From: Kempe, Norm L FLNR:EX

To: Casavant, Bryce FLNR:EX

Cc: Morris, Rhonda M FLNR:EX; Cotton, Ron FLNR:EX; Silver, Pam FLNR:EX; "Pilling, Glen FPB:EX"

Subject: File # DCR-37250 (BCTS response to Compliance Notice re: Nahmint SMZ 13)

Date: Monday, August 13, 2018 2:39:06 PM

Attachments: Nahmint compliance notice response final Ltr signed.pdf

Nahmint OGMA TEM Variant map.pdf

Protected Forest by BGC Variant Site Series For the Nahmint SMZ13.xlsx

Importance: High

Hello Bryce

Please see attached correspondence from BC Timber Sales regarding Compliance Notice DCR – 37250_SMZ 13.

Thank you for the extension to the response time.

Can you please confirm receipt of the email with a confirmation that all attachments are opening correctly. I can upload the attachments to a FTP site if necessary.

Regards

Norm Kempe Acting Timber Sales Manager BCTS Strait of Georgia Business Area Office: 250 286 9359

Distribution List:

Rhonda Morris (District Manager – South Island Natural Resource District)
Ron Cotton (Land Resource Specialist – Coast Area)
Pam Silver (Resource Initiatives Section Head – West Coast Region)
Glenn Pilling (Forest Practices Board)



File: FOR 18046-01

August 9, 2018

Via email: Bryce.Casavant@gov.bc.ca

Bryce Casavant
Senior Compliance and Enforcement Specialist
Natural Resource Officer
West Coast Region
Compliance and Enforcement Branch/FLNRORD

Dear Bryce Casavant:

RE: Compliance Notice-Inspection Findings (SMZ 13)

Reference is made to your June 18, 2018, Compliance Notice concerning Inspection Findings related to BC Timber Sales, Strait of Georgia Business Area (BCTS) activities in the Nahmint Valley – Special Management Zone 13 (SMZ 13).

Please accept this letter as BCTS's response to Compliance and Enforcement, West Coast Region's finding that there is "a high likelihood of government non-compliance "with <u>Objective B.4 of the Vancouver Island Land Use Plan, Higher Level Plan Order (HLP).</u>

Vancouver Island Land Use Plan - Higher Level Plan Order - Objective B.4

- **B.** for Special Management Zones 8 and 13 and parts of Special Management Zones 1, 3 and 11, which are located within landscape units with higher biodiversity emphasis....
- **4.** Maintain late-successional habitat elements and attributes of biodiversity⁸ in forested ecosystems with emphasis on regionally rare and underrepresented ecosystems, by retaining old seral forest at the site series/surrogate level of representation⁹.
 - This includes, but is not limited to: large diameter (> 60 cm) live, decaying and dead standing trees (providing nest and cavity sites); downed wood, including large diameter pieces (50 to 150 cm); deciduous broad-leaved trees, both in riparian and upland areas
 - 9. The level of representation of old seral forest will be applied through landscape unit planning.

BCTS views Compliance and Enforcement's (C&E) evaluation on matters of non-compliance with resolute concern. Responsibly managing government objectives within the context of forest

Page 1 of 11

harvesting operations is a key objective for BCTS for the purposes of maintaining our social licence and achieving our SFI and EMS commitments.

The Compliance Notice requested the following:

- 1. Further information pertaining to site series/surrogate levels of representation within Nahmint Landscape Planning, or in the alternative,
- 2. Identified corrective actions being taken to ensure compliance with government objectives.

We believe our Landscape Planning Practices and Forest Stewardship Plan are consistent with the VILUP HLP Order Biodiversity Objective B.4. Our response will focus on addressing point (1) above in the following order:

- BCTS Nahmint SMZ 13 Landscape Unit Planning Process
- Appendix 1 Protected Forest Breakdown by Biogeoclimatic Variant and Site Series for the Nahmint SMZ #13.
- Appendix 2 Supporting Information used by BCTS that provided direction to the Landscape Unit Planning Process.
- Appendix 3 Summary of Steps for Land Use Planning for Nahmint

BCTS Nahmint SMZ 13 Landscape Unit Planning Process

(Sustainable Resource Management plan for the Nahmint Landscape Unit)

Currently a suite of Draft Old Growth Management Areas (OGMA's) have been spatially established as described in the *Sustainable Resources Management Plan* (SRMP) for the Nahmint Landscape Unit (2012). These OGMA's meet targets set out in the *Order Establishing Provincial Non Spatial Old Growth Objectives 2004 (Old Growth Order)*. The *Old Growth Order* provides *Objectives* for the amount and distribution of old seral forest retention required to meet the "High" *Biodiversity Emphasis* (BE) for SMZ 13.

Landscape Unit Planning in the Nahmint SMZ, including the selection of Draft OGMAs, has been ongoing for a decade – it is a work in progress that requires consideration of a range of values and working with First Nations and government. BCTS has worked with both the Tseshaht and Hupacasath First Nations on this planning. Both Nations recently received provincial *Strategic Forestry Initiative* funding to assist them in attaining the necessary capacity to participate in the Nahmint LU planning process. Their involvement arises from the province's commitment in a *Mediated Agreement* to emphasize western red cedar conservation, to the extent possible, with the OGMA selection process in order to provide access for cultural use. Further work is needed to complete Landscape Unit Planning in the Nahmint, much of which will be led by government through the modernized Land Use Planning approach (steps for completing Landscape Unit Planning in Nahmint outlined in Appendix 3).

Consistent with the Landscape Unit Planning Guidebook (1999), the 2012 Draft OGMA's were selected using the following preliminary base criteria: age class, forest type, and ecological classification which are considered as surrogates for site series as described below.

These base criteria are defined as:

- Age Class 9 (which is 250 years or older) in Nahmint is old seral forest.
- Forest Type relates to tree and understory species composition and stand structure (horizontal and vertical) on a site (landform).
- Ecological Classification is based on the "Biogeoclimatic Units of the Vancouver Forest Region" as described in Land Management Handbook Number 28. The handbook describes
 Biogeoclimatic Ecological Classification (BEC) Units (Variants). Each BEC variant has similar recurring climatic, soil and physiographic properties and are classified based on their potential to produce similar Old Seral Forest plant communities. BEC variants are identified on available Biogeoclimatic spatial data sets.

Site Series within BEC variants refer to similar site conditions based on nutrient and moisture regimes present on a site. The approach to identifying site series requires determining the basic elements of site quality: Climate (inferred by BEC units), soil moisture regime (SMR) and soil nutrient regime (SNR). Determining site series requires a site assessment in the field that consists of gathering SMR, SNR and indicator plant species. This information is then synthesized using *Handbook Number 28* to identify the site series (ecosystem) according to the BEC system. Site series are a detailed classification level, normally only determined during operational field work.

Surrogate classification organizes ecosystems according to the principle of ecological equivalence. This principle implies that sites with the same or equivalent physical properties have the same vegetative potential, and underlies site classification according BEC. They are intended to characterize the major forest types (ecosystems) within a biogeoclimatic unit. Surrogates are typically categorized using information from resource inventory maps and aerial photography – as opposed to site information collected in the field. Surrogates aid in predicting locations and occurrences of likely site series or groups of similar site associations in a landscape. They are useful in the Landscape Unit Planning process where detailed information is lacking across many thousands of hectares. Factors considered in surrogate classification rely on landform characteristics (depression, floodplain, bench (H, M, and L), middle slope, upper slope and ridge crest), Forest Type and riparian inventories. Surrogates are a generalized classification level.

Classification of forested ecosystems requires use of either site series or some form of surrogate to be used in order to analyze ecosystem representativeness across a landscape. To address variability within and across *Old Seral Forest* BEC variants, a **surrogate** ecosystem classification approach was used to attain forested ecosystem representativeness. This approach was used because accurate site series information was not available across the Nahmint SMZ. Although *Terrestrial Ecosystem Mapping* (TEM) inventories were available, field verification identified misclassifications, making the TEM inventory unsuitable for planning purposes.

The current suite of Draft OGMA's located in Nahmint SMZ 13 are situated across the non-contributing, constrained and timber harvesting landbase. The full *Old Seral Forest* representation targets were met for the Nahmint LU under the 2012 planning process. OGMA's were selected for structural old growth attributes inherent to varied old forested ecosystems across the range of surrogate ecosystems (landform characteristics, forest cover composition and existing riparian network) present in Nahmint SMZ 13. The current suite of Draft OGMA's in the 2012 *Sustainable Resource Management Plan for the Nahmint Landscape Unit* includes *Old Serial Forest* surrogate representativeness along an elevational gradient stretching from rich fluvial valley bottoms to higher

elevation, low "site-index" sites. The use of surrogates was a practical approach across a landscape 20,000 ha in size where acquiring accurate spatial ecosystem data sets is challenging and with limited detailed site series field information.

Government has not yet established targets for site series/surrogate distribution in *VILUP HLP Order, Objective B.4* or the *Old Growth Order* for Landscape Units. The absence of hard targets for site series or surrogate scale ecosystems is intended to provide planning flexibility to consider other old forested ecosystem attributes in the Landscape Unit planning process. This flexibility was exercised in the development of the Draft SMZ 13 Landscape Unit plan. Other values and forested ecosystem attributes considered in the 2012 Draft OGMA selection process include wildlife, cultural values, rare & underrepresented ecosystems, connectivity, protection of 'interior forest', distribution across the LU, and operational factors such as future harvest opportunity for surrounding areas.

At the operational planning (cut-block) level, BCTS is managing rare and underrepresented forested ecosystems by site series. BCTS' protocols for managing sites at this level are consistent with the Provincial Wildlife Tree Retention Area (WTRA) guidance. This entails a fine-filtered approach whereby discovered occurrences of rare and Red Listed plant communities in old forest are protected to the extent practicable and set aside in WTRA's. This is also the planning level where the biodiversity criteria in Objective B.4 (footnote 8) are specifically addressed. WTRA's two hectares or larger can be considered as reserves for the purposes of Landscape Unit Planning.

In summary, due to the lack of detailed information on site series at the landscape level (site series can only be confirmed through field sampling), and the lack of clear targets at the site series level, a surrogate was used for draft OGMA planning. This approach at the Landscape Unit scale is bolstered by BCTS's site-level approach for identifying and protecting rare sites series.

BCTS's approach to biodiversity planning in Nahmint SMZ 13 is generally consistent with direction provided in both in the *Landscape Unit Planning Guidebook* (1999) and the *Old Growth Order* Objectives. The 2012 Draft *Sustainable Resource Management Plan* balances a variety of resource values while achieving legal biodiversity objectives across the range of BEC variants (including rare forested ecosystems) distributed throughout the SMZ.

BCTS reviewed Draft OGMA selections in the Nahmint SMZ as part of our response to the June 18th Compliance Notice. The review entailed GIS analysis of the extent the current Draft OGMA's meet legal biodiversity variant retention targets and the distribution of finer scale TEM spatial data. For the purposes of this analysis, we applied the *Old Growth Order* variant targets to the cross section of site series represented in the LU for this assessment.

Our analysis (Refer to Appendix 1 "Protected Forest Breakdown by Biogeoclimatic Variant and Site Series for the Nahmint SMZ #13") confirms that the ranges of TEM site series that appear across SMZ 13 are well represented in the Draft OGMAs, confirming that the surrogate process used was effective.

The analysis also confirmed that rare forested ecosystems (site series or surrogates that make up less than 2% of an LU) are represented in the current Draft OGMA's, within the Nahmint Special Management Zone (SMZ) #13. This analysis confirms that the coarse filter planning approach to OGMA planning in 2007, and later carried forward into the 2012 OGMA selection process, was successful at meeting VILUP Objective B.4.

OGMA planning in the Nahmint LU is ongoing; BCTS is working with First Nations, District and Regional staff with a goal of having OGMA's legalized by spring 2019. BCTS will use best available information including TEM and new VRI data to evaluate site series representation to ensure the final legal OGMA's represent the correct balance of values and continue to achieve VILUP HLP Objective B.4.

To summarize, BCTS has provided information pertaining to point 1 in the Compliance Notice and is confident that our approach to biodiversity planning in the Nahmint SMZ is not in material conflict with the intent of VILUP HLP Order Objective B.4. Appendix 2 ("Planning Framework for Landscape Unit Planning") provides additional context regarding direction to licensees concerning biodiversity objectives and the Landscape Unit planning process. We used a surrogate level of representation at the Landscape Unit planning scale, due to lack of site-level information accurately mapping site series, and bolstered this through a site-level strategy to capture rare site series when encountered. As demonstrated in the analysis in Appendix 1, this has resulted in a representative distribution of OGMAs across site series at the Landscape Unit level and within the SMZ. We continue to work with government and First Nations to complete the Land Use Planning process in the Nahmint and as part of this process may further refine our management at the site series level through the adoption of specific targets, such as using the BEC variant targets from the Old Growth Order.

BCTS manages its program in the context of continuous improvement. As new information or direction is provided by government, BCTS will adapt its program to meet higher level government objectives including training staff and multiphase contractors to ensure they are aware and address new information or direction.

If C&E has any questions regarding our response, please contact Norm Kempe, Operations Manager, Strait of Georgia Business Area.

Yours truly,

Norman Kempe

Acting Timber Sales Manager

cc: Rhonda.Morris@gov.bc.ca – District Manager, Regional Operations Division
Ron.Cotton@gov.bc.ca - Land and Resource Specialist, Regional Operations Division

Attachments: Nahmint SMZ13 TEM Variant and Site Series Map
Biogeoclimactic Variant and Site Series Speadsheet Analysis

Appendix 1

Protected Forest Breakdown by Biogeoclimatic Variant and Site Series for the Nahmint SMZ #13
(Spreadsheet and Map)

Appendix 2

Planning Framework for Landscape Unit Planning

Forest development planning in Nahmint SMZ 13 is subject to three levels of plans:

- 1. Strategic Land Use Plans that set out broad objectives for land use Vancouver Island Land Use Plan, Higher Level Plan Order (December 1, 2000)
- Landscape Unit Plans that translate these broad objectives into clear and measurable targets and strategies to manage and conserve forest resources - Order Establishing Provincial Non-Spatial Old Growth Objectives (June 30, 2004)
- 3. Forest Stewardship Plans that set out specific timber harvesting results and strategies aimed at achieving government objectives.

Historical Context

On December 1, 2000, the VILUP HLP was put into effect. The VILUP HLP established Resource Management Zones and detailed a number of objectives that pertain to operational planning and landscape unit planning. It was noted at the time that some of the objectives were too broad in scope to give specific guidance to operational planning and that there was a need for Landscape-Level Plans (also referred to as "Landscape Unit Plans" or "Sustainable Resource Management Plans") which provide more specific guidance for measuring consistency of an operational plan with the objectives of higher level plans such as the VILUP HLP.

Under the scheme of the Forest Practices Code of British Columbia Act 1995 (the Code), Landscape Level Plans were intended to bridge HLP's and Operational Plans. Landscape Level Plans manage biodiversity objectives such as VILUP HLP Objective B.4 through the implementation of the Order Establishing Provincial Non Spatial Old Growth Objectives (Old Growth Order).

Under the Code, the Chief Forester provided policy direction regarding the relationship between approved HLP objectives and the development of Landscape Unit Plan objectives – such as the *Old Growth Order*. The direction required LU objectives to be consistent with existing Cabinet or Minister approved HLP such as the VILUP HLP. Accordingly, the 2004 *Old Growth Order* objectives are considered consistent with and complimentary to the 2000 VILUP HLP biodiversity objectives – specifically Objective B.4.

Recently Landscape Level plans, such as the Nahmint SMZ, have been broadened in scope to manage for a wider range of forest resources and values in order to provide meaningful guidance to operational plans and capture new societal values in forest management. In addition to forested ecosystem representation, habitat for species at risk and cultural values may be considered in the Landscape Level Planning process.

¹ Province of British Columbia: Higher Level Plans: Policy and Procedures – Chapter 5 Revisions (December 1996)

With respect to VILUP HLP Objective B4, both the HLP and the January 25, 2001 South Island Forest District VILUP HLP Implementation Guidance Memo² to Licensees stated that Objective B4 is expected to be achieved through Landscape Unit Planning, referring to the Landscape Unit Planning Guide (1999).

The guidance in the January 25, 2001 Memo stated:

"Objectives 4 and 5: of the HLP require the retention of old seral forest at the site series level of representation and in patches of variable size in the Nahmint SMZ (SMZ 13). The SDM,s expect that these objectives will be achieved through landscape Unit Planning. Licensees and agencies should note that this objective is linked to the transitional provisions of the HLP (objectives 17 and 18)"

The transitional provisions were put in place because it was recognized that specific VILUP HLP objectives such as B4 were too broad in scope, lacking targets and vague in terms of providing guidance for their practical application. It was recognized in a Forest Practices Board (the board) special report (FPB/SR/34) that "The clarity of objectives strongly influences how effectively they can be translated into practices on the ground"³. The board concluded in their report that "early SLUP's (Strategic Land Use Plans) in particular were deliberately written to provide broad strategic direction, with the intent it would be refined or operationalized in lower level plans." This was the situation with VILUP HLP B4 and the reason this objective was subject to transitional provisions of the HLP.

HLP Objective 17 was a transitional objective that did not require several VILUP HLP objectives to be immediately implemented, including B.4, until landscape units and objectives had been established for applicable resource management zones...essentially this was a "phase-in" provision.

HLP Objective 18 provided a two year window for **Objective 17** to be in effect. On December 1st 2002, the transitional objectives that did not require forest development plan consistency with HLP Objectives were no longer optional but fully in effect.

It was not until June 30, 2004 with the establishment of the *Old Growth Order* that biodiversity emphasis and old growth retention targets for the Nahmint were made known to assist with the implementation of VILUP HLP Objective B4 though the Landscape Unit (LU) Planning process.

In addition to providing old forest retention targets for SMZ 13, the *Old Growth Order* also provided direction to Licensees in terms of its implementation. The direction in the Old Growth Order was, "licensees must maintain old forest by **biogeoclimatic variant** within each landscape unit according to the age of old forest and the percentage of old forest retention that is specified in Tables 1 through 4..." This direction was approved by the Regional director of MSRM in a companion Implementation Policy.

The Old Growth Order was implemented through the Landscape-Unit Planning Guidebook (1999). A stated directive by the Chief Forester with respect to implementation was that landscape unit biodiversity objectives would not impact timber supply by more than 4.3% (1999)⁴. This pre-mandated limit on timber supply would be achieved by way of adherence with earlier direction from the Chief

² Letter from Cindy Stern , District Manager South Island Forest District (January 25, 2001) (Re: VILUP HLP Implementation, South Island Forest District).

³ FPB Provincial Land Use Planning, Which way from here, (November 2008).

⁴ Memorandum from Larry Peterson, Chief Forester, Ministry of Forests (March 17, 1999) Re: Release and Implementation of the Landscape Unit Planning Guide.

Forester which specifically addressed representativeness when developing landscape unit objectives for old seral requirements (1998). The direction was not to consider representativeness at a scale finer than the Biogeoclimatic Ecosystem Classification (BEC) variant level when establishing Landscape unit objectives⁵.

The Chief Forester's 1998 memo expressed concern "that applying representativeness requirements on a scale finer than the BEC variant represents a high risk that the Ministry of Forests will not be able to manage the Province's forest resources having regard to the immediate and long term economic benefits they may confer on British Columbia, as is required by section 4(b) of the Ministry of Forests Act R.S.B.C 1996, c.300⁶".

The release of the Old Growth Order in 2004 subsequently established Landscape Units and Old-Growth Landscape Unit Objectives consistent with the earlier Chief Forester policy directives. And, the Chief Forester direction to maintain old forest representativeness by BEC variant was affirmed again in the Old Growth Order itself.

Where a forest or planning practice is established as part of a higher level plan objective, they must be consistently followed in operational planning. Accordingly, VILUP HLP Objective B.4 must be addressed in SMZ 13 Land Use Planning. Objective B.4 is not prescriptive in nature (no targets) and therefore, is intended to provide flexibility in the OGMA selection process. Targets in higher level plans were typically only applied if it was generally accepted as necessary to attain a very specific outcome for an objective. Objective B.4 directs Landscape Unit Planning to consider the full spectrum of old seral forests (analysed at the site series or surrogate level) occurring within a variant, and attempt to balance their representation in OGMAs, with particular regard (or emphasis) to protecting rare and underrepresented ecosystems at an appropriate spatial scale.

It was this direction that guided BCTS's 2007 and 2012 Nahmint SMZ 13 Landscape Unit Planning process.

The *Old Growth Order* translates strategic level objectives and directions in the VILUP HLP such as Objective B4, into achievable and measurable legal requirements, through a Landscape Unit Planning Process, that provides a means of integrating and achieving the intent of the Objective B4 into a Forest Stewardship Plan.

The legal Realm - Forest Stewardship Plans

Under the Code, certain old growth objectives under VILUP were made legally binding as Higher-Level Plan Orders. When the Code was replaced with the *Forest and Range Practices Act 2004* (FRPA), existing Orders were continued under the *Land Act*. Legally, government objectives for old growth established under Code or FRPA orders become enforceable through a two-step process⁷.

1. Forest tenure holders and timber sale managers are required to submit a forest stewardship plan (FSP). A FSP must specify results or strategies that are consistent with objectives set by

⁵ Memorandum from Larry Peterson, Chief Forester, Ministry of Forests (May 25, 1998) Re: Chief Forester Direction Landscape Unit Objectives.

⁶ Memorandum from Larry Peterson, Chief Forester, Ministry of Forests (May 25, 1998) Re: Chief Forester Direction Landscape Unit Objectives.

⁷ Environmental Law Center and Clinic, An Old Growth Protection Act for British Columbia (Spring 2013)

government – (this includes objectives for old-growth retention contained in Code-era or Land Act orders). Approval of the FSP indicates that a Statutory Decision Maker is satisfied the Results and Strategies are compliant with legislation and higher level plans.

2. Commitments (results and strategies) made in forest stewardship plans are legally binding on holders of such plans.

This implies that Orders established under the Land Act or those established under the Code, and subsequently grandfathered, are enforceable only through a forest stewardship plan.

Accordingly, under the results-based framework of FRPA, a holder of a Forest Stewardship Plan (FSP) may be in non-compliance with an approved FSP result and strategy and reasonably subject to compliance and enforcement, but not with a government objective.

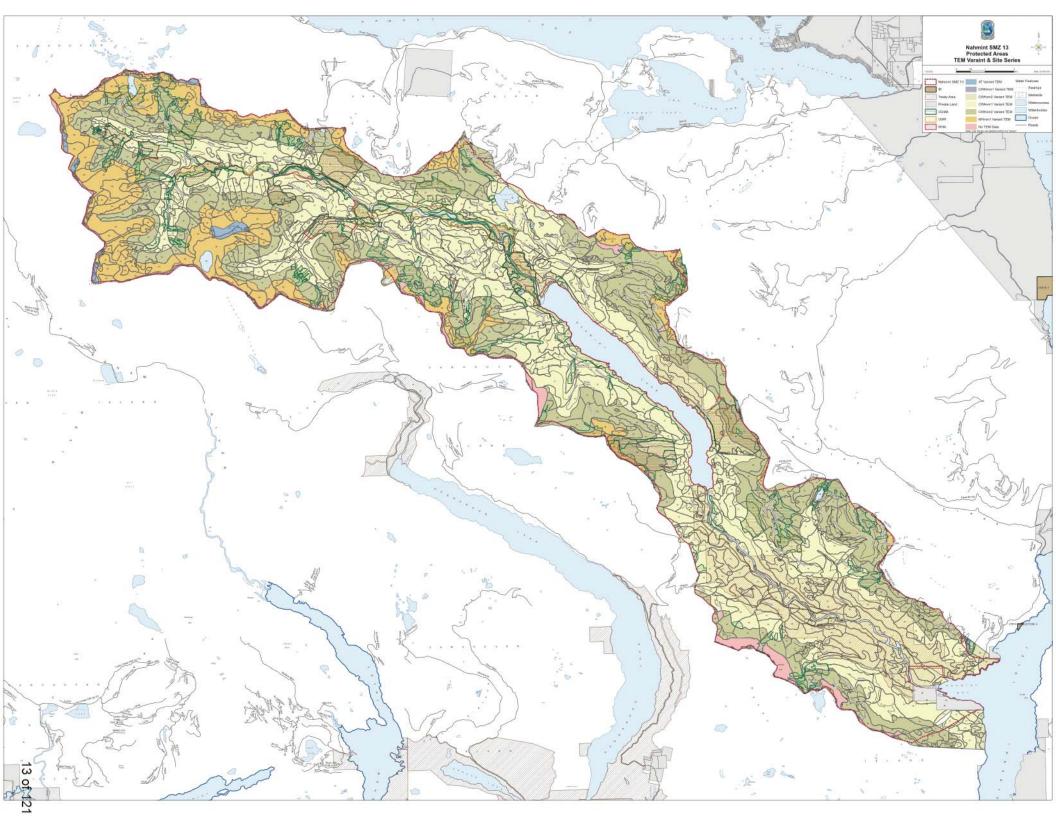
BCTS currently has an approved forest stewardship plan (#638 -approved on April 19, 2017) that addresses VILUP Objective B4 under section 7.2.5. of the FSP.

Appendix 3

Summary of steps for Land Use Planning in Nahmint

The Ministry of Forests, Lands, Natural Resource Operations and Rural Development is committed to establishing legal Old Growth Management Areas (OGMAs) in the Nahmint Landscape Unit. These will be established through a Land Use Order under Section 93.4 of the *Land Act*, as part of a modernized Land Use Planning process that considers a range of values and is completed in partnership with First Nations.

Overview of steps to achieve legal OGMAs	Target timeline
Work with Regional Planning staff to develop project team, define roles and responsibilities, and confirm scope of Land Use Planning for Nahmint Landscape Unit.	Currently underway – to be completed by Oct 2018
Engage early with First Nations and include stakeholders in Land Use Planning process. Currently working with BCTS and Hupacasath First Nation, will engage with Tseshaht First Nation and Interfor in near future.	Currently underway – to be completed by Oct 2018
Update and expand Nahmint draft Landscape Unit Plan to include all relevant values for Landscape Unit Planning. This includes OGMA planning considerations (aspatial targets by variant, targets by site series, configuration and size), in addition to a range of other Land Use Planning goals (e.g. overlap with cultural cedar, wildlife habitat areas and ungulate winter range). The province is currently reviewing options for site series targets, has confirmed cultural cedar overlap, and is considering overlap with species at risk (marbled murrelet, northern goshawk).	Currently underway – to be completed by Nov 2018
Draft a version of the Land Use Order to be established under Section 93.4 of the <i>Land Act</i>	To be completed by Nov 2018
Initiate formal First Nation consultation, continue engagement as needed.	Start by Dec 2018
Complete 60 day public review process and summarize responses.	January-March 2019
Bring final package to decision maker to establish Land Use Order.	April 2019
Post final order in BC Gazette and on Land Use Planning website in order to come into effect.	April 2019



Protected Forest Breakdown By Biogeoclimatic Variant And Site Series For The Nahmint SMZ13

							Old	Old Growth -		Remaining		Mature -		Remaining		Immature -		Remaining		Remainin
					02.5	Total Other			Remaining				Remaining	Mature -	122		Remaining	Immature -	e e	Mature to
				2018	Total OGMA	Protected - WHA,UWR	Age Class 9 in	in Other Protected -	Old Growth - Age Class	- Age Class 9 in Non	Age Class 5 to 8 in	to 8 in Other	Mature - Age Class 5		Immature - Age Class 1	to 4 in Other	Immature - Age Class 1	Age Class 1 to 4 in Non	Remaining Mature to	Old in No Contribut
BEC				Analysis	(ha)	(ha) =	OGMA	WHA,UWR		Contributi	OGMA	Protected	to 8 in	Contributi	to 4 in	Protected	to 4 in	Contributing		
	Site Series	Crown Forest Landbase (ha)	Target %	The second secon	=H+L+P	I+M+Q	(ha)	(ha)	(ha)	ng (ha)	(ha)	(ha)	THLB (ha)		OGMA (ha)		THLB (ha)	(ha)	(ha) = J+N	K+0
AT	00	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		- (
	No Site Series	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
AT Total		7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CWHvm1	00	142.5	19.0	27.1	18.9	3.3	14.6	3.1	4.4	23.7	2.2	0.0	5.7	25.4	2.2	0.3	17.9	43.1	10.1	49
	01	2246.7	19.0	426.9	234.8	23.6	160.8	16.2	301.8	87.5	69.3	2.6	339.3	178.2	4.7	4.8	1048.4	33,1	641.1	265
	02	24.6	19.0	4.7	2.3	0.0	1.5	0.0	0.2	0.0	0.8	0.0	2.4	11.5	0.0	0.0	8.3	0.0	2.6	11
	03	1064.6	19.0	202.3	183.9	16.7	79.1	9.2	161.4	48.6	103.5	6.3	168.1	151.8	1.2	1.3	299.4	34.5	329.5	200
	04	1309.9	19.0	248.9	156.8	4.3	64.6	0.1	315.2	47.8	90.1	0.3	166.9	134.5	2.2	3.8	463.3	21.1	482.1	182
	05	1637.0	19.0	311.0	368.3	45.3	282.1	32.5	286.4	222.0	56.8	4.4	109.0	67.7	29.4	8.4	529.0	9.3	395.4	289
	06	470.1	19.0	89.3	98.2	7.6	81.1	3.8	76.6	56.3	9.2	0.0	49.9	36.5	7.9	3.8	135.6	9.4	126.5	92
	07	424.9	19.0	80.7	118.2	4.1	84.7	3.0	45.2	56.4	15.3	0.2	22.3	36.1	18.3	0.9	78.4	64.2	67.5	92
	08	120.8	19.0	23.0	60.1	1.3	59.2	1.3	8.5	12.2	0.1	0.0	0.0	9.1	0.8	0.0	12.3	17.2	8.6	21
	09	115.5	19.0	21.9	50.0	41.9	40.8	3.6	1.8	0.0	0.4	0.3	0.0	0.0	8.8	38.0	21.8	0.0	1.8	0
	10	48.7	19.0	9.3	36.9	7.4	27.2	3.1	0.4	0.6	8.3	1.6	0.0	0.1	1.4	2.6	1.8	1.5	0.4	0
	11	0.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	- 0
	14	7.2	19.0	1.4	0.4	0.1	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.1	- 0
CWHvm1	Total	7612.6		1446.4	1329.0	155.7	896.1	76.0	1201.9	555.0	355.8	15.8	863.7	650.9	77.1	64.0	2622.8	233.6		
CWHvm2	00	164.5	19.0	31.3	3.5	0.0	2.2	0.0	7.6	28.8			9.1	40.1	0.5	0.0	24.8	50.7	16.7	
	01	1517.2	19.0	288.3	239.2	3,2	67.8	1.2	106.2	129.4	167.1	1.1	367.6	204.9	4.3	0.8	429.3	37.5	473.8	334
	02	52.9	19.0	10.0	12.3	0.3	1.0	0.0	0.8	0.0	11.1	0.3		29.1	0.1	0.0	4.5	0.4	6.3	
	03	1114.6	19.0	211.8	133.6	4.5	36.4	0.0	61.7	83.2	95.7	4.5	185.7	408.0	1.4	0.0	232.6	5.4	247.4	
	04	1016.7	19.0	193.2	126.3	0.0	34.4	0.0	129.7	137.0	91.0	0.0	216.2	250.4	0.9	0.0	152.3	4.8	345.9	387

05 06 07 08 09 CWHvm2 Total CWHxm2 00 01 04 CWHxm2 Total MHmm1 00 01 02	939.2 438.0 351.0 67.3 52.0 5713.5 1.8 13.9 4.4 20.1	19.0 19.0 19.0 19.0 19.0 13.0 13.0	178.4 83.2 66.7 12.8 9.9 1085.6 0.2 1.8 0.6 2.6	80.1 74.7 13.0 10.4 939.8 0.0 0.0	5.4 0.0 2.9 0.0 0.0 16.3	95.4 10.1 35.7 12.6 0.0 295.5	1.6 0.0 0.7 0.0 0.0 3.4	140.0 47.5 12.3 8.7 0.9 515.4	107.6 107.6 47.8 10.5 10.6 662.4	148.7 70.0 36.4 0.2 10.4 631.3	2.1 0.0 2.2 0.0 0.0 10.3	102.9 87.5 12.9 2.3 1.3 990.9	216.0 91.6 105.2 10.6 7.9 1363.8	2.9 0.0 2.6 0.2 0.0 13.0	1.7 0.0 0.1 0.0 0.0 2.6	98.0 13.7 64.9 5.3 0.9 1026.2	22.4 10.0 30.3 17.0 19.9 198.5	242.9 135.0 25.2 11.0 2.2	18
07 08 09 CWHvm2 Total CWHxm2 00 01 04 CWHxm2 Total MHmm1 00 01	351.0 67.3 52.0 5713.5 1.8 13.9 4.4	19.0 19.0 19.0 13.0 13.0	66.7 12.8 9.9 1085.6 0.2 1.8 0.6	74.7 13.0 10.4 939.8 0.0 0.0	2.9 0.0 0.0 16.3	35.7 12.6 0.0 295.5	0.7 0.0 0.0 3.4	12.3 8.7 0.9 515.4	47.8 10.5 10.6 662.4	36.4 0.2 10.4 631.3	2.2 0.0 0.0 10.3	12.9 2.3 1.3 990.9	105.2 10.6 7.9 1363.8	2.6 0.2 0.0 13.0	0.1 0.0 0.0 2.6	64.9 5.3 0.9 1026.2	30.3 17.0 19.9 198.5	25.2 11.0 2.2	152 21 18
09 CWHvm2 Total CWHxm2 00 01 04 CWHxm2 Total MHmm1 00 01	52.0 5713.5 1.8 13.9 4.4	19.0 19.0 13.0 13.0	9.9 1085.6 0.2 1.8 0.6	13.0 10.4 939.8 0.0 0.0	0.0 0.0 16.3	12.6 0.0 295.5	0.0 0.0 3.4	8.7 0.9 515.4	10.5 10.6 662.4	0.2 10.4 631.3	0.0 0.0 10.3	2.3 1.3 990.9	10.6 7.9 1363.8	0.2 0.0 13.0	0.0 0.0 2.6	0.9 1026.2	17.0 19.9 198.5	11.0	21. 18.
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CWHxm2 00 01 04 CWHxm2 Total MHmm1 00 01	1.8 13.9 4.4	13.0	0.2 1.8 0.6	0.0 0.0 0.0	0.0	0.0	0.0	0.0										0.0	0.0
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01 04 CWHxm2 Total MHmm1 00 01	13.9	13.0	1.8 0.6	0.0	0.0		177.5	-	0,0								and an		
CWHxm2 Total MHmm1 00 01		13.0	0.6	0.0	0.0			0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	9,8	0.0	1.8	
MHmm1 00 01	20.1		26			0.0	0.0	0.0	0.0	0.0	0.0	2.4	1.7	0.0	0.0	0.3	0.0	2.4	0.0
01			2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	1.7	0.0	0.0	11.9	0.0		
01				-									-		0.0				
	226.9	28.0	63.5			0.0	0.0	1.3	25.6	3.4	0.0	3.3	96.1	0.0	0.0	17.8	79.5	4.6	121.7
102	323.5	28.0	90.6	84.4	0.0	14.2	0.0	17.0	43.0	70.1	0.0	23.8	138.6	0.0	0.0	4.4	12.3	40.8	181.6
0.0	529.8	28.0	148.3	57.0	0.0	18.7	0.0	27.3	72.3	38.2	1.2	19.5	287.1 103.0	0.1	0.0	7.2	61.7 55.5	46.8	359.3
03	216.2 75.4	28.0	21.1	14.1 35.9	0.0	1.2	0.0	7.9	7.4	34.6	0.0	6.1 3.3	12.3	0.0	0.0	8.7	0.0	8.1 11.2	131.3
05	69.7	28.0	19.5	3.3	0.0	3.2	0.0	0.2	11.6	0.1	0.0	0.6	54.1	0.0	0.0	0.0	0.0	0.8	65.7
06	68.4	28.0	19.1	5.9	0.0	1.1	0.0	0.0	12.5	4.8	0.0	0.0	38.4	0.0	0.0	2.6	9.0	0.0	51.0
09	0.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MHmm1 Total	1510.0	20.0	422.8	203.8	1.2	41.4	0.0	55.6	200.8	162.0	1.2	56.7	729.5	0.5	0.0	44.6	217.9	0.0	0.0
									177						100				
No TEM Data No Site Se		0.0	0.0		0.0	5.2	0.0	23.3	61.8	6.1	0.0	33.1	47.2	0.1	0.0	10.4	2.5		
No TEM Data Total	189.7	0.0	0.0	11.4	0.0	5.2	0.0	23.3	61.8	6.1	0.0	33.1	47.2	0.1	0.0	10.4	2.5		

Site Series Representation < 2% of the Crown Productive Forest - Shown in Red

Data Used
BCGW Layers(June 28, 2018):
WHSE_TERRESTRIAL_ECOLOGY.STE_TEM_20K_POLYS_SVW
WHSE_FOREST_VEGETATION.VEG_COMP_LYR_R1_POLY
WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_SP
WHSE_WILDLIFE_MANAGEMENT.WCP_WILDLIFE_HABITAT_AREA_POLY
WHSE_LAND_USE_PLANNING.RMP_PLAN_LEGAL_POLY_SVW
BCTS Layers:
Draft OGMA's

Note: 4.8% of the Crown Forest Landbase has no TEM data (Where Site Series = 00 or where there is No TEM data)

From: Casavant, Bryce FLNR:EX

To: Casavant, Bryce FLNR:EX

Subject: FW: Report of Natural Resource Violation

Date: Tuesday, June 26, 2018 1:51:35 PM

Attachments: attach2.pdf

attach3.jpg attach4.jpg attach5.jpg attach6.jpg attach7.jpg

----Original Message----

From: mailer@a100.gov.bc.ca [mailto:mailer@a100.gov.bc.ca]

Sent: Tuesday, June 5, 2018 3:18 PM

To: FLNR Compliance and Enforcement Contact Centre FLNR:EX

Subject: Report of Natural Resource Violation

Below is the result of your feedback form. It was submitted on Tuesday, June 05, 2018 at 15:18:29.

referer: https://www.for.gov.bc.ca/hen/nrv/report.htm

remote address: 70.71.173.102

ReportDate: 05/31/2018

ReportTime: 15:38

LastName: Inness

FirstName: Andrea

EmailAddress: andrea@ancientforestalliance.org

DaytimePhone: 7789535983

MailingAddress: Ancient Forest Alliance Victoria Main PO, PO Box 8459 Victoria, BC, V8W 3S1

PropertyAddress: Unit 306, 620 View Street, Victoria, BC

Location: Nahmint Valley, west of Port Alberni on Vancouver Island. Special Management Zone 13.

attach1: Nahmint - 11x17.pdf

attach2: Nahmint Cutblocks - 11x17.pdf

attach3: Nahmint-Valley-9th-widest-Douglas-fir1.jpg

attach4: Nahmint-Valley-9th-widest-Douglas-fir2.jpg

attach5: Nahmint-Valley-9th-widest-Douglas-fir3.jpg

attach6: Nahmint-Valley-Clearcut-with-large-redcedar.jpg

attach7: Nahmint-Valley-Large-Redcedar.jpg

ViolatorAddress: BC Timber Sales

ViolationDate Start: 05/06/2018

ViolationHour_Start: 00

ViolationMinute Start: 00

ViolationHour End: 00

ViolationMinute End: 00

InProgress: yes

NatureOfViolation: This is a complaint from the Ancient Forest Alliance about a potential natural resource violation by the Ministry of FLNRO regarding forest practices and recent BC Timber Sales cutlbocks in the Nahmint Valley - Special Management Zone 13 on Vancouver Island.

After walking through various recent cutblocks planned by BC Timber Sales in the Nahmint Valley, we believe BC Timber Sales' Forest Stewardship Plan (FSP #638) fails to meet the results and strategies set out in the Vancouver Island Land Use Plan Higher Level Plan Order that rare and underrepresented site series and surrogates be represented and protected (p. 2, objective B4).

After walking many of these cutblocks, typically found at lower- and mid-elevations, we believe several of the western redcedar, Douglas-fir, western hemlock, and amabilis fir-associated site series may be considered rare and underrepresented plant associations that should not be logged.

We also have noted that BCTS "Best Management Practices for Coastal Legacy Trees" policy states that the minimum size for retention of Douglas-fir is 2.1 meters. The largest Douglas-fir that we noted that was logged was 3.0 metres a clear violation of BCTS policy. See attached photos of the tree. We believe that other western redcedars and Douglas-firs in the BCTS-issued cutblocks also exceeded the minimum threshold size for retention.

Furthermore, we also note that, in the Vancouver Island Summary Land Use Plan, one of the primary land use objectives for the Nahmint Valley (Special Management Zone 13) includes the retention of a high proportion of old forest, including large, old seral Douglas-fir trees (p. 70). The Douglas-fir described above was clearly one of the largest and oldest Douglas-first in the province (and was wider than the 9th-widest Douglas-fir tree listed in the BC Big Tree Registry).

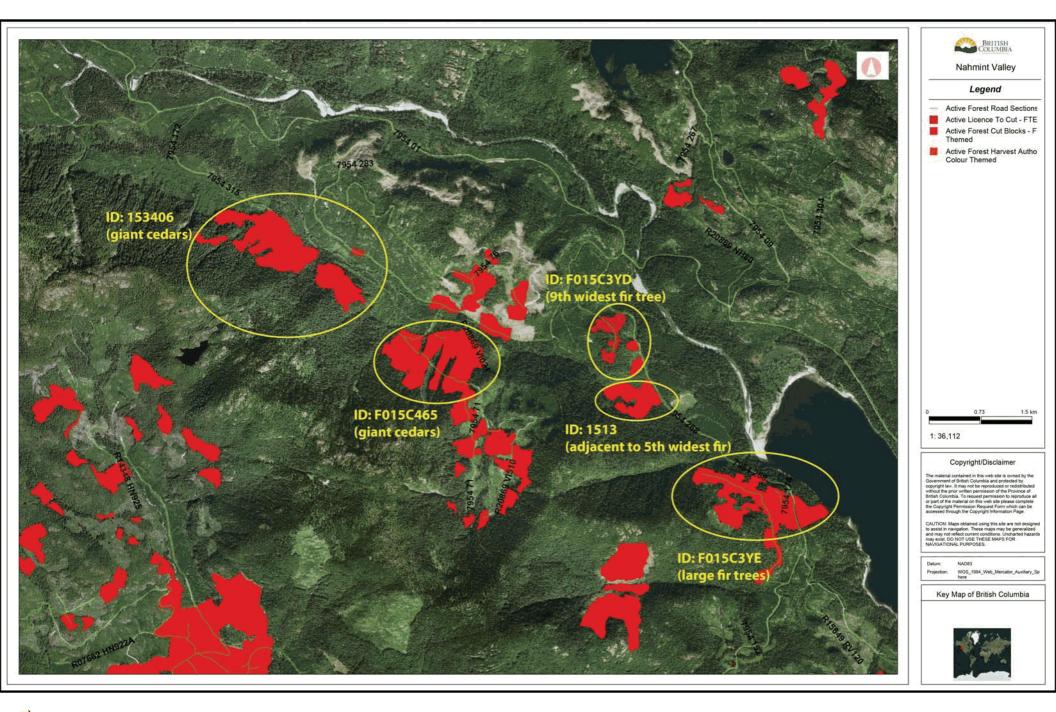
We request that an investigation be commenced to look into this matter. If you need more information, please contact us at info@ancientforestalliance.org.

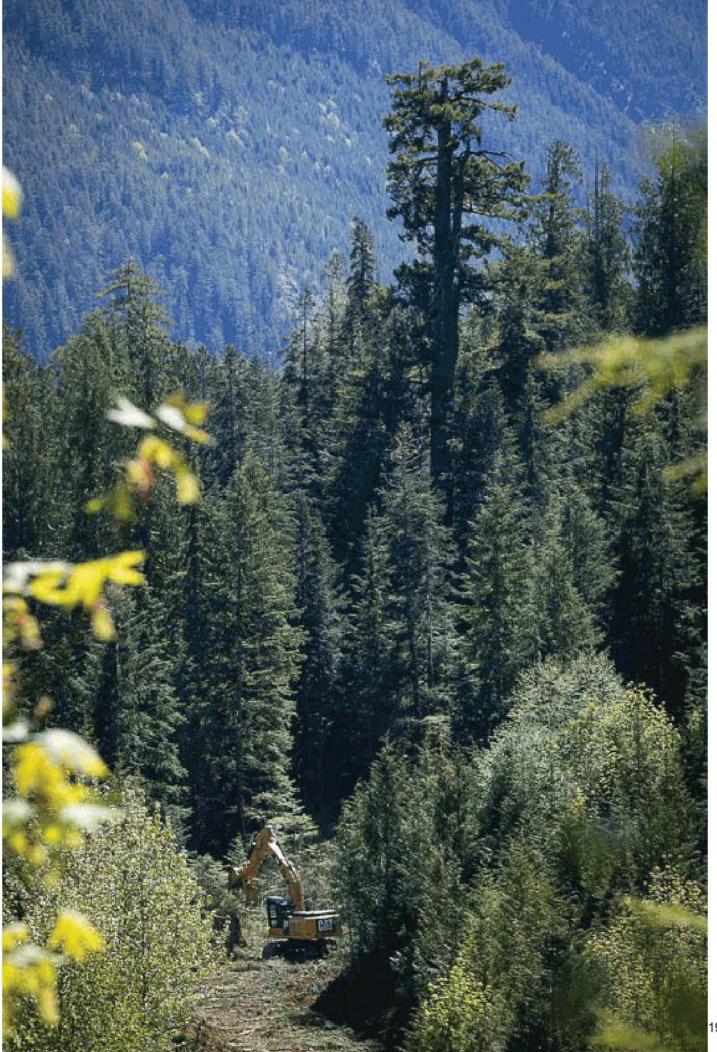
AffectFromViolation: We are deeply concerned about the violation, given the abundant ecological, tourism and recreational, and cultural values of the area in question and possible negative and long-term impacts on these values. We photo documented the areas and have alerted the public as to what is happening through news and social media channels.

AgenciesNotified: Minister of Forests, Lands, Natural Resource Operations and Rural Development

ReasonForUrgency: We consider this matter to be urgent, given the scale and fast pace of current logging operations in the Nahmint Valley, which are targeting the rarest, highest-productivity stands with the biggest trees.

Hazards:	Fallen t	rees.			













 From:
 Casavant, Bryce FLNR:EX

 To:
 Hudson, Don A FLNR:EX

Cc: Bastarache, Paul FLNR:EX; Morris, Rhonda M FLNR:EX; Cotton, Ron FLNR:EX; Norlock, Jim D FLNR:EX

Subject: Nahmint Findings - SMZ 13 Compliance Notice

Date: Monday, June 18, 2018 2:56:39 PM

Attachments: image001.jpg

Lt 2018 June 18 DCR 37250 Nahmint Findings BCTS.pdf

Importance: High

Dear Mr. Hudson,

Please see attached correspondence of today's date.

I wish to take this time and thank your staff for their co-operation and transparency during this compliance inspection.

Sincerely,

NRO Bryce Casavant, DSocSci (ABD), MA, CMAS

Senior Compliance and Enforcement Specialist

Natural Resource Officer

West Coast Region

Compliance and Enforcement Branch | FLNRORD

Office: 250-230-1319 (cell)

To report a Natural Resource Violation:

Telephone: 1-877-952-7277 (RAPP) or #7277 on cellphones Webpage: https://www.for.gov.bc.ca/hen/nrv/report.htm





File # DCR-37250

Don Hudson B.C. Timber Sales Manager Campbell River District Office 370 S Dogwood Street Campbell River, B.C. V9W-6Y7

VIA e-mail don.hudson@gov.bc.ca

June 18th 2018

Re: Compliance Notice - Inspection Findings (SMZ 13)

Ref: Vancouver Island Land Use Order (Higher level Order); Vancouver Island Land Use Summary Plan; Nahmint Watershed Review (1991); Forest Stewardship Plan #638 (2018); West Coast Forest Stewardship Plan, BCTS – Major (2013).

Dear Mr. Hudson,

Please be advised that Natural Resource Officers conducted a records inspection pursuant to Section 61 (2) of the *Forest and Range Practices Act* in order to determine the level of compliance of timber harvesting operations in SMZ 13 (Nahmint). Please be advised that our inspection findings have resulted in reasonable grounds to believe that there is a high likelihood of a government non-compliance pertaining to your operations in this area. This letter will describe the issue, the overall findings, the details of the inspection conducted, and issues pertaining to interpretation of current ministerial orders. Finally, the actions taken by the inspecting officers will be outlined for you and an opportunity to respond within a specified timeline will be provided.

Issue: This Compliance Notice pertains to an Inspection conducted by Natural Resource Officers following public media attention regarding timber harvesting operations in the Nahmint Valley. A formal public complaint was also received by Natural Resource Officers.

Findings: The inspection found that there is a <u>high likelihood of government non-compliance</u> with the *Vancouver Island Land Use Plan – Higher Level Order* Objective B4.



Details of inspection: The Inspection found that the *Vancouver Island Land Use Plan* ("**VILUP**") is a formal ministerial order that established portions of the Nahmint Valley as a Special Management Zone (identified as "**SMZ 13**"). This order is still in effect. The order contains a background document titled *The Vancouver Island Summary Land Use Plan*. On page 70, this plan establishes SMZ 13 and sets out specific government objectives and rationales pertaining to SMZ 13 (old growth protection objectives and intent is described in detail). While not a legal order itself, *The Vancouver Island Summary Land Use Plan*, coupled with the *Nahmint Watershed Review* (1991), assists in understanding the government's intentions in producing the VILUP higher level order. The objectives of VILUP contain a requirement to manage SMZ 13 at a site series / surrogate level of representation (VILUP Objective B4) for the purpose of meeting ministerial intentions pertaining to SMZ 13. This ministerial order requirement for land use planning is identified in the current Forest Stewardship Plan (FSP) #638. Specifically, VILUP states:

- VILUP Objective # B4 "Maintain ... elements of biodiversity in forested ecosystems ..., by retaining old seral forests at the site series / surrogate level of representation". Special consideration is also to be given to rare and underrepresented ecosystems.
- VILUP Objective # B4 Biodiversity retention, "This includes, but is not limited to: large diameter (>60cm) live, decaying and dead standing trees (providing nest and cavity sites); downed wood, including large diameter pieces (>50-150sm); deciduous broad-level trees, both in riparian and upland areas".
- VILUP Objective # B4 "The level of representation of old seral forest (at the site series / surrogate level) will be applied through landscape unit planning".

In reviewing BCTS landscape planning documents from 2007 and 2012, the Inspection found that site series / surrogate level of representation in landscape planning was never implemented. Specifically, The Nahmint Landscape Unit Plan (2007, pg 13), states, "Although site series mapping was available it was not used to select OGMA delineation and final selection ..." Furthermore, the Sustainable Resource Management Plan for the Nahmint Landscape Unit (2012), appears to have adopted the 2007 methodologies and does not address site series / surrogate levels of representation in landscape planning. Therefore, it was found that:

- 1. Landscape unit planning, using site series / surrogate levels of representation, appears to have never been implemented.
- 2. As a result, there are reasonable grounds to believe historic and current harvesting in SMZ 13 is not in accordance with VILUP, BCTS FSP Major (2013), and the current FSP #638.

VILUP Interpretation: The Inspection found that confusion appears to exist pertaining to VILUP Objective B4. It is noted that BCTS staff interpret this objective as only pertaining to identified "rare" or "underrepresented ecosystems" and that site series / surrogate levels of representation are not required in landscape planning due to data issues. However, in discussion with land use planning specialists and other staff, Natural Resource Officers interpret Objective B4 as applying to all of SMZ 13 at the landscape planning phase. This understanding of site series / surrogate levels of representation at the landscape level is consistent with the plain words of the order and the context of the background documents which formed the intent of the order.



Opportunity to respond: Please produce to the undersigned, within 30 days of the date of this Notice, the following:

- 1. Further information pertaining to site series / surrogate levels of representation within Nahmint Landscape Planning; or in the alternative,
- 2. Identified corrective actions being taken to ensure compliance with government objectives.

Actions taken:

- I conducted a file review and Compliance Inspection pertaining to SMZ 13.
- I reviewed all orders, FSP results and strategies, land use planning documents, and applicable legislation (300 + pgs).
- I spoke with land use specialists in Nanaimo and legislation and site series monitoring staff.
- I spoke with BCTS personnel on 3 occasions and reviewed cut block and site plans.
- I presented preliminary concerns to the FSP approving authority, district manager, and other staff on May 31st 2018.
- I presented preliminary findings during conference call proceedings on June 14th 2018.
- I determined there are reasonable grounds to believe that a high likelihood of historic and current government non-compliance in SMZ 13 exists, as a result of potential failures to implement site series / surrogate levels of representation in the landscape planning phases.

Submitted for your action,

NRO Bryce Casavant, DSocSci (ABD), MA, CMAS

Senior Compliance and Enforcement Specialist

Natural Resource Officer

West Coast Region

Compliance and Enforcement Branch | FLNRORD

Office: 250-230-1319 (cell)

To report a Natural Resource Violation:

Telephone: 1-877-952-7277 (RAPP) or #7277 on cellphones Webpage: https://www.for.gov.bc.ca/hen/nrv/report.htm

Distribution List:

Paul Bastarache (Regional Manager – C&E West Coast)
Jim Norlock (Field Unit Supervisor – C&E Port Alberni)
Rhonda Morris (District Manager – Alberni)
Ron Cotton (Land Resource Specialist – Coast Area)

From:Chessor, Laura FLNR:EXTo:Casavant, Bryce FLNR:EXSubject:Nahmint OGMA ss tables

Date: Wednesday, June 13, 2018 4:05:31 PM

Attachments: N OGMAs SSeries.xls

Nahmint SMZ Red Blue Lists.xlsx

Hi Bryce,

Attached are the tables showing site series breakdowns for the draft OGMA's. The first one is from the 2007 analysis forwarded to me by Ron Cotton.

Thanks,

Laura

Laura Chessor, RPF A/ Planning Officer BCTS Strait of Georgia (250) 286-9431

OBJECTIC Shape	OBJECTICBOO	CGSDEPERIMETI EC	P	ECP ID ECP MB P	OLY_NB FCODE PROJ_I	D SOURCE SDEC 1	SITE S1	SITEMC S1	SITE M1A	SITE M1B	STRCT_S SDEC_2	SITSITEM	C_SITE_M2A	SITE M2B	STISDEC	3 SITE S3	SITEM	C ISITE A	M3/SITE M3ESTRO	T_S SHAPE_L Shape_Le S	hape Area
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359	67367	0 3839.854	1079	62712 44303012	1227 WI252001 44303		7	0 RO	w		1	3 0 MM	v	w	7	0	5			0 3839.865 138.227	1283.25842
370	99037	0 620.664	3845	165148 443040031	387 WI252001 44304	10	0	0 TA			0	0 0			0	0	0			0 620.6608 16.95262	2.378631107
373 374	23452	0 1098.511	3841	165144 44304003I 165142 44304003I	383 WI252001 44304 381 WI252001 44304	3	7	0 SA 0 SA	w		3.	3 0 RO 3 0 RO			0	0	0			0 1098.514 701.1693 0 1074.287 483.1511	4304.482917 8591.393573
382	99901	0 1571.574	3792	165117 44304003	358 WI252001 44304	10	0	0 TA	AW.		0	0 0			0	0	0			0 1571.564 75.80753	197.0649944
385	92027	0 2596.835	3788	165113 44304003!	354 WI252001 44304	11	0	0 SA	c		3	0 0			0	0	0			0 2596.837 1694.015	18659.1215
407 440	36833 43054	0 1724.989	3715 3586	165066 44304003 164975 44304002;	312 WI252001 44304 233 WI252001 44304	13	6	0 SA 0 RO	c		3	4 6 HD 4 3 HS	0	160	7	0	0			0 1724,979 1073,261 0 2801,873 753,9707	15043.88014 14574.59994
443	90045	0 2044.097	3580	164970 44304002	229 WI252001 44304	18	7	0 SA	c	K	4	3 0 TA		w.	0	0	0			0 2044.094 757.8074	9307.237039
447	113665	0 592.2743	3548	164951 44304002	211 WI252001 44304	13	7	0 SA	c	k	4	3 0 TA			0	0	0			0 592.2748 172.3843	501.9326637
455 464	96421 11430	0 3301.877	3515 3475	164932 44304006- 164912 44304001	649 WI252001 44304 177 WI252001 44304	11	0	0 LA 0 SA			0	0 0			0	0	0			0 3301.886 612.7114 0 991.2929 896.8954	1085.832562 7390.812552
464	110638	0 995,4121	3468	164905 44304001;	171 WI252001 44304	1	5	0 SA	c	W	3	5 0 TA			0	0	9			0 995.4033 4.474526	0.267683621
470	101922	0 1662.467	3459	164899 443040016	165 W1252001 44304	- 3	4	0 SA	c	k	3	3 4 RS	o .	k	7	3	RO			0 1662.472 285.3092	873.7622103
473	28369 30329	0 1349.483	3452 3382	164894 443040010	160 WI252001 44304 135 WI252001 44304	1	5	0 SA 0 TA	c	w	3	5 0 TA			0	0	5			0 1349.481 289.6403	1522.27659 707.077654
495	21507	0 598.2832	3382	164856 44304001;	135 WI252001 44304 134 WI252001 44304	1	0 6	0 TA 0 CL			0	4 3 HS	h		4	0	9			0 598.2988 147.9872 0 464.2718 37.63252	63.6949937
558	81563	0 844,3923	3181	164748 44304000!	52 WI252001 44304	1	0	0 SA	c	K:	3	0 0	755	70	0	0	0			0 844.4013 356.9575	1311.684224
567	63744	0 1067.45	3145	164725 443040000	35 WI252001 44304	10	6	0 TA			0	4 3 HS		w.	4	0	0			0 1067.458 1161.179	5202.777914
588 597	10091 76903	0 7213.736 0 731.8078	3045	164675 44304005 164665 44304005	579 WI252001 44304 571 WI252001 44304	1	0	0 RO 0 TA			0	4 2 MM	h		0	0	BYS	P		4 7213.735 337.2275 0 731.8087 29.98214	2139.117275 36.95442082
619	83977	0 1704,133	2867	755771 44205021;	2135 WI252001 44205	P	7	0 RO			1	3 2 MM	. V.	w	7	0	0			0 1704.139 427.6668	2240.710552
620	99685	0 6526.54	2803	755771 44205021:	2128 WI252001 44205	P 1	5	0 MM	V		7	4 0 RO			1	1) MB	k	5	7 6526.52 1199.073	12478.483
621 624	60359 70289	0 2162.069	2832	755771 44205021: 755795 44205021	2130 WI252001 44205 2141 WI252001 44205	P	7	0 MM 0 RO	V		7	3 0 RO	821		7	0	MR	100	227	0 2162.073 135.3648 7 4197.377 390.956	176.0058412 913.9712143
626	70289	0 4197,405	2880	755795 442050214	2141 WI252001 44205	P	4	0 RO			1	4 2 MM	v		7	2	1 MB	k.		7 4197.377 396.6334	2647.840688
277	63860	0 21587.25	4223	833336 443059991	99999	20	0	0			0	0 0			0	0	9			0 21587.27 3497.508	2749.351972
288 291	25890 57038	0 2854.309 0 620.5597	1429	509 441010050 503 441010050	509 WI252001 44101 503 WI252001 44101	P 11		0 MH 0 MH	8		7	0 0			0	0	0			0 2854.311 1366.217 0 620.5511 472.4319	20737.49612 4963.003998
504	30446	0 862 4908	3363	164845 443040063	627 WI252001 44304	1		0 TA	*		ő	0 0			0	0	5			0 862.4679 605.4653	2684.686629
516	2639	0 10581.61	3319	164823 44304001	110 WI252001 44304	10	0	0 RI			0	0 0			0	0	0			0 10581.62 9972.661	98889.81173
600 604	57941 49443	0 429.6018 0 1984.084	3009	164663 44304005 164658 44304000	570 WI252001 44304 2 WI252001 44304		5	0 RO 0 RO			0	5 0 TA 4 2 MM	24.5	K.	0	0	0			0 429.5931 269.0264 0 1984.068 1145.828	3361.181639 14718.56856
612	32240	0 1794.251	2952	164649 44304005	557 WI252001 44304	1	0	0 LA			0	0 0		pr.,	ó	0	0			0 1794.258 485.7052	787.2448298
613	83977	0 1704,133	2867	755771 44205021:	2135 WI252001 44205	P	7	0 RO			1.	3 2 MM	V	w	7	0	0			0 1704.139 126.6323	373.2714576
615	90483	0 2325.839	2944	755826 442050211	2161 WI252001 44205	Α	0 Total	0 RO			1	1 2 MM	k	v	7	1) MK	k		3 2325,825 806,9324	6602.155674 529347.53
111	105893	0 995.9537	6417	758505 442050240	2400 WI252001 44205	Α	6 Fotai	1 HK	k	8	5	4 3 DS	·k	v	5	0	0			0 995.9653 238.3138	2212.35
2	11551	0 1965.854	6388	758504 442050231	2395 WI252001 44205	P	7	1 HK	k	5	5	3 1 HK	k.		5		0			0 1955.864 1239.295	29999.27
3	23348 61223	0 1503.907 0 1107.242	6385	758506 44205023 759212 44205023	2392 WI252001 44205 2380 WI252001 44205	P	4	1 AB 1 AB	k	В	4	3 1 AB 3 3 HS	k		4		3 HS 1 AB	k	V	4 1503.92 509.3618 6 1107.225 1006.81	8821.44 45050.72
7	9516	0 1474.639	6346	758507 44205023	2379 WI252001 44205	P	5	1 AB	k	8	5	3 0 RO	k	*.	1		7 AS	o o	k -	5 1474.644 322.1589	1660.19
8	61783	0 738.4822	6314	758475 44205023	2372 WI252001 44205	P 1	0	1 HK	k	8	6	0 0			0	0	0			0 738.4726 732.9462	33604.48
10	45060	0 761.2136	6300	759213 44205023i 758473 44205023i	2367 WI252001 44205 2366 WI252001 44205	P	4	1 AB	¥2	25	6	3 1 AB	5		6	3	1 AB	G		6 761.2219 335.7753	1800.50
11	40075 108387	0 993.7851	6298	758973 442050231 758353 442050231	2335 WI252001 44205 2335 WI252001 44205	P 1	0	1 AB 1 AB	k k	8	7	2 1 AB	K.		0	0	3 HS	K	ν.	6 993.7857 887,3794 0 923.6074 93.58126	23959.99 386.02
27	40594	0 660.3762	5986	256222 443050021	266 WI252001 44305	11		1 AB	è	o E	7	0 0			0	0	0			0 660.3701 60.17972	0.20
31 40	51252 62638	0 4491.387	5955 4409	256157 44305005; 2970 44101029;	522 WI252001 44305 2970 WI252001 44101		0	1 AB 1 AP	0	1	7	0 0 5 3 HS	76		0	0	0			0 4491,404 205,2283 0 1121,978 533,5344	1359.71
52	13195	0 2377.498	5642	255536 443050020	2970 WI252001 44101 207 WI252001 44305	1	0	1 AB	K.	0	3	0 0 n	К	5	0	0	0			0 2377.485 311.0392	3807.13
59	45059	0 3971.513	5386	255043 443050041	470 WI252001 44305	- 3	6	1 HS	v	80	7	4 0 AB	8		7	0	0			0 3971.488 1081.152	26070.83
61	72277	0 2508.728	5369	254997 443050014	149 WI252001 44305		7	1 AB	c	w	7	3 4 RS	C C	w	7	0	0			0 2508.737 1848.649	85463.74
62 64	71047 99902	0 2119.827	5354 5343	254947 443050014 254904 443050044	140 WI252001 44305 469 WI252001 44305		6	1 AB 1 AB	c	· L	\$	4 3 HS 2 0 RO	c	F.	0	0	9			0 2119.802 60.11784 0 5421.377 1078.853	94.47 55926.34
65	41180	0 792.3401	5330	254863 44305001;	130 WI252001 44305	11	0	1 AB	0	î	6	0 0			0	0	5			0 792.3324 725.9695	31703.44
66	65457	0 1958.961	5315	254804 443050011	127 WI252001 44305		9	1 AB	c	1	6	1 0 RO			0	0	0			0 1958.946 1956.335	143740.82
67 68	101928	0 1822.618	5309	254790 44305001; 254789 44305001	123 WI252001 44305 119 WI252001 44305		4	1 AB 1 AB	0	10	4	3 1 AB 1 0 RO	c	I.	4	3	3 HS	G.	w	7 1822.623 858.1399 0 1683.922 1519.109	33668.07 87450.55
72	94113	0 6734.83	5278	254680 443050010	106 WI252001 44305	11	0	1 AB	c	1	4	0 0			0	0	0			0 6734,824 249,9959	572,71
73	80082	0 2353.408	5276	254673 443050010	105 WI252001 44305	1	В	1 AB	c	1	7	1 4 RS	c	1	4	1	RO			0 2353.403 868.6807	12283,91
77 80	15910	0 977.1288 0 1468.104	5243 5231	254579 443050001 254529 443050001	95 WI252001 44305 90 WI252001 44305	10		1 AB	0	1	7	0 0			0	0	9			0 977.1417 967.7862 0 1468.108 1082.848	50869.98 41629.48
82	95631	0 1367.935	5226	254505 443050001	88 WI252001 44305	1	8	1 AB	0	1	7	2 9 YG	P		7	0	Ď			0 1367.938 1294.334	90347.17
83	5480	0 13170.77	5225	254500 44305004	462 WI252001 44305	- 9	5	1 AB	c	1	5	3 4 RS	c	1	5	2	5 AF	C)	5 13170.74 1296.3	24338.27
85 86	60776 107176	0 3036,007 0 7680,023	5215 5211	254474 443050041 254466 443050041	460 WI252001 44305 459 WI252001 44305	11	B .	1 AB 1 AB	0	K	7	2 4 RS 5 4 RS	0	K.	7	0	0			0 3036.018 2117.72 0 7679.997 4531.122	99022.56 239989.12
87	107176	0 /680.023	5205	254466 44305004:	459 WI252001 44305 457 WI252001 44305	1	0	1 AB	0	k.	7	0 0	1911	75	ó	0	0			0 /6/9.99/ 4531.122	239989.12 50959.06
88	95310	0 7193,049	5208	254459 443050041	458 WI252001 44305	11	0	1 AB	c	h	3	0 0			0	0	0			0 7193.017 1528.074	11448.77
90	39520 105892	0 3613,876	5201	254449 44305000l 254426 44305000l	83 WI252001 44305 82 WI252001 44305		0	1 AB	c	T.	3	0 0 3 4 RS	12	-	0	0	0			0 3613.893 592.1334 0 3242.223 2307.654	2702.02
93	76784	0 3242.209	5197	254426 443050001	82 WI252001 44305 452 WI252001 44305		7	1 AB	0	w	6	3 4 RS	0	w	6	0	0			0 3242.223 2307.654 0 2969.228 2588.609	242328.97 183903.11
105	65576	0 1720.526	5174	254342 44305004	447 WI252001 44305	1		1 AB	c	k	7.	0 0	0711	a.	0	0	0			0 1720.512 722.0811	13600.68
108 124	36410 95303	0 1775.092	5163 3260	254317 44305004- 2630 44101026	442 WI252001 44305 2630 WI252001 44101	D 1	0	1 AB	c	R:	3	0 0 4 1 AB			0.	0	0			0 1775.08 174.1695 0 3462.099 2825.847	1361.49
124	95303 38382	0 3462.102	3260	2630 44101026: 2632 44101026:	2630 WI252001 44101 2632 WI252001 44101	P 1	0	1 AB 1 AB	8		7	0 0			0	0	0			0 525.5167 10.54241	244703.09 2.82
129	77016	0 2886.54	5091	254080 44305004;	425 W1252001 44305		7	1 AB	o	h	7	3 6 HD	0	h	7	0	0			0 2886.541 1783.025	99092.53
131	27477	0 2960.015	5080	254031 443050001	63 W1252001 44305		€:	1 AB	c	K:	7	3 6 HD	0	K3	70	0	0			0 2960.042 229.4072	274.34

an manual									1007						and the same						SEC. 2000
OBJECTIC Shape 132	99239	GSDFPERIMETIEC 0 1405.986	5065	253986 44305004;	OLY_NB FCODE PROJ_I 421 WI252001 44305	D SOURCE SDEC	5 SITE_ST	SITEMC_S1 1 AB	SITE_M1A	h SITE_M18	STRCT_S SDEC_2	5 0 RO	C_SITE_M2A	SITE_M2B	0	3 SITE_	S3 SITEM	C_SSHE_N	M3/SITE_M3ESTR	CT_S SHAPE_L Shape_Le Sh 0 1406.017 1150.587	29724.81
134	93210	0 1140.437	5063	253982 443050056	561 WI252001 44305		5	1 MB	c	h	7.	5 0 RO			0	0	0			0 1140.451 798.7235	7178.15
139 140	2441 97302	0 4731.969 0 1677.589	5020	253822 44305004 253808 44305000!	415 WI252001 44305 53 WI252001 44305		7	1 AB 1 AB	0	k	7	3 6 HD 3 6 HD	0	k	7	0	0			0 4731.994 4092.954 0 1677.595 149.1387	349672.29 656.85
141	80862	0 1677,569	5016	253808 44305000:	559 WI252001 44305		7	1 AB	c	k	7	3 0 MB	c	1	7	0	0			0 817,595 149,1387	31841.73
145	42264	0 3481.039	4930	253501 443050051	556 WI252001 44305		10	1 MB	c	k	7	0 0		f.c	0	0	0			0 3481.056 711.7342	5688.38
148 152	34957 4674	0 2129.479	4988	253686 443050040	409 WI252001 44305 2644 WI252001 44101	16	10	1 AB	c	n:	6	0 0			0	0	0			0 2129,489 2133,769 0 1016,532 860,0693	84358.72
159	47245	0 4910.893	2599	2656 44101026	2656 WI252001 44101	P	6	1 AB	k		7	4 1 AB	k		7	0	0			0 4910.887 131.4425	208.55
163	42264	0 3481.039	4930	253501 443050051	556 WI252001 44305		10	1 MB	c	k	7	0 0			0	0	0			0 3481,056 122,6402	352,32
169 171	113670	0 1404.698 0 2893.842	4906	345026 44401008i 253299 44305003i	862 WI252001 44401 393 WI252001 44305		4	1 AB	-	60	5	4 6 HD			5	2	3 HS			5 1404.697 650.1229	9016.08 131856.20
177	55248 70733	0 2893.842	4878	253299 443050031	388 WI252001 44305 388 WI252001 44305		10	1 AB	c	K.	ý	0 0 5 6 HD		V.	7	0	0			0 2893.852 3400.942 0 3670.845 81.58911	131856.20
179	22085	0 2708.673	2504	548 44101005	548 Wt252001 44101	E	6	1 AB	5		7	4 1 AB			7	0	0			0 2708.669 402.0796	2891.16
180	33032	0 5061.965	4820	253106 44305003	386 WI252001 44305		7	1 AB	c	k	7	3 4 RS	c	k .	7	0	0			0 5061.957 3556.195	176887.06
187 188	55690 52386	0 3298.241 0 3761.241	4753 4743	252887 44305003 252853 44305003	374 WI252001 44305 372 WI252001 44305		7	1 AB 1 AB	c	k	7	3 0 RO			0	0	0			0 3298.259 79.02119 0 3761.237 1557.927	217.76 76696.91
192	24296	0 3880.064	4708	252727 443050001	29 WI252001 44305		7	1 AB	c	k	7	3 4 RS	0	k	7	0	0			0 3880.077 2259.572	115147.73
193	62652	0 488.5182	4693	252681 443050031	365 WI252001 44305		10	1 AB	0	n	7	0 0			0	0	0			0 488.5123 462.1105	14061.79
194 195	64736 16346	0 4043,812 0 9173,123	4658 4655	252545 44305003! 252526 44305003!	359 WI252001 44305 358 WI252001 44305		10	1 AB 1 AB	0	k	7	0 0			0	0	0			0 4043.8 2426.933 0 9173.133 1961.781	70291.89 51488.57
201	113782	0 732.6783	4606	252340 44305003	349 WI252001 44305		10	1 AB	0	n.	7	0 0			0	0	0			0 732.675 604.8381	19618.12
203	109163	0 4391,355	4601	252323 44305003	347 WI252001 44305		7	1 AB	c	1.5	7	3 4 RS	0	1	0	0	0			0 4391.351 3702.049	196324.89
204 209	86232 55247	0 4554.066 0 2196.695	4596	252306 44305003- 252172 44305003:	345 WI252001 44305 334 WI252001 44305		10	1 AB 1 AB	0	1	7	0 0 3 4 RS	e	2	0	0	0			0 4554.026 1270.63 0 2196.7 1427.877	27432.69 68073.13
211	23346	0 931.6157	4528	252106 44305003	329 WI252001 44305		10	1 AB	c	n	7	0 0	9	1:	ó	0	0			0 931.6296 867.0936	44920.61
212	14299	0 1793,009	4526	165414 44304007;	777 WI252001 44304		10	1 MB	1	h	7	0 0			0	0	0			0 1793.036 1154.69	21493.70
213 214	99238 91490	0 931,7788 0 1267,365	4523 4520	165413 44304007; 165412 44304007;	776 WI252001 44304 775 WI252001 44304		5	1 AB 1 MB	d	b	7	5 9 YG 5 8 YS	р		5	0	0			0 931,786 431,8195 0 1267,365 269,2512	5247.38 1671.06
216	21413	0 3312,238	4511	252067 443050031	327 WI252001 44305		10	1 AB	c	h	2	0 0	P		0	0	0			0 3312.203 1614.07	38511.08
221	81981	0 4091.866	4479	251976 44305003	318 WI252001 44305		6	1 MB	c	k	7	4 2 MM	c	ks	7	0	0			0 4091.9 1660.211	40248,03
241 243	16005 30657	0 1950.156 0 784.7085	4357	165384 44304005: 165383 44304007!	537 WI252001 44304 753 WI252001 44304		5	1 AB 1 MB	k	25	7	5 3 HS	N.		7	0	0			0 1950.162 449.1469 0 784.7154 83.07977	3717.01 233.45
243	30657 58199	0 784.7085	4350	165383 44304007:	753 WI252001 44304 534 WI252001 44304		5	1 MB	6	K	7	5 5 AF			7	0	0			0 /84./154 83.0/9// 0 1393 772 567 6327	233,45 6302.58
251	32241	0 630.281	4310	165373 44304005;	532 WI252001 44304		10	1 AB	d	k	7	0 0	202 -		0	0	0			0 630.2774 155.9102	200,59
252	47602	0 2365.823	4305	165371 44304005:	531 WI252001 44304		5	1 AB	k.		7	5 5 AF	k		7	0	0			0 2365.637 795.8411	8485.26
255 258	12499 76550	0 1859,787 0 2229,005	4288	165367 443040074 165364 443040074	747 Wi252001 44304 745 Wi252001 44304		7	1 AB 1 MB			7	4 5 AF 3 2 MM	n		7	0	0			0 1859.78 1697.591 0 2229.002 745.7784	38471.28 18586.27
264	3194	0 1314,252	4253	165355 44304007	738 WI252001 44304		4	1 AB	k	g	7	4 5 AF	k	g	7	2	7 A5	k	g	7 1314.269 584.2652	10243.18
266	107066	0 1047.277	4249	251452 443050036	304 WI252001 44305		10	1 MB	k		7	0 0			0	0	0			0 1047.271 1011.355	28262.34
267 269	15189 76437	0 1233.929 0 2380.295	4247 4243	165353 44304007; 251443 44305003	736 WI252001 44304 303 WI252001 44305		5	1 AB 1 AB	2		7	5 5 AF 3 3 HS		K:	7	0	0 0 RO			0 1233.941 1135.757 0 2380.295 39.39425	52322.21 47.40
270	113867	0 1606.889	4242	165351 44304007:	734 WI252001 44304		5	1 MB	k	h	7	5 4 AB	k.	h	7	0	0			0 1606.885 592.9223	8857.61
294	73799	0 4196.021	4140	251206 443050021	294 W1252001 44305		10	1 AB	c	w	7	0 0			0	0	0			0 4196.02 3487.976	114913.54
296 307	65230 45513	0 1062,537	4130	251186 44305002! 251137 44305002!	293 WI252001 44305 291 WI252001 44305		10	1 AB 1 MB	c	w	3	0 0 4 0 MM			0	0	0			0 1062.547 166.2859	1383.49
308	41926	0 852,074	1334	466 44101004	466 WI252001 44305	P	7	1 AB	k		7	3 7 AS	0	k.	3	0	0			0 852 0695 762 1184	23894.28
310	73695	0 5812.577	4096	251120 443050021	290 WI252001 44305		10	1 AB	Î.	g	3	0 0			0	0	0			0 5812,584 330,1949	2885.17
311 314	47818 90173	0 4899.626 0 1752.696	4093 4079	251113 44305002I 251088 44305000I	289 WI252001 44305 3 WI252001 44305		10	1 AB 1 AB	e		2	0 0			0	0	0			0 4899,536 233.8948 0 1752,711 56.86097	1763.08
315	84961	0 1752.696	1272	467 44101004	467 WI252001 44101	P	7	1 AB	e e	1	ź	3 7 AS	0	w	3	0	0			0 1142,177 479,292	8147.66
326	60662	0 2159.519	3972	250883 443050021	283 W1252001 44305		6	1 MB	w		7	4 0 MM			7	0	0			0 2159.501 505.0523	13982.21
330	42887	0 6907.423	1218	496 441010041	496 WI252001 44101	P	6	1 MB 1 AB	5	w	7	4 2 MM	V	w	7	0	0			0 6907.405 2051.309	66641.66
334 343	40071	0 2971.716 0 1069.364	3959 3933	165225 443040061 165207 443040041	682 WI252001 44304 436 WI252001 44304		6	1 AB	8	9	7	4 0 SA 4 0 SA		9	3	0	0			0 2971.706 925.4727 0 1069.375 568.9204	21426.28 10318.21
353	33951	0 1823.062	3891	165179 44304004	415 WI252001 44304		- 5	1 AB	.50	w.;	7	3 5 AF	1.57	*	7	2	7 AS			7 1823.071 661.7878	26148.02
354	62216	0 1455,413	3889	165177 44304004	413 WI252001 44304		5	1 AB	h		3	5 5 AF	h		3	0	0			0 1455.416 359.7669	3763.84
365 367	41284 56262	0 1466.984	3860 3850	165158 443040031	396 WI252001 44304 392 WI252001 44304		10	1 AB 1 AB	h	e .	2 7	0 0 3 3 HS	b.		7	0	0			0 1466,993 289,8721 0 3741,093 1740,88	1379,43
408	17664	0 1921.938	3706	165060 44304003	310 WI252001 44304		10	1 AB	d	C:	7	0 0			0	0	0			0 1921.942 1933.501	78567.26
413	89373	0 1279.235	3694	165052 443040030	303 Wi252001 44304		10	1 AB	c	1	2	0 0			0	0	0			0 1279.238 510.7025	10604.14
419 424	66019 7018	0 468.733 0 9237.296	3673 3647	165037 443040029 165016 443040069	290 WI252001 44304 655 WI252001 44304		10	1 AB 1 AB	e h	1	2	0 0 2 3 HS	367	2	0	0	0			0 468.7192 202.2347 0 9237.312 201.2554	2535.37 982.22
427	68203	0 1950.96	3636	165009 443040020	264 WI252001 44304		9	1 AB	d		7	1 5 AF	d	F.	7	0	0			0 1950.945 2084.112	69019.55
433	57943	0 5556,766	3614	164993 44304006!	653 WI252001 44304		7	1 AB	h		7	2 3 HS	h		7	1	0 WE	p.		3 5556.748 657.7112	23524.02
434 435	16917 102453	0 2205.51	3613 3612	164992 44304002+ 164991 44304002+	249 WI252001 44304 248 WI252001 44304		5	1 AB 1 AB	h	8	7.	5 3 HS 4 6 HD	h	5	7	0	0			0 2205.511 1192.136 0 1919.448 1768.238	14829.45 33958.08
439	49963	0 4584.091	3587	164976 44304006!	652 WI252001 44304		8	1 AB	d	h.	7	2 3 HS	h	8	7	0	0			0 4584.084 3004.282	161823.80
441	53157	0 2330.78	3585	164974 44304002:	232 WI252001 44304		5	1 AB	s	h	7	5 3 HS	5	h	7	0	0			0 2330.791 359.703	3725.89
456 459	110748	0 2722.251	3513 3483	184930 44304001! 184917 44304006	192 WI252001 44304 646 WI252001 44304		7	1 AB 1 AB	k	100	7	2 3 HS 2 4 RS	k	60	7	1	6 HD	k		7 2722.255 296.5276 0 2621.008 50.80931	5710.21 119.90
463	84186	0 1132.122	3480	164915 443040001	179 WI252001 44304		7	1 AB	k	1.	7	2 3 HS	k	H:	7	1	6 HD	k		7 1132.128 1120.504	44878.08
465	63424	0 1173.859	3474	164911 443040017	176 WI252001 44304		6	1 AB	9	w	7	2 0 SA	w	g	3	2	3 HS	w	9	7 1173.864 109.307	310.52
466 476	96090 43286	0 2252.243 0 491.7394	3470 3434	164907 443040011 164884 443040011	173 WI252001 44304 153 WI252001 44304		6	1 AB 1 AB	9	w	7	2 0 SA 5 14 RC	w	g	3	2	3 HS	W	9	7 2252.239 1006.487 0 491.7413 91.50674	31009.67 394.55
477	98733	0 1159.396	3431	164882 44304001	152 WI252001 44304		6	1 AB	k	0	7	4 4 RS	k k		7	0	0			0 1159.4 1298.385	36269.66
479	32018	0 1041,108	3427	164880 44304001!	150 W1252001 44304		7	1 AB	9		7	3 3 HS	9		7	0	0			0 1041.096 897.5298	26002.39
484	6908	0 1331.717	3408	164871 44304001; 164851 44304001;	146 W1252001 44304		. 4	1 AB 1 AB	w		7	4 4 RS 4 4 RS	w		7	2	3 HS	w		7 1331.708 127.8755	431.19 77071.69
499 500	79531 39182	0 2417.019 0 3093.502	3379	164851 44304001:	132 WI252001 44304 131 WI252001 44304		B	1 AB	к		7	2 3 HS	к.		4	0	0			0 2417.007 1522.229 0 3093.507 2866.211	51805.67
530	32928	0 5334.166	3260	164789 44304006	615 WI252001 44304		4	1 AB	k	g	7	4 3 HS	k.	g	7	2	0 SA	R.	9	3 5334.168 4255.584	315186.86
535	29590	0 7574,406	3249	164783 44304000	78 WI252001 44304		6	1 AB	52		3	4 4 RS	88		3	0	0			0 7574.384 1139.889	11645.88
537 543	46640 83330	0 2804.071	3239	164776 443040007	73 WI252001 44304 70 WI252001 44304		5	1 AB 1 AB	k		7	5 7 AS 3 3 HS	k.		7	0	0			0 2804.073 3038.562 0 4722.852 1195.397	98128.92 31257.71
545	74049	0 1967.278	3221	164767 443040001	67 WI252001 44304		6	1 AB	W		7	3 3 HS	W		7	1	0 SA			3 1967.271 3437.22	169119.69
557	14171	0 993.3876	3184	164749 443040001	53 WI252001 44304		9	1 AB	W		7	1 3 HS	w		7	0	0			0 993.3969 463.4264	6073.68
565 568	50569 109710	0 1209.353 0 2276.406	3152 3140	164728 443040000 164723 443040000	37 WI252001 44304 34 WI252001 44304		6	1 AB 1 AB	w		7	4 3 HS 4 6 HD	w		7	0	0			0 1209.351 558.4823 0 2276.396 122.9658	15774.05 676.67
583	63022	0 2786.105	3093	164697 44304000	15 WI252001 44304		6	1 AB	W		7	2 4 RS	w		7	2	6 HD	g		7 2786.117 2832.086	77505.18
592	33950	0 2550.795	3050	164677 443040000	6 WI252001 44304		6	1 AB	W		7	2 4 RS	w		7	2	6 HD	g		7 2550.812 472.2071	11249.50
593 596	90932 66942	0 4220.014 0 1551.893	3042 3020	164674 443040001 164667 44304005	5 WI252001 44304 573 WI252001 44304		5	1 AB 1 MB	W		7	5 5 AF 4 3 MO	w		7	0	0			0 4219.985 275.4989 0 1551.875 1703.642	2176.79 75145.05
596 617	86437	0 1551.893	2940	755786 442050211	2160 WI252001 44304 2160 WI252001 44205	A	6	1 MB	s ·	w	7	4 3 MO 4 2 MM	W.	w	7	0	0			0 1551.875 1703.642 0 1282.573 1299.681	75145.05 38925.59
618	89154	0 2232.619	2935	755772 442050211	2157 WI252001 44205	A	7	1 MB	5	w	7	3 1 MB	w	(T)	7	۵	0			0 2232.619 2278.549	134121.03
274 276	98633 33480	0 820,0596 0 698,4946	4232 4228	251423 443050030 251413 443050030	302 WI252001 44305 301 WI252001 44305		10	1 AB 1 AB	c	n	7	0 0			0	0	0			0 820.0655 775.5975 0 698.4794 698.4805	17653.40 21162.25
276	109711	0 698.4946	4228	251413 443050031 165333 44304005	301 WI252001 44305 515 WI252001 44304		5	1 AB	k	No.	7	0 0 5 5 AF	k		7	0	0			0 698.4794 698.4805	162.25
292	56263	0 1113,815	4152	251248 443050021	296 WI252001 44305		10	1 MB	c		7	0 0	F4		0	0	0			0 1113.808 1109.242	29435.82
507	98827	0 2350.623	3355	164840 44304001; 164838 44304001;	123 WI252001 44304 121 WI252001 44304		7	1 AB			7	3 3 HS	h	5	7	0	0 7 AS			0 2350.617 1384.049	82987.78 578.48
508	20440	0 2194,943	3346	104838 44304001;	121 W1252001 44304		D	1 AB	ri,		3	4 3 HS	10		3	. 9	7 AS			3 2194.938 194,2157	578.48

OBJECTIC Shape 510 519 598	OBJECTICBO 11104 96313 105763	CGSDFPERIMETI EC 0 1841.088 0 1761.098 0 3241.311	3341 3314 3018	ECP_ID ECP_MB PC 164835 44304001 164820 44304001 164866 44304005	OLY_NB FCODE PROJ_ 118 WI252001 44304 107 WI252001 44304 572 WI252001 44304	D SOURCE :	SDEC_1 SITE_S1 10 5	SITEMC_S1 1 AB 1 AB 1 AB	SITE_M1A	SITE_M1B c	STRCT_S SDEC_2	SITSITEM 0 0 5 3 HS 2 7 AS	MC_SITE_M2A	SITE_M2B	STISDEC_3	(SITEMO	:_tsiTE_M	M3#SITE_M3ESTRO	T_S SHAPE_L Shape_Le Sh 0 1841.091 172.0019 0 1761.11 257.3323 3 3241.316 1241.373	1482.11 269.07 58500.88
599	33834	0 2970.465	3016	164664 443040000	3 WI252001 44304		6	1 AB	w		ž	3 7 AS	w		7 1	- 9	4 RS	w		7 2970,48 882,2877	16983.66
601 605	97425 32126	0 1670.518	3007 3000	164662 44304005i 164657 44304005i	569 WI252001 44304 565 WI252001 44304		5 5	1 MB 1 MB	s k		7	4 3 MO 3 2 MM	w k	5	7 1 2		RO 4 AB	1	d	0 1670,506 1672,701 7 1053,009 882,3028	128241.77 11232.71
611 616	62545	0 3001.942	2956 2943	164650 44304005! 164648 44304006!	558 WI252001 44304 556 WI252001 44304		5	1 MB 1 MB	c k	1	7	3 2 MM 3 2 MM	c k	8	7 2		4 AB	P	d	7 3001.956 5066.191 7 1693.574 1777.697	157318.80 93728.89
69	33954	0 1130.489	5298	254750 44305001	116 WI252001 44305		1 Total	21C		23		5 0 80		37	0 0			970	1.51	0 1130.489 81.67826	6616707,56 68.63
76 113	45971 97410	0 3439.169 0 421.2497	5245 3424	254582 44305000! 63930 44101700;	96 WI252001 44305 70029 WI252001 44101		5	2 LC	0	5	6	5 0 RO			0 0	i	0			0 3439.194 4705.391 0 421.246 421.246	111861.83 10297.63
166	107943	0 1684.009	4923	253469 443050031	399 WI252001 44305		10 8	2 LC 2 LC	c c	5	ý	0 0 2 0 RO			0 0		9			0 1684.006 452.0843	5129.16
198 224	49789 47040	0 1046,565	4620 4453	252408 44305003! 165404 44304007!	354 WI252001 44305 767 WI252001 44304		10	2 MM 2 MM	c	z	7	0 0			0 0		0			0 1046.573 651.6953 0 1602.354 1575.936	5814.24 76915.16
225 227	69938 92891	0 3654.385 0 411.2229	4452 4438	165403 443040076 165400 44304005	766 WI252001 44304 554 WI252001 44304		6	2 MM 2 MM	5	h	7	4 0 RO 3 0 RO			0 0					0 3654.391 1044.021 0 411.2135 306.7249	48031.08 5319.38
233	20768	0 1193,863	4394	165393 44304007!	758 WI252001 44304	125	В	2 MM	h h	8	ŕ	2 0 RO			0 0		3			0 1193.887 851.3432	12541.54
248 250	27574 81285	0 3071.926 0 3582.636	1617 4315	516 44101005 165375 44304007	518 WI252001 44101 749 WI252001 44304	P	8 6	2 MM 2 MM	k 8	h	7	2 0 RO 4 0 RO	k		1 0		0			0 3071.912 353.7819 0 3582.688 1392.045	3268.65 16436.44
253 254	39078 45514	0 828.2548	1597	510 44101005 251584 443050030	510 WI252001 44101 308 WI252001 44305	P	10	2 MM 2 MM	v	ps.	7	0 0			0 0		0			0 828 2532 531 0172 0 1485 892 703 2824	7286.40
257	98232	0 1374,492	4282	251519 443050030 165291 44304007	306 WI252001 44305 710 WI252001 44304		10	2 MM 2 MM	Ř	9	7	0 0 3 3 MO	12.7		0 0	j	0			0 1374.49 1386.114 3 2402.403 448.1267	43525.11 11004.02
309 352	58556 74962	0 1829.863	4098 1085	62651 44303006	813 WI252001 44303		8	2 MM	w		7	2 0 RO	h		1 0	Č	BYS D	p		0 1829.872 1020.425	59093.68
381 485	5823 22211	0 3453.866 0 2117.765	3794 3407	165119 44304003I 164870 44304001i	360 WI252001 44304 145 WI252001 44304		6 8	2 MM 2 MM	8 8	c h	7	4 0 SA 2 0 RO	c		3 0 0 0		0			0 3453.872 256.5119 0 2117.768 1380.314	3462.61 43537.14
489 502	79638 437	0 1390.98 0 4688.681	3397 3367	164865 44304001+ 164847 44304006;	141 WI252001 44304 628 WI252001 44304		8	2 MM 2 MM	8	h	7	2 0 RO 5 0 RO			0 0		0			0 1390.988 640.3058 0 4688.663 513.6614	15447.86 7487.29
539	67166	0 902.7962	3236	184774 44304006	611 WI252001 44304		8	2 MM	w		ŕ	1 3 MO	w		7 1		RO			0 902.7968 636.5026	16257.90
556 575	93533 80970	0 3285.089 0 740.3816	3178 3125	164746 443040061 164715 443040001	605 W1252001 44304 26 W1252001 44304		6 10	2 MM 2 MM	8	h: w	7 7	2 1 MB 0 0	8	h	7 2		ORO			0 3285.088 981.0482 0 740.3761 175.8478	18421.15 1756.89
578 579	9409	0 2712.647	3109 3106	164707 44304005! 164705 44304005!	596 WI252001 44304 594 WI252001 44304		8	2 MM 2 MM	8	w	7	2 0 CL 4 1 MB			0 0		O B YS	n		0 2712.661 2198.57 7 1552.443 453.1486	86696.50 7083.78
622	27672	0 3032.795	2872	755785 44205021: 755791 44205021!	2136 WI252001 44205 2151 WI252001 44205	P	5	2 MM	v	w	ż	5 1 MB		w	7 0	- 1	1			0 3032.773 1647.157	38082.72
623 625	7017 90820	0 2482.209 0 752.4943	2920 2898	755789 442050214	2144 WI252001 44205	P	5	2 MM 2 MM	K V	w	7	2 1 MB 5 1 MB	K S	8 W	7 0		0			0 2482.202 1882.894 0 752.4932 365.5995	74602.27 6334.35
281 602	104852 46639	0 1164,793 0 676,2752	4201 3006	251355 443050021 164661 443040056	299 WI252001 44305 568 WI252001 44304		10 5	2 MM 2 MM	k s	h	7	0 0 5 9 YC	p		0 0 7 0		0			0 1164.792 1292.092 0 676.2819 411.768	25861.21 1525.46
603 606	43052 43051	0 1366.215 0 3401.647	3004 2999	164659 44304006i 164656 44304006i	566 WI252001 44304 564 WI252001 44304		6	2 MM 2 MM	c	27	7	4 4 AB 4 1 MB	6		7 0		9			0 1366.225 945.1618 0 3401.649 1238.392	34837.21 25155.83
607	74844	0 1576.635	2997	164655 443040056	563 WI252001 44304		8	2 MM	8	c	7	2 0 RO	w		0 0	i	Ď			0 1576.632 1548.348	83678.49
610 614	63970 81385	0 7180.899 0 1197.13	2969 2947	164651 44304005! 755770 44205021!	559 WI252001 44304 2162 WI252001 44205	P	6	2 MM 2 MM	W	s w	7 6	2 1 MB 4 0 RO	w		7 2	(RO			0 7180.919 4992.924 0 1197.109 1118.917	123101.04 41580.30
16	104331	0. 590 5862	6126	256470 44305005:	535 W(252001 44305		2 Total	3 HS		led:	7	0.0			0 00		n .			0 590 5708 136 5521	1083261.84
18	31661	0 737.9593	6087	256408 44305005	534 WI252001 44305		6	3 HS	c	h:	7	4 9 YG	p		7 0		0			0 737.9473 166.4339	965,12
2t 26	87416 5829	0 1470.261 0 695.3157	6047 5995	256336 44305005: 256232 44305002!	532 WI252001 44305 268 WI252001 44305		10	3 HS 3 HS	p c	h	7	4 9 YG	P		0 0		0			0 1470.247 167.2587 0 695.3173 578.4337	821.22 23330.11
35 42	90822 28362	0 2397,213 0 1245,526	5895 4363	256034 44305006° 2969 441010296	519 WI252001 44305 2969 WI252001 44101	P	10 6	3 HS 3 HS	C D	k	7 7	0 0 4 1 AP	k	*	7 0		0			0 2397.211 1349.218 0 1245.53 257.3726	34165.73 1277.72
54 70	38518 80971	0 4422.376 0 1307.787	5467 5283	255220 443050047 254713 443050010	476 WI252001 44305 109 WI252001 44305		7	3 HS 3 HS	c	w	7	3 0 RO 1 0 RO			0 0	(0			0 4422.346 1006.635 0 1307.808 1293.751	18483.09 56126.08
79	100904	0 1685,771	5234	254541 44305000!	91 WI252001 44305		7	3 HS	c	k	á	3 0 RO			0 0	í	5			0 1685.794 586.5244	5786.23
91 92	76785 58653	0 987.0039 0 2795.639	5198 5198	254424 44305004! 254431 44305004!	455 W1252001 44305 456 W1252001 44305		10 7	3 HS 3 HS	c		7	0 0 3 0 RO			0 0	(0			0 986.9987 666.3199 0 2795.626 566.9235	23218.11 8716.74
100	59511 25308	0 602.716	5160 5178	345932 444010091 254355 44305004	934 WI252001 44401 448 WI252001 44305		7	3 HS			5	3 6 HD 4 3 HS		h.	6 0		0			0 602.7142 66.87139 0 1871.332 1540.051	16.11 86900.53
107	76660	0 1764.472	5167	254324 443050044	444 WI252001 44305		6	3 HS	c		Ž	4 3 HS	c	h	7 0		5			0 1764.477 1702.543	131748.13
109 116	59511 29594	0 602.716 0 1377.63	5160 5138	345932 444010090 254243 443050040	934 W1252001 44401 434 W1252001 44305		10	3 HS 3 HS	С	N)	7	3 6 HD 0 0			0 0		0			0 602.7142 221.1973 0 1377.624 1444.903	915,75 41190,41
117 120	113538 32129	0 3990.989 0 1460.614	5125 5119	254196 44305004: 254169 44305004;	430 WI252001 44305 428 WI252001 44305		8	3 HS 3 HS	6	w	7	2 0 RO 0 0			0 0	(0			0 3990.962 1649.612 0 1460.615 288.5404	65129.46 4547.78
121 122	67980 113530	0 594.8344 0 2312.913	5114 3348	254158 443050001 63899 44101700;	68 WI252001 44305 70023 WI252001 44101		6	3 HS 3 HS	c	w	2	4 2 LC 4 1 HS	o	w	2 0		O RO			0 594.8254 5.832513 1 2312.909 398.6297	0.62 7844,71
127	80422	0 1099.965	5102	345734 44401009	915 WI252001 44401		6	3 HS	w		5	3 2 LC		w	3 1		0 RO	w		0 1099.961 161.0667	342.21
135 138	29390 70508	0 411.569 0 551.5014	5054 5038	253961 44305004; 253882 44305004	420 WI252001 44305 418 WI252001 44305		10 10	3 HS 3 HS	c	w	2 2	0 0			0 0	(0			0 411.5758 287.5246 0 551.5021 521.7185	3118.76 3847.45
143 153	65915	0 2302.114	5008	253783 44305004	413 WI252001 44305 407 WI252001 44305		10	3 HS 3 MO	c	w	7	0 0			0 0		0			0 2302,106 1175,825 0 961,9824 843,8032	48600.00 16857.05
154 157	40717 81177	0 1159.527 0 1156.252	4961 4940	253801 443050040 253532 443050040	406 WI252001 44305 404 WI252001 44305		10	3 HS 3 HS	c	w	Ž	0 0			0 0		0			0 1159.522 1776.959 0 1156.24 676.7315	44217.95 1965.14
158	98538	0 1093.134	4939	253528 44305004(403 WI252001 44305		5	3 HS	c	s	7	5 2 LC	c	6	7 0	i	5			0 1093.138 701.9763	27873.60
160 161	769 12962	0 1555.863 0 4149.858	4937 4936	253522 443050044 253516 443050044	402 WI252001 44305 401 WI252001 44305		10	3 HS 3 HS	c c	w	7	0 0			0 0		0			0 1555.877 639.7984 0 4149.859 3421.644	11542.82 255316.86
162 164	89613 23568	0 622.3408	4929 4927	345124 44401008i 345111 44401008i	865 WI252001 44401 864 WI252001 44401		10	3 HS 3 HS	r		5	0 0 3 1 AB			0 0		D B HD			0 622.3473 227.9993 6 2658.808 1650.222	845.24 16800.38
167	16807	0 481.281	4922	253468 44305000	44 W1252001 44305		8	3 HS	С	w	7	2 0 RO			0 0	(0			0 481.2682 481.2671	9865.26
170 173	30330 37049	0 3104.384 0 3478.288	4899 2716	253379 443050031 63652 44101700;	397 WI252001 44305 70020 WI252001 44101		6	3 HS 3 HS	c v	w	5	2 2 LC 2 0 HS	e v	8 W	7 2		RO RO	w		0 3104.38 391.2987 1 3478.277 2720.744	4478.02 326620.24
181	27675 59509	0 3325,357	4817 4764	253097 44305000: 252919 44305003:	35 WI252001 44305 378 WI252001 44305		8 5	3 HS 3 HS	h c	r w	7	2 0 RO 5 5 AF		w	0 0 7 0	(0			0 3325.346 453.2168 0 4852.587 5680.279	5588.03 487118.13
186 197	38148 107499	0 2406.734	4755 4626	252895 44305003 344053 44401006	376 W1252001 44305 825 W1252001 44401		5	3 HS 3 HS	c	w	7	5 5 AF	c	w	7 0		5			0 2406.721 886.8851 0 2575.602 286.7013	28782.21 1419.70
200	17915	0 1664.514	4609	252365 44305003!	350 WI252001 44305		5	3 HS	С	1	7	5 1 AB	c	1	7 0	ì	ő		2422	0 1664.522 59.53959	129.26
205 217	51006 54585	0 2499.278 0 1994.278	4592 4508	252297 443050034 252060 443050033	344 WI252001 44305 325 WI252001 44305		6 8	3 HS 3 HS	c	k w	7	2 1 AB 2 2 LC	0	Į.	7 2	- 0	2 LC	C	h	7 2499.267 475.8534 0 1994.279 837,7284	12631.31 41172.37
218 219	69302 101487	0 1731.35 0 675.5912	4494 4492	252024 44305003; 252021 44305003;	321 WI252001 44305 320 WI252001 44305		6 8	3 HS 3 HS	E	w	7	2 2 LC 2 1 AB	0	v h	7 2		RO			0 1731.346 390.9627 0 675.5891 143.0254	2311.59 758.68
220	13518	0 1420.015	4486	252005 44305003	319 WI252001 44305		10	3 HS	c	k	7	0 0	1911	70	0 0	(0			0 1420.053 1276.774	55690.40
222 226	13961 60144	0 550.806 0 1057.453	4476 4445	165407 44304007: 165402 44304007(770 WI252001 44304 765 WI252001 44304		8	3 HS 3 HS	16) 16)		7	0 0 2 1 AB			7 0	į,	0			0 550.8182 492.0418 0 1057.456 549.4031	12094.44 8657.15
230 231	50228 106417	0 3484,284 0 1094,578	4408 4408	165396 44304007(165395 44304005)	760 WI252001 44304 553 WI252001 44304		6 7	3 MO 3 HS	k s	9	7	4 5 MT 3 0 RO	k .		7 0 0 0	(0			0 3484.311 2617.032 0 1094.564 615.6097	83961.55 5935.09
234 239	107278	0 2021.333	4392 4371	165392 44304005 165387 44304007!	541 WI252001 44304 755 WI252001 44304		7	3 HS 3 HS	8 k	9	7	3 0 RO			0 0	(0			0 2021.328 1607.411	24049.57 93973.74
318	50334	0 1031.07	4058	165275 443040047	479 WI252001 44304		10	3 HS	h	d	7	0 0	100		0 0	i	0			0 1031.073 436.6319	8237,38
319 321	86551 107269	0 3174.439 0 951.3695	4057 1273	165274 44304007(506 44101005)	701 WI252001 44304 506 WI252001 44101	Р	8 10	3 HS 3 HS	h W		7	2 1 AB 0 0	h		7 0		0			0 3174.431 2414.433 0 951.3758 782.2675	150595.01 30849.01
325	3535	0 2652.627	4001	250941 443050000	2 WI252001 44305		10	3 HS	c	w	7	0 0			0 0		0			0 2652.638 1003.983	53219.10

OBJECTIC Shape 333 333 331 391 416 438 444 451 402 400 407 531 532 532 540 541 546 549 566 560 560 560 560 560 560 560 560 560	CBJECTIT BICCGSDF PERIJAM 7500 0 5000,00 7500 0 5000,00 7500 0 5000,00 1995,25 22994 0 2276,85 19050 1 3305 47253 0 520.782 28967 0 1805.17 2840 0 6835,85 35057 0 872.905 18050 0 1474,00 1805,12 2867 0 1805,12 287474 0 422,00 1805,12 247474 0 422,00 1805,12 247474 0 422,00 1805,13 1805 0 100,00 1805,13 1805	55 3890 260870 261871 25187 25	ECP_MB_POLY_MB_FCODE PRO_JI 0.440560021 282 W255001 44304 24.44304003 342 W252001 44304 31.44304003 342 W252001 44304 31.44304003 342 W252001 44304 31.443040021 231 W252001 44304 31.44304001 199 W252001 44304 31.44304000 199 W252001 44304	D SOURCE SDEC_1 SITE_S1 7 5 6 10 7 4 7 6 6 6 6 6 6 7 7 6 7 7 6 7 7 6 7 7 6 7 7 6 7 7 6 7 7 6 7 7 6 7 7 6 7 7 6 7 7 6 7 7 6 7 6 7 7 6 7 6 7 7 6 7 6 7 7 6 7 6 7 7 6 8 7 7 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9	SITEMC_S1 3 HS	SITE_M1A C K K K S S S S S S S S S S S S S S S S	SITE_M18 w c c h g	STRCT_S SDEC_2 2 7 7 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7	SITSITEMC 3 1 AB 5 5 AF 6 1 AB	SITE_M2A C K W W W W W W W W W W W W	SITE_M2B w	STISDEC_3 2 7 0 7 0 0 0 0 0 0 0 7 7 7 7 7 7 7 7 7	SITE_S3 S 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	B 00 SS 10 O	W K K	S SHAPE L Shape Le Sht 5 508 789 1051 738 5 1965 789 423587 1 2276 659 750.0769 2 276 659 750.0769 3 305.702 1395.428 5 20.7798 520.7798 1 800.00 906.277 6 843.887 2766.75 6 1474.06 642.6201 6 1474.06 642.6201 1 106.820 740.7907 6 145.887 2766.75 1 107.888 104.7907 1 107.888 104.7907 1 107.888 104.7907 1 107.888 104.7907 1 107.888 104.7907 1 108.820 108.62339 4 42.8234 91.29924 2 2565.712 699.1403 9 66.7498 602.7308 2 186.7498 602.7308 4 48.8272 2 215.5108 4 48.8272 2 215.5108 4 1138.689 600.8742 3 2 21.5578 617.572 3 2 21.5578 617.572 3 2 1.5578 617.572	10-63-4 13 10-63-4 13 10-63-4 13 10-63-4 13 10-63-4 13 10-63-4 13 10-63-6 13
513 514 515	2214 0 5125.18 42935 0 1909.28 82708 0 1274.02	1 3329 164827 9 3328 164826	177 44304006: 623 W1252001 44304 166 44304001' 113 W1252001 44304 1444304001' 111 W1252001 44304	6 7 5 3 Total	3 HS 3 HS 3 HS	w n	40	7 3 7	3 1 AB 3 1 AB 5 1 AB	w n		7 1 3 0 7 0	0 F 0	0		0 5125.221 551.7449 0 1909.301 61.53398 0 1274.032 19.76722	12228.83 111.39 16.49 3144720.59
4 5 5 12 14 17 24 14 17 24 18 18 18 18 18 18 18 18 18 18 18 18 18	49702 0 907.31 110673 0 2416.52 120673 0 2416.52 120673 0 2416.52 120673 0 2416.52 120673 0 2416.52 120673 0 2416.53 120673 0	9 6351 758474 3 6343 256914 3 6343 256914 4 6143 256510 6 6200 256237 6 6 6001 262237 6 6 6001 262237 6 7 5450 25630 7 5450 25630 7 545	4 442050023 2381 WZ52001 44205 4 443050051 503 WZ52001 44205 0 443050051 503 WZ52001 44305 0 443050051 503 WZ52001 44305 0 443050051 539 WZ52001 44305 0 443050051 539 WZ52001 44305 0 443050051 539 WZ52001 44305 0 443050051 527 WZ52001 44305 0 443050051 527 WZ52001 44305 0 44305001 107 WZ52001 44305 0 44305001 107 WZ52001 44305 0 44305001 107 WZ52001 44305 0 44305001 108 WZ52001 44305 0 443050001 108 WZ52001 44306 0 443050001 108	3 Total P 7 7 7 7 7 7 7 7 10 6 7 7 7 10 6 10 10 6 10 10 10 10 10 10 10 10 10 10 10 10 10	DERINGRES DERI		RKRTT RKKW WWW.I. I. WWW.I. WWW.KKKKKKWWW.KKKKWWW.KKKKWWW.KKKKWWW.KKKKKWWW.KKKKKWWW.KKKKWWW.KKKKWWW.KKKKWWW.KKKKWWW.KKKKWWW.KKKKWWW.KKKKWWW.KKKKWWW.KKKKWW.KKKKWWW.KKKKWW.KKKKWWW.KKKKWW.KKKKWW.KKKKWW.KKKKWW.KKWW.KKKWW.KKWW.KKWW.KKKWW.KKWW.KKKWW.KKWW.KKKWW.KKWW.KKKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKWW.KKW.KKWW.KKW.KKWW.KKW.KKW.KW.	777277677777566777772777777777777777777	5 FIS		k h h h k s s k k W W J h h h d d d c c c k	6 7 7 7 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000000000000000000000000000000000000	F : : : : : : : : : : : : : : : : : : :	W 5 W I C W W	907.398.2 900.1781 9241.5-545 1083.779 9241.5-545 1083.779 9409.235 53.81.516 4763.948 1357.097 9331.516 4213.243 9552.27 2445.243 9552.27 2445.243 9707.487 1026.794 1244.938 134.543.343 9707.487 1026.794 1244.938 134.543 9707.487 1026.794 1382.473 1749.18 1382.489 1393.453 104.274 1282.397 1486.59 109.1082 105.48 105.2	
146 151 156 223	58088 0 1757.64 57481 0 602.775 60453 0 1852.70 53031 0 1684.13	1 4992 253711 2 4971 253637 2 4955 253576	134 44305004 410 Wi252001 44305 17 44305000 47 Wi252001 44305 16 44305000 48 Wi252001 44305 16 443040071 769 Wi252001 44304	10 10 10 10	5 AF 5 AF 5 AF 5 AF	0	w w		0 0 0 0 0 0 0 0			0 0 0	0			0 1757.65 1470.886 0 602.7995 602.8002 0 1852.895 958.0445 0 1684.132 300.2881	43438.44 16326.37 24747.47 3637.95

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OBJECTIE Shape 228	OBJECTICBCC 54267	GSDFPERIMETIEC 0 2499.258		CP_ID ECP_MB PC 165399 44304007i	763 WI252001 44304	DURCE SDEC_1 SITE_S1	SITEMC_S1 5 AF	SITE_M1A	SITE_M1B	STRCT_S SDEC_2	5 4 RS	C_SITE_M2A	SITE_M2B	STISDEC_S	3 SITE_S	SITEMO	C_ISITE_N	M3#SITE_M3E	STRCT_S SHAPE_L Shape_Le Sh 0 2499.271 2027.891	ape_Area 100460.36
232	83070	0 2586,003	4401	165394 44304007!	759 WI252001 44304	5	5 AF	k	9	7	5 4 RS	k	9	7	0	0			0 2586,016 2229,188	139722.27
235 236	107497	0 2889.316 0 840.9621	4389 4385	165390 44304007! 165389 44304005:	757 WI252001 44304 539 WI252001 44304	6	5 AF	k	9	7	2 4 RS 4 7 AS	k.	9	7	0	0			0 2889,326 367,9146 0 840,9663 507,634	4597.01 4113.34
244 245	98535	0 354.4012	4348 4340	165381 44304005: 165379 443040071	536 WI252001 44304	6	5 AF	k	9	7	4 7 AS 4 7 AS	k.	9	7	0	0			0 354.3947 263.9022 0 6002.704 1953.354	4281.87 81533.14
245 246	89956 14857	0 6002.868	4340	165379 443040071	751 WI252001 44304 750 WI252001 44304	6	5 MT	k 8	9	7	4 7 AS 2 0 SA	k 8	g	3	2	4 AB	8	0	7 1014,837 1148,673	35682.20
249	57708	0 1758.028	4321 4264	165376 44304005! 165358 44304005;	552 WI252001 44304	5	5 AF	k	9	7	5 1 AB 3 1 AB	k	g	7	0	0 7 AS			0 1758.042 1084.931	56225.53 47149.43
262 272	73696 55022	0 2224,198 0 1846,402	4234	165348 44304007:	525 WI252001 44304 732 WI252001 44304	6	5 AF	k k		7	4 4 RS	k k		7	0	0	u		7 2224.201 1518.292 0 1846.413 1897.343	91597.94
293 299	17254	0 1672.24	4142	165314 443040050 165308 44304007	503 WI252001 44304 714 WI252001 44304	6	5 AF			7	4 1 AB 2 7 AS			7	0	0			0 1672.214 1912.887 0 2149.361 283.103	53441.78 3563.61
300	103657	0 3116.083	4121	165305 443040041	499 WI252001 44304	8	5 AF			Ý	2 1 AB			7	0	0			0 3116.106 342.9919	8149.51
301 302	23992 27581	0 2939.214 0 1273.497	4120	165304 44304004! 165301 44304004!	498 W1252001 44304 495 W1252001 44304	6	5 AF 5 AF			7	2 1 AB 2 1 AB			7	2	6 HD			7 2939.2 1097.829 0 1273.502 368.9367	46403.62 3160.01
304	5035	0 1566.503	4112	165299 44304007	712 Wi252001 44304	6	5 AF	h		7	4 4 RS	h		7	0	0			0 1566.519 540.0187	3442.85
316 317	109476	0 738.7115 0 5574.457	4070 4065	165280 443040048 165278 443040070	482 WI252001 44304 702 WI252001 44304	7	5 AF	t		7	3 7 AS 2 7 AS	t		7	0	0			0 738.6957 740.6158 0 5574.492 2374.518	22488.65 138850.00
327	23102	0 1283.771	3992	165246 443040041	463 WI252001 44304	5	5 AF	c	h	7	5 7 AS	0	k.	7	0	0			0 1283.767 800.3162	6177.29
328	11762	0 1902.663	3989	165243 443040044	461 WI252001 44304 456 WI252001 44304	6	5 AF			7	2 1 AB	1000	-	7	2	4 RS			7 1902.661 1763.379 0 3349.446 1851.068	132473.78
332	27130	0 3289.413	3973	165233 44304004!	455 WI252001 44304	6	5 AF	w	9	7	2 7 AS	5	w	7		4 RS	w		7 3289.409 1133.823	14698.03
335 337	66020 17359	0 3583.685 0 2003.841	3958 3952	165224 44304004 165221 44304006!	449 WI252001 44304 681 WI252001 44304	6 10	5 AF	(2)	20	3	2 1 AB			3	2	6 HD			3 3583.71 198.9429 0 2003.837 1868.357	948.59 77301.88
341	1871	0 3822.026	3934	165208 443040067	678 WI252001 44304	7	5 AF	k	9	7	3 7 AS	k	g	7	0	0			0 3822.044 785.8994	30043.12
342 345	31658 3322	0 2910.344	3935 3925	165209 44304004: 165202 44304004:	437 WI252001 44304 432 WI252001 44304	5 10	5 AF 5 AF	k	9	7	5 7 AS	k.	9	7	0	0			0 2910.342 977.7972 0 600.9387 588.7991	32656.23 15764.14
347	5824	0 1107.567	3910	165192 443040041	425 WI252001 44304	6	5 AF	n	9	7	4 0 SA	n		3	0	0			0 1107,566 466,4262	9226.46
348 349	67379 2984	0 1626.742	3909 3898	165191 44304004; 165184 44304006;	424 WI252001 44304 673 WI252001 44304	6	5 AF 5 AF			7	2 1 AB 4 3 HS			7	2	7 AS 7 AS			7 1626,764 1509,647 7 3787,126 2160,282	35559.31 139698.81
357	7235	0 2448.601	3885	165173 44304006;	671 WI252001 44304	4	5 AF	g		7	4 3 HS	9		7	2	7 AS	g		7 2448.598 706.5427	17215.61
364 376	111644	0 613.1043	3861	165159 443040031 165135 44304003	397 WI252001 44304 375 WI252001 44304	4	5 AF 5 AF	9		7	4 3 HS	9		7	2	7 AS 7 AS	9		7 613.1048 613.1065 7 3555.063 1082.298	11435,48 63302.24
380	44834	0 3117,707	3796	165121 443040036	362 W/252001 44304	8	5 AF	w		7	2 3 HS	w		7	0	0			0 3117.687 989.7143	28155.48
383 387	84092 49985	0 5809.73 0 2642.837	3790 3782	165115 443040031 165110 443040031	356 WI252001 44304 351 WI252001 44304	4	5 AF 5 AF	9	61	7	4 3 HS	9		7	2	7 AS	9		7 5809.745 3957.088 0 2642.841 1540.676	171019.57 29968.73
388	72275	0 2208,499	3781	165109 443040031	350 WI252001 44304	5	5 AF	h	c	3	3 5 AF	h		7	2	4 RS	h		3 2208.525 1634.237	52986.48
390 392	104851 81175	0 2519.889 0 2055.798	3771 3765	165102 443040034 165098 443040033	343 WI252001 44304 339 WI252001 44304	5 8	5 AF	1		7	5 7 AS 2 5 AF	1		7	0	0			0 2519.884 2507.559 0 2055.792 87.48328	57199.03 371.10
393	57480	0 1647.979	3763	165096 44304003:	337 WI252001 44304	10	5 AF	d	0	3	0 0	3.		o ·	ů .	0			0 1647.993 189.5652	1901.98
395 396	103109	0 3213.956 0 2521.376	3759	165094 44304003;	336 WI252001 44304 332 WI252001 44304	8 8	5 AF	d	1	7	2 4 RS 2 1 AB	d	1.5	7	0	0			0 3213.962 957.3062 0 2521.375 77.97082	18737.49 250.05
398	68323	0 1445,721	3741	165084 44304003;	328 WI252001 44304	10	5 AF	d	c	3	0 0			0	0	0			0 1445.709 20.87393	4.68
402 405	87754 62778	0 2176,111 0 2469,424	3727	165073 44304003 165070 44304003	317 WI252001 44304 314 WI252001 44304	5 8	5 AF	d	1	7	3 0 WE 2 5 AF	p	e:	2 7	2	1 AB	d	4	7 2176,119 2714,106 0 2469,416 116,9301	62458.33 78.99
409	34288	0 4939.497	3700	165057 443040030	308 WI252001 44304	7	5 AF	ď	h	3	2 4 RS	h	5	3	1	5 AF	d	h	7 4939.503 499.9511	12768.15
411 412	111643	0 1382.665	3697 3696	165054 443040030 165053 443040030	305 WI252001 44304 304 WI252001 44304	- 7 8	5 AF 5 AF	W		3 7	3 6 HD 2 7 AS	w		7	0	0			0 1382,673 55,26069 0 1487,119 1132,659	143.92 27719.26
414	26647	0 4334.211	3692	165051 443040030	302 WI252001 44304	7	5 AF	w		7	3 6 HD	w		7	0	0			0 4334.2 3033.209	146314.77
415 432	43508 73916	0 1053.926 0 2363.958	3689 3616	165049 44304003(164994 44304002!	300 WI252001 44304 250 WI252001 44304	10	5 AF 5 AF	d w	0	7 7	0 0 3 4 RS	w		7	0	0			0 1053,936 960,8887 0 2363,964 290,7831	35224.89 4289.35
442	13846	0 3325.094	3583	164972 44304002:	230 WI252001 44304	4	5 AF	w		6	3 1 AB	w		6	3	3 HS	W		6 3325,086 277,1761	3388.61
445 446	12845 47152	0 3334.157	3558 3553	164957 44304002 164964 44304002	216 WI252001 44304 213 WI252001 44304	8 8	5 AF	k.		7	2 4 RS 2 4 RS	h k		7	0	0			0 3334.169 153.0527 0 2189.212 2572.402	628.10 227642.04
448	10754	0 2313,643	3540	164946 443040020	206 WI252001 44304	9	5 AF	î		3	1 4 RS	ï		3	0	0			0 2313.658 891.8641	6236.16
449 453	37947 12844	0 1289.885 0 2663.963	3532 3518	164942 443040020 164934 443040011	202 WI252001 44304 194 WI252001 44304	. <u>9</u> 8	5 AF 5 AF	i d	h	7	1 4 RS 2 4 RS	h	45	3	0	0			0 1289,889 1303,384 0 2663,979 61,7084	36669.55 173.88
454	107607	0 5290.777	3516	164933 443040011	193 WI252001 44304	5	5 AF	1		3	5 4 RS	1		3	0	0			0 5290.771 1550.539	11372.78
457 458	4441 48252	0 2687.345 0 1383.285	3508 3504	164927 443040011 164926 443040011	190 WI252001 44304 189 WI252001 44304	8 5	5 AF	k.		6	2 4 RS 5 1 AB	k.		6	0	0			0 2687.354 1488.668 0 1383.284 168.5254	60064.11 1607.77
461	64992 79748	0 789.4433	3489 3488	164921 443040011	184 Wi252001 44304	10	5 AF	0		7	0 0			0	0	0			0 789.4429 148.8305	1089.20
462 468	113213	0 1866.093 0 4788.757	3488	164920 44304001i 164904 44304001;	183 WI252001 44304 170 WI252001 44304	10 8	5 AF	î		7	2 4 RS	h		7	0	0			0 1866.089 207.7496 0 4788.746 2189.538	2422.69 49811.41
469 471	49444 18039	0 1169.019	3466 3454	164903 443040014 164896 443040014	169 WI252001 44304 162 WI252001 44304	6	5 AF 5 AF	k	h	7	4 4 RS 3 0 SA	k.	C	7	0	0 3 HS	.00		0 1169.026 781.9059 5 1210.441 181.9731	18189,17 1240.72
475	60143	0 1662,395	3438	164886 44304001	154 WI252001 44304 154 WI252001 44304	5	5 AF	K		7	5 4 RS	*		7	0	3 MS	K		0 1662,398 2800,209	36115.21
482	50570	0 5441.287	3413	164873 44304006:	635 WI252001 44304	5	5 AF	w		7	5 4 RS 1 4 RS	w		7	0	0			0 5441.305 1949.875	134999.56
483 486	112885 27900	0 1790,851 0 2202,042	3410	164872 443040014 164969 443040014	147 WI252001 44304 144 WI252001 44304	8	5 AF	w		7	2 4 RS	w		7	0	0			0 1790.865 953.0298 0 2202.025 2067.909	36210.04 225273.23
488 490	12062 53155	0 2887.702 0 7063.115	3403 3393	164867 443040014 164863 44304001;	142 WI252001 44304 139 WI252001 44304	7	5 AF	9	w:	7	3 7 AS 3 4 RS	g	w	7	0	0			0 2887.673 1447.011 0 7063.115 5472.229	70128.08 166405.98
493	31900	0 3251.26	3384	164858 44304006:	631 WI252001 44304	8	5 AF	ì	d	Ý	2 1 AB	i	d	7	0	0			0 3251.271 200.329	1906.19
522 523	3425	0 1843.18	3303	164814 44304001(101 WI252001 44304 96 WI252001 44304	6	5 AF	k		7	4 8 AD	k		7.	0	O TA			0 1843,177 1847,892 0 1578,642 227,7052	70762.13
524	84971	0 634.5427	3288	164804 443040009	93 WI252001 44304	6	5 AF	k		ý	4 7 AS	k		7	0	0			0 634.5388 442.083	9835.56
525 527	95111 26422	0 4170.01	3283 3265	164802 44304006° 164793 443040001	619 WI252001 44304 87 WI252001 44304	8	5 AF	W		7	2 4 RS 4 7 AS	w		7	0	0			0 4170.005 3261.002 0 518.047 310.1854	329560.51 4531.89
533	100102	0 638,345	3254	164786 443040001	81 WI252001 44304	6	5 AF	k		7	4 7 AS	k		7	0	0			0 638.3517 566.7354	18282.83
534 538	107722	0 1308.328 0 4036.021	3252 3237	164784 443040001 164775 44304006	79 WI252001 44304 612 WI252001 44304	6	5 AF	C.	K.	7	4 5 AF 4 4 RS	c	K .	4 7	0	0			0 1308.328 142.4307 0 4036.012 2698.669	246.31 308714.70
547	24964	0 6293,367	3217	164765 443040001	65 WI252001 44304	6	5 AF	9		7	4 8 AD	9		7	0	ō			0 6293.352 7018.747	389351.69
553 554	29281 47599	0 1545,681 0 1225,493	3192 3189	164755 44304000! 164752 44304000!	56 WI252001 44304 55 WI252001 44304	5	5 AF 5 AF	w		7	5 4 RS 5 8 AD	w		7	0	0			0 1545.684 1545.683 0 1225.49 587.979	81795.52 7397.67
560	62106	0 2222.722	3171	164742 44304000	47 WI252001 44304	8	5 AF	w		7	2 8 AD	w		7	0	0			0 2222.741 1019.262	49612.50
569 576	25305 51566	0 1636,422 0 2588.871	3137	164722 44304000: 164714 44304000:	33 WI252001 44304 25 WI252001 44304	6	5 AF	k W		5 7	4 8 AD 4 8 AD	k w		7	0	0			0 1636.446 789.6922 0 2588.886 509.3692	11671.40 4488.93
582	41062	0 1173,403	3098	164700 44304000	18 WI252001 44304	5	5 AF			7	4 8 AD	1-400 1000		7		4 RS			7 1173.399 1034.7	27636,75
584 585	57371 112555	0 1387.324 0 6972.186	3087	164694 44304000 164691 44304005	13 WI252001 44304 590 WI252001 44304	6	5 AF	w	0	5 7	2 5 AF 3 7 AS	w	a	7		0 SA 4 RS	w		4 1387.322 1362.973 7 6972.226 2353.932	75900.09 89907.83
586	4339	0 810.2045	3080	164690 44304000	10 WI252001 44304	9	5 AF	W	90.	7	1 4 RS	w	*	7	0	0	0.70		0 810.2063 717.4633	25570.54
589 591	44081 60661	0 972.7654 0 3079.342	3056 3052	164680 443040051 164678 443040051	582 WI252001 44304 581 WI252001 44304	8 7	5 AF 5 AF	w		5 7	2 0 SA 2 1 AB	w		7	1	0 5 AF	w		0 972.7459 730.2876 5 3079.346 1086.06	21191.22 36460.60
594	102562	0 757,1193	3029	164671 443040001	4 WI252001 44304	8	5 AF	w		7	2 1 AB	w		7	0	0	-		0 757 1081 482 782	14676.37
273 279	11763	0 552.9824	4235 4214	165349 44304007;	733 WI252001 44304 521 WI252001 44304	8	5 AF 5 AF			7 7	2 7 AS 4 1 AB			7	0	0			0 552.9749 535.3578 0 1065.362 1240.651	13749.16
284	52931	0 5284.995	4185	165328 44304005	511 Wi252001 44304	6	5 AF	k	9	7	2 1 AB	N.	g	7	2	7 AS	k	9	7 5285.029 3454.156	187239.55
289 512	56378 83775	0 1256.271 0 3733.88	4168 3332	165321 44304007; 164829 44304001	722 WI252001 44304 115 WI252001 44304	6 9	5 AF	k		7 7	4 4 RS 1 7 AS	k g		7	0	0			0 1256.279 1187.687 0 3733.883 4452.437	53476.60 198796.23
521	82707	0 1708.507	3305	164816 443040010	103 WI252001 44304	6	5 AF	k		7	4 7 AS	k		7	Ò	0			0 1708.51 483.9223	9501.15
608	14170	0 2654.495	2993	164653 443040051	561 WI252001 44304	7	5 AF	K.		7	3 8 AD	K.		7	U	U			0 2654.485 2788.217	108604,67

OBJECTIÉ Shape					POLY_NB FCODE PROJ_ID	SOURCE SDEC		SITEMC_S1	SITE_M1A	SITE_M1B	STRCT_S SDEC_2		IC_SITE_M2A	SITE_M2B	STISDEC	3 SITE				S SHAPE L Shape Le S	
609	47481			184652 44304005			5 Total	5 AF	w	9		1 0 SA	w	g.	3	1	4 RS	W	g	7 4367,644 4445,438	233400.85 5830140.48
22	58201			256292 44305005	530 WI252001 44305		10	6 HD	0	h	7	0 0			0	0	0			0 3540.486 839.1166	19075.25
33	71593 74731	0 1529.146 0 5215.101	5911	256081 44305002! 256041 44305002!	257 WI252001 44305 256 WI252001 44305		10	6 HD	c	k	7	0 0			0	0	0			0 1529.143 1315.018 0 5215.094 898.9469	36759.37 15997.47
36	89615	0 2193.195	5881	256041 443050021	518 WI252001 44305		10	6 HD 6 HD	c		3	0 0			0	0	0			0 2193.192 751.6085	16347.21
43	27419	0 3031.199	5785		512 WI252001 44305		8	6 HD			7	2 0 TA	e	42	4	0	0			0 3031.211 1151.073	48766.11
44	28251	0 1174.876	5740		505 WI252001 44305		10	6 HD	c	0	7	0 0	1.00	P	0	0	0			0 1174.883 48.3603	74.53
45	85657	0 1180.144	5737		234 WI252001 44305		10	6 HD	c	k	7	0 0			0	0	0			0 1180,145 692,1163	14718.92
46	441	0 2810.81	5734	255712 443050050	503 WI252001 44305		6	6 HD	c	k .	7	2 0 TA	0	k.	3	2	0 RO			0 2810.814 2281.607	96855.70
47	3087	0 1059.104	5703		226 WI252001 44305		10	6 HD	c	k	7	0 0			0	0	0			0 1059.101 356.8923	4944.60
48	18144	0 2261,14	5687		499 WI252001 44305		10	6 HD	c	R.	7	0 0			0	0	0			0 2261.171 2718.03	69174.66
49	79873	0 2166.916	5683		217 Wi252001 44305		10	6 HD	c	9	7	0 0			0	0	0			0 2166.92 592.6816	7655.69
51	15679	0 2459.832 0 2868.862	5651 5249	255556 443050020 254591 443050001	209 WI252001 44305 97 WI252001 44305		10	6 HD 6 HD	5	k	7	0 0			0	0	0			0 2459.835 2788.739 0 2868.878 1332.43	213441,46 50232,47
75 81	48800	0 5124,466	5164		936 WI252001 44401		4	6 HD		10	6	4 1 AB			6	2	3 HS			6 5124.461 615.7265	5157.83
97	82505	0 1380.529	5188		81 WI252001 44305		10	6 HD	c	E.S.	5	0 0			0	0	0			0 1380.528 1360.268	71738.55
99	78877	0 4228.066	5059		901 WI252001 44401		7	6 HD			6	3 1 AB			6	0	0			0 4228.085 21.74781	9.97
147	41505	0 1115,032	4987		49 WI252001 44305		9	6 HD	C	k	7	1 0 SA	C	k:	3	0	0			0 1115.033 1115.032	53656.81
150	106088	0 3025,669	4979		558 WI252001 44305		9	6 HD	0	R.	7	1 0 SA	0	R.	3	0	0			0 3025.688 2951.985	341865.95
172	81388	0 3076,428	4876		392 WI252001 44305		10	6 MD	c	h	7	0 0			0	0	0			0 3076.385 739.7655	23072.72
174 178	84300 108828	0 3778.887 0 2290.889	4869 4835		39 WI252001 44305 387 WI252001 44305		10	6 HD 6 HD	c	h	7	0 0			0	U .	0			0 3778.869 27.09296 0 2290.894 2262.303	29.56 192224.68
182	23103	0 793.1285	4801	253056 443050001	32 WI252001 44305		10	6 HD		W	7	0 0			0	0	0			0 793.1386 345.7162	4122.07
183	18143	0 4997.033	4794		384 WI252001 44305		10	6 HD	c	i i	7	0 0			0	0	0			0 4997.025 678.1655	18884.87
184	48031	0 2520.553	4783		381 WI252001 44305		10	6 HD	c	k	7	0 0			0	0	0			0 2520.558 1472.284	72854.77
189	10555	0 2005.837	4732	252818 443050033	371 WI252001 44305		10	6 HD	c	k	7	0 0			0	0	0			0 2005.833 1946.874	110944.70
191	15559	0 4048,007	4707	252726 44305003	367 WI252001 44305		10	6 HD	c	k	7	0 0			0	0	0			0 4048.044 968.6412	33915.10
206	64735	0 3318.117	4579	252270 44305003-	341 WI252001 44305		10	6 HD	c	k.	7	0 0			0	0	0			0 3318.109 1958.244	82382.26
207 240	51568 70627	0 3742.722 0 721.9491	4570	252248 44305003- 165386 44304005:	340 WI252001 44305 538 WI252001 44304		10	6 HD	0	k.	7	0 0 4 4 AB	o Nove		0	0	0			0 3742.899 3862.985 0 721.957 517.766	152638.33 9769.55
242	52171	0 454.188	4349		752 WI252001 44304		0	6 MD	Ĉ	9	7	2 0 SA	î.	9	4	0	0			0 454.1984 457.773	5338.18
356	110617	0 670.3061	3886	165174 44304004	411 WI252001 44304		10	6 HD	h		7	0 0	- R	4.1	0	0	0			0 670.2932 570.1254	12419.31
361	22212	0 667.0087	3875	165168 443040040	406 WI252001 44304		10	6 HD	h	c	7	0 0			0	0	0			0 667.0209 665,4196	7295.98
366	24625	0 2113.208	3859		395 WI252001 44304		9	6 MD	g	0	4	1 0 SA	9	g :	3	0	0			0 2113.219 427.9922	10959.78
416	91251	0 992.27	3687	165047 443040021	298 WI252001 44304		10	6 HD	W	C.	7	0 0			0	0	0			0 992.2702 684.5392	12014.71
417	31773	0 1158,492	3682		295 WI252001 44304		10	6 HD	c	d	7	0 0			0	0	0			0 1158,492 1205,443	46878.27
421 422	72378 32353	0 2331.352	3660 3658	165027 443040021 165025 443040021	280 WI252001 44304 278 WI252001 44304		5	6 HD 6 HD	W		7	4 4 RS 3 4 RS	w		4	0	0			0 2331.347 213.9907	2201.06 19480.98
425	42828	0 1962.98 0 2977.68	3640	165012 44304002	267 WI252001 44304			6 HD	1		4	5 7 AS	-		4	0	0			0 1962.962 1118.547 0 2977.681 2835.492	113250.70
436	103994	0 1241.359	3605		244 WI252001 44304		5	6 HD		0	7	5 0 SA		0	3	0	0			0 1241.348 892.3318	8440.37
478	95206	0 1757.683	3430		151 WI252001 44304		8	6 HD			7	2 1 AB			7	0	0			0 1757.675 214.8485	1934.60
498	18387	0 986.3255	3376		133 WI252001 44304		6	6 MD	k	9	7	4 4 AB	k.	9	7	0	.0			0 986.3208 374.7385	4343.55
501	85084	0 1646.062	3370		130 W1252001 44304		10	6 HD	a.	h	7	0 0			0	0	0			0 1646.052 1596.205	64460.66
555	86438	0 3082.215	3188		54 WI252001 44304		10	6 HD	9	200	7	2 1 AB	9		7	0	0			0 3082.203 1794.712	25007.02
517	16683	0 2496.895	3316	164822 443040010	109 WI252001 44304		6 Total	6 HD	d			0 0			U.	u.	.0			0 2496.889 2611.51	70195.26 2171531.58
9	73698	0 1707.073	6302	758472 442050230	2368 WI252001 44205	P	6	7 AS	c		6	4 5 AF			6	0	0			0 1707.06 1205.405	93715.22
98	83555	0 2324.52	5186		450 WI252001 44305		6	7 AS	c	h	7	4 3 HS	c	8	7	0	0			0 2324,526 282.893	3965.56
111	872	0 1048.745	5151	254273 443050044	441 WI252001 44305		10	7 AS	c	1	2	0 0			0	0	0			0 1048.724 24.30021	17.87
114	39645	0 4299.025	5141		436 WI252001 44305		10	7 AS	c	1	7	0 0			0	0	.0			0 4299.032 875.3569	19904.93
119	33354	0 848.5407	3357	63932 44101700;			6	7 YG			7	4 0 BS			2	0	0			0 848.5455 1205.307	15143.57
126 229	95304 2327	0 2657.939	3305 4432	63887 44101700; 165398 44304007(70024 WI252001 44101 762 WI252001 44304		4	7 AB 7 AS	3	w	10	3 0 AB 4 5 AF	120		4	3	0 HS	V	W	7 2657.937 1100.943 0 922.5706 273.1592	16954.12 2209.98
238	36615	0 3866.138	4377		756 WI252001 44304		6	7 AS			7	4 5 AF			7	0	0			0 3886.172 3191.23	188221.83
259	85526	0 1346.713	4272	165362 44304005	526 WI252001 44304		8	7 AS	k	5	7	2 0 SA	k	8	4	0	0			0 1346.725 1344.04	39778.42
260	62877	0 2208.592	4271	165361 44304007	743 WI252001 44304		6	7 AS	s	g	7.	2 0 SA	8	g	3	2	4 RS	5	9	7 2208.617 2200.246	125377.04
261	52617	0 1184.009	4268	165359 443040074	741 WI252001 44304		8	7 AS	9		7	2 0 SA	9		3	.0	0			0 1184.016 1105.368	35763.97
263	50682	0 1930.626	4258		739 WI252001 44304		8	7 AS			7	2 5 AF			7	0	0			0 1930.611 1997.404	89862.48
265 268	56379 37159	0 2243.273	4250		737 WI252001 44304		6	7 AS 7 AS	100		7	4 5 AF	other in		7	0	.0			0 2243.286 953.4788	21521.43
303	5369	0 2070.136 0 2243.457	4113		735 WI252001 44304 494 WI252001 44304			7 AS			4	3 5 AF 2 0 SA			- 6	0	0.80			0 2070.129 1494.855 0 2243.454 238.2383	69148.72
305	103327	0 3090,267	4110		492 WI252001 44304		5	7 AS	î		7	5 0 SA	î		3	0	0 10			0 3090.269 1298.404	24723.52
306	96091	0 1869.353	4111		493 WI252001 44304		5	7 AS	k	c c	7	5 0 SA	k.	c	7	0	0			0 1869.369 1304.691	23038.37
322	20129	0 3631,114	4032		697 WI252001 44304		5	7 AS	k		7	5 5 AF	k		7	0	0			0 3631,106 963,7973	26271.19
324	61110	0 2636.799	4022		467 WI252001 44304		7	7 AS	k	c	7	3 0 SA	k	c	3	0	0			0 2636.808 3682.688	114231.64
329	113449	0 2269.138	3984	165239 443040040	460 WI252001 44304		10	7 AS	c		7	0 0			0	0	0			0 2269.152 195.9516	2262.11
338 360	16569 11968	0 1422.611 0 1433.386	3947		445 WI252001 44304 407 WI252001 44304		7	7 AS 7 AS	c		7	3 0 SA 3 5 AF	c		3	0	0			0 1422.621 232.3232	1063.36
363	86114	0 728.8956	3868		407 WI252001 44304 401 WI252001 44304		10	7 AS			2	3 5 AF			6	0	0			0 1433.388 1342.109 0 728.8885 60.81557	81372.25 184.24
369	48142	0 5594.293	3847		389 WI252001 44304		8	7 AS	k		3	2 7 AS	N.		7	0	0			0 5594.318 2107.504	67738.74
375	29591	0 994.7714	3830		377 WI252001 44304		8	7 AS	k		4	2 5 AF	k		4	0	0			0 994.7774 222.2967	1128.59
389	103326	0 1855.547	3772	165103 44304003	344 WI252001 44304		7	7 AS			7	3 5 AF			7	0	0			0 1855.537 1826.738	91671,53
400	54265	0 2338.604	3739		326 WI252001 44304		7	7 AS	N.		7	3 5 AF	N.		7	0	0			0 2338.603 2124.59	41693.35
403	63971	0 2663.228	3724		316 WI252001 44304		8	7 AS	t		7	2 5 AF	t		7	0	0	1.10		0 2663.231 2667.648	53254,61
472	28491	0 1865,539	3453	164895 443040010	161 WI252001 44304		. 0	7 AS	K		4	3 5 AF	N.		4	2	0 SA	K:		3 1865.539 403,4797	4874.20

OBJECTIC Shape		CGSDFPERIMETI EC			OLY_NB FCODE PROJ_ID SOURCE	CE SDEC_1 SITE_S1	SITEMC_S1	SITE_M1A	SITE_M1B	STRCT_S SDEC_2		MC_SITE_M2A	SITE_M2B	STISDE			C_ISITE_	M3/SITE_M3ESTRCT_S SH		
487	75865	0 3008.398	3405		143 WI252001 44304	9	7 AS	k		7	1 5 AF	k.		7	0	0			108,401 1412.38	28481.16
491	98927	0 1881.351	3390		138 WI252001 44304	8	7 AS	n		4:	2 0 SA	n		3	0	0			81,365 204,863	1560.93
494	28768	0 3328.428	3383		136 W1252001 44304	6	7 AS	n		5	3 0 SA	,n		3	1	7 AS	n		328.421 2176.104	70846.63
526	27233	0 3054.798	3271	164796 443040001	89 WI252001 44304	6	7 AS	k		7	4 8 AD	k.		7	0	0			054.798 1440.118	67450.55
528	553	0 715.3351	3264	164792 443040001	86 WI252001 44304	5	7 AS	k		4	5 8 AD	k.		4	0	0			15.3481 360.7892	2049.21
529	17043	0 542.626	3261	164790 443040001	84 WI252001 44304	5	7 AS	k		4	5 8 AD	k		4	0	.0		0.54	12.6412 341.3163	1927.21
536	19575	0 2947.631	3248	164782 443040001	77 WI252001 44304	5	7 AS	k		4	5 8 AD	k.		4	0	0		0 29	947.634 353.9951	1323.10
542	102878	0 1289.294	3233	164771 44304000	71 WI252001 44304	5	7 AS	k.		4	5 8 AD	k		4	0	0		0 12	289.278 33.71096	12.80
548	68142	0 1802,732	3205	164762 443040001	63 WI252001 44304	5	7 AS			4	5 8 AD			4	0	0		0.18	802.718 1062.299	14518.63
573	94112	0 3376.673	3128	164718 44304000;	29 WI252001 44304	6	7 AS			7	4 5 AF			7	0	0			376,676 2490,705	89776.33
275	27131	0 1567.027	4229	165346 44304007:	731 WI252001 44304	6	7 AS			7	4 5 AF			7	0	.0			567.027 522.8389	14541.45
285	107839	0 4764.825	4178		510 WI252001 44304	5	7 AS	1		7	5 5 AF	t		7	0	.0			764,809 3692,782	182553.08
520	21968	0 1342.103	3308	164817 443040010	104 WI252001 44304	6	7 AS	k.		7	4 8 AD	k .		7	0	0			342.096 1359.868	38909.65
						7 Total														1770089.93
28	33035	0 1267.403	5979	256210 443050020	265 WI252001 44305		8 AD	0	ė.	7	2 1 AB	c		7	n			0.45	267.389 1075.566	20131.64
32	101364	0 2020,606	5937	256123 443050021	261 Wi252001 44305		8 AD	0	2	4	2 1 AB		20	4	0	0			120.603 2521.681	138029.48
355	26533	0 1639.55	3887	165175 44304004	412 WI252001 44304	6	8 AD		100		5 0 SA		200	-	0	0			39.541 2195.274	68508.13
362	64734	0 959.9452	3872	165165 44304004	403 WI252001 44304		8 AD	9	20	5	5 0 SA	9	20	3	0	0			59.9409 1058.782	23619.87
377	40592	0 1972.528	3806	165124 443040031	365 WI252001 44304		8 AD	· ·	9	- 2	1 0 SA		9	3	0				972.524 810.3563	14508.47
378	16468	0 927,805	3805	165123 443040031	364 WI252001 44304	9	8 AD	9		- 2	1 0 SA	100	55	9	0	0			27.8126 1435.008	37157.23
401	60873	0 1540.793	3728	165074 44304003	318 WI252001 44304	9	B AD	9	0	2		9	9.	0	0				540.775 828.7479	
						10		к	0	2	0 0			0	0					11267.10
404	101359	0 954,9826	3723	165071 44304003	315 WI252001 44304	ь	B AD	n		· ·	5 5 AF	n		/	u		1.554		54.9803 1078.436	29638.84
450	29173	0 1312,837	3529	164941 443040020	201 WI252001 44304	4	B AD	K			3 0 SA	R.		3	3	5 AF	K.		312.842 1523.494	22751.32
460	9155	0 2977,707	3497	164924 443040011	187 WI252001 44304	8	8 AD	1		7	2 1 AB	1		7.	0	0			977.685 1282.615	24440.75
544	61435	0 566.7459	3223	164769 44304000	69 WI252001 44304	8	DA B	k.		7	2 5 AF	k .		7	0	0			6.7479 487,1987	9753.86
551	54379	0 1766,396	3199	164759 443040001	60 W1252001 44304	8	8 AD	k.		7	2 5 AF	K.		7	0	0			766.385 80.11164	305.29
552	47921	0 1311,499	3197	164758 44304000!	59 WI252001 44304	8	8 AD	k		7	2 5 AF	k		7	0	.0			311,498 1666.032	73510.08
559	21310	0 260.9624	3176	164745 44304000	50 WI252001 44304	10	8 AD	c	k	7	0 0			0	0	0			260.968 219.3808	2384.83
562	97888	0 431 3415	3168	164739 44304000-	44 WI252001 44304	10	8 AD	C	k	7	0 0			0	0	0		0 43	31.3424 405.6152	6841.56
563	82603	0 164.7874	3166	164738 44304000:	43 WI252001 44304	8	8 AD	k.		4	2 0 SA	k.		3	0	0		0 16	84.7921 137.4853	1228.55
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571	89487	0 1544.042	3134	164720 443040000	31 WI252001 44304	8	8 AD	k		7	2 5 AF	· k		7	0	0		0 15	544.035 1603.748	57555.53
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410	1739	0 1927.04	3699	165056 443040030	307 W1252001 44304	10	9 SS	C		7	0 0			0	0	.0			927.059 1661.098	57196.43
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					***********************************	14 Total			-	-				-		-		0.20		4054.52
						Grand Total														26569568.27

Biogeoclimatic Zone + Leading Site Series	Within OGMA	Outside of OGMA	Total Hectares	Percentage Within OGMA
AT		95.8	95.8	
00		71.8		
(blank)		24.0		
CWHvm1 Totals	1346.4			
00	7.9	182.7	190.6	4.3'
01	229.5	3147.7	3377.2	7.3
02	2.3	31.1	33.4	7.5
03	196.5	1155.1	1351.5	17.0
04	156.9	1488.3	1645.2	10.5
05	369.3			
06	99.7			
07	124.4			
08	60.1			
09	60.1			
10	39.3			
11	0.0			
14	0.4			
CWHvm2 Totals	948.0			
00	3.4			
01	240.9			
02	12.3			
03	136.6			
03	128.8			
05	246.8			
06	80.4			
07	75.4			
08	13.0			
09	10.4			
CWHxm2 Totals		20.1		
00		1.8		
01		13.9		
04		4.4		
MHmm1 Totals	229.5			
00	7.2			
01	87.9			
02	74.2			
03	14.8			
04	35.9			
05	3.6	70.4	73.9	5.1
06	5.9	70.7	76.6	8.3
09		0.2	0.2	0.0
MHmmp Totals		0.2	0.2	
00		0.2	0.2	0.0
No Data	24.2	70.1	94.4	er e
(blank)	24.2	70.1	94.4	
Total Hectares	2548.2	16115.8	18663.9	

Biogeoclimatic Zone + Leading Site Series	Sum of Hectares	BC Focus List	Age Class
CWHxm2	20.1		
00	1.8	N/A	5
01	13.9	Red List	4
04	4.4	Blue Listed	5
Grand Total	20.1		

From: Casavant, Bryce FLNR:EX

To: Hudson, Don A FLNR:EX

Cc: Kempe, Norm L FLNR:EX; Morris, Rhonda M FLNR:EX; Cotton, Ron FLNR:EX; Smallacombe, Daniel K FLNR:EX;

Norlock, Jim D FLNR:EX; Bastarache, Paul FLNR:EX

Subject: Advisory Letter - Nahmint SMZ 13 - File CLOSED.

Date: Monday, October 22, 2018 9:11:00 AM

Attachments: Lt 2018 Oct 22 DCR 37250 Nahmint SMZ 13 Advisory notice.pdf

Nahmint Review Oct 1 (2).pdf

Target assessment Nahmint SMZ13 RC calc.xlsx

image001.jpg

Importance: High

To the Parties,

Please see attached correspondence of today's date with respect to an Advisory Notice regarding Nahmint SMZ 13.

The CEB inspection is now closed.

I remain available to answer any questions or address any concerns as they may arise.

I wish to thank everyone for their co-operation with this complex inspection and for their professionalism during the last few months.

Regards,





Senior Compliance and Enforcement Specialist Special Provincial Constable | Natural Resource Officer West Coast Region

Compliance and Enforcement Branch | FLNRORD

Office: 250-230-1319 (cell)

To report a Natural Resource Violation:

Telephone: 1-877-952-7277 (RAPP) or #7277 on cellphones Webpage: https://www.for.gov.bc.ca/hen/nrv/report.htm



File # DCR-37250

Don Hudson B.C. Timber Sales Manager Campbell River District Office 370 S Dogwood Street Campbell River, BC V9W-6Y7

VIA e-mail don.hudson@gov.bc.ca

October 22nd 2018

Advisory Letter - Nahmint Special Management Zone (SMZ) 13

Encl: Consultant report titled *Nahmint SMZ 13: Consistency of Forest Stewardship with Management Intent and Legal Objectives* (attached as PDF); Secondary analysis of government data (attached excel spread sheet).

Good day,

Please be advised that the inspection results pertaining to timber harvesting within the Nahmint Valley (SMZ 13) are now concluded. It has been determined that Forest Stewardship Plan (the "FSP") #638 is in non-compliance with S. 5 and S. 21 of the Forest Range and Practices Act. For this reason, it is recommended that BC Timber Sales ("BCTS") submit an amendment to the current FSP, cease timber harvesting within SMZ 13 pending amendment approval, and place on hold current OGMA legalization and future timber harvesting tenures. Further details are provided within this Advisory Letter. This Advisory Letter will first provide an overview of the details leading to this referral decision followed by the independent review results, the results of the Compliance and Enforcement Branch ("CEB") secondary analysis, an explanation of CEB's position on legislative compliance, inspection determinations, historical context, outstanding concerns, CEB decision, and interim recommendations. Finally, closing remarks will be provided.

Overview: I am in receipt of the BCTS communication dated August 9th 2018 and titled *Re: Compliance Notice-Inspection Findings (SMZ 13)* (the "response letter"). The letter was in response to a CEB notice issued to BCTS on June 18th 2018 and titled *Compliance Notice – Inspection Findings (SMZ 13)* (the

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"notice"). Briefly, the notice outlined a CEB records inspection which concluded that there was reasonable grounds to believe government non-compliance had occurred regarding timber harvesting operations within the Nahmint Valley (SMZ 13) Specifically, concerns were raised pertaining to the manner in which the current FSP was applying the Vancouver Island Land Use plan ("VILUP") Objective B.4; namely, that the FSP only applied this government objective to rare and underrepresented ecosystems within the landscape when in actuality VILUP requires this objective to be applied to the entirety of the landscape. As a result, the overarching issue at play was the use of site series / surrogate levels of representative data at the landscape planning phase of timber harvesting operations. BCTS was provided an opportunity to respond to the CEB notice and did so respond on August 9th 2018.

In summary, the response letter received from BCTS maintained the following key points:

- Old Growth Management Areas ("OGMAs") have been selected in consultation with First Nations.
- Established OGMAS have been delineated in accordance with applicable legislation (referenced in response) and best practices outlined within the land planning guidebook (referenced in response).
- Rare and underrepresented ecosystems within SMZ 13 are managed at the site series level.
- A surrogate (in place of site series data) was used for the remainder of landscape planning.
- Government has not set objectives for site series / surrogate distribution and this was to allow planning flexibility.
- There is an overall lack of site series data and lack of clear government targets for site series.
- The planning approach taken is "generally" consistent with best practices (referenced in response).
- GIS analysis using TEM site series data was used to verify current planning approaches and confirmed that BCTS landscape management is compliant.
- As the holder of an approved FSP BCTS could be found in non-compliance with results and strategies within the FSP <u>but not</u> in non-compliance with VILUP (i.e., objectives set by government) due to the legal application and workings of an FSP once approved.

Following the BCTS response letter, CEB engaged a private consultant to conduct a qualified professional third party blind review of the CEB notice and BCTS response letter. The parameters of the services were to, "verify the consistency of forest stewardship with management intent and legal objectives". While this review was occurring, CEB conducted its own secondary data analysis of the BCTS site series data (which is provided as an enclosure to this letter) in conjunction with provincial government planning staff. This Advisory Letter is based on the results of these two reviews (described further below).

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Blind review results: The independent review concluded the following in relation to BCTS timber harvesting operations within the Nahmint Valley (SMZ 13):

- Based on review of available documents and data, planning in the Nahmint seems inconsistent
 with the intent of the VILUP and with the legal objectives in the Higher Level Plan Order
 ("HLPO").
- There is no evidence that planning in the Nahmint SMZ considered ecosystem representation by site series/surrogate as required by the HLPO.
- The BCTS response states that representation was assessed using a surrogate, but does not
 provide a systematic surrogate classification or provide evidence that analysis was completed as
 part of planning. Information exists to create surrogates from tree species and productivity as
 well as from landform and site series.
- Neither the draft Land Use Plan ("LUP") nor draft Special Reserve Management Plan ("SRMP")
 described surrogates nor mention assessment by site series or surrogate
- Our effectiveness assessment concludes that the current draft OGMAs do not represent site series or surrogates—based on three different surrogate measures—equally.
- Douglas-fir ecosystems (CWHvm1/04, CWHvm2/04, F and HF moderate and high productivity) seem poorly represented, counter to the specific notation for retention in the VILUP.
- OGMAs improved the representation of mesic, but not dry or wet MHmm1 ecosystems.
- The draft OGMAs do not include target amounts of old forest (age class 8 + 9) by variant.
- The 2017 FSP does not include a result for a target level of mature seral forest (exclusive of old forest) as per the HLPO.
- There is no demonstration of equivalency of younger forest included in draft OGMAs.
- The 2017 FSP only includes the HLPO old forest objective under rare ecosystems.
- Planning documents do not use best-available information.
- TEM site series data, representing best-available information, exist for 99% of the Nahmint, but were not assessed until the BCTS response. No valid rationale has been provided for why these data are worse than VRI.
- New estimates of disturbance return interval exist, but have not been incorporated.
- The legal objectives are unlikely to achieve the intent of the VILUP.
- Meeting representation objectives means that the minimum levels of retention need to be met or exceeded in all ecosystems.
- The natural disturbance return interval estimate is too low, so that the amount of old forest expected naturally—the basis for assessing risk to biodiversity and old forest values—is severely underestimated.
- Parks have been removed from the estimate of the amount of old forest needed, yet there are no parks in the Nahmint.
- Science is coming to consensus that maintaining low risk to biodiversity likely requires at least half of the total area retained.

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- Natural disturbance will continue within OGMAs, so that the amount of old forest will be lower than the area retained (other constrained areas provide a little more).
- Landscape and stand-level retention is sometimes double-counted (e.g., riparian reserve zones).
- Planning for OGMAs seems to have been ad-hoc, based on existing constrained areas and
 aiming to achieve the bare minimum required legally rather than following good conservation
 design. Professional forester managers are responsible for filling the gap between legal
 objectives and intent. Our assessment suggests that the Nahmint demonstrates failure of
 professional reliance at maintaining publicly-agreed-upon values and priorities.

CEB internal secondary analysis: In conjunction with provincial land use planning staff, CEB conducted a secondary analysis of the BCTS provided data set and the BCTS response letter. This secondary analysis found the following:

- 1. There is a discrepancy between the plain and ordinary wording of VILUP regarding retention targets for mature seral forests and old forests, and the manner in which government has been interpreting VILUP retention targets in land use planning. Specifically, while the plain and ordinary wording of VILUP appears to direct a 25%-33% retention of mature seral forest across the landscape plus a minimum 19% old forest retention. In practice, however, this has been interpreted as 25%-33% overall retention of which 19% must be old and 6% may be old or mature seral forest. The retention difference between these two interpretations is significant.
- 2. Regardless of the above noted interpretation issues, if the BCTS data set is taken at face value as "true" the following additional concerns arise:
 - a. No mature seral forest retention target is identified.
 - No depletion targets are identified.
 - c. Multiple site series are not adequately represented within existing OGMA delineation and recruitment for many at risk site series needs to take place within the timber harvesting land base. Put another way, if only the OGMAs are used, there is a high probability of timber harvesting into deficit for both general retention targets and underrepresented ecosystems.
- 3. No site series data was used in initial landscape planning. Instead it is stated that a surrogate was used. However, the response letter lacks a clear definition of the surrogates, data, and retention target thresholds used in initial planning.
- 4. The FSP contains no clearly established retention values for mature seral forests or old forests, nor are depletion values over time explained for the FSP decision maker.
- 5. As noted in the previous CEB notice, the current FSP only references VILUP under the heading of rare and underrepresented ecosystems. This results in significant concerns regarding the application of VILUP and the adherence to government objectives across the land base.

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CEB position on legislative compliance frameworks: BCTS has raised issue with the characterization of timber harvesting operations being in non-compliance with VILUP and objectives set by government. BCTS asserts this is not a possible enforcement conclusion as they are the holders of an approved FSP and therefore are held to results and strategies contained within the FSP and not the order more broadly speaking. **This BCTS position is not supported.**

Simply put, an FSP cannot be used as a shield to allow non-compliant activities to occur or purport to usurp or replace the legal orders and objectives set by government. Indeed, no such authority exists to contravene legislation, legal orders, or objectives set by government. While the legislative landscape may very well restrict the enforcement options available to CEB, nevertheless, the timber harvesting activities conducted must, by necessity, be in compliance with the overarching legislation, and both objectives set by government and the legal orders which establish said objectives. In situations where an FSP may be found to have inadvertently created circumstances by which timber harvesting has not met their legislated obligations, or failed to apply results and strategies that are measurable and verifiable, it is appropriate for CEB to note these concerns as non-compliances – regardless of the enforcement options available (if any). The legislative framework that applies to Nahmint SMZ 13 is as follows:

- The BC Land Act S. 93.4 provides authority to establish the requisite ministerial orders under the Forest and Range Practices Act respecting Crown resources and confirms that such an order is an objective set by government.
- The BC Land Act S. 93.8 provides confirmation that orders under S. 3 or 4 or the BC Forest
 Practices Code are continued as objectives set by government for the purposes of S. 93.4 of the
 BC Land Act.
- 3. The Vancouver Island Land Use Plan (High Level Order) was established pursuant to sections 3(1); 3(2); and 9.1 of the BC *Forest Practices Code* and is therefore continued as an objective set by government under the BC *Land Act* S.93.8; 93.4. VILUP therefore is legally in force.
- 4. Subject to the *Land Act*, the BC *Forest Act* S. 11 prohibits the government from harvesting Crown timber except in accordance with the *Forest Act*.
- 5. Subject to S. 12 of the BC *Forest Act*, the minister may grant rights to harvest timber through a timber sale licence.
- 6. Pursuant to S. 3 of the *Forest and Range Practices Act* an approved FSP is required for the holders of timber sale licences prior to timber harvesting.
- 7. Under S. 5 of the Forest and Range Practices Act an FSP must:
 - a. Specify intended results or strategies, each in relation to
 - (i) objectives set by government, and
 - (ii) other objectives that are established under this Act and that pertain to all or part of the area subject to the plan...
- 8. For greater certainty, and in accordance with the legal definitions provided within the *Forest* and *Range Practices Act*, "objectives set by government" are inclusive of objectives provided

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- under the *Land Act* and "other objectives set by government" are inclusive of regulations under the *Forest and Range Practices Act*.
- 9. Furthermore, subject to the definitions provided within the *Forest Planning and Practices Regulation*, a "result" means:
 - a. Measurable or verifiable outcomes in respect of a particular established objective, and
 - b. The situations or circumstances that determine where in a forest development unit those outcomes (above) will be applied.
- 10. In addition, "strategy" is defined as a description of:
 - a. Measurable or verifiable steps or practices that will be carried out in order to meet a particular established objective, and
 - b. The situations or circumstances that determine where in a forest development unit the steps or practices will be applied (emphasis added).
- 11. Subject to S. 21 of the *Forest and Range Practices Act,* holders of an FSP must ensure the intended results and strategies are carried out.
- 12. Pursuant to S. 12 of the *Forest Panning and Practices Regulation*, an exemption may be granted from showing a specified result and strategy under certain parameters but only if it is shown that there is a conflict with a land use objective. The regulation places a higher emphasis on compliance with land use objectives.

Inspection determinations: Based on a secondary analysis of the BCTS response letter and the data provided, coupled with a legislation review, CEB has determined the following:

- 1. For the reasons identified by the private consultant during their review, and based on the findings of CEB during an analysis of the BCTS response letter, the current FSP does not contain measurable or verifiable results and strategies pertaining to mature seral forests or old forests within SMZ 13, in contravention of S. 5 of the Forest and Range Practices Act. Other concerns pertaining to depletion values and overall landscape retention targets remain. Additional concerns pertaining to underrepresented and rare ecosystems as well as large tree retention still exist. As a result, the legal objectives established under VILUP have not been met.

 Therefore, it is found that the current FSP is in non-compliance with S. 5 of the Forest and Range Practices Act.
- 2. Within the current FSP, and despite the above noted deficiency, it was found that certain site series for underrepresented ecosystems are not adequately represented across the landscape. Furthermore, current OGMA delineation does not retain the required targets. The overall results and strategies for underrepresented and rare ecosystems lack depletion values and clear targets / retention rationales. Therefore, it is found that, even had the FSP been valid, the current timber harvesting within Nahmint SMZ 13 is in non-compliance with S. 21 of the Forest and Range Practices Act.

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Historical context: This inspection focused solely on the current FSP (#638) and current and planned timber harvesting operations within SMZ 13. However, this inspection did briefly review historical FSPs for general compliance over the last 18 years. Although out of scope for this inspection, at first glance, there appears to be legacy compliance issues with timber harvesting in the Nahmint Valley SMZ 13. There are therefore reasonable grounds to believe that serious cumulative impacts may occur on the land base over time should this matter remain unaddressed.

Outstanding matters: It is noted that there exists a discrepancy between the plain reading of VILUP, the retention values for mature seral forests, and the current government interpretation of VILUP retention thresholds for mature seral forests. This discrepancy is a serious concern. However, as mature targets and depletion values have simply not been identified, it is a non-determining factor in the above findings.

During the course of this inspection it was learned:

- That BCTS is moving to legalize the current established OGMAs. This is of great concern as the OGMAs do not adequately address the retention targets needed to maintain landscape biodiversity.
- That >400,000m³ is planned to go to public tender for harvesting. This is of significant concern to
 CEB as certain underrepresented site series are not adequately represented in the OGMAs and
 require recruitment from the timber harvesting land base. Without clearly identified
 recruitment planning for these site series overharvesting and irreparable harm is highly possible
 and would constitute further non-compliance with the FRPA and the FPPR.

CEB decision: CEB lacks the discretionary enforcement options that would otherwise be available if the holder of FSP #638 had been a company or non-government body. Therefore, CEB cannot adequately resolve the public complaint that has been made.

It has come to the attention of CEB that a public complaint has also been made to the Forest Practices Board. Please be advised that the Board has already been in contact with CEB regarding this matter and the status and outcome of the CEB inspection. CEB has been requested to notify the Board when the inspection has concluded.

Recommended interim measures: Based on the totality of circumstances identified, BCTS is hereby advised the following:

BCTS <u>should voluntarily submit</u> an amendment to FSP #638. This amendment should consider
the points raised by the private consultant and address the additional concerns presented by
CEB in this Advisory Letter; specifically, but not limited to, the interpretation of landscape
retention targets for mature seral forests and old forests, the establishment of results and

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- strategies that are measurable and verifiable and that meet the objectives set by government. The amendment should also carefully consider the application of VILUP to the landscape within SMZ 13 (as legislatively required) versus the current restrictive application to only rare and underrepresented ecosystems.
- 2. Timber harvesting within Nahmint SMZ 13 <u>should voluntarily cease</u> pending amendments to the FSP regarding complete government objectives, the establishment of measurable and verifiable results and strategies, and any other matters that may be relevant.
- The planned legalization of the current OGMAs <u>should not be supported</u> until the applicable FSP amendments adequately address and fully meet objectives set by government for SMZ 13, have included results and strategies that are <u>measurable and verifiable</u>, and are duly approved by the responsible District Manager.
- 4. Considering the above identified needs, future timber harvesting tenures should be placed on hold pending the above noted corrections and any matters determined relevant.

Concluding remarks: In making the above noted decisions I took the following actions:

- I conducted a review of all government files and records pertaining to SMZ 13.
- I reviewed all orders, legislation, FSPs, land use planning documents, and applicable legislation (400+ pgs).
- I engaged with government land use planning staff to review and verify data sets.
- I presented preliminary concerns to the FSP approving authority, district manager, and other personnel on May 31st 2018.
- I presented preliminary findings during conference call proceedings on June 14th 2018
- I issued a compliance notice on June 18th 2018 and provided an opportunity for the responsible individual to respond.
- On July 17th 2018 I issued a time extension to BCTS.
- I received a compliance notice response on August 9th 2018 which included a new data set containing site series information.
- I retained a private consultant to conduct a blind review of my compliance notice and the BCTS response letter.
- I conducted an internal CEB secondary analysis of the BCTS response information, legislation, and datasets.
- I again met with government land use planning staff to go over results and outstanding concerns.
- I received the independent review results on October 2nd 2018.
- I reviewed all results. I was then lead to believe that there were reasonable grounds to assert a
 government non-compliance had occurred and that the current FSP #638 was in noncompliance with legislation.

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- I met with the FSP approving authority and district manager on October 5th 2018 and provided a
 preliminary assessment of the concerns regarding the FSP and current harvesting operations. A
 copy of the independent report was provided at this time.
- I conducted a final legislation review and noted that there were concerns regarding CEB's ability
 to take enforcement actions against a government body and properly address the inspection
 findings and public complaint that was made.
- I completed this Advisory Notice and associated documents.

In sum, it has been determined that FSP #638 is in non-compliance with S. 5 of the *Forest and Range and Practices Act*. It has also been determined that current harvesting operations are harvesting contrary to the plan and in contravention of S. 21 of the *Forest and Range and Practices Act*. As a result, it has been recommended that BCTS cease timber harvesting in SMZ 13, place a hold on current OGMA legalization, and hold future harvesting tenures.

Should you have any questions, comments, or concerns, please do not hesitate to contact me at: bryce.casavant@gov.bc.ca (1-250-230-1319).

Sincerely,

NRO Bryce Casavant, DSocSci (ABD), MA, CMAS

Senior Compliance and Enforcement Specialist Special Provincial Constable | Natural Resource Officer West Coast Region

Compliance and Enforcement Branch | FLNRORD

Office: 250-230-1319 (cell)

To report a Natural Resource Violation:

Telephone: 1-877-952-7277 (RAPP) or #7277 on cellphones Webpage: https://www.for.gov.bc.ca/hen/nrv/report.htm

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Nahmint SMZ 13: Consistency of Forest Stewardship with Management Intent and Legal Objectives

Karen Price and Dave Daust
October 2, 2018

Report to Bryce Casavant, Senior Compliance and Enforcement Specialist, FLNRORD

Introduction

In response to a request from FLNRORD's Compliance and Enforcement Branch (CEB), this report assesses whether forest planning in the Nahmint Landscape Unit (SMZ #13) on Vancouver Island is consistent with legal objectives and with the intent of the Vancouver Island Land Use Plan (VILUP). Inconsistent management of publicly-agreed-upon values can result from excluded values, altered objectives or ineffective management strategies. We focus on the amount and representation of old forest in draft Old Growth Management Areas (OGMAs) to provide a second opinion on information provided to CEB by BC Timber Sales (BCTS). We assess both the process of determining OGMA amount and location (implementation of intent) as well as the likely effectiveness of the areas in achieving both legal objectives and policy intent as documented in the VILUP.

Caveats

- Data vary among sources. We have used existing public databases (except for OGMA location);
 they may not exactly match the databases used by BCTS.
- Time for review was limited. We have relied on easily-accessible documents.
- Literature cited is taken from our library rather than from a new literature review.

Methods

We assessed the implementation of direction by determining consistency of planned management with intent and legal objectives. We reviewed the following materials:

- Vancouver Island Summary Land Use Plan (2000); "VILUP"
- Vancouver Island Land Use Plan Higher Level Plan Order (2000); "HLPO"
- Nahmint Landscape Unit Plan (draft 2007); "draft LUP"
- Sustainable Resource Management Plan for the Nahmint Landscape Unit (draft 2012); "draft SRMP"
- Forest Planning and Practice Regulation (accessed September 17, 2018)
- Biodiversity Guidebook (1995)
- Landscape Unit Planning Guidebook (1999)
- Order Establishing Provincial Non-Spatial Old Growth Objectives (2004) and associated Implementation Policy; "Old Growth Order"
- CEB initial inspection findings (File # DCR-37250; June 18, 2018)
- BCTS response to compliance notice-inspection findings (File: FOR 18046-01; August 9, 2018)
- South Island Forest District TFL 44 Forest Stewardship Plan Background Information (BCTS; June 2008)
- 2017 West Coast Forest Stewardship Plan (BCTS, Strait of Georgia Business Area; SP #638; April 19, 2017); "2017 FSP"

We assessed the effectiveness of implementation by analysing ecosystem representation given planned management. We used the following data sources to analyse representation (Table 1).

Table 1. Spatial data sources used to assess representation.

Variable	GIS data file	Source	
Landscape Unit	RMP_LU_SVW	Data_BC	
Treaty Lands	FNT_TRT_LN_polygon	Data_BC	
Ungulate Winter Range WCP_UWR_SP_polygon		Data BC	
Wildlife Habitat Area	WCP_WHAPLY_polygon	Data BC	
OGMA	OGMA_Nahmint_Cous_May17_2010	FLNRO	
Variant	Dist_Pkg_NonPEM_Coast.gdb	Province of BC *	
Variant_v2	BEC_BIOGEOCLIMATIC_POLY (version 11, 2018)	Data BC	
Site Series	Dist_Pkg_NonPEM_Coast.gdb	Province of BC *	
Site Series Group	Dist_Pkg_NonPEM_Coast.gdb	Province of BC *	
Cutblocks	CNS_CUT_BL_polygon	Data BC	
Land Facets	facets_adjel10cl	AdaptWest**	
Vegetation Resources	n Resources VEG_R1_PLY_polygon		
Inventory			
Site index class	te index class Based in average SI for Ba, Cw, and Hw from sprod_38.gdb		
FMLB	Extracted from VRI	Data BC	
Land1	Based on BC Land Classes 1 and 2 from VRI	Data BC	
Land2	Based mainly on BC Land Class 4 from VRI	Data BC	
Site Position	Extracted from VRI	Data BC	
Logging Year	Extracted from VRI	Data BC	
AgeClass	Extracted from VRI	Data BC	
Tree species group	Based on species label, from VRI	Data BC	

^{*}https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/ecosystems/search-ecosystem-info

Further data analysis methods are included in the Effectiveness section below.

Broad Intent: VILUP Management Principles

Within the Vancouver Island Land Use Plan (VILUP), Special Management Zones are areas with regionally significant values that require management tailored to "minimize development impacts" (VILUP p. 35) to stated values. The intent is that management of forested SMZs should be based on the "principles of sustainable forest ecosystem management", and should be monitored to ensure that strategies are effective at achieving stated objectives: "Resource management within SMZ units will be accompanied by active monitoring and evaluation, consistent with the principles and concepts of adaptive management." (VILUP p. 35).

These principles—sustainability of stated values, and continual improvement—provide important context on broad intent and guidance for professionals planning management in the Nahmint.

Intent for Nahmint SMZ

Nahmint Special Management Zone (SMZ) #13 encompasses about 20,000 ha of the Nahmint River Watershed in southern Vancouver Island (reported area varies: 19,168 ha in the draft SRMP; 19,252 ha in the draft LUP; 20,438 ha in the DataBC landscape unit map; 24,900 ha in the VILUP). The SMZ and Nahmint Landscape Unit are congruent.

^{**}https://adaptwest.databasin.org/pages/adaptwest-landfacets

Values

The zone was created as part of the VILUP process to maintain significant primary values (VILUP p. 70) including

- Oldgrowth biodiversity and connectivity functions
- Fish and wildlife habitats and populations
- Visual quality for recreationists in the Nahmint Valley
- Linkage to possible high elevation Wilderness Area (Mt. Gibson, Klitsa Mountain)

Consistent with its listed oldgrowth biodiversity value, the Nahmint Landscape Unit was assigned a higher biodiversity emphasis option in the Old Growth Order as "recommended for those areas where biodiversity conservation is a high management priority" (Biodiversity Guidebook).

Objectives

Consistent with the Nahmint's oldgrowth biodiversity value, overall management guidance is that "emphasis should be on high biodiversity values, with high levels of old seral forest retention; ..." (VILUP p. 70). Objectives incremental to forest management (referring to the Forest Practices Code at the time) include Special Biodiversity Conservation Management, Special Wildlife Management, Special Timber Management, Special Recreation Management and Special Visual Management. The VILUP also lists a specific strategy to "maintain high proportion of old forest, including large Douglas fir in the Nahmint Old Growth Area".

Special Timber Resource Management objectives are intended to manage forests "in keeping with the primary resource values identified" (VILUP p. 38) with an objective to "sustain forest ecosystem structure and function..."; Special Biodiversity Conservation Management objectives are intended to maintain "natural elements and attributes of biodiversity with emphasis on rare and underrepresented ecosystems"; Special Wildlife Management objectives are intended to conserve habitat for identified wildlife species; Special Recreation Resource Management objectives are intended to maintain the integrity of identified recreation resources; and Special Visual Resource Management objectives are intended to maintain the integrity of visual resources.

The VILUP notes that SMZ plans will "address the issues stakeholders and interests identified in the Planning Framework Statements identified in Appendix 3" (6.5.2 VILUP). For the Nahmint (p. 53), planning issues raised by public interest groups include

- "Concerns over the rate of forest harvest
- Concerns over lack of protection for fish, wildlife, old growth and biodiversity
- Propose creation of old growth reserves for Douglas fir in upper Nahmint"

The special timber, biodiversity and visual management objectives included in the VILUP were subsequently legalized, with minor wording changes, within the HLPO. Wildlife and recreation objectives were excluded. The strategy to maintain a high proportion of old forest, including large Douglas-fir was dropped from the legal order.

The most relevant legal objectives, based on the Special Timber and Special Biodiversity Management regimes from the VILUP, include the following:

- A.1. Sustain forest ecosystem structure and function in SMZs, by:
 - (a) creating or maintaining stand structures and forest attributes associated with mature¹ and old² forests, subject to the following:
 - i. the target for mature seral forest should range between one quarter to one third of the forested area of each SMZ³; ...
- B.4. Maintain late-successional habitat elements and attributes of biodiversity⁸ in forested ecosystems with emphasis on regionally rare and underrepresented ecosystems, by retaining old seral forest at the site series/surrogate level of representation⁹.
- ¹ The mature seral forest is defined as generally 80 to 120 years old or older, depending on species and site conditions. The structure of mature seral forests generally includes canopies that vary vertically or horizontally, or both. The age and structure of the mature seral stage will vary significantly by forest type and from one biogeoclimatic zone to another.
- ² The old seral forest is defined as generally greater than 250 years old, containing live and dead (downed and standing) trees of various sizes, including large diameter trees, and of various tree species, including broadleaved trees. The structure of old seral forests varies significantly by forest type and from one biogeoclimatic zone to another.
- ³ Mature seral targets will be established through landscape unit planning.
- 8 This includes, but is not limited to: large diameter (> 60 cm) live, decaying and dead standing trees (providing nest and cavity sites); downed wood, including large diameter pieces (50 to 150 cm); deciduous broad-leaved trees, both in riparian and upland areas.
- ⁹ The level of representation of old seral forest will be applied through landscape unit planning.

The mature-forest objective A.1.(a)i. provides explicit targets for the amount of mature seral forest as 25 - 33% of forested area; the objective does not explicitly limit "mature" forest to younger than 250 years, but the definition of old as >250 years provides an implicit limit; in addition, the word "seral", defines a bounded successional stage. The Biodiversity Guidebook is clear that the mature seral stage ends where the old seral stage begins. The similarity of the target to the recommended target for mature forest in the Biodiversity Guidebook further supports the definition of mature as 80 - 250 years or 120 - 250 years (Table 2). The mature-forest objective does not stipulate representation by site series—or even variant—for mature forest targets.

Table 2. Recommended % old and mature + old for major BEC variants in the Nahmint SMZ (high biodiversity emphasis option) from the Biodiversity Guidebook, with added columns showing calculated mature (difference between "mature + old" and ">250 years" and mature targets in HLPO.

BEC Variant	% >250 years recommended	% of mature + old recommended	% mature recommended*	% mature HLPO
CWHvm1	>19	>54	35	25 – 33
CWHvm2	>19	>54	35	25 – 33
MHmm1	>28	>54	26	25 – 33

^{*} Calculated as {mature + old} minus old

The HLPO old-forest objective B.4. does not provide targets for the amount of old forest, but rather includes a footnote stating that "the level of representation of old seral forest will be applied through landscape unit planning" (HLPO p. 2). The objective and footnote are unclear in their usage of "level of

representation": it refers to the unit of representation in the objective, but seems to refer to the target amount of representation in the footnote.

Consistency of Planned Management with Intent and Legal Objectives

Values

The draft Landscape Unit Plan (2007) and draft SRMP (2012) seem to move away from the values as described in the VILUP.

The draft LUP is consistent with the legal objectives (for Visual objectives described in the HLPO), but inconsistent with the intent of the VILUP. Although the draft LUP notes that VILUP assigns a Special Recreation Management regime, it ignores the objectives listed for that regime, instead relying entirely on managing visual quality.

The priority given to timber supply in the draft LUP is inconsistent with the intent of the VILUP. The draft LUP seems to manipulate the language around timber resources to misrepresent the intent of the VILUP. The VILUP assigns Special Timber Management regime to the Nahmint, with an overall goal to manage forests in keeping with primary values, and an objective "to sustain forest ecosystem structure and function in SMZs by concentrating, within SMZs, the retention or recruitment of old growth forests required to meet landscape level biodiversity objectives" (VILUP p. 38). The draft LUP, however, does not restate this objective; rather it states that the Nahmint was "assigned a secondary level management regime for Timber under the VILUP SMZ13, which after considering the placement of OGMAs to conserve primary management regime values, gave emphasis on minimizing timber supply impacts". Nowhere in the Nahmint SMZ13 description in the VILUP, or in the broad intent statements for SMZ, is there any mention of minimizing timber supply impacts.

The Forest Planning and Practice Regulation provides objectives for landscape-level biodiversity to harvest timber in a way that resembles patterns of natural disturbance in time and space, without "unduly reducing the supply of timber". The "unduly" clause, included in the Government Action Regulation that designates Wildlife Habitat Areas and Ungulate Winter Ranges constrains possibilities, but has no legal definition (although policy direction exists). Old Growth Management Areas (OGMAs), however, are established under the Land Act rather than the Forest and Range Practices Act, and are authorized by the Land Use Objectives Regulation where the test for designation, rather than not unduly reducing timber supply, is that benefits of OGMAs must outweigh impacts to timber harvesting. No legal definition exists that allows comparison of costs and benefits amongst values, but the VILUP clearly intends that biodiversity is valued more highly than timber in the Nahmint SMZ by noting oldgrowth biodiversity as primary and timber as secondary.

The draft SRMP is inconsistent with the intent of the VILUP in excluding oldgrowth biodiversity and wildlife values. The draft SRMP ignores three of the four values listed in the VILUP (old growth biodiversity, wildlife, linkage to possible Wilderness Area), claiming that the "primary objective is recreation". This is untrue and entirely inconsistent with both the VILUP and HLPO. Interestingly, the draft SRMP notes that HLPO objectives 1,2, 4, and 5 apply to SMZ 13 and ignores objective 6—visual quality—the one objective that the draft LUP notes as important to recreation. The 2017 FSP also seems to exclude HLPO objective 6.4

Mature targets

The mature target misrepresents the intent of the Biodiversity Guidebook and seems inconsistent with the legal objective mature seral forest target. HLPO Objective A.1.(a) refers to "mature and old forests", while the sub-section A.1 (a)i. refers to "mature seral forest". While the definition of "mature" in the footnote is unbounded at the upper end, the use of the term "seral", and reference to the Biodiversity Guidebook, both clarify that the objective refers solely to mature forest, exclusive of old. The background information for the 2008 FSP for TFL 44, however, claims that "mature" is understood to mean "mature plus old" without providing any rationale, without noting that the HLPO amounts are similar to those for mature—without old—in the Biodiversity Guidebook (Table 2, above), and ignoring the accepted definition of "seral" as a bounded successional stage. The 2017 FSP continues with the misrepresentation, quoting the objective (7.2.1 Objective 1(a)i) as "target for mature seral forest", but specifying under the result that "no less than 25% of the forest area of SMZ 13 is retained as mature or old seral age classes" (7.2.1.2.). This interpretation will likely considerably decrease the amount of mature and old forest over the landscape (e.g., from 54% recommended by the Biodiversity Guidebook to 25%).

Oldgrowth targets

The Biodiversity Guidebook (1995) provided the first estimates of the amount of mature and old forest to retain to improve the probability of maintaining biodiversity, with practices designed to "reduce the impacts of forest management on biodiversity, within targeted social and economic constraints" (p.1). Targets for the amount of mature and old forest vary by ecosystem according to the natural disturbance regime. The Biodiversity Guidebook states that targets represent "the minimum requirements considered to have a good probability of maintain biodiversity within the landscape unit" (p. 14). The approach was designed to be "refined over time as new knowledge is obtained" (p.2)—an intent that matches the broad intent of the VILUP.

Ecosystems within the Nahmint SMZ (except for very small areas of CWHxm2 and CWHmm1) fall within Natural Disturbance Type 1, with rare stand-initiating events and structure primarily driven by gapphase dynamics. The biodiversity guidebook lists return interval for the CWHvm1 and vm2 as 250 years and the MHmm1 as 350 years (Table 3). It estimates the expected proportion of each age using a negative exponential method and calculates recommended proportions of the forested area to be mature + old (> 80 years for CWH; > 120 years for MH) and old (>250 years) based on the amount expected naturally. Hence, for CWHvm1, assuming a return interval of 250 years (and assuming disturbance independent of age), the Biodiversity Guidebook calculates that about 37% of the landscape would naturally be over 250 years old and nearly three-quarters (73%) would be mature or older. For the MHmm1, assuming a return interval of 350 years, nearly half (49%) would naturally be older than 250 years and 71% would be mature or older (Table 3).

Table 3. Estimates of stand-replacing disturbance, % expected old and recommended % old and mature + old for BEC variants in the Nahmint SMZ based on the high biodiversity emphasis option and Appendix 4 from the Biodiversity Guidebook (1995).

BEC Variant	Stand-replacing disturbance	% expected >250 years	% >250 years recommended	% of mature + old recommended
CWHvm1	250 year	37	>19*	>54
CWHvm2	250 year	37	>19	>54
CWHmm1	200 year	29	>13	>51
CWHxm2	200 year	29	>13	>51
MHmm1	350 year	49	>28	>54

^{*} Calculation: (37% expected – 12% assumed to be in protected areas) x 0.75 = 19%

Target amounts of old forest are inconsistent with VILUP intent and with policy informing the Old Growth Order because they have not been updated to reflect best available knowledge. The Old Growth Order identifies how much old forest to retain based on landscape biodiversity emphasis. The targets for high biodiversity emphasis landscapes like the Nahmint match those provided in the Biodiversity Guidebook: 75% of the area that would be expected to be old naturally, with a 12% allowance for protected areas. The Order stipulates review by 2007 to assess effectiveness at achieving sustainable management goals, and the Implementation Policy providing guidance for the Order notes that implementation "should be informed by the best available technical and science-based information, with new information being utilized as soon as practicable" (2.d).

Several lines of evidence demonstrate that mean disturbance intervals for CWHvm1 and 2 and MHmm1 variants were severely underestimated in the biodiversity guidebook. The lack of even-aged forests, soil charcoal and tree age all suggest that stand-replacing disturbance intervals in the CWHvm are 750 - 1,000 years or longer. Hence oldgrowth targets were calculated using outdated knowledge. Given the overarching principle for adaptive management in the VILUP, updated targets that reflect new information seem timely. Using best-available knowledge for stand-replacing disturbance interval and the calculations in the biodiversity guidebook raises the amount of old forest (>250 years) expected under historic condition to 72 - 78% or more. Using a similar calculation to that used in the Biodiversity Guidebook, the amount of old forest needed to have a reasonable probability of maintaining biodiversity increases from 19% in the CWHvm1 and 2 and from 28% in the MHmm1 to 45 - 50% (with 12% removed for protected areas).

The draft SRMP does not demonstrate equivalency when substituting younger stands for old forest and is thus inconsistent with the legal order. The draft SRMP notes that OGMAs included younger stands "where conservation value was assessed and determined to be equal or greater than that of the older stands" (p. 8), but provides no description of the assessment; it is thus inconsistent with Old Growth Order Objective 6 stating that younger forests can be used "where it can be demonstrated that equal or better conservation benefits would result".

Appendix 4 of the Biodiversity Guidebook notes that the 12% adjustment could be replaced with actual percentage in the landscape. This stipulation is lost from the Landscape Unit Planning Guide and the Old Growth Order (indeed, the Landscape Unit Planning Guide states explicitly that protected areas should be removed from the OGMA target, thereby double-counting by subtracting area already removed in the targets). In the Nahmint, there are no protected areas; therefore, the target amounts of old forest are consistent with the legal order, but inconsistent with the intent of the Biodiversity Guidebook (which would return the 12% removed).

The objective and results for old seral representation included in the 2017 FSP are inconsistent with the legal objective of the HLPO and with the intent of the VILUP. The 2017 FSP includes the HLPO old growth objective under the heading "Rare ecosystems" (7.2.5 Objectives 4 and 5), whereas the HLPO targets are designed to apply to all ecosystems. Results applying to the strategy are limited to maintaining late successional habitat elements within stands (as wildlife tree patches or riparian management areas) rather than to retaining old forest; they do not mention rare ecosystems. While the FSP objective quotes the need for "retaining old seral forest at the site series/surrogate level of representation", as per the HLPO objective, the results ignore both old forest retention and representation.

Old Forest Representation

Ecosystem representation is accepted as key to maintaining ecological integrity worldwide. Essentially, because we cannot understand ecosystems, the best practical approach retains enough of each natural ecosystem to allow ecological and evolutionary processes to continue. Effective representation must capture all different ecosystems. BC is fortunate to have an excellent ecosystem classification system: biogeoclimatic variants represent broad ecological variability due to climatic processes; within variants, a mosaic of distinct ecosystems—site series—vary with site conditions and soil processes. Site series provide the best estimate of the potential of an area to support a particular ecosystem. Although ecosystems change with the climate, site series continue to integrate the environmental factors; for example, in a particular region, the wettest sites will continue to be the wettest sites even as aridity increases.

The Biodiversity Guidebook, representing the best available knowledge at the time, recommended representation of mature and old forest by site series: "site series should generally be retained in proportion to their occurrence in the landscape unit"; "rare site series should be retained in greater proportion than they occur". The Biodiversity guidebook recommends that rare forest stand types covering <2% of area should be maintained over the rotation, and that the distribution of deciduous species and stands should be maintained within the natural range. Applying targets to finer-scaled units within BEC variants was intended to ensure that all ecosystems, including the productive ecosystems targeted by forestry, are sufficiently represented. Conservation scientists consider that one of the principle dangers of applying broad targets for old forest is that an uncritical focus on amount cannot account for non-random land-use processes, including biased modification of the most productive ecosystems. This concern is particularly relevant in the highly incised watersheds of coastal BC, where it is possible to maintain more than 90% of a particular BEC variant while harvesting all of the productive valley-bottom ecosystems. The best available science agrees that consideration of ecosystem type, productivity and risk are crucial factors to include in representation planning.

Terrestrial Ecosystem Mapping (TEM), with aerial photo interpretation of site series verified with field assessment, provides the best-available information on ecosystem type. Where TEM exists, there is no need to use a surrogate for site series. Combining site series into groups of similar ecosystems can be beneficial to avoid slivers and decrease the number of units for planning purposes; however, grouping does not require a different classification system, but is based on existing TEM site series.

Recognising that coverage of TEM was incomplete, the Biodiversity Guidebook described an alternative methodology, using a surrogate based on leading species and productivity: "where site series mapping is not available, a combination of forest cover and site productivity or site index information should be used

to determine representativeness" (Biodiversity Guidebook p. 18). This approach was used to design old forest representation in the Great Bear Rainforest. Using site series surrogates to design reserves intended to represent ecosystems brings challenges: there are concerns that using surrogates based on units defined for timber management (e.g., forest cover and productivity) may not match units based on ecology (i.e., site series) well; if surrogates do not correspond, non-random harvest can mean that productive ecosystems are harvested preferentially, leaving less productive ecosystems over-represented in reserves. An assessment in the Great Bear Rainforest determined that site series should be used preferentially when possible. Whenever site series are available, particularly based on field-checked TEM, they are the best units—potentially combined into site-series groups by edaphic grid or indicator species of planning and assessing representation.

The Biodiversity Guidebook suggestion for a surrogate that combines forest cover and site index is repeated in the VILUP (as a strategy under the Special Biodiversity Conservation Management Regime). The HLPO includes an objective for representation at the site series/surrogate level, but does not describe any particular surrogate.

Direction in the LUP Guidebook to plan representation by variant is irrelevant in the Nahmint. Diverging from the Biodiversity Guidebook, because of the potential impact to timber supply, the LUP Guidebook specifies that representation be calculated by variant (following the Chief Forester's direction). Both LUP Guidebook and Chief Forester's guidance note that finer detail can be used if an objective is established as a higher-level plan: "Representation may be pursued at a finer level of detail provided that an RMZ objective is established as a higher level plan and directs representation at a finer level of detail" (LUP Guidebook p. 28)—as it has clearly been in the HLPO. Indeed, the LUP Guidebook stipulates that HLPO direction "supersedes the Chief Forester's direction" (p. 4).

The Chief Forester's direction also calls for research into the impacts to biodiversity of representing ecosystems at the variant scale "Research Branch...is committed to reviewing the risk to biodiversity values of establishing OGMAs at the variant level of representation" (LUP Guidebook p. 34). We are unaware of any completed research projects into this issue that could provide an update on the best available science.

Potential Site series surrogates

- Forest cover plus productivity class or site index: suggested by the Biodiversity Guidebook and included as a VILUP strategy. The surrogate combines leading species with productivity (e.g., Hemlock-Cedar High) and was used for planning in the Great Bear Rainforest.¹⁷
- Site series groupings: similar site series combined based on vegetation community similarity or by position on the edaphic grid to facilitate planning.¹⁸
- Enduring features or landform: based on a topographic position index in combination with soil
 and climate variables. Landforms have been used widely in the US for conservation planning
 with climate change.¹⁹ Ongoing analyses suggest that site series include additional variability
 that is not well captured by topographic position.²⁰

Site series are available for the Nahmint, but were not used. The Planning Unit Statement for the Nahmint (VILUP, p. 53) notes the state of site series mapping under existing inventories: "vegetation site series mapping (one-half of area complete)". Hence, in 2000, half of the area was complete. The draft LUP specifically notes that "Although site series mapping was available, it was not used to select

OGMAs...". Based on the BCTS response appendix, TEM site series mapping, including field assessment, is available for almost all (98.8%, all but 190ha) of the Nahmint watershed.²¹ Further work may be needed to ensure consistency over the entire area because two separate projects defined site series in the Nahmint watershed, and site series do not match exactly in adjacent areas. On cursory examination, the discrepancy appears small, with mismatches only a single site series (by moisture or richness) apart. Grouping similar site series (an accepted practice) could easily account for the inconsistency, with field checks improving data as appropriate.

The draft LUP provides a rationale for ignoring site series based on other factors: "site series mapping...was not used...because the many other factors involved...were significant influences and the distribution of OGMAs across the Landscape Unit and through the range of sites appeared to be exceptionally good". Factors considered, as described in the draft LUP include existing constrained areas with reduced or no harvest:

- Established WHAs (marbled murrelet and northern goshawk; on map 4)
- Established ungulate winter range (elk and deer; on map 4)
- Established Forest Ecosystem Networks (not on map²²)
- Hupacasath Cedar Strategy recommendations (on map 4)
- Nahmint Old Growth Reserve (not on map)
- Ecosystem complexes (e.g., slide track, riparian area, wetlands, rock outcrop, gullies—not on map).

Additional factors considered in the draft LUP are described to include

- Patch size: This is a reasonable consideration, but there is no evidence that it has been used. The large patches seem congruent with existing WHAs and UWRs; hence there was no additional consideration.
- Distribution throughout the landscape unit: This is a reasonable consideration to a point. Good conservation design will distribute retained areas by ecosystem with sufficient connectivity to allow movement across the landscape.
- Connectivity: There is a confusing statement in relation to connectivity that "the inclusion of riparian reserve zones and other non-productive forest has increased the connectivity between lower and higher elevation OGMAs" (p. 13). Ecologically, riparian zones are amongst the most productive forest. This definition of productivity seems to reflect a timber supply rather than biodiversity focus.
- Structural attributes: The draft LUP notes that "structural attributes of the stand were used to determine its suitability as an OGMA rather than forest cover information" (p. 13). Structural attributes can define oldgrowth, but do no address representation. The LUP does not describe how attributes are better than using site series/surrogate information.

The process of locating OGMAs as described in the draft LUP is unsupported by an analysis of representation at the site series/surrogate level and hence is inconsistent with the legal objective. Most (90%) of WHAs and UWRs are included in the draft OGMAs as are some of the Hupacasath recommendations; nearly half of the OGMA area was already protected from harvest in WHAs and UWRs, with 77% of rich site series within the CWHvm1 already protected. This strategy is sensible as part of good conservation design; valuable ecosystems can form anchors for a complete OGMA network.

Fully constrained riparian reserve zones are also included, a reasonable strategy provided that the areas are sufficiently wide to maintain old growth attributes and not double-counted as in-stand retention. Further design is needed to ensure representation. The draft LUP does not provide an assessment of site series/surrogate representation in the draft OGMAs to support the statement that "the range of sites appeared exceptionally good"; nor does it state that such an assessment was completed. Neither does it mention any analysis of other factors (e.g., wildlife habitats represented). The existence of constrained areas for wildlife habitat conservation does not imply maintenance of oldgrowth biodiversity if they are not spread across the full diversity of ecosystems: assessment of representation by site series/surrogate is still required. Visual inspection of distribution (as implied by "appeared to be..."), while necessary, is not sufficient.

The process of locating OGMAs as described in the draft SRMP does not ensure representation by the site series/surrogate level and hence is inconsistent with the legal objective included in the HLPO. The draft SRMP quotes the HLPO objective to retain old seral forest at the site series/surrogate level, but then never even considers representation by site series/surrogates, simply stating that "Old seral representation targets (which are the basis of OGMA's) are applied by BEC variant to ensure the OGMA's are distributed across each BEC variant thereby ensuring adequate protection of each variant." (SRMP p. 4). The draft SRMP states that "the full old growth representation targets were met for the Nahmint landscape unit", but does not provide any assessment of representation by site series/surrogate or mention that such an assessment was completed. Hence, there is no way of determining if legal targets were met. Inspection of each draft OGMA rationale (SRMP Appendix 1) shows that a single OGMA (out of nearly 80 listed) has a rationale that includes an ecosystem (OGMA #220: 8ha of "old growth fir on ridge...); the remainder are either WHAs, marbled murrelet habitat, UWRs, gullies, riparian areas, or slide tracks. Of 16 OGMAs bigger than 50 ha, 14 are either UWRs, WHAs or both; of four OGMAs bigger than 100 ha, all are either UWRs, WHAs or both.

Addition of OGMAs to existing constrained areas was not in proportion to deficit. Good conservation design uses existing constrained areas to anchor an OGMA network, assesses how well these anchors represent ecosystems, and then adds area to under-represented ecosystems—adding the most area to the least-represented ecosystems to ensure that all ecosystems meet or exceed the target. This process does not appear to have been followed for the Nahmint (Figure 1). For example, wet, mesic and dry site series groups in the MHmm1 are very poorly represented in existing constrained areas (WHAs and UWRs), with 23 - 27% deficit (target is 28% retained for MHmm1). The draft OGMAs increased the representation of mesic MHmm1 ecosystems sufficiently to exceed the target, but added only 5 - 10% to dry and wet MHmm1 ecosystems that remain well below the target. Had a representation analysis been completed, the points on Figure 1 would show a one-to-one line, with added area matching deficit.

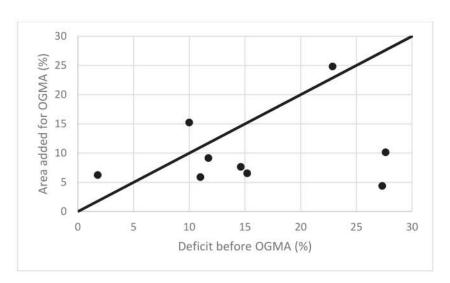


Figure 1. Relationship between the deficit faced by each ecosystem (here, site series groups within BEC Variant) and the amount added to existing constrained areas to create an OGMA network. All points above the solid line have met the targets; those below have not.

BCTS Response

This section offers comments ordered to match paragraphs of the BCTS response to CEB compliance notice.

The BCTS response "Re: Compliance Notice-Inspection Findings (SMZ13)" attempts to support the contention that the landscape planning practices and 2017 FSP are consistent with the HLPO. The response states "Consistent with the Landscape Unit Planning Guidebook (1999), the 2012 Draft OGMAs were selected using...age class, forest type and ecological classification which are considered as surrogates for site series" (p.2). The three factors listed are those included in the LUP Guidebook, but are not surrogates for site series. The following definitions (BCTS p. 3) confirm standard usage, including that "ecological classification" refers to BEC variant and not to site series.

BCTS (para 2, p. 3) defines site series, but states that site series are "normally only determined during operational field work". This statement is untrue; many projects across the province have determined site series through TEM or PEM (predictive ecosystem mapping). Regardless, the statement is irrelevant to the Nahmint as TEM site series have been defined.

The BCTS description of surrogate classification (para 3, p. 3) includes both inaccuracies and unclear language. The statement that site series surrogates "are intended to characterize major forest types (ecosystems) within a biogeoclimatic unit" would be better stated as "are intended to characterize ecosystems within a biogeoclimatic variant": biogeoclimatic "unit" can refer to different levels of classification; surrogates include ecosystems beyond forest types (e.g., wetlands); surrogates do not necessarily represent only "major" types, but also rare types. The success of surrogates in "predicting locations and occurrences of likely site series or groups" is questionable for those surrogates based on resource inventories. The statement that surrogates are "useful in the Landscape Unit Planning process where detailed information is lacking across many thousands of hectares" is true, but irrelevant for planning in the Nahmint, where TEM is lacking for < 200ha. The next sentence is unclear: "Factors