulates excavation and other land-disturbing activities and outlines a permitting and review program enforced by local agencies (Section 324.9104).

2.2 MICHIGAN SEED LAW

The Michigan Seed Law of 1965 (MSL; Public Act 329), as amended, regulates "the labeling, coloration, advertising, sale, offering, exposing, or transporting for sale of agricultural, vegetable, lawn, flower, and forest tree seeds." The law prohibits the sale or transport of seed containing prohibited noxious weed seed and includes a limit on the percentage of weeds within a seed mix.

2.3 CERTIFICATION OF SEED

The Michigan Certification of Seed Act of 1959 (COS; Public Act 221), as amended, includes standards for field crop seeds and tolerances for contaminants within a seed mix. Under the COS, Regulation No. 286.623 provides direction on seed certification and No. 285.715 outlines seed law implementation (which prohibits and restricts noxious weeds).

2.4 INSECT PEST AND PLANT DISEASE ACT

The Michigan Insect Pest and Plant Disease Act of 1931 (IPPDA; Public Act 189) regulates the "the sale and distribution of nursery stock, plants, and plant products." The IPPDA includes regulations that prevent the introduction of insect pests and plant diseases and the destruction, control or treatment of insect pests and plant diseases.

2.5 NOXIOUS WEEDS ACT

The Michigan Noxious Weeds Act of 1941 (NWA; Public Act 359) regulates the control and eradication of certain noxious weeds within the state. As part of the act, the owner of land on

which noxious weeds are found growing shall destroy the weeds before they reach a seed bearing stage and prevent their regrowth, or shall prevent them from becoming a detriment to public health. Local agencies enforce this act and report to the Michigan Department of Natural Resources and Environment.

3.0 Local Regulations

3.1 SOIL EROSION AND SEDIMENTATION CONTROL

The Chippewa Luce Mackinac Conservation District (CLMCD) is the designated County Enforcement Agency for the NREPA, Part 91 Soil Erosion and Sedimentation Control in Chippewa County. An earth change which disturbs one or more acres of land or which is located within 500 feet of the water's edge of a water body requires a permit from the CLMCD before commencing an earth change.

Appendix B 1996 Special Use Permit (SUP), 2005 Decision Notice (DN), and 2011 Supplemental Information Report (SIR)

FS-2700-4 (7/96)
OMB No. 0596-0082

U. S. DEPARTMENT OF AGRICULTURE Forest Service	Holder No. 5 3 2 0-0 1	Issue Date 1 0/0 4/9 6	Expir. Date 1 0/0 4/1 6
	Type Site(s) 4 2 1	Authority 0 0 2	Auth. Type 2 0
SPECIAL-USE PERMIT Authority: Act of June 4, 1897 Organic Administrative Act	Region/Forest/District 0 9/1 0/0 4		State/County 2 6/0 3 3
	Cong. Dist. 0 1	Latitude _ _-_ _-_ _	Longitude _ _ _-_ _-_ _

Smithers Scientific Services, Inc.
1150 North Freedom Street Ravenna Ohio 44266

(hereinafter called the Holder) is hereby authorized to use or occupy National Forest System lands, to use subject to the conditions set out below, on the Hiawatha National Forest.

This permit covers an area of 700 acres in parts of Sections 27, 28, 29, and 33, T46N-R04W. The precise legal description of the permit area is attached as "Exhibit 1" Legal Description, and shown on "Exhibit 2" Location Map, attached to and made a part of this permit, and is issued for the purpose of: Conducting automotive testing and for the construction of buildings and a variety of test surfaces to support said automotive testing.

The above described or defined area shall be referred to herein as the "permit area".

TERMS AND CONDITIONS

I. AUTHORITY AND GENERAL TERMS OF THE PERMIT

A. Authority. This permit is issued pursuant to the authorities enumerated at Title 36, Code of Federal Regulations, Section 251 Subpart B, as amended. This permit, and the activities or use authorized, shall be subject to the terms and conditions of the Secretary's regulations and any subsequent amendment to them.

B. Authorized Officer. The authorized officer is the Forest Supervisor or a delegated subordinate officer.

C. License. This permit is a license for the use of federally owned land and does not grant any permanent, possessory interest in real property, nor shall this permit constitute a contract for purposes of the Contract Disputes Act of 1978 (41 U.S.C. 611). Loss of the privileges granted by this permit by revocation, termination, or suspension is not compensable to the holder.

D. Amendment. This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms, conditions, and stipulations as may be required by law, regulation, land management plans, or other management decisions.

E. Existing Rights. This permit is subject to all valid rights and claims of third parties. The United States is not liable to the holder for the exercise of any such right or claim.

F. Nonexclusive Use and Public Access. Unless expressly provided for in additional terms, use of the permit area is not exclusive. The Forest Service reserves the right to use or allow others to use any part of the permit area, including roads, for any purpose, provided, such use does not materially interfere with the holder's authorized use. A final determination of conflicting uses is reserved to the Forest Service.

G. Forest Service Right of Entry and Inspection. The Forest Service has the right of unrestricted access of the permitted area or facility to ensure compliance with laws, regulations, and ordinances and the terms and conditions of this permit.

H. Assignability. This permit is not assignable or transferable. If the holder through death, voluntary sale or transfer, enforcement of contract, foreclosure, or other valid legal proceeding ceases to be the owner of the improvements, this permit shall terminate.

I. Permit Limitations. Nothing in this permit allows or implies permission to build or maintain any structure or facility, or to conduct any activity unless specifically provided for in this permit. Any use not specifically identified in this permit must be approved by the authorized officer in the form of a new permit or permit amendment.

II. TENURE AND ISSUANCE OF A NEW PERMIT

A. Expiration at the End of the Authorized Period. This permit will expire at midnight on October 4, 2016 . Expiration shall occur by operation of law and shall not require notice, any decision document, or any environmental analysis or other documentation.

B. Construction. Any construction authorized by this permit may commence by July 31st and shall be completed by April 1st . If construction is not completed within the prescribed time, this permit may be revoked or suspended.

C. Minimum Use or Occupancy of the Permit Area. Use or occupancy of the permit area shall be exercised at least 30 days each year, unless otherwise authorized in writing under additional terms of this permit.

D. Notification to Authorized Officer. If the holder desires issuance of a new permit after expiration, the holder shall notify the authorized officer in writing not less than six (6) months prior to the expiration date of this permit.

E. Conditions for Issuance of a New Permit. At the expiration or termination of an existing permit, a new permit may be issued to the holder of the previous permit or to a new holder subject to the following conditions:

1. The authorized use is compatible with the land use allocation in the Forest Land and Resource Management Plan.
2. The permit area is being used for the purposes previously authorized.
3. The permit area is being operated and maintained in accordance with the provisions of the permit.
4. The holder has shown previous good faith compliance with the terms and conditions of all prior or other existing permits, and has not engaged in any activity or transaction contrary to Federal contracts, permits, laws, or regulation.

F. Discretion of Forest Service. Notwithstanding any provisions of any prior or other permit, the authorized officer may prescribe new terms, conditions, and stipulations when a new permit is issued. The decision whether to issue a new permit to a holder or successor in interest is at the absolute discretion of the Forest Service.

III. RESPONSIBILITIES OF THE HOLDER

A. Compliance with Laws, Regulations, and other Legal Requirements. The Lessee shall comply with all applicable Federal, State, and local laws, regulations, and standards, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Control, and Liability Act, 42 U.S. C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, and maintenance of any facility, improvement, or equipment on the property.

B. Plans. Plans for development, layout, construction, reconstruction, or alteration of improvements on the permit area, as well as revisions of such plans, must be prepared by a qualified individual acceptable to the authorized officer and shall be approved in writing prior to commencement of work. The holder may be required to furnish as-built plans, maps, or surveys, or other similar information, upon completion of construction.

C. Maintenance. The holder shall maintain the improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this authorization. If requested, the holder shall comply with inspection requirements deemed appropriate by the authorized officer.

D. Hazard Analysis. The holder has a continuing responsibility to identify all hazardous conditions on the permit area which would affect the improvements, resources, or pose a risk of injury to individuals. Any non-emergency actions to abate such hazards shall be performed after consultation with the authorized officer. In emergency situations, the holder shall notify the authorized officer of its actions as soon as possible, but not more than 48 hours, after such actions have been taken.

E. Change of Address. The holder shall immediately notify the authorized officer of a change in address.

F. Change in Ownership. This permit is not assignable and terminates upon change of ownership of the improvements or control of the business entity. The holder shall immediately notify the authorized officer when a change in ownership or control of business entity is pending. Notification by the present holder and potential owner shall be executed using Form FS-2700-3, Special Use Application and Report, or Form FS-2700-3a, Request for Termination of and Application for Special-Use Permit. Upon receipt of the proper documentation, the authorized officer may issue a permit to the party who acquires ownership of, or a controlling interest in, the improvements or business entity.

IV. LIABILITY

For purposes of this section, "holder" includes the holder's heirs, assigns, agents, employees, and contractors.

A. The holder assumes all risk of loss to the authorized improvements.

B. The holder shall indemnify, defend, and hold the United States harmless for any violations incurred under any such laws and regulations or for judgments, claims, or demands assessed against the United States in connection with the holder's use or occupancy of the property. The holder's indemnification of the United States shall include any loss by personal injury, loss of life or damage to property in connection with the occupancy or use of the property during the term of this permit.

Indemnification shall include, but is not limited to, the value of resources damaged ordestroyed; the costs of restoration, cleanup, or other mitigation; fire suppression or other types of abatement costs; third party claims and judgments; and all administrative, interest, and other legal costs. This paragraph shall survive the termination or revocation of this authorization, regardless of cause.

C. The holder has an affirmative duty to protect from damage the land, property, and interests of the United States.

D. In the event of any breach of the conditions of this authorization by the holder, the Authorized Officer may, on reasonable notice, cure the breach for the account at the expense of the holder. If the Forest Service at any time pays any sum of money or does any act which will require payment of money, or incurs any expense, including reasonable attorney's fees, in instituting, prosecuting, and/or defending any action or proceeding to enforce the United States rights hereunder, the sum or sums so paid by the United States, with all interests, costs and damages shall, at the election of the Forest Service, be deemed to be additional fees hereunder and shall be due from the holder to the Forest Service on the first day of the month following such election.

E. With respect to roads, the holder shall be proportionally liable for damages to all roads and trails of the United States open to public use caused by the holder's use to the same extent as provided above, except that liability shall not include reasonable and ordinary wear and tear.

F. The Forest Service has no duty to inspect the permit area or to warn of hazards and, if the Forest Service does inspect the permit area, it shall incur no additional duty nor liability for identified or non-identified hazards. This covenant may be enforced by the United States in a court of competent jurisdiction.

V. TERMINATION, REVOCATION, AND SUSPENSION

A. General. For purposes of this permit, "termination", "revocation", and "suspension" refer to the cessation of uses and privileges under the permit.

"Termination" refers to the cessation of the permit under its own terms without the necessity for any decision or action by the authorized officer. Termination occurs automatically when, by the terms of the permit, a fixed or agreed upon condition, event, or time occurs. For example, the permit terminates at expiration. Terminations are not appealable.

"Revocation" refers to an action by the authorized officer to end the permit because of noncompliance with any of the prescribed terms, or for reasons in the public interest. Revocations are appealable.

"Suspension" refers to a revocation which is temporary and the privileges may be restored upon the occurrence of prescribed actions or conditions. Suspensions are appealable.

B. Revocation or Suspension. The Forest Service may suspend or revoke this permit in whole or part for:

1. Noncompliance with Federal, State, or local laws and regulations.
2. Noncompliance with the terms and conditions of this permit.
3. Reasons in the public interest.
4. Abandonment or other failure of the holder to otherwise exercise the privileges granted.

C. Opportunity to Take Corrective Action. Prior to revocation or suspension for cause pursuant to Section V (B), the authorized officer shall give the holder written notice of the grounds for each action and a reasonable time, not to exceed 90 days, to complete the corrective action prescribed by the authorized officer.

D. Removal of Improvements. Prior to abandonment of the improvements or within a reasonable time following revocation or termination of this authorization, the holder shall prepare, for approval by the authorized officer, an abandonment plan for the permit area. The abandonment plan shall address removal of improvements and restoration of the permit area and prescribed time frames for these actions. If the holder fails to remove the improvements or restore the site within the prescribed time period, they become the property of the United States and may be sold, destroyed or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all cost associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

VI. FEES

A. Termination for Nonpayment. This permit shall automatically terminate without the necessity of prior notice when land use rental fees are 90 calendar days from the due date in arrears.

B. The holder shall pay a fee of Six thousand Dollars ($ 6,000) for the period from October 4 , 1996, to December 31, 1996, and thereafter annually on January 1st , Twenty-Four thousand Dollars ($ 24,000): Provided, charges for this use shall be made or readjusted whenever necessary to place the charges on a basis commensurate with the fair market value of the authorized use.

C. Payment Due Date. The payment due date shall be the close of business on January 1st of each calendar year payment is due. Payments due the United States for this use shall be deposited at location indicated on the annual bill for collection in the form of a check, draft, or money order payable to "Forest Service, USDA." Payments shall be credited on the date received by the designated Forest Service collection officer or deposit location. If the due date for the fee or fee calculation statement falls on a non workday, the charges shall not apply until the close of business on the next workday.

D. Late Payment Interest. Pursuant to 31 USC 3717, and regulations at 7 CFR Part 3, Subpart B, and 4 CFR Part 102, an interest charge shall be assessed on any payment or financial statement not received by the due date. Interest shall be assessed using the most current rate prescribed by the United States Department of Treasury's Financial Manual (TFM-6-8020). Interest shall accrue from the date the payment or financial statement was due. In the event that two or more billings are required for delinquent accounts, administrative costs to cover processing and handling of the delinquent debt will be assessed.

E. Additional Penalties. In the event of permit termination pursuant to provisions VI (A), and prior to the issuance of a new permit, a penalty of 6 percent per year shall be assessed on any fee amount overdue in excess of 90 days from the payment due date. This penalty shall accrue from the due date of the first billing or the date the fee calculation financial statement was due. The penalty is in addition to interest and any other charges specified in the above paragraph.

F. Disputed Fees. Disputed fees are due and payable by the due date. No appeal of fees will be considered by the Forest Service without full payment of the disputed amount. Adjustments, if necessary, will be made in accordance with settlement terms or appeal decision.

G. Delinquent Fees.

1. Delinquent fees and other charges shall be subject to all rights and remedies afforded the United States pursuant to Federal law and implementing regulations (31 U.S.C. 3711 et seq.).

2. The authorized officer shall require payment of fees owed the United States under any Forest Service authorization before issuance of a new permit.

VII. OTHER PROVISIONS

A. Members of Congress. No Member of or Delegate to Congress or Resident Commissioner shall benefit from this permit either directly or indirectly, except when the authorized use provides a general benefit to a corporation.

B. Appeals and Remedies. Any discretionary decisions or determinations by the authorized officer are subject to the appeal regulations at 36 CFR 251, Subpart C, or revisions thereto.

C. Superior Clauses. In the event of any conflict between any of the preceding printed clauses or any provision thereof and any of the following clauses or any provision thereof, the preceding printed clauses shall control.

D. Superseded Permit. This permit supersedes a special-use permit designated: User No. 5320, Dtd 5/17/93, expire 12/31/2001 with Smithers Scientific Services, Inc.

E. Nondiscrimination, Services. During the performance of this authorization, the holder agrees that:

1. The holder and employees shall not discriminate by segregation or otherwise against any person on the basis of race, color, or national origin by curtailing or refusing to furnish accommodations.

2. Title VI attaches coverage to the holder's employment practices if discrimination in employment, impeded the delivery of services and benefits to people on the basis of their race, color, or national origin.

3. The holder shall include and require compliance with this nondiscrimination provision in any subcontract made with respect to the operations under this authorization.

4. Signs setting forth this policy of nondiscrimination, to be furnished by the Forest Service, will conspicuously be displayed at the public entrance to the premises, and at other exterior or interior locations as directed by the Forest Service.

F. Esthetics. The holder shall protect the scenic esthetic values of the area under this permit, and the adjacent land, as far as possible with the authorized use, during construction, operation, and maintenance of the improvements.

G. Water Pollution. No waste or byproduct shall be discharged into water if it contains any substance in concentrations which will result in harm to fish and wildlife, or to human water supplies.

Storage facilities for materials capable of causing water pollution, if accidentally discharged, shall be located so as to prevent any spillage into waters or channels leading into water, that would result in harm to fish and wildlife or to human water supplies.

H. Pesticide Use. Pesticides may not be used to control undesirable woody and herbaceous vegetation, aquatic,plants, insects, rodents, trash fish, etc., without the prior written approval of the Forest Service. A request for approval of planned uses of pesticides will be submitted annually by the holder on the due date established by the authorized officer. The report will cover a 12-month period of planned use beginning 3 months after the reporting date. Information essential for review will be provided in the form specified. Exceptions to this schedule may be allowed, subject to emergency request and approval, only when unexpected outbreaks of pests require control measures which were not anticipated at the time an annual report was submitted. Only those materials registered by the U.S. Environmental Protection Agency for the specific purpose planned will be considered for use on National Forest System lands. Label instructions will be strictly followed in the application of pesticides and disposal of excess materials and containers.

I. Vandalism. The holder will take reasonable measures to prevent and discourage vandalism or disorderly conduct, and when necessary, will call in the appropriate law enforcement officer.

J. Information From Holders. As a condition of this authorization, the holder is responsible for providing the authorized officer with any information in possession necessary for determining annual rental fees, ownership, or other matters concerning the administration of the authorized use by the Forest Service.

K. Subleasing, Requirements. The holder, in the exercise of the privileges granted by this permit, shall require that employees, sublessees, contractors, subcontractors, or renters and their employees comply with all applicable conditions of this permit and that the conditions of this permit be made a part of all subleases, contracts, subcontracts, or rental agreements. This clause shall not be construed as authorizing such subleases, contracts, subcontracts, or rental agreements unless specifically authorized elsewhere in the permit.

L. Building and Service System Plans. All plans and specifications for buildings shall be prepared by an architect licensed in the State in which the building will be located. The plans shall be in accordance with the Uniform Building Code 1994.

Building plumbing shall be in accordance with the National Plumbing Code. The electrical system shall be in accordance with the National Electrical Code. Other systems shall be designed in accordance with recognized standards.

Plans shall be submitted to the authorized officer for approval prior to beginning of construction.

The holder shall submit to the authorized officer a certification by the architect or engineer who inspected construction that the building has been constructed in accordance with the approved plans before the building is approved for use.

M. Site Planting Plans. The holder shall submit plans to reasonably restore or protect all areas disturbed during construction. Such plans will identify plant material by botanical name, size, and location. Each stage of construction will be considered complete only upon completion and acceptance of the successful seeding and planting in the vicinity of construction. All seeding and planting required on the permitted area shall be completed according to the development schedule.

N. Site Plan. The holder shall prepare site plans to show the location of all buildings, service areas, roads, and structures. Such plan shall be on a scale of 1"=100' and with 2 foot contour intervals. The holder is encouraged to consult with the

authorized officer during the preparation of the site plan to ensure that it is adequate and to gain multiple-use compliance. No construction shall be undertaken by the holder prior to site plan approval.

O. Site Development Schedule. As a part of this permit, a schedule for the progressive development of the permitted site and installation of facilities shall be prepared jointly by the holder and the Forest Service. Such a schedule shall be prepared by January 1, 1997, and shall set forth an itemized priority list of planned improvements and the due date for completion. This schedule shall be made a part of this permit.

The holder may accelerate the scheduled date for installation of any improvement authorized, provided the other scheduled priorities are met; and provided further, that all priority installations authorized are completed to the satisfaction of the Forest Service and ready for public use prior to the schedule due date.

All required plans and specifications for site, improvements, and structures included in the development schedule shall be submitted to the Forest Service at least forty-five (45) days before the construction date stipulated in the development schedule.

In the event there is agreement with the Forest Service to expand the facilities and services provided on the areas covered by this permit, the holder shall jointly prepare with the Forest Service a development schedule for the added facilities prior to any construction. Such schedule shall be made a part of this permit.

P. Site Grading Plans. The holder shall prepare grading plans, profiles and cross-sections to show precise elevations, excavations, and other details related to the installation of buildings, structures, or improvements on the permitted-use area. Such plans shall include provisions for drainage, retaining structures, seeding, and planting, to be made for the prevention and control of erosion on the permitted area and the National Forest lands adjacent to the permitted area, insofar as the latter may be influenced by the permitted use.

Q. Bonds, Performance. As a further guarantee of the faithful performance of the provisions of terms and conditions of this permit, the holder agrees to deliver and maintain a surety bond in the amount of one hundred thousand dollars ($100,000.00). Should the sureties or the bonds delivered under this permit become unsatisfactory to the Forest Service, the holder shall, within thirty (30) days of demand, furnish a new bond with surety, solvent and satisfactory to the Forest Service. In lieu of surety bond, the holder may deposit into a Federal depository, as directed by the Forest Service, and maintain therein, cash in the amounts provided for above, or negotiable securities of the United States having a market value at time of deposit of not less than the dollar amounts provided above.

The holder's surety bond will be released, or deposits in lieu of bond, will be returned thirty (30) days after certification by the Forest Service that priority installations under the development plan are complete and upon furnishing by the holder of proof satisfactory to the Forest Service that all claims for labor and material on said installations have been paid or released and satisfied. The holder agrees that all moneys deposited under this permit may, upon failure on his part to fulfill all and singular the requirements herein set forth or made a part hereof, be retained by the United States to be applied to satisfy obligations assumed hereunder, without prejudice whatever to any rights and remedies of the United States.

Prior to undertaking additional construction or alteration work not provided for in the above terms and conditions or when the improvements are to be removed and the area restored, the holder shall deliver and maintain a surety bond in an amount set by the

Forest Service, which amount shall not be in excess of the estimated loss which the Government would suffer upon default in performance of this work.

R. Operation and Management Plans. The attached operation and management plan (Exhibit #3), when currently approved by the authorized officer will become a part of this authorization. Its terms and conditions are binding on the permittee/grantee.

Public reporting burden for collection of information, if requested, is estimated to average 1 hour per response for annual financial information; average 1 hour per response to prepare or update operation and/or maintenance plan; average 1 hour per response for inspection reports; and an average of 1 hour for each request that may include such things as reports, logs, facility and user information, sublease information, and other similar miscellaneous information requests. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Washington D.C. 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB # 0596-0082), Washington, D.C. 20503.

This permit is accepted subject to the conditions set out above.

By _____ **SMITHERS SCIENTIFIC SERVICES, INC.**
Douglas C. Domeck, President
Smithers Tire and Automotive Testing Division

Date: Oct 9, 1996

ATTEST:
_____
Daniel LaPorte, Secretary

I, Daniel LaPorte, certify that I am the Secretary of the Corporation that executed the above permit; that Douglas C. Domeck, who signed said permit on behalf of said Corporation was then President of said Corporation; that I know his signature, and that his signature on said permit is genuine; and that said permit was duly signed, sealed, and attested to for and on behalf of said Corporation by authority of its governing body.

_____
Daniel LaPorte, Secretary
Smithers Scientific Services, Inc.

U. S. DEPARTMENT OF AGRICULTURE
Forest Service

By _____
Carol Jorgensen
District Ranger

Date: 10/9/96

"EXHIBIT 1"

LEGAL DESCRIPTION OF SPECIAL USE PERMIT AREA

SMITHER'S SCIENTIFIC SERVICES, INC.

Parts of Sections 27, 28, 29 & 33, T46N-R04W, Superior Township, Chippewa County, Michigan described as:

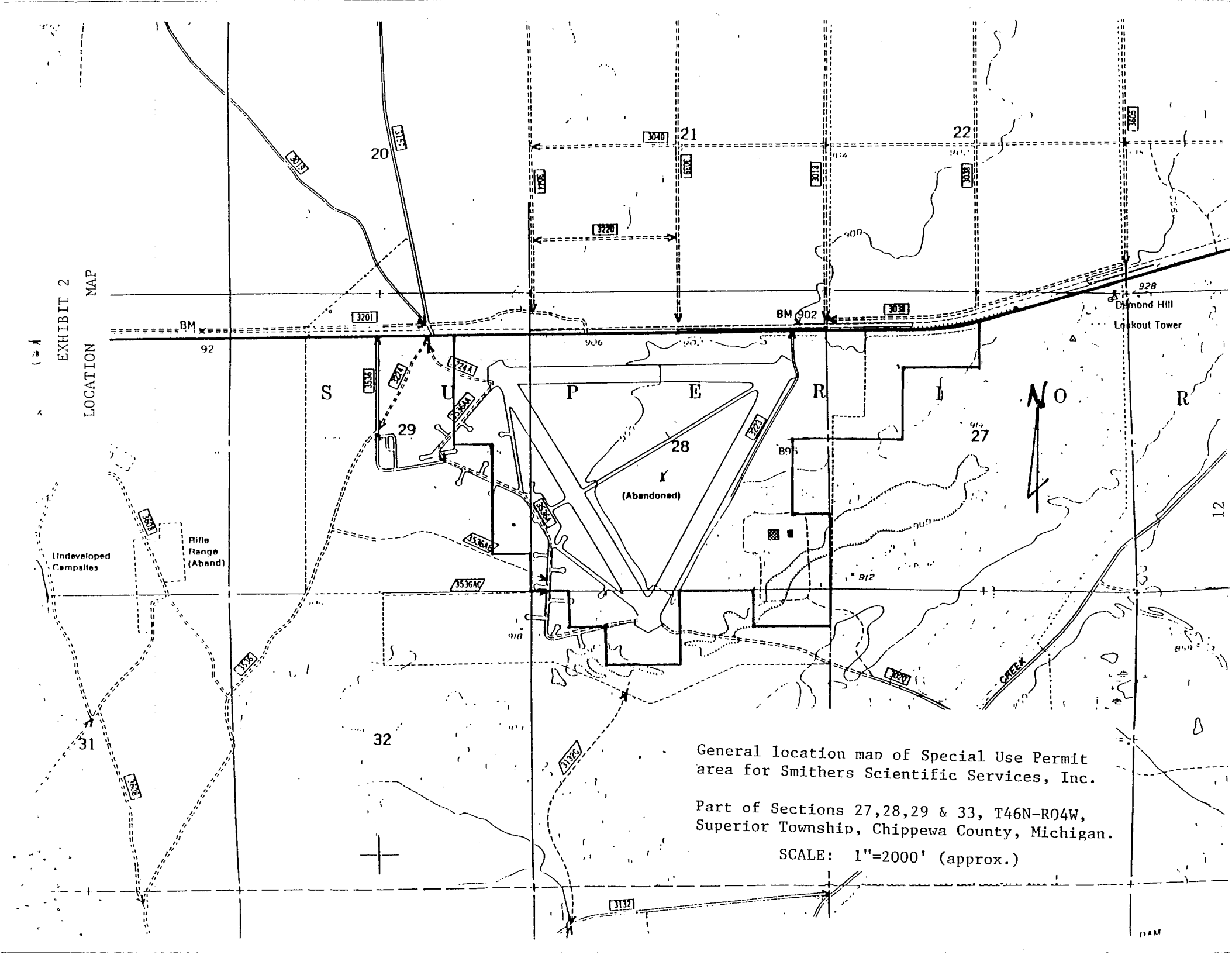
That part of the NE 1/4 of the NE 1/4 lying southerly of Highway M-28, the SE 1/4 of the NE 1/4, the E 1/2 of the NE 1/4 of the SE 1/4 and the NE 1/4 of the SE 1/4 of the SE 1/4 of Section 29; (90 acres)

That part of Section 28 lying southerly of Highway M-28 EXCEPT the E 1/2 of the NE 1/4 of the SE 1/4 of Section 28; (460 acres)

That part of the N 1/2 of the NW 1/4 lying southerly of Highway M-28 and the SW 1/4 of the NW 1/4 of Section 27; (80 acres)

The NE 1/4 of the NW 1/4 of the NW 1/4, the NE 1/4 of the NW 1/4 and the N 1/2 of the NE 1/4 of the NE 1/4 of Section 33; (70 acres)

Containing a total of 700 acres, more or less.



General location map of Special Use Permit area for Smithers Scientific Services, Inc.

Part of Sections 27,28,29 & 33, T46N-R04W, Superior Township, Chippewa County, Michigan.

SCALE: 1"=2000' (approx.)

"EXHIBIT #3"

OPERATION & MANAGEMENT PLAN
SMITHERS SCIENTIFIC SERVICES, INC.
SPECIAL USE PERMIT FOR VEHICLE TESTING FACILITY

1. The permittee shall provide a visual buffer for screening the view of the entrance from travelers along Highway M-28. The screening will be at the entrance to the Raco Airfield testing facility. This will be accomplished by planting native species of trees as outlined in Item 8(1.).

2. To provide for the courtship and brood rearing season of the sharptail grouse without disturbance, the permittee will close all or part of the operations between the dates of April 1st and July 31st, with the stipulation that the District Ranger still has the responsibility and prerogative of closing all or part of the operations earlier or later than April 1st should unusual weather occur that would cause the sharp-tailed grouse to utilize the site earlier or later than usual. Any operations between the dates of April 1st and July 31st must be approved by the District Ranger.

3. The permittee will provide the Forest Service a sign plan, for their approval, that includes examples of precautionary signs to advise the public when testing activities are occurring and other signs they may feel necessary. This plan will be reviewed on an annual basis.

4. In conjunction with the storage of fuel for test vehicles, the permittee will provide the Forest Service a "Spill Plan " as required by the State of Michigan for the use and storage of Hazardous Materials. The spill plan shall contain as a minimum a list of the the key contact personnel and their phone numbers and shall be updated on an annual basis.

5. In the event of an emergency forest fire situation the permittee agrees to allow the Forest Service unrestricted access to the Raco Airfield water supply system.

6. In the event of an emergency fire or search and rescue situation the permittee agrees to suspend testing or use of the airstrip to afford the landing of emergency aircraft.

7. During the snow free season, individuals and groups may appear at the airfield for a variety of activities without the knowledge of the Forest Service. The safety of all users is the primary concern. When these other activities do not conflict with testing, the Forest Service would encourage co-existence between the permittee and other forest users.

8. As outlined in the Decision Notice for this permit dated August 9, 1996, the following test surfaces and facilities may be added:(see location map for approximate locations)

Smithers Scientific Services, Inc. O&M plan. (cont.)

a.) Four (4) single-story office and garage buildings totaling approximately 45,000 square feet.

b.) A 600' by 700' asphalt vehicle dynamics pad.

c.) Two (2) unpaved 1/4 mile long circular tracks.

d.) Approximately 1200' of gravel road.

e.) Approximately 2000' of native surface handling course.

f.) One (1) grass surfaced traction lane approximately 300' by 1500'.

g.) Approximately 1300' of native surface road course.

h.) Two (2) 480' asphalt circles.

i.) One 1000' chatter bump pad.

j.) Two (2) earthen traction hills, one 25' by 250' at a 6.5% grade and one 25' by 30' at a 45% grade.

k.) Re-locate the existing weather station to the middle of the snow circle.

l.) Revegitate the open area adjacent to the existing entrance off Highway M-28 with white spruce and white pine for screening and habitat enhancement.

m.) Establish an additional access road from the Smither's property to the east of the site. The road will be approximately 0.6 miles long, 24 feet wide and composed of native surface.

Prior to the construction of any of the above mentioned additions, the permittee will provide the Forest Service with building construction and site development design plans to be reviewed and approved by the Forest Service prior to construction. All buildings shall be painted in earth tone colors to help them blend with the existing landscape, especially the tree line between them and M-28, which serves as a backdrop.

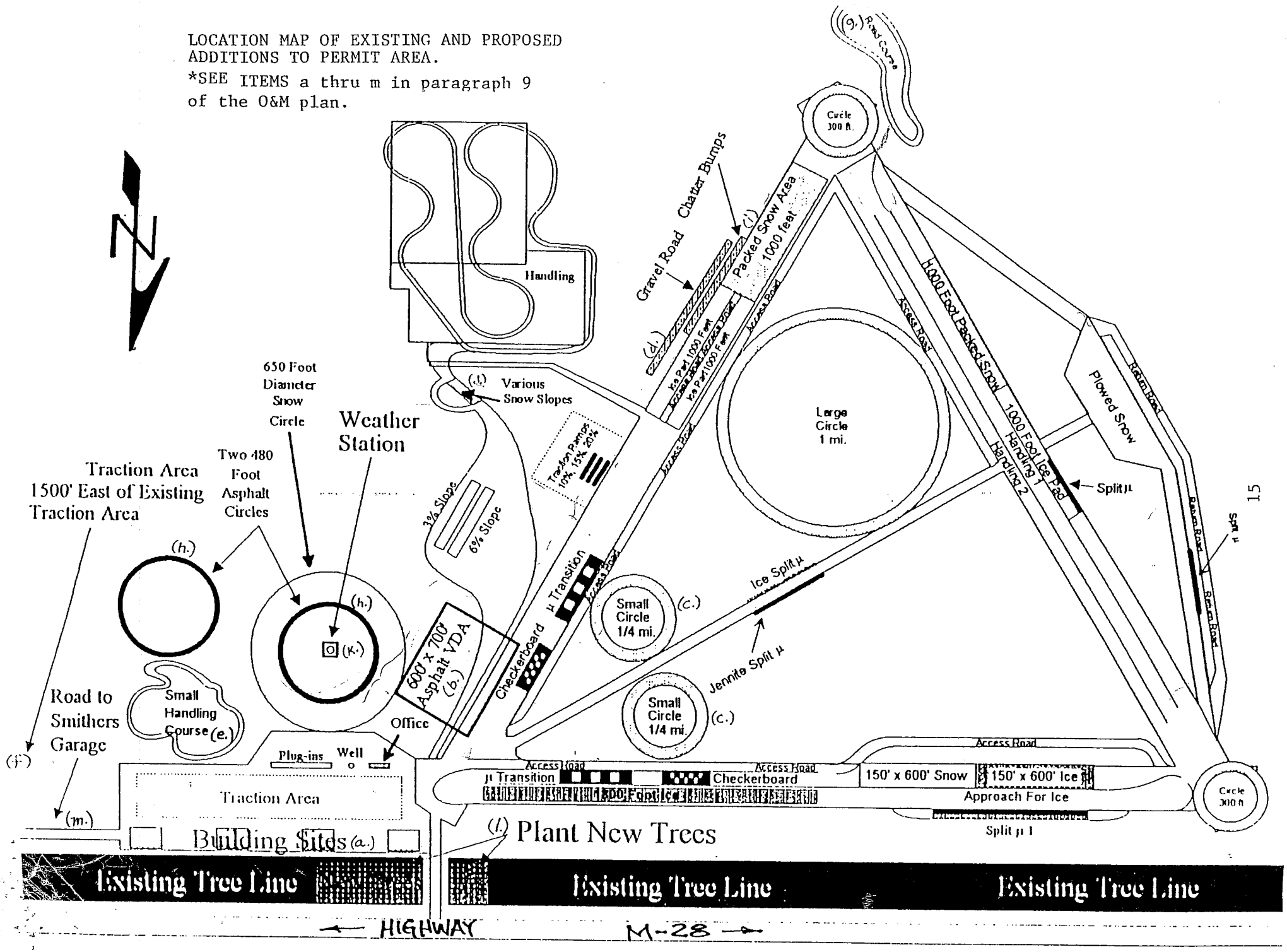
9. The Forest Service will, at a minimum of every five (5) years, review the permit to make adjustments for any changes in laws or implementing regulations and to access the fees associated with this permit.

Approved: 10/9/94
Date

By: Carol J. Jorgensen
Carol Jorgensen
District Ranger

LOCATION MAP OF EXISTING AND PROPOSED ADDITIONS TO PERMIT AREA.

*SEE ITEMS a thru m in paragraph 9 of the O&M plan.



United States Department of Agriculture | Forest Service | Hiawatha National Forest Supervisor's Office | 2727 N. Lincoln Rd Escanaba, MI 49829 906-786-4062

File Code: 1950
Date: September 2, 2005

Greetings:

I have signed the Decision Notice for the Smithers Scientific Services, Inc. Special Use Permit Modification. I have selected Alternative 3, as the alternative to implement as part of the special use permit.

A copy of the Decision Notice is enclosed.

Please note this decision is subject to appeal in accordance with 36 CFR 215 under the Notice, Comment, and Appeal Procedures for National Forest System Project and Activities, dated June 4, 2003. An appeal may be filed by individuals or organizations who have submitted substantive written or oral comments during the Notice and Comment period for this project. The appeal must have an identifiable name attached or verification of identity will be required. A scanned signature may serve as verification on electronic appeals.

To appeal this decision, a written Notice of Appeal must be postmarked or received within 45 calendar days after the date of the legal notice. The publication date in the *Daily Press* (Escanaba, Michigan), newspaper of record, is the exclusive means for calculating the time to file an appeal. Those wishing to appeal this decision should not rely upon dates or timeframe information provided by any other source. At a minimum, an appeal must include information as specified in 36 CFR 215. The Notice of Appeal should contain a subject line, "Smithers Special Use Modification," and must be sent to:

Randy Moore, Appeal Deciding Officer
Attn: Appeals and Litigation
USDA – Forest Service, Eastern Region
626 E. Wisconsin Avenue
Milwaukee, WI 53202

The office business hours for those submitting hand-delivered appeals are: 7:30 am – 4:00 pm CT, Monday through Friday, excluding holidays. The Notice of Appeal may alternatively be faxed to (414) 944-3963, or may be submitted electronically to: appeals-eastern-regional-office@fs.fed.us. Acceptable formats for electronic comments are text or html email, Adobe portable document format, and formats viewable in Microsoft Office applications.

This decision is also subject to appeal pursuant to 36 CFR 251 by those who hold or, in certain instances, those who apply for written authorizations to occupy and use National Forest system

lands. An appeal for initial review may be filed by those who hold or, in certain instances, those who apply for written authorizations to occupy and use National Forest system lands. In order for applicants and holders of written authorization to occupy and use National Forest system land to appeal this decision under 36 CFR 251, a written Notice of Appeal must meet the content requirements. The appeal must also be postmarked or received within 45 calendar days after the date of notice of this decision. The Notice of Appeal should be sent or hand delivered to:

Randy Moore, Appeal Deciding Officer
Attn: Appeals and Litigation
USDA – Forest Service, Eastern Region
626 E. Wisconsin Avenue
Milwaukee, WI 53202

or fax to (414) 944-3963.

The subject line should be titled: Smithers Special Use Modification. A copy of the appeal must simultaneously be sent to:

Beth LeClair, Acting Forest Supervisor
Hiawatha National Forest
2727 N. Lincoln
Escanaba, MI 49829.

If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period. When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

Sincerely,

BETH LECLAIR
Acting Forest Supervisor

Enclosure

DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT
FOR
SMITHERS SCIENTIFIC SERVICES, INC.
SPECIAL USE PERMIT MODIFICATION

Sault Ste. Marie Ranger District
Hiawatha National Forest
Chippewa County, Michigan
USDA Forest Service, Region 9

August 2005

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1 INTRODUCTION

This document describes my decision, and the rationale for the implementation of a series of land management activities proposed for the *Smithers Scientific Services, Inc. Special Use Permit Modification Environmental Assessment* (*Smithers SUP Modification EA*) located on the Sault Ste. Marie Ranger District, Hiawatha National Forest (HNF). The Decision Notice and Finding of No Significant Impact are based on an environmental assessment of the proposed activities and five alternatives to the proposed activities. These actions would be carried out on approximately 710 acres of National Forest System lands in Compartment 55 on the Sault Ste. Marie Ranger District. The legal description of the project area is T46N, R4W, Sections 27, 28, 29, and 33; Chippewa County, Michigan (Figure 1).

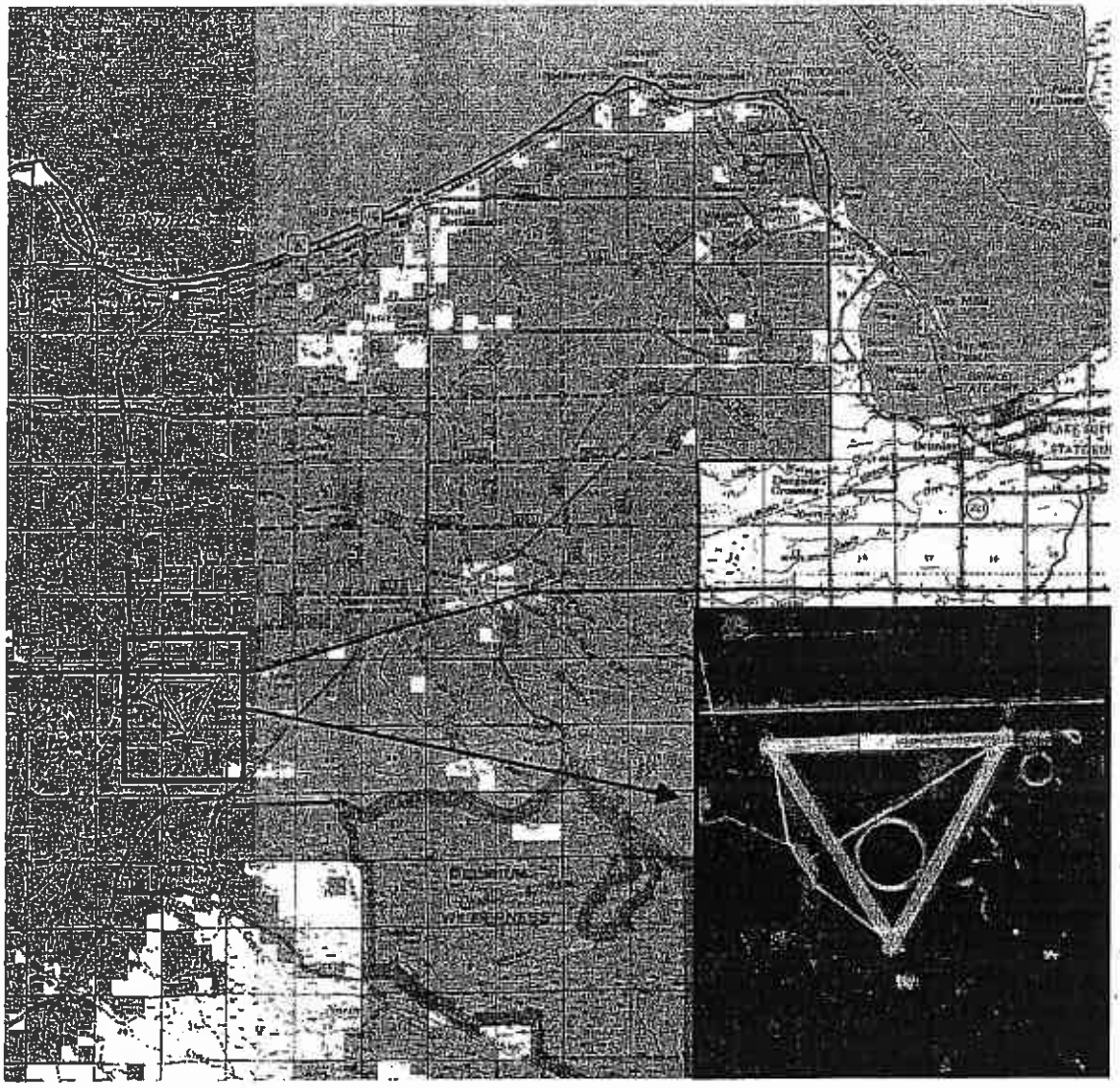

FIGURE 1. LOCATION OF THE ABANDONED RACO AIRBASE USED BY SMITHERS SCIENTIFIC SERVICES, INC. FOR VEHICLE AND VEHICLE COMPONENT TESTING UNDER A SUP FROM THE HIAWATHA NATIONAL FOREST.

The *Smithers SUP Modification EA* was prepared by an interdisciplinary team (IDT) of Forest Service resource specialists and contract scientists as required by the National Environmental Policy Act (NEPA). The EA describes the Purpose of and Need for action, the alternatives considered, the affected environment, and the potential environmental effects. It further describes the public involvement process used.

This EA analyzed six alternatives: Alternative 1 - No Action, Alternative 2 - Proposed Action, and four alternatives to the Proposed Action (Alternatives 3 through 6). Four additional alternatives were considered, but eliminated from detailed analysis in the EA (EA, section 2.1.7). It is my judgment that this range of alternatives adequately addressed the Purpose of and Need for the project, (EA, section 1.2), the issues raised during the initial scoping, and the comments received during the Notice and Comment period (EA, section 1.7; Appendix C, Response to Comments).

A set of resource management activities that comprised Alternative 2 (Proposed Action), are described in section 2.1.2 of the EA. These activities were proposed by Smithers Scientific Services, Inc. to address the Purpose of and Need for action. The IDT developed Alternatives 3 through 6 (EA, sections 2.1.3 through 2.1.6) to address issues raised during scoping.

After detailed review of the alternatives and their effects, I am selecting Alternative 3 for implementation. I have decided on Alternative 3 based on its response to the decision criteria found in section 3 of this Decision Notice. Implementation of the management activities described in Alternative 3 will best meet the Purpose of and Need for the project while meeting the management objectives described in the Hiawatha National Forest Land and Resource Management Plan (Forest Plan) for Management Area[1] (MA) 4.4.

I have also determined the activities included in Alternative 3 are consistent with direction in Forest Service manuals and handbooks, Forest Service policy on ecosystem management, the Forest Service Natural Resources Agenda, direction from the Endangered Species Act, and other applicable laws relating to Forest Service activities.

The *Smithers SUP Modification EA* is available for public review at the St. Ignace District Ranger Office, 1798 West US-2, St. Ignace, Michigan 49781 or the Sault Ste. Marie District Office, 4000 I-75 Business Spur, Sault Ste. Marie, MI 49783.

2 PUBLIC INVOLVEMENT

The project was first identified in the January 2001 issue of *Project Planning*, the HNF quarterly report on upcoming projects on the HNF.

A key component in preparing an EA is "scoping," that is, determining the relevant issues related to the environmental effects of the Proposed Action (CEQ 1501.7). In March 2001 scoping was conducted, with approximately 200 letters being sent to landowners in and adjacent to the project area, interested citizens, local governments, organizations, tribes, and industry, explaining the project and requesting comments on the Proposed Action. A legal notice was placed in the Sault Ste. Marie *The Evening News* on January 30, 2001, asking for the public's comments. An article

[1] A portion of the HNF with specific management direction in the Forest Plan that is designed to reach a desired future condition appropriate for that area. The HNF is divided into 21 MAs.

was also placed in the *Bay Mills News* (Brimley, Michigan) and the *St. Ignace News* (St. Ignace, Michigan) in May 2001, announcing a public meeting. The public meeting was held on May 3, 2001 at the project site to further inform the public and to provide a forum for commenting. Team members interacted with the public through meetings as well as by phone, fax, and e-mail throughout the scoping and analysis process.

Seventeen individuals or organizations responded to the initial scoping with comments and/or issues. Issues, which were relevant to the proposal, were identified and analyzed by the IDT and incorporated into the EA, either by developing new alternatives or discussing them in the environmental effects section of the document. Development of issues is discussed in section 1.7 of the EA. All comments and issues identified during public scoping were addressed and are part of the project file.

On June 14, 2004, the EA was released to the public through mailing and Internet in accordance with 36 CFR 215.3 for the official Notice and Comment period. The legal notice was published in *The Daily Press* (Escanaba, Michigan) on June 18, 2004. One comment letter was received during the Notice and Comment period. The comment letter and the Forest Service response are included in Appendix A of this decision notice.

3 DECISION AND RATIONALE FOR THE DECISION

3.1 AUTHORITY

As Forest Supervisor, I am authorized to make site-specific decisions to manage the HNF in accordance with applicable laws and regulations that govern National Forest System lands. This authority includes the site-specific designation of which improvements will be considered at the Smithers Scientific Incorporated Winter Test Site facility that is under special use permit authority on the HNF. My authority includes development of alternatives based on public comment, and the power to decide between alternatives to implement the best possible course of action. This authority is delegated to me through agency policy described in Forest Service Manual 1236.41.

3.2 DECISION

Based on the results of the analysis documented in the *Smithers SUP Modification EA* and comments received during initial scoping and the Notice and Comment period, it is my decision to implement Alternative 3.

The EA and project file describe the management practices, and the site-specific location of activities that will occur by implementing Alternative 3. Details of the proposed activities are displayed in section 2.1.3 of the EA. Mitigation measures that will be followed when implementing the selected alternative are described in section 2.2 of the EA. Alternative 3 includes the following activities (locations are indicated on Figure 2 as site changes):

#1. Resurfacing a 300' x 1,800' area on the east end of the East West runway with asphalt.

#2. Resurfacing a 50' x 500' area on the south side of the East West runway with asphalt.

#3. Constructing three asphalt surfaces for various configurations of ice/snow/asphalt test surfaces.

#4. Relocating two existing 34' x 500' checkerboards ice/asphalt testing surfaces from the East West runway to the West runway.

#5. Clearing and maintaining a 300' x 4,000' open area located between the East West runway and M-28 for packed snow testing surfaces.

#6. Adding four traction split mu hills in the same area as the existing hills, each traction hill will require an additional 6,000 sq. ft. of asphalt surfacing.

#7. Adding a heated split mu traction hill tied to the existing heated asphalt area.

#8. Covering existing and proposed traction hills with quonset hut style covers.

#9. Adding a 6" high capacity water well and monitoring this and the existing well yearly for recharge rates and potential contaminants.

#10. Straightening out the existing access lane (taking out curves) south and parallel to the East West runway.

#11. Increasing the total number of permitted buildings from four to seven for a total of 120,000 sq. ft. The additional buildings would be constructed to the east of existing buildings.

#12. Construction of a platform blind along the West runway in order to facilitate sharptail grouse monitoring.

#13. Use of a 100' x 4,000' snow-pack area along the inside of the North runway.

A groundwater monitoring well in the vicinity of changes #3, #6, and #8.

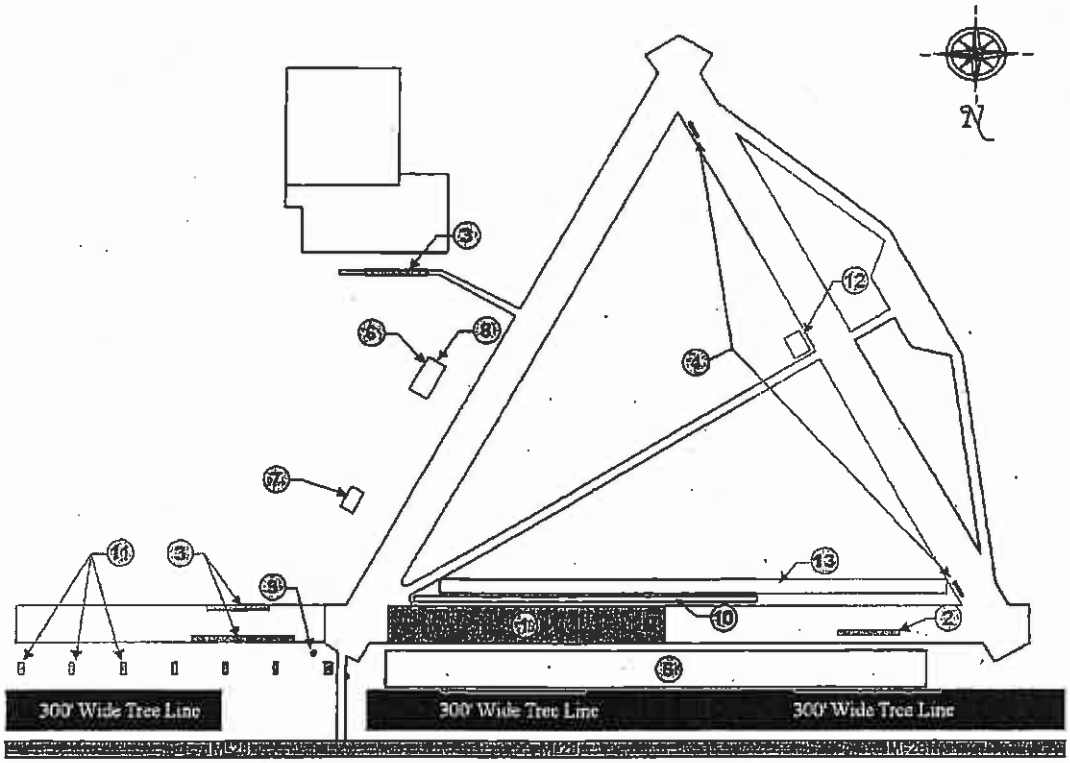

FIGURE 2. MAP OF SITE CHANGES INCLUDED IN ALTERNATIVE 3 FOR MODIFICATION OF THE SUP FOR SMITHERS SCIENTIFIC SERVICES INC. USE OF THE RACO AIRBASE, CHIPPEWA COUNTY, MICHIGAN (NO SCALE).

3.3 RATIONALE FOR DECISION

I weighed numerous factors in making my decision, including compliance with Federal and State laws (see EA, Appendix A); environmental impacts on the social, economic, and biological environment; and the public comments and concerns that were raised during scoping. No single factor was solely responsible for my decision. Alternative 3, with its mitigating measures was selected as the alternative that will best meet the Purpose of and Need for the project, respond to public issues, and provide additional net public benefits, while minimizing undesirable environmental change.

I believe the implementation of Alternative 3 will achieve the specific needs identified in the EA (section 1.2). It will move the area closer to the overall desired future condition (DFC) described for MA 4.4 (EA, section 1.5) and as described in the Forest Plan. All practicable means have been employed to avoid and/or minimize environmental harm. Detailed descriptions of required mitigation can be found in the Forest Plan and section 2.2 of the EA.

3.3.1 Decision Criteria

As with all land management decisions the overall goal is to achieve the project objectives while avoiding substantial adverse impacts to other resource values. With this goal in mind, I used the following criteria in order to decide between the alternatives.

a. Degree to which the alternative addresses the Purpose of and Need for action for the Smithers SUP Modification EA.

The Purpose of and Need for action and DFC for the *Smithers SUP Modification EA* are based on meeting the changing scientific and regulatory environment of vehicle testing within the context of Forest Plan goals, objectives, and standards. With exception of Alternative 1, I find that all the alternatives would meet the project Purpose of and Need for action (EA, section 1.2) and all are consistent within the DFC for MA 4.4 established in the Forest Plan (p.IV-119). Specifically Alternatives 2-6 would bring the Smithers facility in line with developing industry standards by:

- Resurfacing deteriorating testing surfaces with asphalt (Changes #1 and #2, Alternatives 2-6).
- Constructing combinations of ice/asphalt surfaces for improved testing purposes (Changes #3 and #4, Alternatives 2-6).
- Creating additional areas of snow pack surfaces for improved testing purposes (Change #5, Alternatives 2-6).
- Adding a series of covered traction hills for improved testing purposes (Changes #6, #7, and #8, Alternatives 2-6).
- Adding a 6-inch high capacity water well to improve water delivery needs to the test facilities (Change #9, Alternatives 2-6).
- Straightening the existing access lane to improve safety of operations (Change #10, Alternatives 2-6).
- Increasing the indoor operation capacity by 120,000 sq. ft. to provide for stated needs. (Change #11, Alternatives 2-6).
- By moving the 1,000 ft. x 4,000 ft. packed snow surface to the south, the tree line distances are increased from 200 ft. in the Proposed Action to 300 ft. in Alternatives 3, 4, and 5, providing better visual quality along M-28 by screening the air base open areas. (Change #5).
- Minimizes the loss of ground currently occupied by vegetation by re-surfacing already existing asphalt (Change # 3).

Alternative 3 realizes all the above conditions but adds the requirement of a groundwater well in the vicinity of changes #3, #6, and #8. This monitoring well will effectively measure the potential movement of any residual contaminants resulting from the years site was used as Raco Airbase, as well as measure effects of Smithers operations on the groundwater levels.
Based on the above rationale I find that Alternatives 2-6 all meet the stated Purpose of and Need for the project. I find that Alternative 3 provides the additional benefit of the monitoring well that would not be installed under the other alternatives.

b. Degree to which the alternative addresses and resolves public issues that drove alternative development, and responds to public comments.

Alternatives to the Proposed Action were developed based on the following public issues and comments:

- Tree removal may result in a loss of screening along the north boundary and an unacceptable decrease in visual quality for travelers along Highway M-28.

  Alternatives 3-6 increase the vegetated strip between the airbase and M-28 to 300 ft., which will adequately provide for visual quality objectives of partial retention along M-28 (EA, section 3.6.2.3). A mitigation measure to underplant this area to white pine and red oak as the jack pine mature would continue to maintain the visual quality standards required over the long term (EA, section 2.2). Based on the design criteria of leaving 300 ft. of tree line and employing the underplanting mitigation measure I find that all action alternatives respond to this issue.

- Additional paving and tree removal may result in an unacceptable loss of forested area.

  Alternatives 2-5 would result in approximately 27 acres of pine type being converted to herbaceous cover. Approximately 3 acres of vegetation would be converted to asphalt, and an additional 3 acres would be covered by building sites. (EA, section 3.3) These conversions represent 3.8 percent of the red pine community being converted to low herbaceous cover, and 0.5 percent of the area being converted to asphalt (EA, Table 2.2). I find that this represents a small portion of the total resource and will not constitute undesirable environmental consequences.

- Proposed site changes may result in an increase in the presence of invasive plants within the permit-area.

  Approximately 3.8 percent of the permit area would be exposed to ground disturbing activities conducive to establishment of invasive species in Alternatives 2-5. Previously disturbed areas within the permit area exhibit spotted knapweed populations being more numerous near roads and trails so it is reasonable to expect this same pattern to follow in newly disturbed areas which would result in less than the 3.8 percent (27 acres) being susceptible to infestation (EA, Table 2.2, sections 3.3.2.2, and 3.3.2.3). I find the proposed activities would not pose an unacceptable risk of introducing great amounts of non-native invasive plant species.

- The proposed well may result in an unacceptable effect to groundwater levels or an unacceptable effect to stream flow, particularly in the portion of Sullivan Creek supplying the fish hatchery.

  The current rate of pumping at the site is about 52,000 gallons per day for the 4.5 month season for a total of 7 million gallons annually. A hydrologic model was run for Alternatives 2-6 that doubled the current daily rate to

104,000 gallons per day over 4.5 months (14 million gallons). The drawdowns at distances of 250, 500, 750, and 1,000 ft. were modeled at the current rate and with the 50 and 100 percent increases in water use, even though there is only a projected 12 percent increase in testing surface under any of the action alternatives. The nearest domestic well is 7,700 ft. away from the existing well and the Sullivan Creek Hatchery is approximately 2 miles to the southeast (EA, section 3.2). Based on the modeling and the projected time-distance drawdown plots, I find it is unlikely that the existing availability of groundwater would be adversely affected by the installation of the 2nd production well, even in the unlikely event that the pumping rates were doubled.

As part of this decision I am requiring Smithers Scientific Services to install water meters on the existing and proposed production wells and that the amount of water pumped through these wells be capped at 14 million gallons annually. The details of monitoring the output of these wells will be outlined in the Operation and Maintenance Plan of the special use permit. This provides a monitoring process to ensure that water pumping will not exceed the model's capability to project water drawdown levels.

- Use of water from the proposed well may increase the risk of redistributing potential contaminants.

The EA documents that Smithers Scientific Services performed environmental sampling and analysis of their existing high capacity well in the summer of 2002. Based on this sampling it was determined that no contaminates above the Michigan part 201 drinking water standards were present. The new high capacity well would be drilled to approximately the same depth in the aquifer as the existing well. The groundwater model indicates the additional well would not adversely affect groundwater movement near the existing contamination source area which is near monitoring well number 08 (EA, section 3.2.2.2). Based on the analysis presented in the EA, I find the additional well would not be likely to pose additional risk of exacerbating the environmental conditions of the site.

Alternative 3 installs a new monitoring well (MW) south of the proposed and existing high capacity wells. The monitoring well location is between the existing groundwater contamination source area (MW08) and the existing and proposed wells (EA, Figure 2.3). The monitoring well will be used to measure groundwater withdrawal and recharge rates. This information will be used to validate the groundwater model's predictions of no effect on contaminate movement from the existing source area. In addition, the monitoring well will serve as an environmental sampling location which would detect contaminates before reaching the proposed or

existing wells. While I am quite confident the modeling and monitoring of contaminates to date reflects little risk on the Raco aquifer, this monitoring well will provide an additional level of assurance that the existing environmental conditions are not affected by the proposed or existing high capacity wells.

Based on the preceding rationale I find that Alternative 3 best meets the public issues that were identified.

c. Degree to which management actions present an acceptable level of environmental, social, and economic effects.

Based on the disclosures of environmental effects in Chapter 3 of the EA, I find impacts to other resource values which will result from the implementation of Alternative 3 are either beneficial or have been mitigated to keep negative impacts to acceptable levels. Monitoring has been included in the project in order to guard against unanticipated consequences.

3.4 MITIGATION MEASURES

Standard mitigation practices that would be applied during implementation of each of the action alternatives are found in section IV of the Forest Plan. Additional mitigation practices are described in the EA, section 2.2 and section 3.3.1, b, above.

3.5 OTHER ALTERNATIVES CONSIDERED

3.5.1 Alternative 1 (No Action)

Alternative 1 (No Action) would maintain the existing special use permit conditions without any changes. Routine maintenance associated with existing and previously permitted facilities and activities would continue. Alternative 1 (No Action) was not selected because it does not allow upgrades necessary to meet existing testing standards and thus does not meet the Purpose of and Need for the *Smithers SUP Modification EA*.

3.5.2 Alternative 2 (Proposed Action)

The emphasis of Alternative 2 is similar to Alternative 3. However, Alternative 2 would only maintain a 200 ft. tree line between the East-West runway and M-28, and does not include a groundwater monitoring well. Therefore, I do not believe Alternative 2 provided monitoring devices that could lead to better protection of the local environment as well as Alternative 3.

3.5.3 Alternative 4

Alternative 4 is the same as Alternative 3 except that Change #9 (the new well), would only be used under emergency circumstances (e.g. fire) until the US Army Corps of Engineers and Michigan Department of Natural Resources declared the airbase officially closed and free of contamination.

I did not select this alternative because I believe the very low risk documented by past chemical monitoring and the continuation of this monitoring through the remainder of the closure process make the contingency in Alternative 4 unnecessary.

3.5.4 Alternative 5

Alternative 5 is the same as Alternative 3 except that Change #9 (the new well) could only be constructed after the US Army Corps of Engineers and Michigan Department of Natural Resources declared the airbase officially closed and free of contamination. Water from the existing well would be tested until the new well was constructed then testing would cease.

I did not select this alternative because I believe the very low risk documented by past chemical monitoring and the continuation of this monitoring through the remainder of the closure process make the contingency in Alternative 5 unnecessary.

3.5.5 Alternative 6

Alternative 6 is the same as Alternative 3 except that Change #13 (100' x 4,000' snow pack area) is not included (Figure 2.4).

I did not select Alternative 6 because I find the area in question has been harvested through a previously planned timber sale and maintaining it in an open condition constitutes a minimal environmental change in a developed landscape that is warranted by the benefits of testing new vehicle technologies. The public interest would not be served by rejecting this testing surface.

4 NATIONAL FOREST MANAGEMENT ACT COMPLIANCE

4.1 FOREST PLAN CONSISTENCY

The test facility and surrounding lands are part of MA 4.4 (Forest Plan IV- 119 through IV-125). The general purposes of this MA are to:

- Provide habitat that is favored by upland wildlife species such as sharptail grouse and sandhill cranes;
- Manage conifers for fiber production;
- Provide opportunities for recreation such as driving for pleasure, berry picking, hunting, and fishing.

To meet these objectives, the DFC of the land is large pine dominated stands interspersed with grassy openings and savannas, paper birch and oak areas, and stands of hardwoods on more mesic sites. Large openings of up to 300 acres may be found in this area for sharptail grouse management. The minimum percentage of MA 4.4 that is supposed to be in each vegetation group Forest-wide is shown in Table 1.1 below.

Table 1.1 Hiawatha National Forest General Vegetation Management Objectives for Management Area 4.4:	
Vegetation Group	Minimum Percentage
Aspen	10
Hardwoods	
Oak	2
Hemlock	1
Other	2
Conifers	
Red/White Pine	10
Jack Pine	15
Permanent Opening	20[a]
Existing and Potential Old Growth	4[b]
[a] Includes sharptail areas [b] Long-lived species	

Open road densities in MA 4.4 may be relatively high (up to 2.8 miles per square mile) to provide recreation opportunities consistent with the "Roaded Natural" recreation opportunity class.

"Buildings and structures may be provided to support resource management activities" (Forest Plan IV-124).

There are no specific special uses management guidelines for MA 4.4. However, Forest-wide standards and guidelines applicable to the proposed project allow for "approval of applications for other special uses as long as they are compatible with management of the area and consistent with Forest Service Manual sections 2720 and 2730" (Forest Plan IV-51).

After review of the project file, I find this action is consistent with the HNF Final Environmental Impact Statement (FEIS) and related Forest Plan including both the Forest-wide standards and guidelines (Forest Plan pp. IV-17 to 56), and the standards and guidelines for MA 4.4. I further find that all of the expected impacts from this project are consistent with the expected impacts disclosed in the FEIS for the Forest Plan. Acting Regional Forester Floyd J. Marita signed the Record of Decision on the FEIS October 24, 1986.

4.2 APPROPRIATENESS OF EVEN-AGED TIMBER MANAGEMENT

Timber management, including even-aged management, is not part of the *Smithers SUP Modification EA*.

4.3 OPTIMALITY OF CLEARCUTTING

Timber management, including clearcutting, is not part of the *Smithers SUP Modification EA*.

4.4 ASSURANCE OF RESTOCKING

Timber management is not part of the *Smithers SUP Modification EA*. Therefore, restocking is not a consideration.

4.5 OTHER VEGETATIVE MANIPULATION REQUIREMENTS

The actions in Alternative 3 for this project area which alter vegetation comply with the seven requirements of 36 CFR 219.27(b). My reasons for making this determination are:

- The actions are best suited to the multiple use goals stated in the Forest Plan as discussed in this decision notice and EA.
- The activities will avoid permanent impairment of site productivity and will ensure conservation of soil, water, recreation, and visual resources. Mitigation measures listed in the Forest Plan and in section 2.2 of the EA will also ensure the protection of sensitive resources. These considerations are addressed in the environmental effects section in Chapter 3 of the EA.

5 FINDING OF NO SIGNIFICANT IMPACT

In reaching my determination that preparation of an environmental impact statement is not needed, I considered the following factors and information developed during the analysis of the proposal and disclosed in the EA:

5.1 CONTEXT

The analysis of the proposal is in a localized area with implications only for the immediate area. The cumulative effects of past management, combined with the current proposal, and reasonably foreseeable future actions are displayed in Chapter 3 of the EA. As a result of the analysis of those effects, the context of this decision, both from a biological and social standpoint, appears localized. I realize that some wildlife species, for example large mammals and migratory birds, range outside of the permit area, however, based on the environmental effects analysis there will not be significant effects. My decision is consistent with the management direction outlined in the Forest Plan, which analyzed the effects of the type of activities that will be implemented at a larger scale.

5.2 INTENSITY

5.2.1 Impacts that may be both beneficial and adverse.

My finding of no significant environmental effects considers both beneficial and adverse effects. Beneficial effects have not, however, been used to offset or compensate for potential adverse effects. Impacts from my decision are not unique to this project alone, as previous projects have had similar activities and effects. Impacts associated with my decision are discussed in Chapter 3 of the EA.

I conclude that implementing Alternative 3 will not have significant direct, indirect, or cumulative environmental effects.

5.2.2 The degree to which the Proposed Action affects public health or safety.

The project does not involve or have any implications to national defense or security. The airbase will remain available for emergency use by local, state, and federal agencies as necessary.

Based on the environmental analysis and implementation of projects similar to this in the past, I conclude that there will be no significant effects to public health or safety.

5.2.3. Unique characteristics of the geographic area.

The EA did not identify any impacts to any unique geographic areas. According to the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR Part 1508.27), unique characteristics are defined *"such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas."*

There are no historic or cultural resources, park lands, prime farm lands, wetlands, or wild and scenic rivers within the permit area.

Ecologically critical areas are those areas, which exhibit unique ecological characteristics or, if altered, may affect the viability of threatened or endangered plant or animal species. Botanical and wildlife surveys were conducted throughout the project area. An evaluation of the existing condition for Alternative 3 (Chapter 3 of the EA) determined there are no ecologically critical areas in the project area where management activities would occur.

A biological evaluation (BE) was completed for both plants and animals. Its conclusions are as follows:

Federally (ESA) Listed Species

One Federally-listed threatened or endangered species (gray wolf) has been documented near the permit area (i.e. Betchler Marsh). Therefore, it may occasionally move through the permit area, although no documentation exists confirming that circumstance. Alternative 1, the No-Action Alternative, would result in no change to the existing conditions in the permit area and, therefore, would result in no effect on the gray wolf.

Based on available information, project files, analysis provided in the Biological Evaluation and the Environmental Assessment for this project, the action alternatives would have no effect on gray wolf habitat or individuals.

Canada lynx has been documented in the Eastern Upper Peninsula on the Hiawatha National Forest. However, there is no evidence that the species has used the permit area. There is a small area on the permit site that would qualify as marginal lynx habitat; however, proximity to facility operations and M-28, a well-traveled highway, results in this area being unsuitable.

Implementation of Alternative 1 would have no effect on Canada lynx because it would not affect suitable habitat or change the existing condition. There would be "no effect" to lynx from implementation of Alternatives 2 through 6 because no suitable lynx habitat would be changed. It is likely that lynx already avoid the project area due to current human disturbances on the site and the quality lynx habitat that exists elsewhere in the area. The increase in human activity anticipated would be of a small magnitude and confined to the existing area of disturbance.

Forest Service Region 9 Sensitive Species

Twenty-six Region 9 Regional Forester's (R9) Sensitive Species have potential habitat in, or occupy habitat within the permit area. Alternative 1, the No Action alternative, would create no change to the existing conditions in the permit area and, therefore, would result in no impacts to R9 Sensitive Species.

Based on available information, project files, analysis provided in the Biological Evaluation and the environmental analysis for this project, implementation of any of the action alternatives would have no impacts on any Forest Service (FS) Region 9 sensitive animal species. For plants, the action alternatives may impact individuals but is not likely to cause a trend to federal listing or loss of viability of any species.

No direct impacts have been identified for any of the alternatives being considered for this project. Potential indirect impacts on FS R9 Sensitive Species due to minor alterations of potential, but unoccupied, habitats are expected to be very minimal and would not likely cause a trend to federal listing or loss of viability of any species discussed in the Biological Evaluation.

Based upon these considerations, I conclude there will be no significant effects on unique characteristics within the geographic area.

5.2.4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The proposed activities will contribute toward reaching the need for safer transportation while meeting the desired future condition and goals and objectives outlined by the Forest Plan. I believe the effects of the management actions in Alternative 3 are well documented and understood. As such, they do not represent a scientifically controversial impact upon the *"quality of the human environment."* Some commenters may feel the mere volume of comments or differing opinions indicates controversy. The number of public comments or differing opinions does not, in and of itself, make an issue controversial. Controversy as described above is a dispute within the scientific community. Based on the comments received it is my determination there is no scientific controversy with respect to the effects of implementing Alternative 3. This EA is tiered to the Forest Plan FEIS. Forest-wide effects of Forest Plan standards were disclosed in that FEIS. All actions are of a similar type and intensity to activities that have occurred in the past throughout the HNF and in this area.
I received only one comment letter regarding the EA during the Notice and Comment period. I addressed concerns raised in that comment through consultation with the US Fish and Wildlife Service, and independent review by the US Geological Survey.

Based upon these considerations, I conclude there will be no significant effects on the quality of the human environment that are likely to be controversial.

5.2.5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The actions included in my decision are similar to many past actions, both in this permit area and in adjacent areas. The effects analysis shows the effects are not uncertain, and do not involve unique or unknown risks (EA, section 3). The additional testing facilities will involve common structures, typical construction techniques, and standard contractual requirements. There will be no change in the way the facility is used, just a change in the types and relative abundance of tests that occur.

Therefore, I conclude there are no unique or unusual characteristics about the area, which have not been previously encountered, that would constitute an unknown risk upon the human environment.

5.2.6. The degree to which the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.

This is not a precedent setting decision. Similar actions have occurred in the project area, as well as in other locations across the HNF. Effects of this project are minor and short term (EA, section 3).

I conclude this action does not establish precedence for future actions with unknown adverse impacts to the environment.

5.2.7. Whether the action is related to other actions with individually insignificant but cumulative significant impacts.

Chapter 3 of the EA discusses the combined effects of this project with other past, present, and reasonably foreseeable future actions. The EA tiers to the Forest Plan FEIS that also discussed similar effects from similar actions.

I conclude the cumulative effect of implementing Alternative 3 would not result in "significant impacts."

5.2.8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss, or destruction of significant scientific, cultural, or historical resources.

No heritage sites have been identified within the permit area. Because the site does not have environmental features that would tend to attract prehistoric peoples it is unlikely they were more than transient visitors, so the probability of unidentified prehistoric sites is low. The high level of disturbance from airbase construction and operation make it very unlikely that any

unidentified historic sites remain intact. Furthermore, all activities would be confined to lands previously disturbed by construction and operation of the airbase.

Based upon this information, I conclude this action will not cause loss or destruction of significant scientific, cultural, or historic resources.

5.2.9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

No effect to any endangered or threatened species or their habitat is foreseen (see section 5.2.3 above).

Any threatened, endangered, and sensitive (TES) species discovered during implementation of Alternative 3 would be protected as required by law.

Based upon the conclusions documented in the BE, my decision will not affect TES species or their habitat determined to be critical under the Endangered Species Act of 1973.

5.2.10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Activities follow direction and standards and guides mandated by the Forest Plan. The FEIS and Record of Decision for the Forest Plan indicate the consistency of the Forest Plan with laws or requirements imposed for environmental protection. Specific analysis has also been conducted to determine compliance with federal and state endangered species acts, heritage resource protection laws, and other resource protection requirements. These analyses are documented in the EA and BE and show these activities are in compliance with laws, statutes, and regulations imposed for resource protection.

5.3. FINDING

I find, based upon the analysis disclosed in the *Smithers SUP Modification EA*, other project-related documents, and my evaluation of the factors described in 40 CFR 1508.27, this is not a major Federal action that will significantly affect the quality of the human environment. Therefore, an EIS is not needed.

6 APPEAL RIGHTS

This decision is subject to administrative review (appeal) pursuant to 36 CFR 215 dated June 4, 2003. The appeal must be filed (regular mail, fax, email, hand-delivery, or express delivery) with the Appeal Deciding Officer. An appeal may be filed by individuals or organizations who have submitted substantive comments during the Notice and Comment period for the *Smithers Special Use Modification*. The appeal must have an identifiable name attached or verification of identity will be required. A scanned signature may serve as verification on electronic appeals. A written Notice of Appeal must be submitted within 45 days after the date the notice of this decision is published in *The Daily Press* newspaper in Escanaba, MI. Send the Notice of Appeal to:

Randy Moore, Appeal Deciding Officer
Attn: Appeals and Litigation
USDA – Forest Service, Eastern Region
626 E. Wisconsin Avenue
Milwaukee, WI 53202

or fax to (414) 944-3963. Normal business hours (for hand-delivered appeals) are 7:30 am – 4:00 pm, Monday through Friday. Electronic appeals can be sent to appeals-eastern-regional-office@fs.fed.us. Electronic appeals should be in TXT, RTF, DOC, PDF, or other Microsoft Office-compatible formats.

There must be a subject line titled: *Smithers SUP Modification EA*. Appeals must meet the content requirements of 36 CFR 215.

This decision is also subject to appeal pursuant to 36 CFR 251 by those who hold or, in certain instances, those who apply for written authorizations to occupy and use National Forest system lands. An appeal for initial review may be filed by those who hold or, in certain instances, those who apply for written authorizations to occupy and use National Forest System lands. In order for applicants and holders of written authorization to occupy and use National Forest System land to appeal this decision under 36 CFR 251, a written Notice of Appeal must meet the content requirements. The appeal must also be postmarked or received within 45 calendar days after the date of notice of this decision. The Notice of Appeal should be sent or hand delivered to:

Randy Moore, Appeal Deciding Officer
Attn: Appeals and Litigation
USDA – Forest Service, Eastern Region
626 E. Wisconsin Avenue
Milwaukee, WI 53202

or fax to (414) 944-3963.

The subject line should be titled: *Smithers Special Use Modification EA*. A copy of the appeal must simultaneously be sent to:

Beth LeClair, Acting Forest Supervisor
Hiawatha National Forest
2727 N. Lincoln
Escanaba, MI 49829.

If an appeal is filed, I am willing to meet and discuss concerns. Additionally, if an appeal is filed, an oral presentation concerning the appeal (36 CFR 251.97) and/or stay of implementation (36 CFR 251.91) of the decision may be requested at any time prior to closing the appeal record.

If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period. When appeals are

filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

7 IMPLEMENTATION DATE

If no appeal is received, implementation of this decision may occur on, but not before, five (5) business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for fifteen (15) days following the date of appeal disposition.

8 CONTACT

The detailed planning records for the *Smithers SUP Modification EA* are available for public review at the St. Ignace Ranger Station, 1798 West US-2, St. Ignace, MI 49781. For additional information concerning this decision or the Forest Service appeal process, contact Joe Hart, Team Leader, St. Ignace District Ranger, 1798 West US-2, St. Ignace, MI 49781; (906)-643-8759 (Fax); (906)-643-7900 (Voice); or (906)-643-7611 (TTY); or **jhart02@fs.fed.us** (email).

BETH LECLAIR
Acting Forest Supervisor

SEP 0 2 2005
Date

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APPENDIX A

RESPONSE TO COMMENTS

Comment 1-1: Monitor ground water levels at two different existing wells down gradient from proposed production well.

- **FS Response:** The EA (page 12) identifies installation of an additional well to measure potential movement of contaminants. The terms are to be negotiated through the permit operating plan and include process to conduct aquifer drawdown and recharge and monitoring of data, which would address potential contaminant level movement and effect of well on aquifer. Forest Service is quite confident that the modeling done to date reflects little to no impact on Raco aquifer or the hatchery, but we will proceed with this well installation and subsequent monitoring in order to provide good reliable data to assess aquifer characteristics and rerun the model to assess its validity.

Comment 1-2: Monitor the USGS groundwater monitoring well.

- **FS Response:** The Forest Service will not monitor the USGS well because of distance and position up-gradient from Raco site proposed activities.

Comment 1-3: Collect water level data from the above mentioned 3 wells for one year after project implementation. If monitoring indicates little or no impact, cease monitoring.

- **FS Response:** The Forest Service will develop an aquifer draw-down and recharge monitoring protocol and monitor the additional well listed above, in order to validate, model and assess potential contaminant dispersal.

Comment 1-4: Provide an annual report on estimated volume of water pumped at the site. Set an annual limit for pumping per year. If limit is exceeded then USFWS, USFS, and Smithers consult to determine potential impacts to hatchery.

- **FS Response:** As part of the special use permit, Smithers Scientific Services, Inc. will be required to install water gauges on existing and proposed wells and provide annual report to USFS which will be shared with USFWS. USFS will set water limits at 14 mm gallons annually, which is twice what Smithers Scientific Services, Inc. projects their use to be with new well, and is what was used in the model. The monitoring protocol will be detailed in special use permit operating plan.

Based on the comments received on the Biological Evaluation (BE) for the Smithers Scientific Services, Special Use Modification Environmental Assessment (EA), the Deciding Official came to the conclusion that, due to the minor nature of changes between the EA and the BE, an errata containing these minor changes would be issued [pursuant to 40 CFR 1503.4(c)].

Section 3.4.1 Affected Environment. Remove third paragraph. Replace with: "One Federally-listed threatened or endangered species (gray wolf) has been documented near the permit area (i.e. Betchler Marsh). Therefore, it may occasionally move through the permit area, although no documentation exists confirming that circumstance.

Canada lynx has been documented in the Eastern Upper Peninsula on the Hiawatha National Forest. However, there is no evidence that the species has used the permit area. There is a small area on the permit site that would qualify as marginal lynx habitat; however, proximity to facility operations and M-28, a well-traveled highway, results in this area being unsuitable."

Section 3.4.1 Affected Environment. Remove fourth paragraph. Replace with: "One R9 Sensitive Wildlife Species (sharptail grouse) occurs within the permit area. Nine R9 Sensitive Wildlife Species (northern goshawk, Henslow's sparrow, short-eared owl, prairie warbler, merlin, northern blue butterfly, Connecticut warbler, black-backed woodpecker, migrant loggerhead shrike) have habitat in and around the permit area and could potentially occur there."

Section 3.4.2.2 TES Species. Remove first paragraph. Replace with: "Alternative 1, (No-Action), would result in no change to the existing conditions in the permit area and, therefore, would result in no effect on the gray wolf. Based on available information, project files, the EA, and the analysis presented in the BE, the action alternatives would have no effect on gray wolf habitat or individuals."

Section 3.4.2.2 TES Species. Remove second paragraph. Replace with: "Implementation of Alternative 1 would have no effect on Canada lynx because it would not affect suitable habitat or change the existing condition. There would be "no effect" to lynx from implementation of Alternatives 2 through 6 because no suitable lynx habitat would be changed. It is likely that lynx already avoid the project area due to current human disturbances on the site and the quality lynx habitat that exists elsewhere in the area. The increase in human activity anticipated would be of a small magnitude and confined to the existing area of disturbance."

United States Department of Agriculture
Forest Service
Sault Ste. Marie Ranger District
4000 I-75 Business Spur
Sault Ste. Marie, MI 49783
(906) 635-5398
Fax (906) 635-9154
TDD (906) 635-9154

File Code: 1950
Route To:

Date: June 23, 2011

Subject: Supplemental Information Report – Smithers Raco Test Site - SUP

To: Project File

Forest Service Handbook 1909.15 Section 18.1 outlines the procedures for complying with 40 CFR 1502.9 for the preparation of supplemental information:

> If new information or changed circumstances relating to the environmental impacts of a proposed action come to the attention of the responsible official after a decision has been made and prior to completion of the approved program or project, the responsible official must review the information carefully to determine its importance. If, after an interdisciplinary review and consideration of new information within the context of the overall program or project, the responsible official determines that a correction, supplement, or revision to an environmental document is not necessary, implementation should continue. Document the results of the interdisciplinary review in the appropriate program or project file.

In accordance with FSH 1909.15 (18.1), this supplemental information report has been prepared to document my review and consideration of any new information and changed circumstances pertaining to management activities included in the EA and DN that have not yet been implemented.

Background

Smithers Rapra (Smithers) has used an abandoned airbase located on the Eastside Administrative Unit of the Hiawatha National Forest in Raco, Chippewa County, Michigan, for vehicle and vehicle component testing continuously since 1972 under a series of special use permits (Figure 1). Since 1986, this use has been year round except for a period in the spring and early summer when testing ceases during the sharp-tail grouse mating season. Smithers's present special use permit (SUP) was approved in 2005, based on an Environmental Assessment (EA) and Biological Evaluation (BE) prepared at that time under the 1986 Forest Plan, in order to evaluate a request from Smithers to update its Master Plan for the site.

The decision to approve modification of Smithers's Master Plan and update the associated SUP was made through a Decision Notice (DN) signed on September 2, 2005 by Beth LeClair, Acting Forest Supervisor. The decision selected Alternative 3, which included the elements shown on Figure 2. In addition, the decision specified that all or some of the permitted area would continue to be closed during the portion of the year when sharp-tail grouse courtship, nesting, and brooding occurred (April 1 through July 31). This closure was incorporated into the site Operating Plan with the stipulation that the District Ranger had the responsibility and prerogative of closing all or part of site to testing during the nesting period. The Operating Plan also stated that any operations between April1 and July 31 must be approved by the District Ranger.

On August 12, 2010, Smithers requested limited access to the east end of the East-West runway paralleling M-28 between March 30 and August 1. Smithers's request is within the discretion of the District Ranger to approve. However, the EA, BE, and DN for the existing SUP were completed more than five years ago under the 1986 Forest Plan, and did not include any data regarding specific noise levels in the vicinity of the sharp-tail grouse lek site from different types and locations of testing.

This Supplemental Information Report (SIR) was prepared in order to consider the recent noise testing results, as well as other new information and changed conditions that may have developed since the DN was signed. The purposes of the SIR are to determine whether Smithers's request for

summer testing can be approved and whether previously approved but unconstructed site elements can be installed without supplementing or revising existing environmental documents for the test site, or requiring a new EA, BE, and DN.

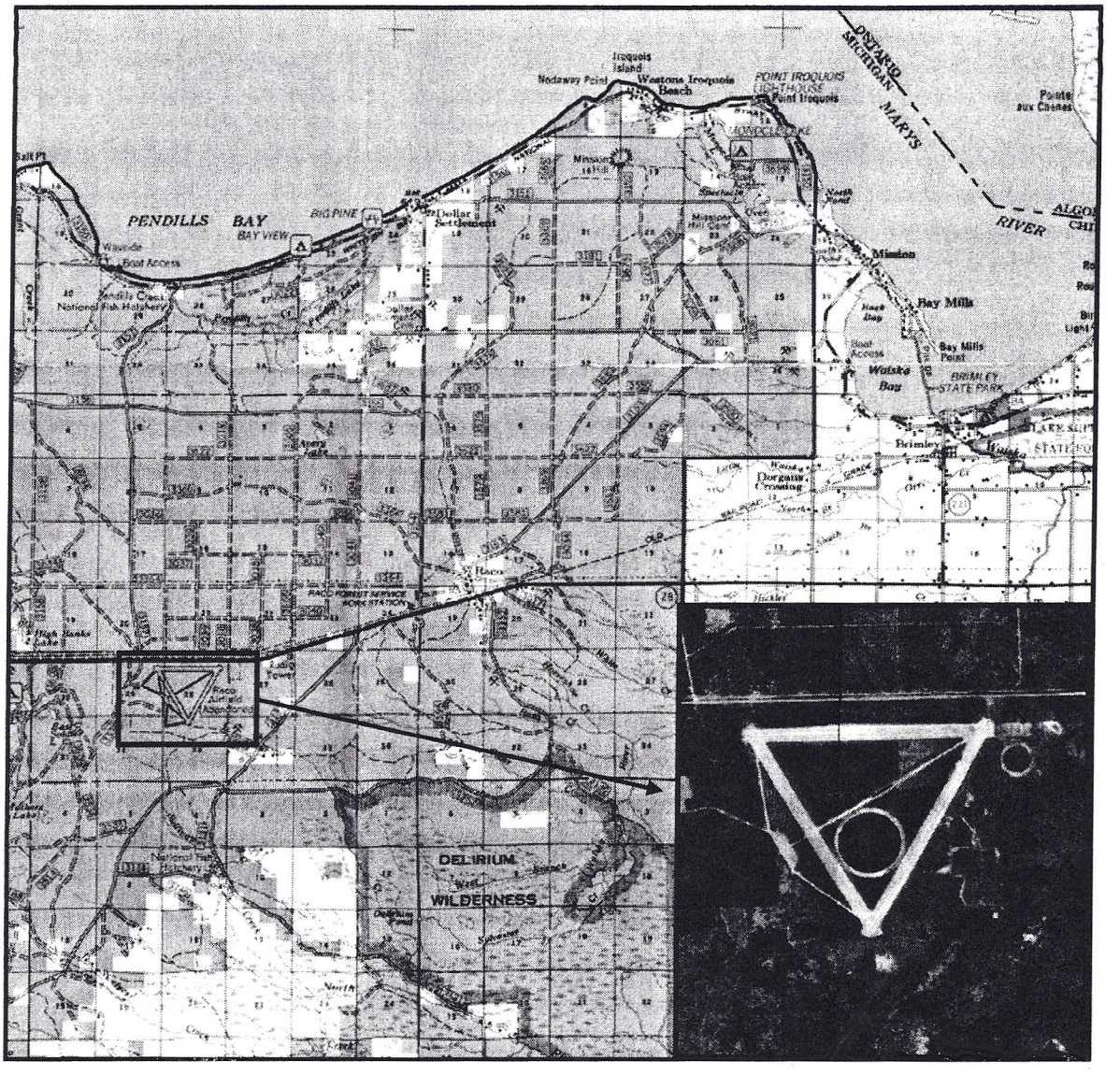

Figure 1. Location of the abandoned Raco airbase used by Smithers Rapra for vehicle and vehicle component testing under a special use permit.

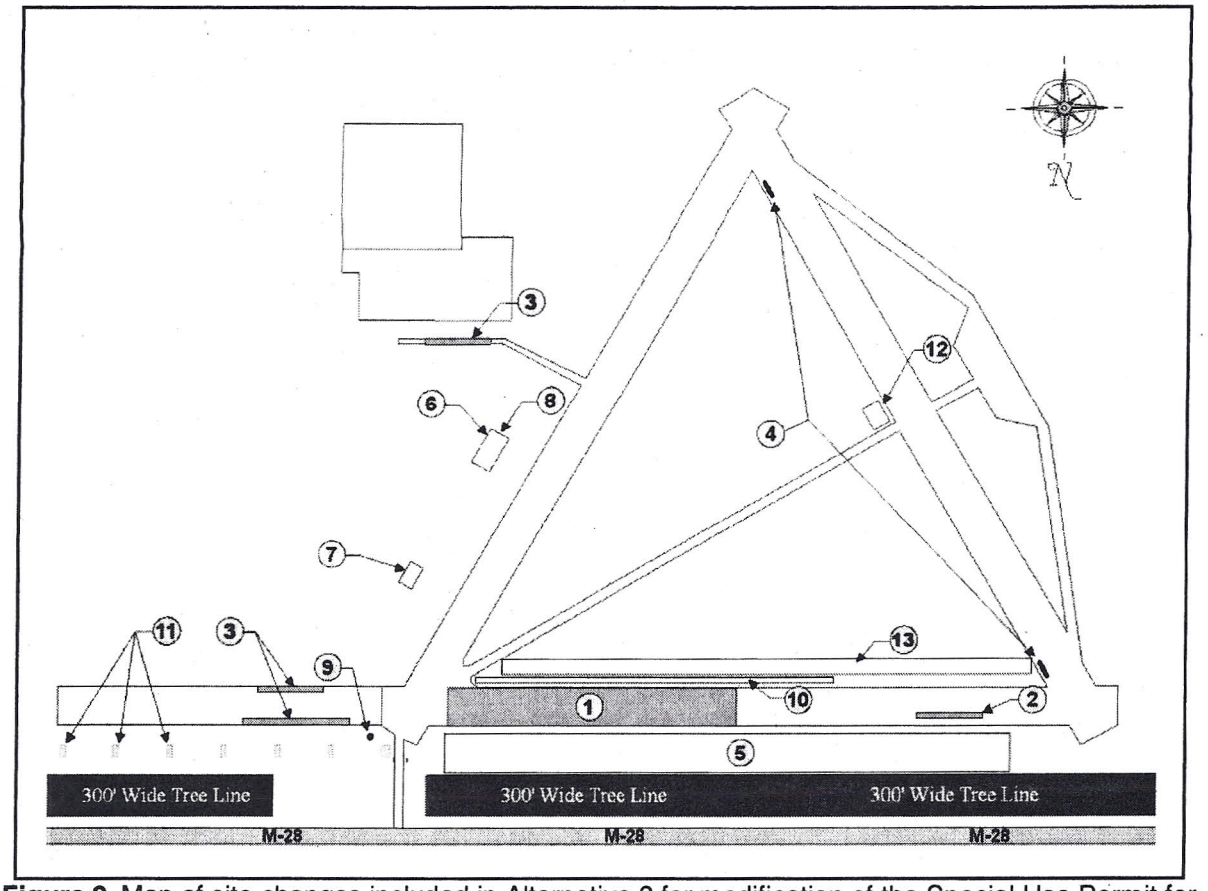

Figure 2. Map of site changes included in Alternative 3 for modification of the Special Use Permit for Smithers Scientific Services Inc. use of the Raco Airbase, Chippewa County, Michigan (no scale).

1. Resurfacing a 300' x 1,800' area on the east end of the East West runway with asphalt.
2. Resurfacing a 50' x 500' area on the south side of the East West runway with asphalt.
3. Constructing three asphalt surfaces for various configurations of ice/snow/asphalt test surfaces.
4. Relocating two existing 34 'x 500'checkerboards ice/asphalt testing surfaces from the East West runway to the West runway.
5. Clearing and maintaining a 300' x 4,000'open area located between the East West runway and M 28 for packed snow testing surfaces.
6. Adding four traction split mu hills in the same area as the existing hills, each traction hill would require an additional 6,000 sq. ft. of asphalt surfacing.
7. Adding a heated split mu traction hill tied to the existing heated asphalt area.
8. Covering existing and proposed traction hills with quonset hut style covers.
9. Adding a 6" high capacity water well and testing both wells yearly for contamination until site closure.
10. Straightening out the existing access lane (taking out curves) south and parallel to the East West runway.
11. Increasing the total number of permitted buildings from four to seven for a total of 120,000 sq ft. The additional buildings would be constructed to the east of existing buildings.
12. Construction of a platform blind along the west runway in order to facilitate sharp-tail grouse monitoring
13. Use of a 100' by 4000' snow pack area along the inside of the north runway.
14. A groundwater monitoring well in the vicinity of changes #3, #6, and #8.

Specialist Analysis

Changed Circumstances

Based on review of Forest Service regulations, planning and guidance documents, monitoring information, other resource data, and interdisciplinary team review in May 2011, the only changed circumstance relating to Smithers's SUP area is adoption of the 2006 Forest Plan. However, the 2006 Forest Plan standards and guidelines applicable to the Raco airbase area and Smithers's SUP changed very little from the 1986 Forest Plan (Table 1).

Table 1. Comparison of Standards and Guidelines applicable to the Smithers's SUP area between the 1986 and 2006 Forest Plan.

Management/Resource Consideration	1986 Forest Plan	2006 Forest Plan
Management Area (MA) and emphasis	MA 4.4 - Manage conifers for fiber production and provide habitat that is favored by upland wildlife species such as sharp-tail grouse and sandhill cranes; Provide opportunities for recreation such as driving for pleasure, berry picking, hunting, and fishing.	MA 4.4 - Conifer management for fiber production and upland wildlife species habitat. Dispersed and developed recreation.
MA 4.4 Special Uses Guidelines	None specified	None specified
Forestwide Special Uses Guidelines	Allow for approval of applications for other special uses so long as they are compatible with management of the area and consistent with Forest Service Manual Sections 2720 and 2730 (IV-51).	Provide and maintain special use permits in accordance with resource management direction and to meet identified Forest and public needs.
Sharptail Grouse	Management Indicator Species for areas of open land and early-successional jack pine.	Management Indicator Species for areas of open land and early-successional jack pine.

New Information

Inventory and monitoring reports, aerial photography, compartment exams, and other similar resource management data collected since 2005 do not indicate that conditions have changed within Smithers's SUP area since the DN was signed. Nor have there been any public comments or communications from interest groups indicating a change in issues or concerns relating to use of the airbase for testing. The only new information pertinent to Smithers's request for limited access to the east end of the East-West runway paralleling M-28 between March 30 and August 1 is a noise evaluation that Smithers had completed by Stantec Consulting Services Inc. (Stantec) during April of 2011 (Appendix A).

The purpose of Stantec's evaluation was to measure noise levels at the site, including proposed testing activities, in order to evaluate the potential impact of noise created by automotive testing on sharp-tail grouse mating. Noise level measurements were collected over two days using three Larson Davis Model 820 sound level meters (820 SLM) set up in the configuration illustrated in Figure 3. These locations were chosen in order to maximize the probability of detecting any noise near the grouse lek area.

Automotive testing was conducted in two main areas within the facility, with a variety of vehicle types and numbers. The first area used is a test track on the east side of the northern runway extending from the east end approximately 3500 feet to the west. This area would most likely see the heaviest use during the testing. The second area used was a ¾ mile stretch of the northern end of the eastern runway. The approximate location of these areas can be seen on Figure 3.

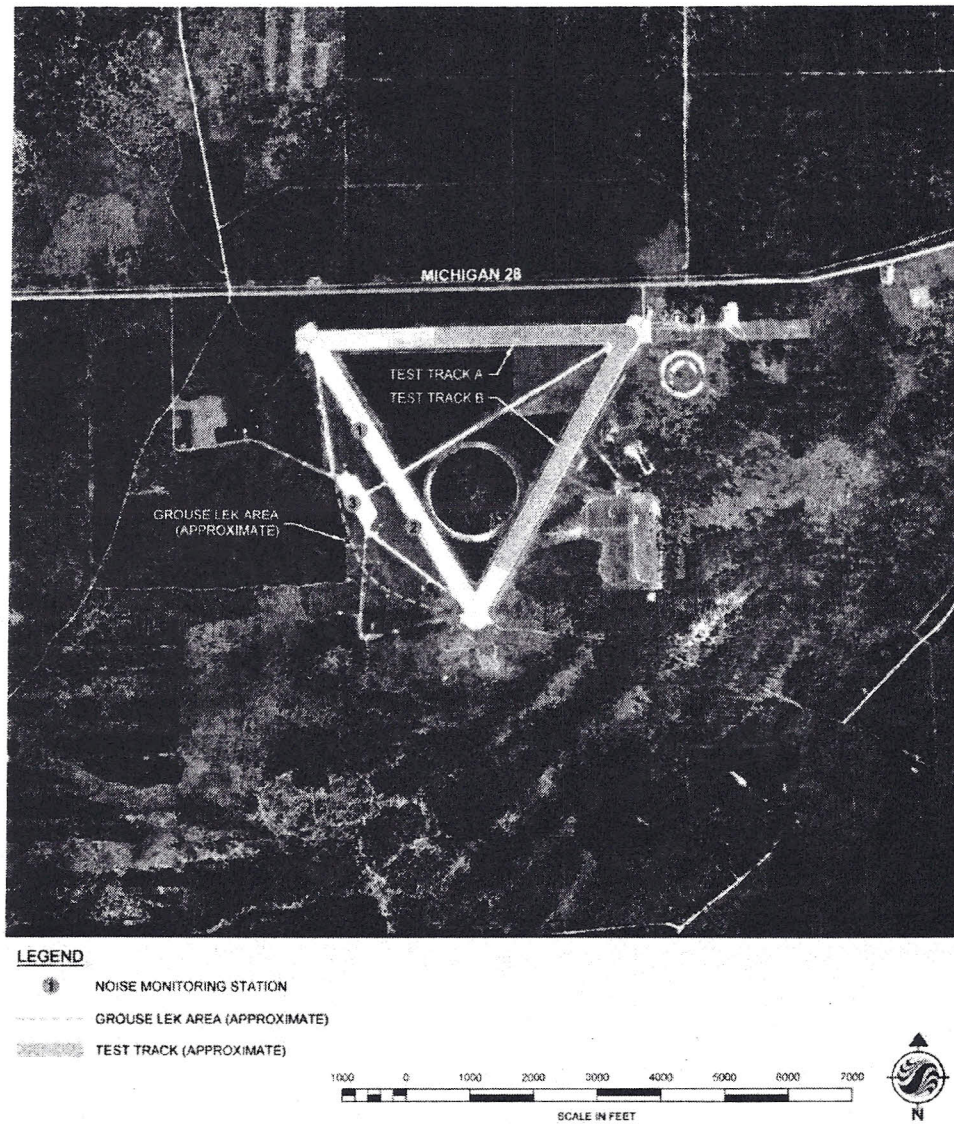

Figure 3. Location of monitoring stations and track areas tested during the April 2011 noise evaluation completed by Stantec Consulting Services on behalf of Smithers Rapra.

Over the three days of testing, the average noise level over all three stations was found to be the same during testing and non-testing times. This result was explained in the evaluation report as being likely due primarily to the large distance between the lek and the automotive testing areas (see Noise Evaluation, Smither's Winter Test Center – Raco, Michigan, dated April 5, 2011). The report concluded that automotive testing on the tracks used during the noise evaluation would not have an impact on sharp-tail grouse behavior in the lek area since there

was no observed difference in noise between testing and non-testing time periods (see Noise Evaluation, Smither's Winter Test Center – Raco Michigan, dated April 5, 2011).

Findings

After review of the project file for the 2005 decision, resource information, the 1986 and 2006 Forest Plans and supporting documentation, and discussions with HNF resource specialists, I find that resource conditions within the SUP area and management direction relating to its management have not changed since the original decision. Therefore, analysis contained in the 2005 environmental documentation, and its conclusions, including those supporting District Ranger discretion to allow testing between March 30 and August 1, remains valid. There is no data or management guideline reason suggesting that discretion should be rescinded.

I further find that the report completed by Smithers in April of this year concerning noise levels from testing, was carried out in scientific fashion using standard testing methods and contains conclusions that are reasonably drawn from the data collected. I agree that the type of testing Smithers has proposed to carry out between March 30 and August 1 appear to have no effect on existing noise levels at the lek site.

Conclusion

Based on the interdisciplinary team review of this project, I have determined that there is no new information or changed condition within the scope of the original decision that warrants a correction, supplement, or revision to the EA in order to address Smithers's request for limited testing between March 30 and August 1 each year. The existing EA is adequate to support the original decision documented in the Smithers Scientific Services, Inc. Special Use Permit Modification DN; therefore, a new decision is not necessary and the remaining project activities approved for Alternative 3 may be implemented. I have also determined that my discretion to allow testing between March 30 and August 1, that is included in the existing Operating Plan, remains valid and, based on the additional noise test information provided; grant Smithers approval to carry out testing activities during that period in the track areas shown on Figure 3.

For the period between March 30 and August 1, only one of the tracks described in the *Noise Evaluation, Smither's Winter Test Center – Raco Michigan,* dated April 5, 2011 area may be used at a time. The other tracks must remain open to the public during this period. Smithers is responsible for signing the track in use at all entry points. The date, starting and ending times of use, and type of use occurring must be printed on the signs. These signs must be posted at least one hour in advance of track use, and all signs must be removed 1 hour after track use concludes. The District Ranger will approve wording of these signs prior to placement.

STEVAN J. CHRISTIANSEN
District Ranger

cc: Anne Davy
Doug Van Arnam

Appendix C Regional Forester Sensitive Species (RFSS) List for Hiawatha National Forest

Wildlife species identified on the list of Regional Forester Sensitive Species (RFSS)

Hiawatha National Forest

Common Name	Scientific Name	Status[1]			Habitat
		Federal	State	FS Region 9	
Occupied Habitat[2]					
Northern Long-eared Bat	*Myotis septentrionalis*	PE		SS	Forest habitats; interspersed wetlands and field edges for foraging
Sharp-tailed Grouse	*Tympanuchus phasianellus*			SS	Grasslands, shrub lands, and woodland edges.
Little Brown Bat	*Myotis lucifugus*			SS	Man-made structures; general forest habitats
Unoccupied Habitat[3] – Wildlife Species					
Northern Goshawk	*Accipiter gentilis*		SC	SS	Boreal and northern hardwood forests.
LeConte's Sparrow	*Ammodramus leconteii*			SS	Wet grasslands and grassy meadows
Short-eared Owl	*Asio flammeus*		E	SS	Open areas (marshes, grasslands, pastures, and peatland).
Prairie Warbler	*Dendroica discolor*		E	SS	Open woodlands, scrublands, and overgrown fields – no doc in EUP.
Loggerhead Shrike	*Lanius ludovicianus migrans*		E	SS	Open, agricultural areas interspersed with shrub lands.
Nabokov's Blue	*Plebejus idas nabokovi*		T	SS	Rocky outcrops in sandy openings w/dwarf bilberry
Connecticut Warbler	*Oporornis agilis*			SS	Spruce bogs and moist woodlands.
Black-backed Woodpecker	*Picoides arcticus*			SS	Conifer stands especially following fire.
Species Without Suitable Habitat[4]					
Lake Sturgeon	*Acipenser fulvescens*		T	SS	Freshwater lakes and rivers
Red-shouldered Hawk	*Buteo lineatus*		T	SS	Large tracts of mature lowland forest
Land Snail	*Catinella exile*			SS	Cobble beaches and fen.
Black Tern	*Chlidonias niger*			SS	Inland lakes and marshes
Yellow Rail	*Coturnicops noveboracensis*		T	SS	Large wet meadows dominated by mat-forming sedge.
Trumpeter Swan	*Cygnus buccinator*		T	SS	Large, shallow lakes
Blanding's Turtle	*Emydoidea blandingii*			SS	Ponds, marshes, swamps, lake inlets and coves of central UP
Land Snail	*Euconulus alderi*			SS	Fens, cobble beach, tamarack sedge wetlands, and white cedar wetlands
American Peregrine Falcon	*Falco peregrinus anatum*		E	SS	Areas with high cliffs overlooking large openings
Common Loon	*Gavia immer*		T	SS	Inland lakes

[1] E = Endangered (State and Federal); T = Threatened (State and Federal); PE = Proposed Endangered; (SS = Forest Service Region 9 Sensitive Species; SC = Michigan State Special Concern Species

[2] Species whose presence has been reported in the general permit area or were identified during current field studies.

[3] Species whose presence has not been reported but which have suitable habitat within or immediately adjacent to the Action Area.

[4] Species whose presence has not been documented and which do not have suitable habitat in the Action Area, or species not present and whose known range does not extend into the Action Area

Wildlife species identified on the list of Regional Forester Sensitive Species (RFSS)

Hiawatha National Forest

Common Name	Scientific Name	Status[1]			Habitat
		Federal	State	FS Region 9	
Bald Eagle	*Haliaeetus leucocephalus*		SC	SS	Various habitats near large bodies of water
Caspian Tern	*Hydroprogne caspia*		T	SS	Sand-gravel, sparsely vegetated beaches of large bodies of water
Green-faced Clubtail	*Gomphus viridifrons*			SS	Habitats adjacent to streams and small rivers
Black-crowned Night-heron	*Nycticorax nycticorax*			SS	Wetlands generally on Great Lakes shorelines
Land Snail	*Planogyra asteriscus*		SC	SS	Fens and white cedar wetland communities
Incurvate Emerald Dragonfly	*Somatochlora incurvata*			SS	Sphagnum bogs
Common Tern	*Sterna hirundo*		T	SS	Sand-gravel, sparsely vegetated beaches of large bodies of water
Lake Huron Locust	*Trimerotropis huroniana*		T	SS	Sparsely vegetated, high-quality coastal sand dunes
Land Snail	*Vallonia albula*			SS	Carbonate cliffs and outcrops
Land Snail	*Vertigo bollesiana*			SS	Carbonate cliffs, outcrops, and lakeshore ledges
Land Snail	*Vertigo morsei*			SS	Calcareous fens
Land Snail	*Vertigo paradoxa*			SS	Carbonate cliffs and outcrops
Ebony Boghaunter	*Williamsonia fletcheri*		SC	SS	Bogs, fens and hardwood swamps
Ringed Boghaunter	*Williamsonia lintneri*			SS	Sphagnum bog pools

Plant species identified on the list of Regional Forester Sensitive Species (RFSS)

Hiawatha National Forest

Common Name	Scientific Name	Status[1]			Habitat
		Federal	State	FS Region 9	
Unoccupied Habitat[3] – Plant Species					
Prairie Moonwort	*Botrychium campestre*		T	SS	Dunes/openings over limestone or limestone outcrops
Michigan Moonwort	*Botrychium michiganense*		T	SS	Open dunes and sandy fields, railroad and roadsides, grassy meadows and fields, mesic northern hardwood forests and moist shrubby jack pine forest
Pale Moonwort	*Botrychium pallidum*		SC	SS	Disturbed Openings

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Plant species identified on the list of Regional Forester Sensitive Species (RFSS)

Hiawatha National Forest

Common Name	Scientific Name	Status[1]			Habitat
		Federal	State	FS Region 9	
Ternate Grapefern	*Botrychium rugulosum*			SS	Open swampy sites and uplands in old orchards, brush old fields, and old second-growth forests
Spoon-leaf Moonwort	*Botrychium spathulatum*			SS	Sand dunes, old fields, grassy railroad and roadsides and old pits
Douglas Hawthorn	*Crataegus douglasii*		SC	SS	Rocky woodland borders, thickets on dunes and shores, on rock outcrops with sunlight
Ram's-head Lady's Slipper	*Cypripedium arietinum*		SC	SS	Various but commonly on low dunes in partial shade of conifers on Great Lakes shores
Woodland Cudweed	*Gnaphalium sylvaticum, syn. Omalotheca sylvatica*			SS	Old trails, clearings, rocky slopes, woodland borders and fields
Ashy Sunflower	*Helianthus mollis*		T	SS	Pine barrens and dry sand prairie openings
Canada Mountain Ricegrass	*Piptatherum canadense*			SS	Pine barrens and open oak woodlands
Giant Pinedrops	*Pterospora andromedea*		T	SS	Dry woods; dunes along Great Lakes
Dwarf Huckleberry	*Vaccinium caespitosum*		T	SS	Open or semi-open areas of sandy dry soils to mossy rocks along riverbanks
Species Without Suitable Habitat[4]					
Climbing Fumitory	*Adlumia fungosa*		SC	SS	Dry to moist deciduous or coniferous woods with dolomite.
	Ahtiana aurescens			SS	White cedar swamps; dense shade
Round-leaved Orchid	*Amerorchis rotundifolia*		E	SS	Bogs with cedar, tamarack, spruce, and/or fir
Walking-fern Spleenwort	*Asplenium rhizophyllum*		T	SS	Shaded mossy limestone boulders and ledges
Canadian Milkvetch	*Astragalus canadensis*		T	SS	Dry prairie, moist shores, riverbanks, marshy or open/ partly-shaded ground, alvar
Cooper's Milkvetch	*Astragalus neglectus*		SC	SS	Riverbanks and lakeshores, esp. on limestone, alvar, and in disturbed forests and fields
Slough Grass	*Beckmannia syzigachne*		T	SS	Marshes and wet soil
Little Goblin Moonwort	*Botrychium mormo*		T	SS	Northern mesic forests

[1] E = Endangered (State and Federal); T = Threatened (State and Federal); PE = Proposed Endangered; (SS = Forest Service Region 9 Sensitive Species; SC = Michigan State Special Concern Species

[2] Species whose presence has been reported in the general permit area or were identified during current field studies.

[3] Species whose presence has not been reported but which have suitable habitat within or immediately adjacent to the Action Area.

[4] Species whose presence has not been documented and which do not have suitable habitat in the Action Area, or species not present and whose known range does not extend into the Action Area

Plant species identified on the list of Regional Forester Sensitive Species (RFSS)

Hiawatha National Forest

Common Name	Scientific Name	Status[1]			Habitat
		Federal	State	FS Region 9	
Blunt-lobed Grapefern	*Botrychium oneidense*			SS	Low woods, swamps, wooded dunes, and swales
Autumnal Water-starwort	*Callitriche hermaphroditica*		SC	SS	Shallow to deep water of lakes and streams
	Caloplaca parvula			SS	Deciduous tree swamps (specifically black ash bogs) near open water
Fairy Slipper	*Calypso bulbosa*		T	SS	Dry hummocks in cedar forests; dolomite boulders on the Niagara Escarpment.
Beautiful Sedge	*Carex concinna*		SC	SS	Edges of cedar/balsam thickets near cobble alkaline shores of Lakes Michigan and Huron.
Hudson Bay Sedge	*Carex heleonastes*		E	SS	Fens, bogs, and rich conifer swamps.
New England Sedge	*Carex novae-angliae*		T	SS	Mesic northern or mesic-dry forests.
Richardson's sedge	*Carex richardsonii*		SC	SS	Very local, sandy, gravelly, or moist openings.
Bulrush Sedge	*Carex scirpoidea*		T	SS	Crevices in thin soil on rock/ calcareous shores, seasonally damp areas, Great Lakes shore.
Fragile Rockbrake	*Cryptogramma stellari*			SS	Crevices of cliffs and outcrops among other ferns
St. Lawrence Bladder Fern	*Cystopteris laurentiana*		SC	SS	Limestone rock outcrops, boulders, sinkholes.
English Sundew	*Drosera anglica*		SC	SS	Interdunal calcareous flats, fens, rock pools, marly shores.
Spreading Woodfern	*Dryopteris expansa*			SS	Cool moist woods, exposed rocky slopes, wet wooded depressions
Male Fern	*Drypoteris filix-mas*		SC	SS	Rocky cliffs, sinkholes, ravines/crevices. Often in limestone areas.
Flat-stemmed Spike-rush	*Eleocharis compressa*		T	SS	Alvar, ditches, and calcareous and marshy Great Lakes shores.
Smooth Wild-rye	*Elymus glaucus*		SC	SS	Various in deciduous forests.
Black Crowberry	*Empetrum nigrum*		T	SS	Bare rock outcrops, cedar or black spruce bogs, and exposed sandy bluffs/old dune ridges.
Daisy Fleabane	*Erigeron hyssopifolius*		T	SS	Marly fens, open tamarack-cedar swamps.
	Frullania selwyniana			SS	Northern white cedar swamps
Limestone Swamp Bedstraw	*Galium brevipes*			SS	Moist, swampy swales.

[1] E = Endangered (State and Federal); T = Threatened (State and Federal); PE = Proposed Endangered; (SS = Forest Service Region 9 Sensitive Species; SC = Michigan State Special Concern Species

[2] Species whose presence has been reported in the general permit area or were identified during current field studies.

[3] Species whose presence has not been reported but which have suitable habitat within or immediately adjacent to the Action Area.

[4] Species whose presence has not been documented and which do not have suitable habitat in the Action Area, or species not present and whose known range does not extend into the Action Area

Plant species identified on the list of Regional Forester Sensitive Species (RFSS)

Hiawatha National Forest

Common Name	Scientific Name	Status[1]			Habitat
		Federal	State	FS Region 9	
Boreal Bedstraw	*Galium kamtschaticum*		T	SS	Mesic northern forest seeps.
Limestone Oak Fern	*Gymnocarpium robertianum*		T	SS	Calcareous substrates, alvars, rock outcrops and cliffs, moist to wet forest slopes.
Fir Clubmoss	*Huperzia selago*		SC	SS	Lake Superior shoreline
Butternut	*Juglans cinerea*			SS	Southern floodplain forests and mesic northern forests
Moor Rush	*Juncus stygius*		T	SS	Peat bogs
Vasey's Rush	*Juncus vaseyi*		T	SS	Moist old fields, ditches, moist prairies, wooded dune/swale
American Dunegrass	*Leymus mollis*		SC	SS	Beaches and dunes along Lake Superior
Auricled Twayblade	*Listera auriculata*		SC	SS	Alluvial sandy stream banks, often under alder thickets
American Shoregrass	*Littorella uniflora*		SC	SS	Sandy mucky shores of lakes and submerged in water up to 3 feet
Small-flowered Wood-rush	*Luzula parviflora*		T	SS	Open woods
Northern Prostrate Clubmoss	*Lycopodiella subappressa*		SC	SS	Marshes, fens, bogs, interdunal wetlands, and beaches
White Adder's Mouth Orchid	*Malaxis brachypoda*			SS	Mixed woods, conifer swamp forests and thickets
Honey-combed Lichen	*Menegazzia terebrata*			SS	Mesic northern forests and hardwood conifer swamps
Soft-leaf Muhly	*Muhlenbergia richardsonis*		T	SS	Marshy ground and boggy meadows
Lakecress	*Neobeckia aqua*		T	SS	Quiet waters or muddy shores of lakes and streams
Alternate-flowered Water Milfoil	*Myriophyllum alterniflorum*		SC	SS	Soft water lakes and bays of Lake Superior and St. Mary's River
Elegant Groundsel	*Packera indecora*		T	SS	Coniferous/mixed, oft. rocky woods/openings; cedar swamps
Arrowleaf Sweet Coltsfoot	*Petasites sagittatus*		T	SS	Low, wet, marshy, open ground
Common Butterwort	*Pinguicula vulgaris*		SC	SS	Alkaline or lime-rich habitats; rock outcrops and crevices
Spongy Gourd Moss	*Pohlia lescuriana*			SS	Wet non-calcareous soil at pond edges, floodplains, waterfalls, stream banks, wooded trails.
Algae-like Pondweed	*Potamogeton confervoides*		SC	SS	Peaty bog pools.

[1] E = Endangered (State and Federal); T = Threatened (State and Federal); PE = Proposed Endangered; (SS = Forest Service Region 9 Sensitive Species; SC = Michigan State Special Concern Species

[2] Species whose presence has been reported in the general permit area or were identified during current field studies.

[3] Species whose presence has not been reported but which have suitable habitat within or immediately adjacent to the Action Area.

[4] Species whose presence has not been documented and which do not have suitable habitat in the Action Area, or species not present and whose known range does not extend into the Action Area

Plant species identified on the list of Regional Forester Sensitive Species (RFSS)

Hiawatha National Forest

Common Name	Scientific Name	Status[1]			Habitat
		Federal	State	FS Region 9	
Lapland Buttercup	*Ranunculus lapponicus*		T	SS	Cedar swamps
Dwarf Raspberry	*Rubus acaulis*		E	SS	Muskegs, swamps, fens, bogs
Satiny Willow	*Salix pellita*		SC	SS	Sand, gravel, and cobble beaches of streams and lakes
	Schistostega pennata			SS	Humid habitats such as caves or cavities in boulders/tree roots
Torrey's Bulrush	*Scirpus torreyi*		SC	SS	Very local, wet sandy or peaty shores and shallow water.
Prairie Dropseed	*Sporobolus heterolepsis*		SC	SS	Native tallgrass prairie
Long-stalked Stitchwort	*Stellaria longipes*		SC	SS	Sandy beaches and dunes
Lake Huron Tansy	*Tanacetum huronense*		T	SS	Sandy beaches, dunes, and cracks in limestone pavement
	Tetrodontium brownianum			SS	Underside of moist, shaded sandstone or granite
Veined Meadow-rue	*Thalictrum venulosum*		SC	SS	River-bank thickets and wet calcareous shores

[1] E = Endangered (State and Federal); T = Threatened (State and Federal); PE = Proposed Endangered; (SS = Forest Service Region 9 Sensitive Species; SC = Michigan State Special Concern Species

[2] Species whose presence has been reported in the general permit area or were identified during current field studies.

[3] Species whose presence has not been reported but which have suitable habitat within or immediately adjacent to the Action Area.

[4] Species whose presence has not been documented and which do not have suitable habitat in the Action Area, or species not present and whose known range does not extend into the Action Area

Appendix D Summary of Groundwater Sampling Results

WATER SAMPLING REPORT

Former Raco Airbase

Chippewa County, Michigan

October 18, 2012

Prepared For:

Doug VanArnam
Smithers Rapra
1150 North Freedom St.
Ravenna, OH 44266

Prepared By:

Stantec Consulting Services Inc.
2321 Club Meridian Road
Okemos, MI 48864
Phone: (517) 349-9499
Fax: (517) 349-6863

Stantec Project #: 193701174

INTRODUCTION

Stantec Consulting Inc (Stantec) performed a water sampling activities at the former Raco airbase used by Smithers Scientific for automotive testing. Sampling was conducted on October 3, 2012 at Buildings #3, #5, and #6, as well as the production well used for snow and ice production. The purpose of the sampling event was to address United States Forest Service (USFS) concerns that the potable water wells on-site be evaluated for the presence of contaminants, specifically volatile organic compounds (VOCs). This report details the methods used and the analytical results obtained from the sampling event.

METHODS

Water samples were collected from taps located inside Buildings #3, #5 and #6 in glass VOA bottles pre-preserved with hydrochloric acid. A sample was not collected from Building #4 as Buildings #3 and #4 share the same well. A sample was also collected from the production well used for snow and ice production. Prior to sample collection, multiple taps were run in each of the buildings for approximately 2 hours. In addition, the production well was purged for approximately 30 minutes prior to sample collection. Purging times were estimated to allow the removal of three well volumes and provide assurance that groundwater collected was representative of the aquifer. A trip blank was kept with the sample bottles/cooler and included in the analysis to determine if any contaminant was introduced to the samples during shipping/handling.

Following collection, the samples were packed in a cooler with ice and shipped overnight to TestAmerica Laboratories for analysis. The samples were received on October 4, 2012. The samples arrived in good condition, properly preserved and on ice. The temperature of the cooler upon receipt was 4.4 degrees Celsius.

RESULTS

Samples were analyzed for VOCs in accordance with EPA SW-846 Method 8260B. No detections occurred in any of the samples collected. While methylene chloride was detected in the method blank, this is a common laboratory introduced contaminant and does not affect the validity of the sample results.

APPENDIX A

TestAmerica Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-15958-1
Client Project/Site: Smithers-Raco

For:
Stantec Consulting Corp.
2321 Club Meridian Drive
Suite E
Okemos, Michigan 48864

Attn: Mr. Mike VanLoan

Patrick O'Meara

Authorized for release by:
10/15/2012 5:50:11 PM
Patrick O'Meara
Project Manager II
patrick.omeara@testamericainc.com

Designee for

Jeffrey Smith
Project Manager II
jeff.smith@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

Table of Contents

Definitions/Glossary

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 240-15958-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: Stantec Consulting Corp.

Project: Smithers-Raco

Report Number: 240-15958-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 10/04/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 4.4 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples DUP (240-15958-1), BLDG-3 (240-15958-2), BLDG-5 (240-15958-3), BLDG-6 (240-15958-4), PW-1 (240-15958-5) and TRIP BLANK (240-15958-6) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/10/2012.

Methylene Chloride was detected in method blank MB 240-60803/5 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

No other difficulties were encountered during the VOCs analyses. All other quality control parameters were within the acceptance limits.

Method Summary

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NC

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NC = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-15958-1	DUP	Water	10/03/12 00:00	10/04/12 10:00
240-15958-2	BLDG-3	Water	10/03/12 12:20	10/04/12 10:00
240-15958-3	BLDG-5	Water	10/03/12 13:00	10/04/12 10:00
240-15958-4	BLDG-6	Water	10/03/12 13:15	10/04/12 10:00
240-15958-5	PW-1	Water	10/03/12 13:30	10/04/12 10:00
240-15958-6	TRIP BLANK	Water	10/03/12 00:00	10/04/12 10:00

Detection Summary

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: DUP — **Lab Sample ID: 240-15958-1**

No Detections

Client Sample ID: BLDG-3 — **Lab Sample ID: 240-15958-2**

No Detections

Client Sample ID: BLDG-5 — **Lab Sample ID: 240-15958-3**

No Detections

Client Sample ID: BLDG-6 — **Lab Sample ID: 240-15958-4**

No Detections

Client Sample ID: PW-1 — **Lab Sample ID: 240-15958-5**

No Detections

Client Sample ID: TRIP BLANK — **Lab Sample ID: 240-15958-6**

No Detections

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: DUP
Date Collected: 10/03/12 00:00
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			10/10/12 16:11	1
Benzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:11	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			10/10/12 16:11	1
Bromoform	1.0	U	1.0	0.64	ug/L			10/10/12 16:11	1
Bromomethane	1.0	U	1.0	0.41	ug/L			10/10/12 16:11	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			10/10/12 16:11	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			10/10/12 16:11	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			10/10/12 16:11	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 16:11	1
Chloroethane	1.0	U	1.0	0.29	ug/L			10/10/12 16:11	1
Chloroform	1.0	U	1.0	0.16	ug/L			10/10/12 16:11	1
Chloromethane	1.0	U	1.0	0.30	ug/L			10/10/12 16:11	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			10/10/12 16:11	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 16:11	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 16:11	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			10/10/12 16:11	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			10/10/12 16:11	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			10/10/12 16:11	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			10/10/12 16:11	1
2-Hexanone	10	U	10	0.41	ug/L			10/10/12 16:11	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			10/10/12 16:11	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			10/10/12 16:11	1
Styrene	1.0	U	1.0	0.11	ug/L			10/10/12 16:11	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			10/10/12 16:11	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			10/10/12 16:11	1
Toluene	1.0	U	1.0	0.13	ug/L			10/10/12 16:11	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 16:11	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			10/10/12 16:11	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			10/10/12 16:11	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 16:11	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			10/10/12 16:11	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			10/10/12 16:11	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			10/10/12 16:11	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			10/10/12 16:11	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			10/10/12 16:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 16:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 16:11	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:11	1
Methyl acetate	10	U	10	0.38	ug/L			10/10/12 16:11	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			10/10/12 16:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			10/10/12 16:11	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 16:11	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:11	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			10/10/12 16:11	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:11	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			10/10/12 16:11	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			10/10/12 16:11	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			10/10/12 16:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*63 - 129*		*10/10/12 16:11*	*1*

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: DUP
Date Collected: 10/03/12 00:00
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*78*		*66 - 117*		*10/10/12 16:11*	*1*
Toluene-d8 (Surr)	*92*		*74 - 115*		*10/10/12 16:11*	*1*
Dibromofluoromethane (Surr)	*95*		*75 - 121*		*10/10/12 16:11*	*1*

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: BLDG-3
Date Collected: 10/03/12 12:20
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			10/10/12 12:58	1
Benzene	1.0	U	1.0	0.13	ug/L			10/10/12 12:58	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			10/10/12 12:58	1
Bromoform	1.0	U	1.0	0.64	ug/L			10/10/12 12:58	1
Bromomethane	1.0	U	1.0	0.41	ug/L			10/10/12 12:58	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			10/10/12 12:58	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			10/10/12 12:58	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			10/10/12 12:58	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 12:58	1
Chloroethane	1.0	U	1.0	0.29	ug/L			10/10/12 12:58	1
Chloroform	1.0	U	1.0	0.16	ug/L			10/10/12 12:58	1
Chloromethane	1.0	U	1.0	0.30	ug/L			10/10/12 12:58	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			10/10/12 12:58	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 12:58	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 12:58	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			10/10/12 12:58	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			10/10/12 12:58	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			10/10/12 12:58	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			10/10/12 12:58	1
2-Hexanone	10	U	10	0.41	ug/L			10/10/12 12:58	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			10/10/12 12:58	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			10/10/12 12:58	1
Styrene	1.0	U	1.0	0.11	ug/L			10/10/12 12:58	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			10/10/12 12:58	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			10/10/12 12:58	1
Toluene	1.0	U	1.0	0.13	ug/L			10/10/12 12:58	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 12:58	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			10/10/12 12:58	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			10/10/12 12:58	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 12:58	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			10/10/12 12:58	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			10/10/12 12:58	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			10/10/12 12:58	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			10/10/12 12:58	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			10/10/12 12:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 12:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 12:58	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			10/10/12 12:58	1
Methyl acetate	10	U	10	0.38	ug/L			10/10/12 12:58	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			10/10/12 12:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			10/10/12 12:58	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 12:58	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 12:58	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			10/10/12 12:58	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 12:58	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			10/10/12 12:58	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			10/10/12 12:58	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			10/10/12 12:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*63 - 129*		*10/10/12 12:58*	*1*

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: BLDG-3
Date Collected: 10/03/12 12:20
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		66 - 117		10/10/12 12:58	1
Toluene-d8 (Surr)	93		74 - 115		10/10/12 12:58	1
Dibromofluoromethane (Surr)	92		75 - 121		10/10/12 12:58	1

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: BLDG-5
Date Collected: 10/03/12 13:00
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			10/10/12 16:32	1
Benzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:32	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			10/10/12 16:32	1
Bromoform	1.0	U	1.0	0.64	ug/L			10/10/12 16:32	1
Bromomethane	1.0	U	1.0	0.41	ug/L			10/10/12 16:32	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			10/10/12 16:32	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			10/10/12 16:32	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			10/10/12 16:32	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 16:32	1
Chloroethane	1.0	U	1.0	0.29	ug/L			10/10/12 16:32	1
Chloroform	1.0	U	1.0	0.16	ug/L			10/10/12 16:32	1
Chloromethane	1.0	U	1.0	0.30	ug/L			10/10/12 16:32	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			10/10/12 16:32	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 16:32	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 16:32	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			10/10/12 16:32	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			10/10/12 16:32	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			10/10/12 16:32	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			10/10/12 16:32	1
2-Hexanone	10	U	10	0.41	ug/L			10/10/12 16:32	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			10/10/12 16:32	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			10/10/12 16:32	1
Styrene	1.0	U	1.0	0.11	ug/L			10/10/12 16:32	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			10/10/12 16:32	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			10/10/12 16:32	1
Toluene	1.0	U	1.0	0.13	ug/L			10/10/12 16:32	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 16:32	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			10/10/12 16:32	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			10/10/12 16:32	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 16:32	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			10/10/12 16:32	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			10/10/12 16:32	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			10/10/12 16:32	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			10/10/12 16:32	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			10/10/12 16:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 16:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 16:32	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:32	1
Methyl acetate	10	U	10	0.38	ug/L			10/10/12 16:32	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			10/10/12 16:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			10/10/12 16:32	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 16:32	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:32	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			10/10/12 16:32	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:32	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			10/10/12 16:32	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			10/10/12 16:32	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			10/10/12 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*63 - 129*		*10/10/12 16:32*	*1*

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: BLDG-5
Date Collected: 10/03/12 13:00
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		66 - 117		10/10/12 16:32	1
Toluene-d8 (Surr)	92		74 - 115		10/10/12 16:32	1
Dibromofluoromethane (Surr)	93		75 - 121		10/10/12 16:32	1

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: BLDG-6
Date Collected: 10/03/12 13:15
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			10/10/12 16:53	1
Benzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:53	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			10/10/12 16:53	1
Bromoform	1.0	U	1.0	0.64	ug/L			10/10/12 16:53	1
Bromomethane	1.0	U	1.0	0.41	ug/L			10/10/12 16:53	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			10/10/12 16:53	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			10/10/12 16:53	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			10/10/12 16:53	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 16:53	1
Chloroethane	1.0	U	1.0	0.29	ug/L			10/10/12 16:53	1
Chloroform	1.0	U	1.0	0.16	ug/L			10/10/12 16:53	1
Chloromethane	1.0	U	1.0	0.30	ug/L			10/10/12 16:53	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			10/10/12 16:53	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 16:53	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 16:53	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			10/10/12 16:53	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			10/10/12 16:53	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			10/10/12 16:53	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			10/10/12 16:53	1
2-Hexanone	10	U	10	0.41	ug/L			10/10/12 16:53	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			10/10/12 16:53	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			10/10/12 16:53	1
Styrene	1.0	U	1.0	0.11	ug/L			10/10/12 16:53	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			10/10/12 16:53	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			10/10/12 16:53	1
Toluene	1.0	U	1.0	0.13	ug/L			10/10/12 16:53	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 16:53	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			10/10/12 16:53	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			10/10/12 16:53	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 16:53	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			10/10/12 16:53	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			10/10/12 16:53	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			10/10/12 16:53	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			10/10/12 16:53	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			10/10/12 16:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 16:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 16:53	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:53	1
Methyl acetate	10	U	10	0.38	ug/L			10/10/12 16:53	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			10/10/12 16:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			10/10/12 16:53	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 16:53	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:53	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			10/10/12 16:53	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 16:53	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			10/10/12 16:53	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			10/10/12 16:53	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			10/10/12 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*63 - 129*		*10/10/12 16:53*	*1*

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: BLDG-6
Date Collected: 10/03/12 13:15
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*79*		*66 - 117*		*10/10/12 16:53*	*1*
Toluene-d8 (Surr)	*94*		*74 - 115*		*10/10/12 16:53*	*1*
Dibromofluoromethane (Surr)	*93*		*75 - 121*		*10/10/12 16:53*	*1*

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: PW-1
Date Collected: 10/03/12 13:30
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			10/10/12 17:15	1
Benzene	1.0	U	1.0	0.13	ug/L			10/10/12 17:15	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			10/10/12 17:15	1
Bromoform	1.0	U	1.0	0.64	ug/L			10/10/12 17:15	1
Bromomethane	1.0	U	1.0	0.41	ug/L			10/10/12 17:15	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			10/10/12 17:15	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			10/10/12 17:15	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			10/10/12 17:15	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 17:15	1
Chloroethane	1.0	U	1.0	0.29	ug/L			10/10/12 17:15	1
Chloroform	1.0	U	1.0	0.16	ug/L			10/10/12 17:15	1
Chloromethane	1.0	U	1.0	0.30	ug/L			10/10/12 17:15	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			10/10/12 17:15	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 17:15	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 17:15	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			10/10/12 17:15	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			10/10/12 17:15	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			10/10/12 17:15	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			10/10/12 17:15	1
2-Hexanone	10	U	10	0.41	ug/L			10/10/12 17:15	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			10/10/12 17:15	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			10/10/12 17:15	1
Styrene	1.0	U	1.0	0.11	ug/L			10/10/12 17:15	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			10/10/12 17:15	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			10/10/12 17:15	1
Toluene	1.0	U	1.0	0.13	ug/L			10/10/12 17:15	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 17:15	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			10/10/12 17:15	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			10/10/12 17:15	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 17:15	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			10/10/12 17:15	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			10/10/12 17:15	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			10/10/12 17:15	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			10/10/12 17:15	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			10/10/12 17:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 17:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 17:15	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			10/10/12 17:15	1
Methyl acetate	10	U	10	0.38	ug/L			10/10/12 17:15	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			10/10/12 17:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			10/10/12 17:15	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 17:15	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 17:15	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			10/10/12 17:15	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 17:15	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			10/10/12 17:15	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			10/10/12 17:15	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			10/10/12 17:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*63 - 129*		*10/10/12 17:15*	*1*

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: PW-1
Date Collected: 10/03/12 13:30
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		66 - 117		10/10/12 17:15	1
Toluene-d8 (Surr)	94		74 - 115		10/10/12 17:15	1
Dibromofluoromethane (Surr)	94		75 - 121		10/10/12 17:15	1

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: TRIP BLANK
Date Collected: 10/03/12 00:00
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			10/10/12 17:36	1
Benzene	1.0	U	1.0	0.13	ug/L			10/10/12 17:36	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			10/10/12 17:36	1
Bromoform	1.0	U	1.0	0.64	ug/L			10/10/12 17:36	1
Bromomethane	1.0	U	1.0	0.41	ug/L			10/10/12 17:36	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			10/10/12 17:36	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			10/10/12 17:36	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			10/10/12 17:36	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 17:36	1
Chloroethane	1.0	U	1.0	0.29	ug/L			10/10/12 17:36	1
Chloroform	1.0	U	1.0	0.16	ug/L			10/10/12 17:36	1
Chloromethane	1.0	U	1.0	0.30	ug/L			10/10/12 17:36	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			10/10/12 17:36	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 17:36	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 17:36	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			10/10/12 17:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			10/10/12 17:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			10/10/12 17:36	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			10/10/12 17:36	1
2-Hexanone	10	U	10	0.41	ug/L			10/10/12 17:36	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			10/10/12 17:36	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			10/10/12 17:36	1
Styrene	1.0	U	1.0	0.11	ug/L			10/10/12 17:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			10/10/12 17:36	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			10/10/12 17:36	1
Toluene	1.0	U	1.0	0.13	ug/L			10/10/12 17:36	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 17:36	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			10/10/12 17:36	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			10/10/12 17:36	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 17:36	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			10/10/12 17:36	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			10/10/12 17:36	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			10/10/12 17:36	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			10/10/12 17:36	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			10/10/12 17:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 17:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 17:36	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			10/10/12 17:36	1
Methyl acetate	10	U	10	0.38	ug/L			10/10/12 17:36	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			10/10/12 17:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			10/10/12 17:36	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 17:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 17:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			10/10/12 17:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 17:36	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			10/10/12 17:36	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			10/10/12 17:36	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			10/10/12 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*63 - 129*		*10/10/12 17:36*	*1*

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: TRIP BLANK
Date Collected: 10/03/12 00:00
Date Received: 10/04/12 10:00

Lab Sample ID: 240-15958-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		66 - 117		10/10/12 17:36	1
Toluene-d8 (Surr)	93		74 - 115		10/10/12 17:36	1
Dibromofluoromethane (Surr)	93		75 - 121		10/10/12 17:36	1

Surrogate Summary

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(63-129)	(66-117)	(74-115)	(75-121)
240-15958-1	DUP	93	78	92	95
240-15958-2	BLDG-3	92	80	93	92
240-15958-2 MS	BLDG-3	92	89	97	92
240-15958-2 MSD	BLDG-3	95	92	99	92
240-15958-3	BLDG-5	93	79	92	93
240-15958-4	BLDG-6	94	79	94	93
240-15958-5	PW-1	93	76	94	94
240-15958-6	TRIP BLANK	94	78	93	93
LCS 240-60803/4	Lab Control Sample	92	90	98	90
MB 240-60803/5	Method Blank	89	79	95	91

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-60803/5
Matrix: Water
Analysis Batch: 60803

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			10/10/12 12:16	1
Benzene	1.0	U	1.0	0.13	ug/L			10/10/12 12:16	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			10/10/12 12:16	1
Bromoform	1.0	U	1.0	0.64	ug/L			10/10/12 12:16	1
Bromomethane	1.0	U	1.0	0.41	ug/L			10/10/12 12:16	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			10/10/12 12:16	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			10/10/12 12:16	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			10/10/12 12:16	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 12:16	1
Chloroethane	1.0	U	1.0	0.29	ug/L			10/10/12 12:16	1
Chloroform	1.0	U	1.0	0.16	ug/L			10/10/12 12:16	1
Chloromethane	1.0	U	1.0	0.30	ug/L			10/10/12 12:16	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			10/10/12 12:16	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 12:16	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 12:16	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			10/10/12 12:16	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			10/10/12 12:16	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			10/10/12 12:16	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			10/10/12 12:16	1
2-Hexanone	10	U	10	0.41	ug/L			10/10/12 12:16	1
Methylene Chloride	1.17		1.0	0.33	ug/L			10/10/12 12:16	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			10/10/12 12:16	1
Styrene	1.0	U	1.0	0.11	ug/L			10/10/12 12:16	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			10/10/12 12:16	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			10/10/12 12:16	1
Toluene	1.0	U	1.0	0.13	ug/L			10/10/12 12:16	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 12:16	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			10/10/12 12:16	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			10/10/12 12:16	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			10/10/12 12:16	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			10/10/12 12:16	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			10/10/12 12:16	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			10/10/12 12:16	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			10/10/12 12:16	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			10/10/12 12:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			10/10/12 12:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/10/12 12:16	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			10/10/12 12:16	1
Methyl acetate	10	U	10	0.38	ug/L			10/10/12 12:16	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			10/10/12 12:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			10/10/12 12:16	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			10/10/12 12:16	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 12:16	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			10/10/12 12:16	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			10/10/12 12:16	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			10/10/12 12:16	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			10/10/12 12:16	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			10/10/12 12:16	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-60803/5
Matrix: Water
Analysis Batch: 60803

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*89*		*63 - 129*		*10/10/12 12:16*	*1*
4-Bromofluorobenzene (Surr)	*79*		*66 - 117*		*10/10/12 12:16*	*1*
Toluene-d8 (Surr)	*95*		*74 - 115*		*10/10/12 12:16*	*1*
Dibromofluoromethane (Surr)	*91*		*75 - 121*		*10/10/12 12:16*	*1*

Lab Sample ID: LCS 240-60803/4
Matrix: Water
Analysis Batch: 60803

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	16.4		ug/L		82	43 - 136
Benzene	10.0	9.95		ug/L		99	83 - 112
Dichlorobromomethane	10.0	9.78		ug/L		98	72 - 121
Bromoform	10.0	7.85		ug/L		79	40 - 131
Bromomethane	10.0	6.63		ug/L		66	11 - 185
2-Butanone (MEK)	20.0	17.9		ug/L		90	60 - 126
Carbon disulfide	10.0	9.26		ug/L		93	62 - 142
Carbon tetrachloride	10.0	10.2		ug/L		102	66 - 128
Chlorobenzene	10.0	9.83		ug/L		98	85 - 110
Chloroethane	10.0	7.69		ug/L		77	25 - 153
Chloroform	10.0	9.49		ug/L		95	79 - 117
Chloromethane	10.0	11.0		ug/L		110	44 - 126
1,1-Dichloroethane	10.0	10.1		ug/L		101	82 - 115
1,2-Dichloroethane	10.0	9.57		ug/L		96	71 - 127
1,1-Dichloroethene	10.0	10.3		ug/L		103	78 - 131
1,2-Dichloropropane	10.0	10.6		ug/L		106	81 - 115
cis-1,3-Dichloropropene	10.0	9.69		ug/L		97	61 - 115
trans-1,3-Dichloropropene	10.0	9.65		ug/L		96	58 - 117
Ethylbenzene	10.0	9.91		ug/L		99	83 - 112
2-Hexanone	20.0	17.6		ug/L		88	55 - 133
Methylene Chloride	10.0	11.4		ug/L		114	66 - 131
4-Methyl-2-pentanone (MIBK)	20.0	19.5		ug/L		97	63 - 128
Styrene	10.0	9.84		ug/L		98	79 - 114
1,1,2,2-Tetrachloroethane	10.0	9.49		ug/L		95	68 - 118
Tetrachloroethene	10.0	9.39		ug/L		94	79 - 114
Toluene	10.0	9.83		ug/L		98	84 - 111
Trichloroethene	10.0	9.52		ug/L		95	76 - 117
Vinyl chloride	10.0	9.75		ug/L		97	53 - 127
Xylenes, Total	30.0	29.6		ug/L		99	83 - 112
1,1,1-Trichloroethane	10.0	9.88		ug/L		99	74 - 118
1,1,2-Trichloroethane	10.0	10.2		ug/L		102	80 - 112
Cyclohexane	10.0	9.54		ug/L		95	54 - 121
1,2-Dibromo-3-Chloropropane	10.0	7.35		ug/L		73	42 - 136
Ethylene Dibromide	10.0	9.60		ug/L		96	79 - 113
Dichlorodifluoromethane	10.0	11.0		ug/L		110	19 - 129
cis-1,2-Dichloroethene	10.0	9.64		ug/L		96	80 - 113
trans-1,2-Dichloroethene	10.0	9.74		ug/L		97	83 - 117
Isopropylbenzene	10.0	9.19		ug/L		92	75 - 114
Methyl acetate	10.0	10.1		ug/L		101	58 - 131

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-60803/4
Matrix: Water
Analysis Batch: 60803

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	10.0	9.11		ug/L		91	52 - 144
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.0		ug/L		110	74 - 151
1,2,4-Trichlorobenzene	10.0	7.54		ug/L		75	48 - 135
1,2-Dichlorobenzene	10.0	9.35		ug/L		93	81 - 110
1,3-Dichlorobenzene	10.0	9.39		ug/L		94	80 - 110
1,4-Dichlorobenzene	10.0	9.36		ug/L		94	82 - 110
Trichlorofluoromethane	10.0	11.2		ug/L		112	49 - 157
Methylcyclohexane	10.0	8.95		ug/L		90	56 - 127
m-Xylene & p-Xylene	20.0	20.0		ug/L		100	83 - 113
o-Xylene	10.0	9.55		ug/L		96	83 - 113

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*63 - 129*
4-Bromofluorobenzene (Surr)	*90*		*66 - 117*
Toluene-d8 (Surr)	*98*		*74 - 115*
Dibromofluoromethane (Surr)	*90*		*75 - 121*

Lab Sample ID: 240-15958-2 MS
Matrix: Water
Analysis Batch: 60803

Client Sample ID: BLDG-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	17.5		ug/L		88	33 - 145
Benzene	1.0	U	10.0	9.68		ug/L		97	72 - 121
Dichlorobromomethane	1.0	U	10.0	9.35		ug/L		93	67 - 120
Bromoform	1.0	U	10.0	7.08		ug/L		71	32 - 128
Bromomethane	1.0	U	10.0	5.09		ug/L		51	10 - 186
2-Butanone (MEK)	10	U	20.0	18.2		ug/L		91	54 - 129
Carbon disulfide	1.0	U	10.0	8.62		ug/L		86	57 - 147
Carbon tetrachloride	1.0	U	10.0	9.46		ug/L		95	59 - 129
Chlorobenzene	1.0	U	10.0	9.43		ug/L		94	80 - 110
Chloroethane	1.0	U	10.0	6.59		ug/L		66	21 - 165
Chloroform	1.0	U	10.0	9.20		ug/L		92	76 - 118
Chloromethane	1.0	U	10.0	10.4		ug/L		104	33 - 132
1,1-Dichloroethane	1.0	U	10.0	9.76		ug/L		98	79 - 116
1,2-Dichloroethane	1.0	U	10.0	9.50		ug/L		95	68 - 129
1,1-Dichloroethene	1.0	U	10.0	9.77		ug/L		98	74 - 135
1,2-Dichloropropane	1.0	U	10.0	10.2		ug/L		102	78 - 115
cis-1,3-Dichloropropene	1.0	U	10.0	8.64		ug/L		86	51 - 110
trans-1,3-Dichloropropene	1.0	U	10.0	9.02		ug/L		90	46 - 116
Ethylbenzene	1.0	U	10.0	9.33		ug/L		93	75 - 116
2-Hexanone	10	U	20.0	17.0		ug/L		85	47 - 139
Methylene Chloride	1.0	U	10.0	9.61		ug/L		96	63 - 128
4-Methyl-2-pentanone (MIBK)	10	U	20.0	18.6		ug/L		93	56 - 131
Styrene	1.0	U	10.0	9.14		ug/L		91	71 - 117
1,1,2,2-Tetrachloroethane	1.0	U	10.0	9.36		ug/L		94	63 - 122
Tetrachloroethene	1.0	U	10.0	8.84		ug/L		88	70 - 117
Toluene	1.0	U	10.0	9.48		ug/L		95	78 - 114
Trichloroethene	1.0	U	10.0	9.14		ug/L		91	66 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-15958-2 MS
Matrix: Water
Analysis Batch: 60803

Client Sample ID: BLDG-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	1.0	U	10.0	9.18		ug/L		92	49 - 130
Xylenes, Total	2.0	U	30.0	27.6		ug/L		92	76 - 116
1,1,1-Trichloroethane	1.0	U	10.0	9.19		ug/L		92	68 - 121
1,1,2-Trichloroethane	1.0	U	10.0	10.1		ug/L		101	75 - 115
Cyclohexane	1.0	U	10.0	8.03		ug/L		80	49 - 123
1,2-Dibromo-3-Chloropropane	2.0	U	10.0	6.99		ug/L		70	32 - 139
Ethylene Dibromide	1.0	U	10.0	9.47		ug/L		95	74 - 113
Dichlorodifluoromethane	1.0	U	10.0	8.83		ug/L		88	17 - 128
cis-1,2-Dichloroethene	1.0	U	10.0	9.32		ug/L		93	70 - 120
trans-1,2-Dichloroethene	1.0	U	10.0	9.46		ug/L		95	80 - 119
Isopropylbenzene	1.0	U	10.0	8.33		ug/L		83	68 - 116
Methyl acetate	10	U	10.0	8.63	J	ug/L		86	47 - 130
Methyl tert-butyl ether	5.0	U	10.0	8.59		ug/L		86	46 - 144
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	9.27		ug/L		93	70 - 152
1,2,4-Trichlorobenzene	1.0	U	10.0	6.73		ug/L		67	38 - 138
1,2-Dichlorobenzene	1.0	U	10.0	8.73		ug/L		87	75 - 111
1,3-Dichlorobenzene	1.0	U	10.0	8.82		ug/L		88	73 - 110
1,4-Dichlorobenzene	1.0	U	10.0	8.75		ug/L		87	75 - 110
Trichlorofluoromethane	1.0	U	10.0	9.38		ug/L		94	46 - 157
Methylcyclohexane	1.0	U	10.0	7.36		ug/L		74	49 - 127
m-Xylene & p-Xylene	2.0		20.0	18.6		ug/L		93	75 - 117
o-Xylene	1.0		10.0	9.01		ug/L		90	76 - 116

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*63 - 129*
4-Bromofluorobenzene (Surr)	*89*		*66 - 117*
Toluene-d8 (Surr)	*97*		*74 - 115*
Dibromofluoromethane (Surr)	*92*		*75 - 121*

Lab Sample ID: 240-15958-2 MSD
Matrix: Water
Analysis Batch: 60803

Client Sample ID: BLDG-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	20.0	18.6		ug/L		93	33 - 145	6	30
Benzene	1.0	U	10.0	9.86		ug/L		99	72 - 121	2	30
Dichlorobromomethane	1.0	U	10.0	9.54		ug/L		95	67 - 120	2	30
Bromoform	1.0	U	10.0	7.73		ug/L		77	32 - 128	9	30
Bromomethane	1.0	U	10.0	6.64		ug/L		66	10 - 186	27	30
2-Butanone (MEK)	10	U	20.0	18.9		ug/L		95	54 - 129	4	30
Carbon disulfide	1.0	U	10.0	9.07		ug/L		91	57 - 147	5	30
Carbon tetrachloride	1.0	U	10.0	9.74		ug/L		97	59 - 129	3	30
Chlorobenzene	1.0	U	10.0	9.71		ug/L		97	80 - 110	3	30
Chloroethane	1.0	U	10.0	7.39		ug/L		74	21 - 165	12	30
Chloroform	1.0	U	10.0	9.47		ug/L		95	76 - 118	3	30
Chloromethane	1.0	U	10.0	10.7		ug/L		107	33 - 132	3	30
1,1-Dichloroethane	1.0	U	10.0	10.1		ug/L		101	79 - 116	4	30
1,2-Dichloroethane	1.0	U	10.0	9.85		ug/L		99	68 - 129	4	30
1,1-Dichloroethene	1.0	U	10.0	10.0		ug/L		100	74 - 135	2	30

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-15958-2 MSD
Matrix: Water
Analysis Batch: 60803

Client Sample ID: BLDG-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloropropane	1.0	U	10.0	10.5		ug/L		105	78 - 115	2	30
cis-1,3-Dichloropropene	1.0	U	10.0	8.97		ug/L		90	51 - 110	4	30
trans-1,3-Dichloropropene	1.0	U	10.0	9.38		ug/L		94	46 - 116	4	30
Ethylbenzene	1.0	U	10.0	9.35		ug/L		93	75 - 116	0	30
2-Hexanone	10	U	20.0	18.1		ug/L		91	47 - 139	7	30
Methylene Chloride	1.0	U	10.0	9.91		ug/L		99	63 - 128	3	30
4-Methyl-2-pentanone (MIBK)	10	U	20.0	20.0		ug/L		100	56 - 131	7	30
Styrene	1.0	U	10.0	9.52		ug/L		95	71 - 117	4	30
1,1,2,2-Tetrachloroethane	1.0	U	10.0	9.83		ug/L		98	63 - 122	5	30
Tetrachloroethene	1.0	U	10.0	9.21		ug/L		92	70 - 117	4	30
Toluene	1.0	U	10.0	9.64		ug/L		96	78 - 114	2	30
Trichloroethene	1.0	U	10.0	9.39		ug/L		94	66 - 120	3	30
Vinyl chloride	1.0	U	10.0	9.69		ug/L		97	49 - 130	5	30
Xylenes, Total	2.0	U	30.0	28.4		ug/L		95	76 - 116	3	30
1,1,1-Trichloroethane	1.0	U	10.0	9.58		ug/L		96	68 - 121	4	30
1,1,2-Trichloroethane	1.0	U	10.0	10.3		ug/L		103	75 - 115	2	30
Cyclohexane	1.0	U	10.0	8.39		ug/L		84	49 - 123	4	30
1,2-Dibromo-3-Chloropropane	2.0	U	10.0	7.69		ug/L		77	32 - 139	10	30
Ethylene Dibromide	1.0	U	10.0	9.76		ug/L		98	74 - 113	3	30
Dichlorodifluoromethane	1.0	U	10.0	9.31		ug/L		93	17 - 128	5	30
cis-1,2-Dichloroethene	1.0	U	10.0	9.51		ug/L		95	70 - 120	2	30
trans-1,2-Dichloroethene	1.0	U	10.0	9.74		ug/L		97	80 - 119	3	30
Isopropylbenzene	1.0	U	10.0	8.65		ug/L		87	68 - 116	4	30
Methyl acetate	10	U	10.0	9.04	J	ug/L		90	47 - 130	5	30
Methyl tert-butyl ether	5.0	U	10.0	8.96		ug/L		90	46 - 144	4	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	9.96		ug/L		100	70 - 152	7	30
1,2,4-Trichlorobenzene	1.0	U	10.0	7.20		ug/L		72	38 - 138	7	30
1,2-Dichlorobenzene	1.0	U	10.0	9.37		ug/L		94	75 - 111	7	30
1,3-Dichlorobenzene	1.0	U	10.0	9.34		ug/L		93	73 - 110	6	30
1,4-Dichlorobenzene	1.0	U	10.0	9.22		ug/L		92	75 - 110	5	30
Trichlorofluoromethane	1.0	U	10.0	10.7		ug/L		107	46 - 157	13	30
Methylcyclohexane	1.0	U	10.0	7.66		ug/L		77	49 - 127	4	30
m-Xylene & p-Xylene	2.0		20.0	19.1		ug/L		96	75 - 117	3	30
o-Xylene	1.0		10.0	9.28		ug/L		93	76 - 116	3	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*63 - 129*
4-Bromofluorobenzene (Surr)	*92*		*66 - 117*
Toluene-d8 (Surr)	*99*		*74 - 115*
Dibromofluoromethane (Surr)	*92*		*75 - 121*

QC Association Summary

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

GC/MS VOA

Analysis Batch: 60803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15958-1	DUP	Total/NA	Water	8260B	
240-15958-2	BLDG-3	Total/NA	Water	8260B	
240-15958-2 MS	BLDG-3	Total/NA	Water	8260B	
240-15958-2 MSD	BLDG-3	Total/NA	Water	8260B	
240-15958-3	BLDG-5	Total/NA	Water	8260B	
240-15958-4	BLDG-6	Total/NA	Water	8260B	
240-15958-5	PW-1	Total/NA	Water	8260B	
240-15958-6	TRIP BLANK	Total/NA	Water	8260B	
LCS 240-60803/4	Lab Control Sample	Total/NA	Water	8260B	
MB 240-60803/5	Method Blank	Total/NA	Water	8260B	

Lab Chronicle

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Client Sample ID: DUP — Lab Sample ID: 240-15958-1

Date Collected: 10/03/12 00:00 — **Matrix: Water**
Date Received: 10/04/12 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	60803	10/10/12 16:11	RQ	TAL NC

Client Sample ID: BLDG-3 — Lab Sample ID: 240-15958-2

Date Collected: 10/03/12 12:20 — **Matrix: Water**
Date Received: 10/04/12 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	60803	10/10/12 12:58	RQ	TAL NC

Client Sample ID: BLDG-5 — Lab Sample ID: 240-15958-3

Date Collected: 10/03/12 13:00 — **Matrix: Water**
Date Received: 10/04/12 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	60803	10/10/12 16:32	RQ	TAL NC

Client Sample ID: BLDG-6 — Lab Sample ID: 240-15958-4

Date Collected: 10/03/12 13:15 — **Matrix: Water**
Date Received: 10/04/12 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	60803	10/10/12 16:53	RQ	TAL NC

Client Sample ID: PW-1 — Lab Sample ID: 240-15958-5

Date Collected: 10/03/12 13:30 — **Matrix: Water**
Date Received: 10/04/12 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	60803	10/10/12 17:15	RQ	TAL NC

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-15958-6

Date Collected: 10/03/12 00:00 — **Matrix: Water**
Date Received: 10/04/12 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	60803	10/10/12 17:36	RQ	TAL NC

Laboratory References:

TAL NC = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: Stantec Consulting Corp.
Project/Site: Smithers-Raco

TestAmerica Job ID: 240-15958-1

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAC	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAC	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAC	5	200004	07-31-13
Kansas	NELAC	7	E-10336	01-31-13
Kentucky	State Program	4	58	11-16-12
L-A-B	DoD ELAP		L2315	02-28-13
Minnesota	NELAC	5	039-999-348	12-31-12
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAC	2	OH001	06-30-13
New York	NELAC	2	10975	04-01-13
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAC	3	68-00340	08-31-13
Texas	NELAC	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAC	3	460175	09-14-13
Washington	State Program	10	C971	01-12-13
West Virginia DEP	State Program	3	210	12-31-12
Wisconsin	State Program	5	999518190	08-31-13

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: ______
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other ______

TestAmerica Laboratories, Inc.

Client Contact			
Company Name: Stantec	Client Project Manager: Mike Van Loan	Site Contact:	Lab Contact:
Address:	Telephone: 517 242 3718	Telephone:	Telephone:
City/State/Zip: Okemos MI	Email: mike.vanloan@stantec.com	Analysis Turnaround Time (in BUS days)	
Phone: 517 242-3718		TAT if different from below ______ ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day	
Project Name: Smithers-Raco	Method of Shipment/Carrier:		
Project Number:	Shipping/Tracking No:		
PO#			

COC No: 047637
1 of 1 COCs

For lab use only
Walk-in client ☐
Lab pickup ☐
Lab sampling ☐
Job/SDG No:

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	Analyses: VOC	Sample Specific Notes / Special Instructions:
DUP	10/3/12	—		X						3X							X	
BLDG-3	10/3/12	12:20																
BLDG-3 MS		12:25																
BLDG-3 MSD		12:30																
~~BLDG 4~~		~~12:45~~																
BLDG 5		13:00																
BLDG-6		13:15																
PW-1		13:30																
Trip Blank																		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☐ Disposal By Lab ☐ Archive For ______ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Stantec	10/3/12 17:30			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Company: TAC	Date/Time: 10/4/12 1000

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TAL 0018-1 (04/10)

TestAmerica Canton Sample Receipt Form/Narrative Login # : 15958

Client STANTEC Site Name _____ By: _____ (Signature)

Cooler Received on 10-4-12 Opened on 10-4-12

FedEx: 1st Grd Exp (UPS) FAS Stetson Client Drop Off TestAmerica Courier Other _____

TestAmerica Cooler # 260-146 Foam Box Client Cooler Box Other _____

Packing material used: (Bubble Wrap) (Foam) (Plastic Bag) None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# 1	(CF 0°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C	Multiple on Back
IR GUN# 4G	(CF –1°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C	
IR GUN# 5G	(CF –1°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C	
IR GUN# 8	(CF 0°C)	Observed Sample Temp. 4.4 °C	Corrected Sample Temp. 4.4 °C	

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 2	(Yes) No
-Were custody seals on the outside of the cooler(s) signed & dated?	(Yes) No NA
-Were custody seals on the bottle(s)?	Yes (No)
3. Shippers' packing slip attached to the cooler(s)?	(Yes) No
4. Did custody papers accompany the sample(s)?	(Yes) No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes) No
6. Did all bottles arrive in good condition (Unbroken)?	(Yes) No
7. Could all bottle labels be reconciled with the COC?	(Yes) No
8. Were correct bottle(s) used for the test(s) indicated?	(Yes) No
9. Sufficient quantity received to perform indicated analyses?	(Yes) No
10. Were sample(s) at the correct pH upon receipt?	Yes No (NA)
11. Were VOAs on the COC?	(Yes) No
12. Were air bubbles >6 mm in any VOA vials?	Yes (No) NA
13. Was a trip blank present in the cooler(s)?	(Yes) No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) ______________________________ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 031512-HNO3; Sulfuric Acid Lot# 041911-H2SO4; Sodium Hydroxide Lot# 121809 - NaOH; Hydrochloric Acid Lot# 041911-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH3COO)2ZN/NaOH. What time was preservative added to sample(s)? ______________________

Client ID	pH	Date	Initials

Cooler #	Observed Sample Temp. °C Corrected Sample Temp. °C	IR #	Coolant

Login Sample Receipt Checklist

Client: Stantec Consulting Corp.

Job Number: 240-15958-1

Login Number: 15958

List Source: TestAmerica Canton

List Number: 1

Creator: Sutek, Nick

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	REFER TO COOLER RECEIPT FORM
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	N/A	
Cooler Temperature is recorded.	N/A	
COC is present.	N/A	
COC is filled out in ink and legible.	N/A	
COC is filled out with all pertinent information.	N/A	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	N/A	
Samples are received within Holding Time.	N/A	
Sample containers have legible labels.	N/A	
Containers are not broken or leaking.	N/A	
Sample collection date/times are provided.	N/A	
Appropriate sample containers are used.	N/A	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	N/A	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Appendix E State Historic Preservation Officer (SHPO) Compliance Letter

STATE OF MICHIGAN
RICK SNYDER
GOVERNOR
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
STATE HISTORIC PRESERVATION OFFICE
SCOTT WOOSLEY
EXECUTIVE DIRECTOR

July 8, 2014

ERIC DRAKE
USDA FOREST SERVICE
HIAWATHA NATIONAL FOREST
820 RAINS DRIVE
GLADSTONE MI 49837-1157

RE: ER14-201 Smithers Master Plan and Special Use Permit – Hiawatha National Forest, Sec. 27-34, T46N, R4W, Superior Township, Chippewa County (USFS)

Dear Mr. Drake,

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that **no historic properties are affected** within the area of potential effects of this undertaking.

This letter evidences the USFS's compliance with 36 CFR § 800.4 "Identification of historic properties," and the fulfillment of the USFS's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected." **If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.**

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking.

If you have any questions, please contact Brian Grennell, Cultural Resource Management Specialist, at (517) 335-2721 or by email at GrennellB@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian G. Grennell
Cultural Resource Management Specialist

for Brian D. Conway
State Historic Preservation Officer

SAT:BGG

RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
STATE HISTORIC PRESERVATION OFFICE

WAYNE WORKMAN
ACTING-EXECUTIVE DIRECTOR

August 27, 2014

ERIC DRAKE
USDA FOREST SERVICE
HIAWATHA NATIONAL FOREST
820 RAINS DRIVE
GLADSTONE MI 49837-1157

RE: ER14-201 Raco Air Force Base Determination of Eligibility Hiawatha National, Sec. 27-34, T46N, R4W, Superior Township, Chippewa County (USFS)

Dear Mr. Drake:

We have reviewed your request determination of eligibility for the Raco Air Force Base at Hiawatha National Forest. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that the Raco Air Force Base does not appear to meet the criteria for listing in the National Register of Historic Places.

If you have any questions, please contact Brian Grennell, Cultural Resource Management Specialist, at (517) 335-2721 or by email at GrennellB@michigan.gov. Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Martha J MacFarlane-Faes

Martha MacFarlane-Faes
Deputy State Historic Preservation Officer

MMF:ROC:bgg

Received
9/5/14