BEFORE THE
ENERGY FACILITY SITING COUNCIL
OF THE STATE OF OREGON

In the Matter of Request for Amendment 13 of the Site Certificate for the **Mist Underground Natural Gas Storage Facility**	))))	PROPOSED ORDER

November 21, 2024

Proposed Order is a track-changes version:
RED underline and strikethrough represent recommended changes from
Draft Proposed Order (DPO) to Proposed Order

Black underline and strikethrough represent site certificate conditions
changes presented in the DPO

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ABBREVIATIONS AND ACRONYMS

AADT	Annual average daily traffic
ACDP	Air Contaminant Discharge Permit
ASC	Application for Site Certificate
BHP	Brake horsepower
BMP	Best Management Practice
Btu/hp-hr	British thermal units per horsepower-hour
CCCP	Columbia County Comprehensive Plan
CCZO	Columbia County Zoning Ordinance
Council	Energy Facility Siting Council
CWTD	Columbian white-tailed deer
dBA	Decibel A-weighting
Department	Oregon Department of Energy
DEQ	Oregon Department of Environmental Quality
DLCD	Oregon Department of Land Conservation and Development
DOGAMI	Oregon Department of Geology and Mineral Industries
DSL	Oregon Department of State Lands
EFSC	Energy Facility Siting Council
EFU	Exclusive farm use
EPA	U.S. Environmental Protection Agency
ESCP	Erosion and Sediment Control Plan
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
HMP	Habitat Mitigation Plan
HP	Horsepower
HDD	Horizontal directional drilling
IBC	International Building Code
IRRP	Inadvertent Return Response Plan
ISO	International Organization for Standardization
I/W	Injection/withdrawal
JPA	Joint Permit Application
JBHR	Julia Butler Hansen National Wildlife Refuge
Hr/yr	Hours per year
lbs CO_2/HP-hr	Pounds of carbon dioxide per horsepower-hour
Mist Facility	Mist Underground Natural Gas Storage Facility
MMBtu/yr	Million British thermal units per year
MMscfd	Million standard cubic feet per day
NMFS	National Marine Fisheries Service
NMCS	North Mist Compressor Station
NMEP	North Mist Expansion Project
NMTP	North Mist Transmission Pipeline
NOAA	U.S. National Oceanic and Atmospheric Agency
NPDES	National Pollutant Discharge Elimination System

NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWN	Northwest Natural Gas Company
OAR	Oregon Administrative Rule
ODAg	Oregon Department of Agriculture
ODAv	Oregon Department of Aviation
ODFW	Oregon Department of Fish and Wildlife
ODF	Oregon Department of Forestry
ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
OHWM	Ordinary high-water mark
ONG	Oregon Natural Gas Development Company
OR	Oregon Route
ORS	Oregon Revised Statute
OSSC	Oregon Structural Specialty Code
OWRD	Oregon Water Resources Department
PA-80	Primary agriculture zone
PF-80	Primary forest zone
pRFA	Preliminary Request for Amendment
RFA	Request for Amendment
RFPD	Rural Fire Protection Department
RIPD	Rural Industrial – Planned Development
SAG	Special Advisory Group
SHPO	Oregon State Historic Preservation Office
SPMP	Spill Prevention and Management Plan
USFWS	United States Fish and Wildlife Service
WMP	Wildfire Mitigation Plan
WPCF	Water Pollution Control Facilities

I. INTRODUCTION

On August 9, 2024, Northwest Natural Gas Company (NWN or certificate holder), filed Request for Amendment 13 of the Site Certificate (Request or RFA13) for the Mist Underground Natural Gas Storage Facility (Mist facility or facility).

The Mist facility consists of underground natural gas storage reservoirs, compressor stations, gathering pipelines, operations and maintenance facilities, and a gas transmission pipeline. The approved site boundary is approximately 5,472 acres and has a permitted daily natural gas throughput of 635 million standard cubic feet per day (MMscfd).

RFA13 requests the Energy Facility Siting Council (EFSC or Council) approval to make the following changes:

At Miller Station:

- replace two existing (end of life) natural-gas fired turbines
- replace existing (end of life) underground distribution powerline from Highway 202 to Miller Station; and,
- increase the fenced boundary of Miller Station by adding approximately 7.52 acres adjacent to the existing station to create a permanent storage yard.

At North Mist Compressor Station (NMCS):
The certificate holder is planning to develop its existing Crater, and new Medicine, Newton, and Stegosaur storage reservoirs.[1] RFA13 proposes the following changes to the NMCS:

- install approximately 2.6 miles of underground gas transmission pipelines to connect the new storage reservoirs to the NMCS;
- add three reciprocating gas fired compressors;
- add two dehydration trains, new air compressor, inlet and outlet coalescing filters, two new back-up power generators, fuel gas heater, skidded fuel gas regulators, and a power transformer;
- add a control building, a Power Distribution Center, compressor building, dehydration regeneration building, and associated equipment.

These additions at NMCS will enable an increase of allowable throughput of natural gas from 635 MMscfd to 835 MMscfd.

The Department bases this ~~Draft~~ Proposed Order ~~(DPO)~~ on its review of RFA13 and comments and recommendations received during review of ~~the preliminary~~ RFA13 ~~and complete RFA13~~ from state agencies, local governments, and tribal governments. This ~~DPO~~ Proposed Order includes recommended conditions of approval for inclusion in an amended site certificate to

[1] The injection/withdrawal wells necessary to develop Crater, Medicine, Newton and Stegosaur reservoirs are not within EFSC jurisdiction; land use review of well pads must be completed by Columbia County; gas well drill permits are required from DOGAMI, which must be obtained prior to construction.

ensure or maintain compliance with applicable rules and standards during construction, operation and retirement of the Mist Facility, with the changes sought in RFA13.

In accordance with OAR 345-027-~~0365(2)~~0371, the Department recommends Council approve RFA13, subject to the existing and proposed new and amended site certificate conditions set forth in this ~~DPO~~ Proposed Order and issue an amended site certificate for the facility. This ~~DPO~~Proposed Order, and the analysis and recommendations contained herein do not constitute a final determination by Council.

I.A. SITE CERTIFICATE PROCEDURAL HISTORY

Council issued the original site certificate for this facility in June 1981. Council previously approved twelve amendments to the site certificate. This order evaluates the thirteenth site certificate amendment request.

On September 30, 1981, Council issued a site certificate to Oregon Natural Gas Development Corporation (ONG) for an underground natural gas storage facility near Mist, Oregon in Columbia County (the Site Certificate). The Site Certificate authorized ONG to construct and operate two naturally existing underground gas reservoirs (the Flora and Bruer pools) and Miller Station with attendant equipment, including compressors, gathering lines, access roads, monitoring wells, and injection/withdrawal (I/W) wells.

State law grants DOGAMI broad authority to regulate oil and gas operations, including the authority "to regulate the underground storage of natural gas and the drilling and operation of any wells required therefor." ORS 520.095(15)." DOGAMI has exercised this authority through the adoption of comprehensive rules governing underground storage facilities at OAR 632 Division 10. When EFSC approved the Site Certificate for the Mist Site in 1981, its jurisdiction included the surface and underground components of the facility. In 1993, the siting law was amended and presently grants Council jurisdiction only over the "surface facility related to an underground gas storage reservoir that, at design injection or withdrawal rates, will receive or deliver more than 50 million cubic feet of natural or synthetic gas per day, or require more than 4,000 horsepower of natural gas compression to operate ***." ORS 469.300(11)(a)(I). Underground storage reservoirs, injection, withdrawal, and monitoring wells, and individual wellhead equipment are expressly excluded from Council's jurisdiction by ORS 469.300(11)(a)(I)(i)-(ii). Those components remain under DOGAMI's authority over wells and other subsurface components. Well pads are also excluded from the site certificate as they are under the authority of DOGAMI and Columbia County.

The Site Certificate has been amended 12 times:

Amendment Nos. 1, 2, and 3: In 1990, ONG assigned the Site Certificate to its parent company, NWN. EFSC approved amendments to the Site Certificate in 1987 (Amendment No. 1), 1988 (Amendment No. 2), and 1990 (Amendment No. 3). The amendments modified

several terms of the Site Certificate and authorized the construction and replacement of wells.

Amendment No. 4: In 1997, EFSC approved Amendment No. 4. That amendment approved an expansion of the Mist Site that increased the combined total Mist storage peak-day delivery capability from 100 million standard cubic feet per day (MMscfd) to 145 MMscfd. The expansion included: (1) improvements to the Miller Station gas processing facility, including the replacement of two older 550-horsepower compressor units with one larger, more efficient unit; (2) total available compression of 6,650 brake horsepower (BHP); (3) construction of a building for the new compressor and updates to related equipment; (4) natural gas storage in one additional naturally occurring underground pool, Al's Pool, in the Calvin Creek storage area; (5) up to four new sites for I/W wells, including one to four wells at each site; (6) approximately 1 mile of buried 8-inch and 6-inch gathering pipeline; and (7) approximately 2.5 miles of buried twin 16-inch transmission pipelines.

Amendment No. 5: In 1998, EFSC approved Amendment No. 5, which replaced the amendment provisions in the Site Certificate with a requirement that future Site Certificate amendments be governed by EFSC's amendment rules.

Amendment No. 6: In 1999, EFSC approved Amendment No. 6, increasing the capacity of the Mist storage facility. The gas storage portion of that project included: (1) upgrades to the dehydration and metering systems at Miller Station; (2) natural gas storage in one additional naturally occurring underground pool, the Reichhold Pool, within the existing Site Boundary; (3) up to four new sites for I/W wells, including one to four wells at each site; (4) approximately 6,500 feet of buried gathering pipeline no greater than 12 inches in diameter; and (5) the removal of the 6,650 compressor horsepower limitation then in place for the Miller Station facility. Approval of Amendment No. 6 allowed Miller Station to operate at rates of up to 190 MMscfd without any restriction on the use of the three existing compressor units, which have a total rating of 8,200 BHP.

Amendment No. 7: On May 17, 2001, the Federal Energy Regulatory Commission (FERC) granted NWN a limited jurisdiction blanket certificate under section 284.224 of FERC's regulations. Under that certificate, NWN is authorized to use existing and expanded facilities at the Mist site to provide FERC jurisdictional bundled firm and interruptible storage and related transportation services in interstate commerce. See Northwest Natural Gas Company, 95 FERC 61,242 (2001). However, FERC's jurisdiction extends only to the interstate services themselves. NWN provides the interstate storage services using existing and expanded facilities at the Mist site that are not needed to serve its "core" utility customer needs. NWN also has agreements in place with state utility regulators regarding this use. Anticipating the FERC certificate, and to make increased capacity available to the interstate market, NWN amended its Site Certificate (Amendment No. 7) by increasing the permitted throughput of the Mist Site to 245 MMscfd. Amendment No. 7 was approved by Council on November 27, 2000.

Amendment No. 8: In Amendment No. 8, approved in 2001, EFSC authorized an increase of the permitted daily throughput from 245 MMscfd to 317 MMscfd. This involved the installation of new metering facilities, new interconnect piping to the South Mist and North Mist pipelines, and a new gas-turbine-driven compressor. The new compressor added 7,800 horsepower, bringing the total compression capability to 16,000 horsepower.

Amendment No. 9: In Amendment No. 9, approved in 2003, EFSC authorized an increase of the permitted daily throughput from 317 MMscfd to 515 MMscfd. EFSC also authorized the construction of improvements at Miller Station, including the installation of new dehydration facilities and gas quality and monitoring equipment. EFSC also authorized NWN to develop related and supporting facilities associated with new underground gas storage reservoirs in the Calvin Creek storage area, the Busch and Schlicker pools. Approval of Amendment No. 9 also allowed NWN to terminate the vibration monitoring program created in Amendment No. 1.

Amendment No. 10: In Amendment No. 10, approved in 2008, EFSC approved a Consolidated, Restated, and Amended Site Certificate. In its Request for Amendment No. 10, NWN sought no substantive changes to the Site Certificate other than clarification of conditions where the applicable law had changed since the Site Certificate was initially approved. The approved Consolidated, Restated, and Amended Site Certificate consolidated the original Site Certificate and Amendment Nos. 1-9 to the Site Certificate, updated the Site Certificate to reflect the current statutory and regulatory regime, deleted outdated and superseded conditions, added language describing the surface facilities related to the underground gas storage reservoir, updated the site maps, and eliminated inconsistencies between the various documents.

Amendment No. 11: Amendment No. 11, approved April 21, 2016, authorized NWN to expand the Site Boundary to include the Adams storage reservoir, as well as the Newton, Medicine, Crater, and Stegosaur future storage areas. The amendment authorized NWN to develop only the Adams reservoir as a new underground storage area; to construct and operate a new compressor station, NMCS; and to construct and operate an approximately 12-mile natural gas transmission pipeline, the North Mist Transmission Pipeline (NMTP), between the NMCS and Portland General Electric's Port Westward Industrial Park. The amendment authorized NWN to increase the allowable throughput from 515 MMscfd to 635 MMscfd. New conditions were added to ensure compliance with EFSC requirements.

Amendment No. 12: Amendment 12, approved September 22, 2017, authorized a new limited water use license for water withdrawn from a diversion point in the Beaver Slough (referred to as the Seeley Mint Farm Diversion Point) during construction of the North Mist Expansion Project from August through November 2017.

I.B. APPROVED FACILITY DESCRIPTION

The Mist facility includes naturally occurring underground natural gas storage reservoirs, which NW Natural has retrofitted to allow pipeline quality natural gas injection and underground storage during off-peak periods and withdrawal when market demand exceeds available supplies from other sources. Related and supporting surface facilities currently include compressors, pipelines, control equipment, dehydration and auxiliary systems, most of which are located at NWN's Miller Station. Other related surface facilities include gathering lines and facilities for maintenance and operations staff. The facility as currently approved allows certificate holder to store natural gas that it purchases from the interstate pipeline and withdraw that gas when it is needed; and store gas owned by others.

I.B.1. Energy Facility Description

Table 1 shows the approved facility components in the EFSC site certificate:

Table 1: Existing Facility Components[2]

Component	Quantity	Unit/Description
Site boundary	5,472	acres
Approved daily throughput	635	million standard cubic feet per day (MMscfd)
Compressor Stations		
Miller Station	2	5,035 and 7,324 brake-horsepower (BHP) compressors
	2	1,350 BHP compressors
	NA	Dehydration facilities
	NA	Gas quality and monitoring equipment
	1	Operations & Maintenance Building
North Mist Compressor Station	2	3,600 BHP gas-fired compressors
Electrical transmission lines (Underground)	3.1	Miles
Gas pipelines (Underground)	~15	Miles

~~As approved by Council in the 12th Amended Site Certificate for the facility, the facility description is as follows:~~

[2] The existing Adams natural gas storage reservoir, as well as the proposed Newton, Medicine, Crater, and Stegosaur future natural gas storage areas, and the associated withdrawal and injection (I/W) wells are not ruled by the EFSC site certificate. They are subject to rules of the Oregon Department of Geological and Mineral Industries (DOGAMI).

The facility consists of underground gas storage reservoirs and surface facilities. As presented above, EFSC has authority over the facility as defined in ORS 469.300(11)(a)(I),[3] the surface facilit(ies) related to the underground gas storage reservoirs. For purposes of understanding operations, the underground gas storage reservoirs and surface facilities are described in the Site Certificate and below:[4]

A. **Original Site**: Two naturally existing underground gas reservoirs (the Flora and Bruer pools) in portions of 3 sections of land all in Township 6 North, Range 5 West of the Willamette Meridian in Columbia County, Oregon, containing 940 acres, more or less from the surface of the earth to the base of the Clark and Wilson Sands and the stratigraphic equivalent thereof, which in the case of the Bruer pool was identified at a measured depth of 3,095 feet in the REC CC#1 RD 1 well and in the case of the Flora pool was identified at measured depth of 2,760 feet in REC CC#33-3 well and are entirely within project boundaries shown in Appendix 1 attached hereto and by reference incorporated herein; and

B. **Calvin Creek**: Naturally existing underground gas reservoirs located in the Calvin Creek area, which is located on the south side of the Nehalem River approximately 2.5 miles south of Miller Station, as shown in Appendix 2. The Calvin Creek storage area is connected to the original facility by two 16-inch pipelines which cross under the Nehalem River in a corridor 200 feet wide and terminate at the Busch Valve Station, as shown in Appendix 2. The 6, 8, and 12-inch pipelines begin at Busch Valve Station and terminate at well sites. The 6, 8, and 12-inch pipelines are each located within a 200 foot wide corridor that has been characterized in orders approving Amendments 4-9 or changes to the facility that received Department concurrence under OAR 345-027-0050(5).

C. **Miller Station**: The Miller Compression Station, shown in Appendix 1, is located contiguous to the Bruer Flora storage area. Miller Station contains natural gas fired compressors, a staffed operations and maintenance building, and other ancillary process equipment. Emissions from the compressors are permitted under an air contaminant discharge permit (ACDP) issued by the Department of Environmental Quality. Miller Station contains the following compressors:

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[3] ORS 469.300(11)(a)(I) defines energy facility as a "surface facility related to an underground gas storage reservoir that, at design injection or withdrawal rates, will receive or deliver more than 50 million cubic feet of natural or synthetic gas per day, or require more than 4,000 horsepower of natural gas compression to operate.." Council rules at OAR 345-001-0010(38) define "surface facilities related to an underground gas storage reservoir" as structures or equipment adjacent to and associated with an underground gas storage reservoir proposed to be built in connection with an undergound gas storage reservoir.."

[4] NWN has adopted nomenclature for the phases of its gas storage operation at Mist. NWN refers to facilities permitted under the original 1981 permit as "phase 1." NWN refers to the development of storage pools in the Calvin Creek area permitted in 1997 under Amendment 4 as "phase 2." NWN refers to development permitted in amendment 6, coupled with the pipeline expansion authorized in amendment 2 to the South Mist Feeder Pipeline Site Certificate, as "phase 3."

1. Two 500 HP Caterpillar reciprocating compressors removed pursuant to Amendment 4.
2. Two 1,350 HP Superior reciprocating compressors not subject to EFSC CO_2 standards.
3. One 5,035 BHP Allison KC-5 turbine driven compressor installed in 1997 pursuant to Amendment 4 and not subject to EFSC CO_2 standards.
4. One 7,324 BHP Allison KC-7 turbine driven compressor installed in 2001 pursuant to Amendment 8 and subject to EFSC CO_2 standards.

D. North Mist Expansion Area: The North Mist Expansion Area, shown in Appendix 3, includes the Adams storage area and the North Mist Transmission Pipeline corridor, as well as the Newton, Medicine, Crater, and Stegosaur future storage areas. The North Mist Transmission Pipeline corridor traverses a north, northeast track from the North Mist Compressor Station to the PWIP.

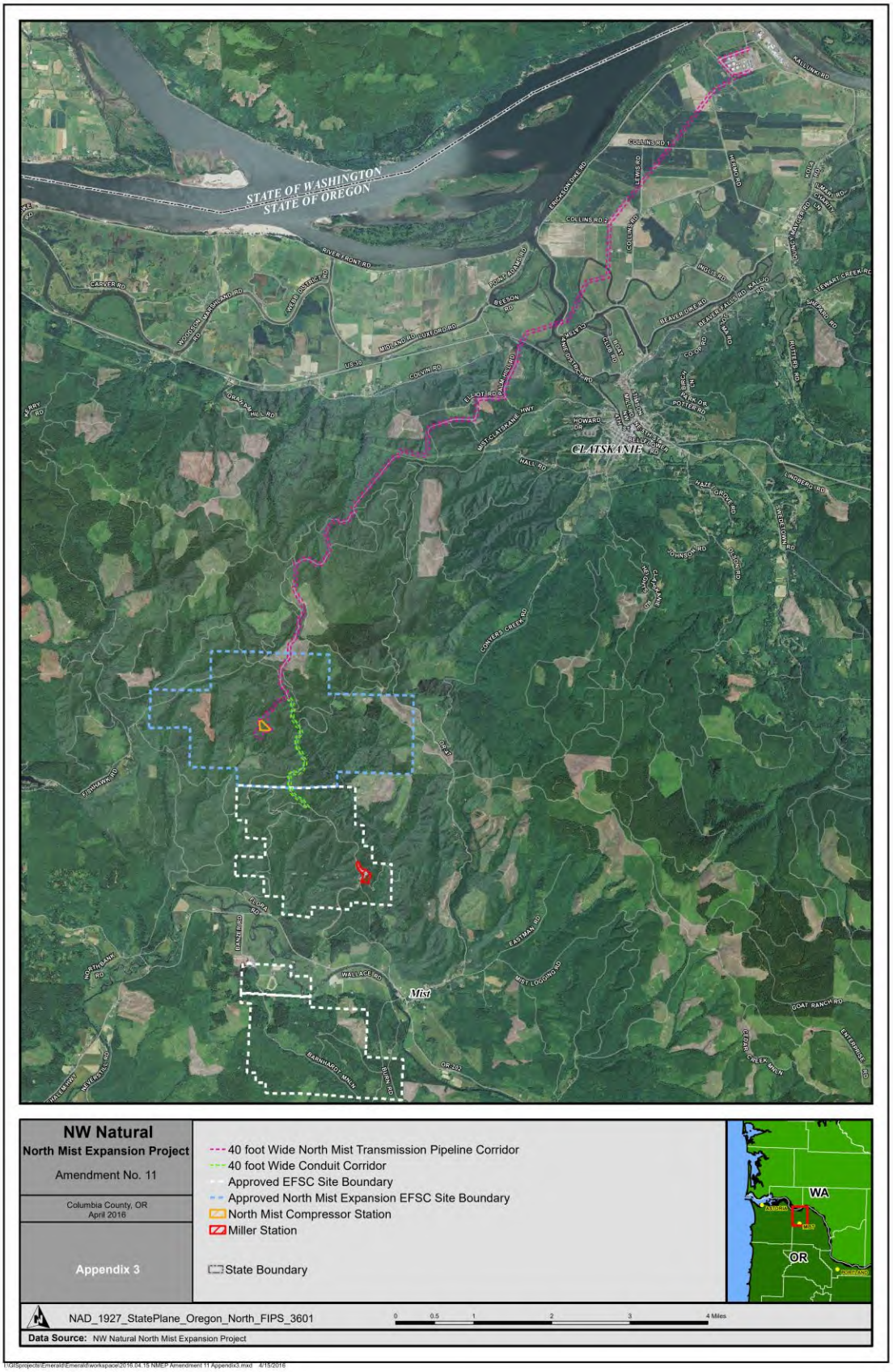
E. North Mist Compressor Station: The North Mist Compressor Station, shown in Appendix 3, is located within the North Mist Expansion Area. The North Mist Compressor Station serves only the Adams reservoir, having the capability not only to compress the gas for injection into and withdrawal from the reservoir, but also to measure and control the gas flow and dehydrate the gas as needed during withdrawal. The North Mist Compressor Station has a total installed compression of approximately 3,600 BHP provided by two gas-fueled compressors.

I.C. SITE DESCRIPTION

The Mist Facility site boundary encompasses approximately 5,472 acres and is in Columbia County. The approved facility includes the Bruer/Flora, Calvin Creek, Newton, Stegosaur and Crater underground gas storage reservoirs. The Bruer/Flora reservoirs and Miller Station are located north of the Nehalem River. The Calvin Creek underground gas storage area is located south of the Nehalem River, approximately two and one-half miles south of Miller Station. Twin 16-inch pipelines cross under the Nehalem River and connect the Calvin Creek area with Miller Station. The Adams storage area is located north of the Nehalem River. The site includes a portion of the North Mist Transmission Pipeline, which extends 13-miles from the North Mist Compressor Station to PGE's Port Westward Industrial Park.

The approved facility and site boundary are represented in Figure 1.

Figure 1: Approved Site Boundary and Vicinity



II. AMENDMENT PROCESS

For amendments to the site certificate that include changes, such as new or amended conditions and adding facility components not previously approved, the Scope of Council Review under OAR 345-027-0375 requires that Council determine whether the preponderance of evidence on the record supports the following conclusions:

1. The amount of the bond or letter of credit required under OAR 345-022-0050 is adequate; and,
2. The facility, with proposed RFA13 changes, complies with the applicable laws or Council standards that protect a resource or interest that could be affected by the proposed RFA13 changes.

The evaluation required under OAR 345-027-0375 is presented in Section III., *Evaluation of Council Standards* of this order.

The changes proposed in RFA13 include above- and belowground components. Some of the belowground components are not within EFSC jurisdiction. Underground storage reservoirs, injection, withdrawal, and monitoring wells, and individual wellhead equipment are expressly excluded from Council's jurisdiction by ORS 469.300(11)(a)(I)(i)-(ii). Those components remain under DOGAMI's authority.

II.A. REQUESTED AMENDMENT

The proposed RFA13 changes, or Mist Resiliency Project, include development of four existing underground natural gas storage reservoirs; construction of approximately 2.6 miles of underground, natural gas pipeline; replacement of an existing, underground powerline; development and use of 4 laydown areas, 1 of which would be maintained as a permanent. 7.5-acre storage area; and expansion of two existing compressor stations – Miller Station and the North Mist Compressor Station (NMCS). These requested changes would increase throughput capacity at the facility from 635 million standard cubic feet per day (MMscfd) to 835 MMscfd and are summarized in Sections II.A.2 and II.A.3 below.

The duration of construction activities is expected to extend 30 months, across 5 years. The number of construction workers is estimated to range from 12 to 113. Construction of the proposed RFA13 changes will include clearing and grading; trenching and backfilling; and clean-up and restoration. Clearing and grading activities will be primarily at the locations of the designated well pads and expansion area and road expansion within existing right of way, as needed. Trenching and backfilling will be for the proposed powerline replacement and an estimate of 14,550 and 13,820 cubic yards of excavation and fill, respectively. Powerline trenches will be excavated to a depth of approximately 5 feet below surface within the existing right-of-way within existing road or a 40 foot wide corridor if outside an existing road. The depth of the trench is expected to be 5 feet for most of the construction installation; however,

the depth of cover can vary according to site-specific conditions and will be installed at a minimum of 30 inches, depending on the consolidated rock conditions, between the top of the conduit and the final land surface after backfilling. Trenches for pipelines will also require clearing and grading for drill sites and trenches will be excavated to a similar depth as for the pipeline.

The proposed RFA13 changes, including a new operations and maintenance (O&M) building, would result in 12 new permanent onsite workers/staff.

II.A.1. Location of Proposed RFA13 Changes

The approved site boundary includes 5,472 acres and is presented in Figure 1.[5] The proposed RFA13 changes will be located within the existing site boundary and includes temporary laydown areas and disturbance within a temporary RFA13 site boundary, for which the certificate holder is requesting not be included in its permanent, EFSC approved site boundary because of the nature of underlying land ownership. The RFA13 site boundary includes the NMCS, Miller Station, the replacement powerline to Miller Station, and 4 laydown area locations, as presented in Figures 2, 3 and 4 below.

[5] OAR 345-001-0010(31) defines the site boundary as the perimeter of the site of a proposed energy facility, its related or supporting facilities, all temporary laydown and staging areas, and all corridors and micrositing corridors proposed by certificate holder.

Figure 2: Regional Location of Proposed RFA13 Changes

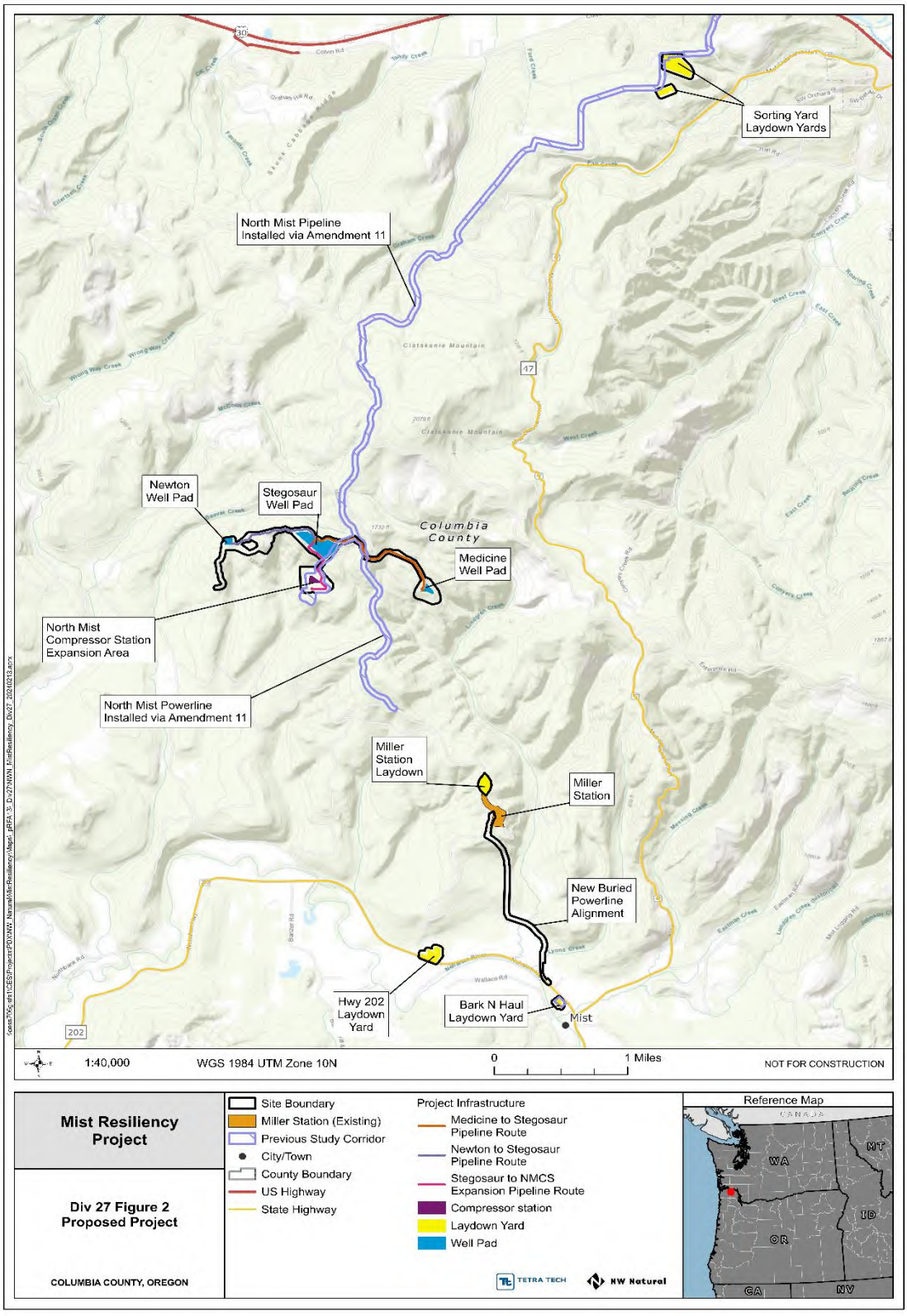
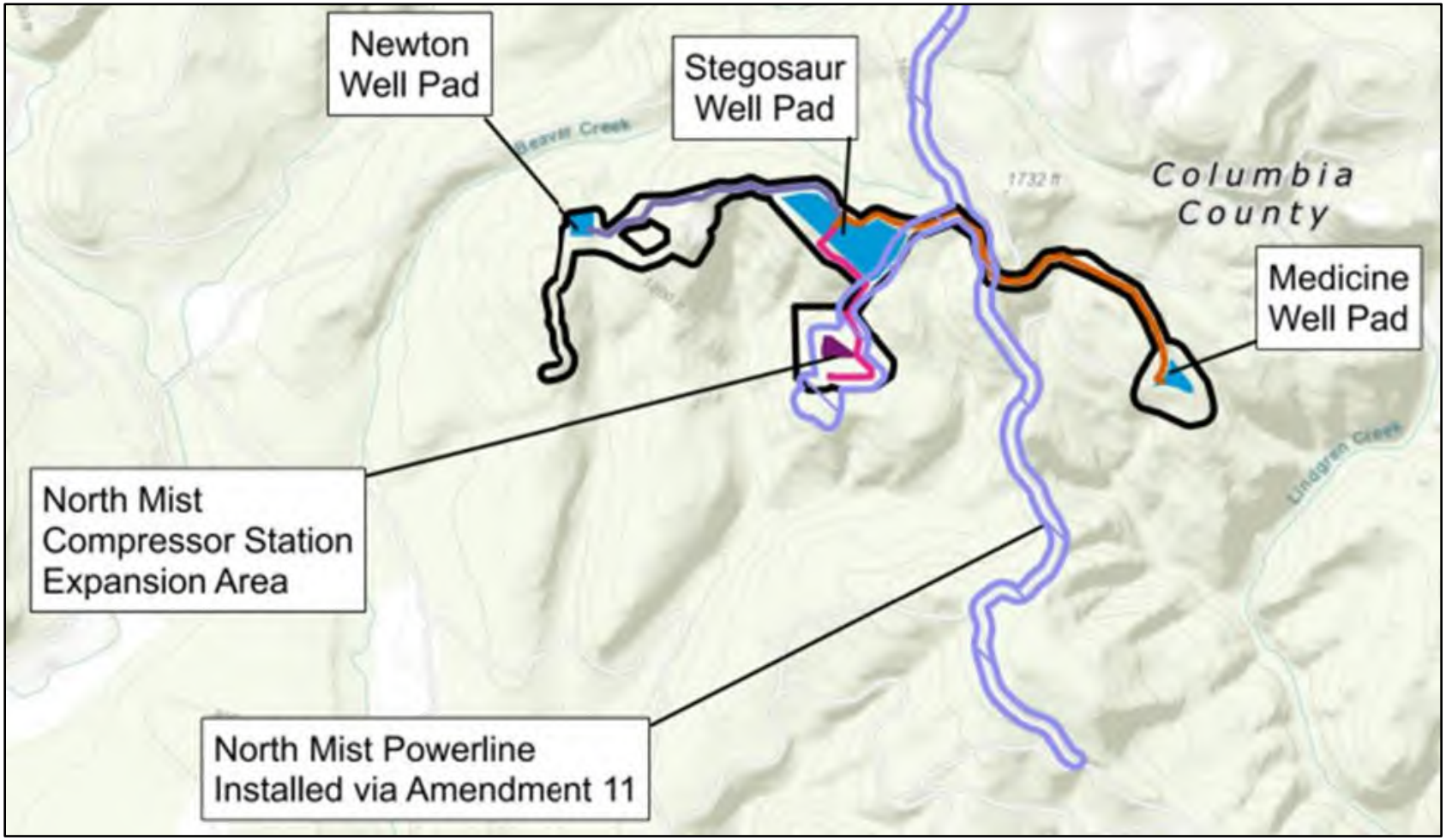


Figure 3: Location of Proposed RFA13 Changes (Miller Station)

Figure 4: Location of Proposed RFA13 Changes (North Mist Compressor Station)



II.A.2. Updates to Miller Station

Powerline replacement

Certificate holder will replace an underground powerline and conduit running from an existing meter located near Highway 202 to Miller Station. (See Figure 4) The replacement will be done using a combination of standard construction trenching techniques and horizontal directional drilling (HDD) to avoid wetland and streams within the construction corridor. Certificate holder states that they will use a standard 24-foot-wide construction right-of-way (ROW) corridor within the existing roadbed or a 40-foot-wide corridor in areas outside of the existing road. The powerline conduits will be buried at a depth of approximately 5 feet within the existing electrical service easement. Also, electrical cable pull boxes will be installed at a spacing not to exceed the selected power cable manufacture recommendations (approximately 2,000-foot spacing) allowing the cable to be pulled into the conduit and not exceed the cable tensile strength. After the installation of the conduit, the electrical contractor will pull 1.6 miles of new replacement cable and conduit through 3.1 miles of existing buried line and terminate at the existing transformer located within the existing Miller Station boundary. The total excavation and fill associated with the trenching of the powerline will be 14,550 and 13,820 cubic yards, respectively.

Turbine replacement

At Miller Station, certificate holder proposes removing two turbine-driven compressors of approximately 12,700 brake horsepower (BHP) at 7,200 BHP and 5,500 BHP, respectively, that have reached the end of their service lives. Removal of the turbines also requires removal of their existing foundation, associated oil coolers, lube oil systems, gas coolers, gas scrubbers, piping and valves, intake filters, exhaust silencers, fuel gas filter, regulation and measurement equipment, electrical distribution and control panels and other associated items. As a replacement, certificate holder proposes to install two new turbine-driven compressors of approximately 15,400 BHP (7,700 BHP each). The replacement work will include installing foundations for the new turbine/compressor packages, extending the existing compressor building and installing associated oil coolers, a double-walled pressurized lube oil tank, gas coolers, gas scrubbers, piping and valves, intake filters, exhaust silencers, electrical distribution and control panels, and other associated minor items.

Storage yard

A permanent storage yard will be developed adjacent/to the north of Miller Station to create space for storing equipment, consumables, and large stocked inventory items. (See Figure 2, below, depicting the proposed changes). The Miller Station fence line will be expanded by approximately 7.52 acres to encompass the Miller Station yard, which will be graded and

graveled.[6] (See Figure 3 above) This area will also likely be used as laydown yard during construction and will be maintained for use during operations.

II.A.3. Updates to Gas Storage Reservoirs and NMCS

Development of Reservoirs

Certificate holder proposes to develop four existing but depleted natural gas storage reservoirs within the facility site boundary: Crater, Medicine, Newton, and Stegosaur as part of their Mist Resiliency Project. While the underground storage wells, reservoirs and well pads are not included in the EFSC site certificate, the proposed development includes the development of related and supporting facilities (above-ground components, underground powerline and pipelines) that are included in the EFSC site certificate.

Four existing natural gas storage reservoirs will be developed from drill sites located near the reservoirs using high-angle directional (deviated) and/or horizontal I/W wells. Following is a summary of the proposed development of each of these reservoirs.

- Crater (approved) – This formation will be drilled from the Medicine well pad, and includes a gas fired heater(s), separation, metering equipment, associated piping, valving, equipment foundations, electrical, and communications.
- Medicine (new) – This formation will be drilled from a proposed newly developed well pad. Site development will include a permanent, fenced in location of 2.5 acres. Construction activities include clearing, grading, site rocking, and fencing. Permanent facilities include gas fired heater(s), separation, metering equipment, associated piping, valving, equipment foundations, electrical, and communications.
- Newton (new) – This formation will be drilled from a proposed newly developed well pad. Site development will include a permanent, fenced in location of 2.5 acres. Construction activities include clearing, grading, site rocking, and fencing. Permanent facilities include gas fired heater(s), separation, metering equipment, associated piping, valving, equipment foundations, electrical, and communications.
- Stegosaur (new) – This formation will be drilled from a proposed newly developed well pad. Site development will include a permanent, fenced in location of 2.5 acres. Construction activities include clearing, grading, site rocking, and fencing. Permanent facilities include gas fired heater(s), separation, metering equipment, associated piping, valving, equipment foundations, electrical, and communications. An above ground valve setting at this location will allow for injection / withdrawal formation flexibility allowing for more effective management of the associated gas storage facility.

[6] The location of the 7.5-acre area proposed to be added to the facility within the approved site boundary includes the replacement powerline that extends from Highway 202 north to Miller Station. This area occurs in Sections 11, 12, 14, 15, 33, 34, and 35 of Townships 6 North and 7 North, Range 5 West, Willamette Meridian, Oregon.

Table 2: RFA13 Proposed Changes to Approved Facility

Facility Component	Approved Facility	RFA13 Proposed Changes
Storage Site Boundary	5,472 acres	5,472 acres
Daily throughput	635 MMscfd	835 MMscfd
Installed compression equipment	19,150 BHP	28,700 BHP
Developed storage reservoirs	Bruer, Flora, Calvin Creek, and Adams	Crater, Medicine, Newton and Stegosaur
Electrical feeds	3.1 miles	1.6 miles, replaced
Transmission pipelines	~ 15 miles	Up to an additional 2.6 miles
Temporary laydown/staging areas	N/A	31 acres

Natural-Gas Pipelines

The new well pads, Newton, Stegosaur and Medicine, will each have underground I/W transmission pipelines to connect the I/W wells to the NMCS. These pipelines are included in the site certificate. All pipelines will be designed to have an 80-foot temporary impact corridor and a 40-foot permanent easement. After construction the land in the permanent easement will be reseeded per the NWN Vegetation Control and Management Plan (See Attachment P-4 of this order).

- Crater – This formation will be drilled from the Medicine well pad. A new, up to 16-inch diameter transmission pipeline will be constructed and connected to the manifold and transport gas to and from the Stegosaur well pad. This formation will share this pipeline with the Medicine formation.
- Medicine – The wells drilled in this formation will move gas from the wellhead into the associated equipment connected to an above ground manifold / valve setting. A new, up to 16-inch diameter transmission pipeline will be constructed and connected to the manifold and transport gas to and from Stegosaur well pad manifold / valve setting totaling approximately 6,300 linear feet of pipeline. This formation will share this pipeline with the Crater formation.
- Newton – The wells drilled in this formation will move gas from the wellhead into the associated equipment. A new, up to 16-inch diameter transmission pipeline will be constructed and connected to the equipment and transport gas to and from Stegosaur well pad manifold / valve setting totaling approximately 4,100 linear feet of pipeline.
- Stegosaur – The well drilled in this formation will move gas from the wellhead into the associated equipment connected to an above ground manifold / valve setting. Two new, up to 16-inch diameter transmission pipelines will be constructed and connected to the manifold and transport gas to and from the NMCS manifold / valve setting totaling approximately 3,200 linear feet of pipeline (1,600 linear feet each).

North Mist Compression Station Enhancements

Updates to the NMCS station would include the addition of new facility components and the storage enhancements described above. RFA13 requests Council approval for the installation of the components or structures presented in the table below.

Table 3: Proposed RFA13 Components at North Mist Compressor Station

Component	Quantity	Height (ft)	Length (ft)	Width (ft)
Reciprocating gas fired compressors	3	46	52	30
Dehydration contact towers	2	45	5 DIA	-
Glycol regenerating skids with reboilers	2	43	51	14
Inlet filter coalescers	2	8	12	4
Outlet filter coalescers	2	7	12	3
Two new back-up power generators; HP and noise level: 1,006 HP (750 kW) 83 dB(A) @ 23 ft	2	13	28	13
One blowdown silencer	1	9	4 DIA	-
One air system consisting of two compressors, dryers, prefilters, and wet air receiver	1	12	30	14
One skidded compressor fuel gas heater	1	15	23	8
One skidded fuel gas regulators system	1	6	20	8
Two lube oil tanks; capacity 3,000 Gallon each	2	-	18	6 DIA
One three-phase power transformer; oil-containing capacity	1	8	5	8
One covered gas/diesel fill station and containment; capacity	1			
Gasoline Tank – 2,500 gallons	1	8	16	7
Diesel Tank – 200 gallons	1	-	4	2 DIA
One power distribution center; and	1	17	50	14
Metal building systems associated with the Facility, including: one office/control building, one warehouse building, one compressor building, and one dehydration regeneration building (including all associated, grading, site rock, foundations, piping, valving, and miscellaneous mechanical and electrical supporting equipment):	4			
1. Gas compressor building	1	48	130	55

Table 3: Proposed RFA13 Components at North Mist Compressor Station

Component	Quantity	Height (ft)	Length (ft)	Width (ft)
2. Office/control building	1	18	100	60
3. Glycol regeneration building	1	39	70	70
4. PDC building	1	17	50	14

RFA13 estimates temporary and permanent impacts within the approved site boundary as presented in the following table.

Table 4: Estimated Disturbance (Acres)

Location/Action	Estimated Disturbance (Acres)	
	Temporary	**Permanent**
Powerline replacement	6.5	–
Miller Station storage yard	–	7.5
Newton wellpad	–	2.0
Stegosaur wellpad	–	16.3
Medicine wellpad	–	1.9
Transmission pipelines	22.5	–
Construction storage and laydown yards	23.3	–
NMCS improvements	12.8	–
TOTAL	**65.1**	**27.7**

I.C.3. Construction Laydown, Storage, and Staging Areas

During construction, the certificate holder will use four temporary storage and staging areas to store supplies and equipment. The Hwy 202 Laydown Yard will encompass approximately 6 acres of private property on the north side of Highway 202 west of Highway 47. The Bark and Haul Laydown Yard located slightly west of the intersection of Highway 47 and Highway 202, with 1.6 acres situated on previously disturbed land used for product storage and hauling. The Miller Station Laydown Yard is located approximately 7 miles north of Miller Station, at the Weyerhaeuser log-sorting yard in an approximately 3-acre, previously disturbed area. The fourth location, the Sorting Yard Laydown Yards are in a paved storage area, previously used for Weyerhaeuser operations. Industrial materials stored at the construction laydown staging areas include fuels and lubricants associated with construction equipment. Oils, lubricants, and solvents will be stored within covered containers such as work trailers and Conex boxes to prevent incidental spills or drips from reaching the environment. Any fuel stored onsite will be stored in mobile, double walled tanks, or proper designated locations with spill protection. All temporary storage and staging areas are remote from the proposed RFA13 changes. Well pad areas that will be developed as part of the proposed development may also be used as

temporary laydown or storage during construction. These temporary storage and staging areas are shown above in Figure 2.

I.C.4. Access Roads

It will not be necessary to construct any new roads for access to the Mist facility during proposed RFA13 construction. Access will be via existing interstate, state highways, county roads, as well as private forestry and farm roads. Any upgrades or improvements to existing roads to facilitate the RFA13 construction work will be done according to the applicable Oregon Department of Transportation and Columbia County ordinances and through approval of the Columbia County Public Works Department.

I.D. Proposed Expansion of Facility Boundary

The certificate holder proposes a small expansion of the facility boundary within the larger approved site boundary including the area of the replacement powerline that extends from Highway 202 north to Miller Station, as shown in Figure 3 above.[7] The Miller Station fence line will be expanded by approximately 7.52 acres, but this will be inside and within the existing approved 5,472-acre site boundary. This additional area is in Sections 11, 12, 14, 15, 33, 34, and 35 of Townships 6 North and 7 North, Range 5 West, Willamette Meridian, Oregon.

I.E. Temporary and Permanent Disturbance Areas

As shown in the Table 4 above, the certificate holder expects the RFA13 changes would temporarily disturb 65.1 acres and permanently impact 27.7 acres within the existing site boundary.

II.B. COUNCIL REVIEW PROCESS

In general, an amendment request will be reviewed under either the "Type A" or "Type B" amendment review process. The Type A review process is the default review process for the types of site certificate changes described above. OAR 345-027-0351(2). The Type A review process includes a public hearing and opportunity for a contested case proceeding. The Type B review process is an expedited review process that does not include a public hearing or opportunity for contested case proceeding. A certificate holder may request a determination of whether a request for amendment justifies review under the Type B review process. RFA13 states that the amendment will be subject to Type A review because RFA13 proposed changes could result in impacts not previously evaluated by Council; therefore, the Request for Amendment will be subject to Type A Review.

[7] The certificate holder has also included the temporary laydown areas in the RFA13 site boundary because Council's definition of "site boundary" includes temporary laydown and stating areas. OAR 345-001-0010(31).

II.B.1. Request for Amendment

On March 15, 2024, the Certificate Holder submitted its preliminary Request for Amendment 13 (pRFA13). The Department reviewed the pRFA to determine whether or not the request contained sufficient information for Council to make findings.

On March 28, 2024, the Department issued Public Notice that pRFA13 had been received as required by OAR 345-027-0360(2).

On May 9, 2024 the Department notified the Certificate Holder that the Request for Amendment was incomplete. The Department also issued a request for additional information (RAI1) related to Structural, Land Use, Fish and Wildlife, Historic, Cultural and Archaeological standards. Additional RAIs on Protected, Scenic and Recreation were sent to the certificate holder on June 6, 2024 (RAI2) and on June 27, 2024 on Wildfire, Fish and Wildlife and Threatened and Endangered Species standards and Removal Fill requirements (RAI3).

On June 12, 2024, the Certificate Holder responded with additional information to the Department's RAI1. Responses to RAI2 were submitted on June 17, 2024 and responses to RAI3 were submitted to the Department on July 16, 2024.

On August 1, 2024, the Department notified the Certificate Holder that Request for Amendment was Complete. The certificate holder submitted a complete RFA13 on August 9, 2024.

II.B.2. Draft Proposed Order

On August 15, 2024, the Department issued Public Notice of a comment period on RFA13 and the Draft Proposed Order on RFA13, from August 15 through September 19, 2024, and of a September 19, 2024 public hearing to be held at 5:30 p.m. at the People's Utility District Building in Clatskanie.

As part of the public hearing, Council considered a request to extend the comment deadline, from September 19 to October 19, 2024, from Columbia Riverkeeper.[8] Council found that the request did not demonstrate good cause for an extension and denied the request.

On the record of the DPO public hearing, the Department received written and verbal comments, all of which are provided and/or transcribed in Attachment B-2 of this order. Based on comments received and at the request of the certificate holder, the Council extended the record of the DPO public hearing to September 30, 2024 at 5:00 PM to allow the certificate holder an opportunity to respond to comments received. The certificate holder's response to issues raised in comments received is provided in Attachment B-3 of this order.

[8] MSTAMD13Doc97 DPO Public Comment 2 Columbia Riverkeeper 2024-08-28

At the October 25, 2024 meeting, Council received a presentation from staff on the DPO, issues raised in comments received, certificate holder responses and the Department's initial evaluation, as presented in Table A-1 below.

Table A-1: Council Review of Issues Raised in Comments Received and Proposed Order Revisions

Commenter and *location in record	Issues Raised/Comment Summary	Certificate Holder Responses Summary, as applicable	Related EFSC Standards and/or Requirements, as applicable	Department's Presentation to Council at DPO Review
Public Comments				
Written comments: Cole Souder and others, Green Energy Institute Comment Letter *MSTAMD13Doc105	EFSC need standard - Commenters ask EFSC to adopt an ad hoc "need" standard into the regulations and then use that "need" standard to deny "RFA 13"	The need standard only applies to three types of "nongenerating facility[ies]" as defined in ORS 469.503. It does not apply to RFA13 because RFA13 does not fall under one of the three types of facilities that require a need analysis. EFSC cannot apply the need standard to RFA13 without first amending OAR 345-023-0005, which would require a formal rulemaking process.	Need Standard for Non-generating Facility - OAR 345-023-0005; ORS 469.503 definitions	The Department agrees with the certificate holder that EFSC could not apply a need standard as requested by the commenters unless it first engaged in formal rulemaking to adopt such a standard. Agencies must follow their rules until the rules are properly amended or repealed. *Harsh Inv. Corp. v. State*, 88 Or App 151, 157, 744 P2d 588 (1987) The commenters do not articulate a legal basis in the statutes or rules governing EFSC procedures that would allow Council to deny NWN's RFA13 until Council adopts a need standard for surface facilities related to an underground gas storage reservoir.
	"related or supporting facilities" - Commenters identify that the DPO is flawed in a statement that asserts RFA13 components are "related or supporting facilities" in the same way RFA11 components were treated as "related or supporting facilities"	EFSC has determined, independent of the Final Order on Amendment 11, that regardless of differences between the energy facility and related or supporting facilities, Council has not adopted a need standard for surface facilities to an underground storage facility. While advocating for policy changes, the Commenters do not raise any issues with any applicable standards.	ORS 469.300 definitions	The Department agrees with the comment. Section IV.A.1., *Need for a Nongenerating Facility*, of the Proposed Order has been revised, removing the language that stated RFA13 components are "related or supporting facilities." However, that does not mean the need standard applies. While RFA13 includes components that are not related and supporting facilities, those components are surface facilities related to an underground natural gas storage facility and Council has not adopted a need standard for such facilities.
Written comments: Craig *MSTAMD13Doc96; Columbia Riverkeeper *MSTAMD13Doc105; Cole Souder and others, Green Energy Institute Comment Letter, *MSTAMD13Doc105	Increased carbon emissions and inconsistency with state's climate policy and HB2021, and therefore Council should only approve facilities related to natural gas that are *needed*.	HB 2021 does not affect the determination here because it expressly relates to generating facilities, not non-generating facilities. House Bill 3630 gives ODOE the discretion to determine and develop the best strategy to achieve the state's energy policy objectives and does not prohibit expansion of existing facilities.	NA	Council has not adopted a need standard for surface facilities related to an underground gas storage reservoir and recent statutory changes precluding EFSC from approving new or amended facilities that would produce or result in a significant increase inCO2 emissions, respectively, specifically apply to "generating facilities", and not to "nongenerating facilities."
Written comments: Craig		Certificate holder and several federal and state regulatory agencies, including DOGAMI, DEQ,	NA	The issues raised in these comments are not specific to the proposed RFA13 changes to surface

Table A-1: Council Review of Issues Raised in Comments Received and Proposed Order Revisions

Commenter and *location in record	Issues Raised/Comment Summary	Certificate Holder Responses Summary, as applicable	Related EFSC Standards and/or Requirements, as applicable	Department's Presentation to Council at DPO Review
Samuel Semerjian Maria Gibson/American Aquifers Daniel Schatz Liz Becker Nickie Schatz, *MSTAMD13Doc96, *MSTAMD13Doc98 through MSTAMD13Doc104; Oral Comment: Daniel Schatz, *MSTAMD13Doc112	Alleged public health and safety concerns and impacts from environmental contamination of area aquifers and groundwater/drinking water from Mist Underground Natural Gas Storage Facility	ODOE, and U.S. Pipeline and Hazardous Materials Safety Administration, reviewed the concerns that were raised and did not find any violations in how NWN operates and maintains natural gas storage operations. DOGAMI enforces storage well design and implementation standards to prevent the release of any natural gas into the atmosphere or contamination of the native aquifers. These standards remain at or above the level of national storage standards set by PHMSA. The Mist Underground Natural Gas Storage Facility employs a variety of technologies and systems to monitor the wellheads and pipelines. In addition to continuous monitoring of the storage wells and associated transmission line pressure via SCADA, wellheads, well safety systems, well piping, and site locations are inspected for operability, leaks, and mechanical or other faults weekly under our integrity monitoring program. Wellhead master valves and pipeline isolation valves are tested at least annually to ensure proper function and ability to isolate the well.		facilities. Issues of factual dispute, as presented in the American Aquifers letter, are evaluated further below.
Written comments: Samuel Semerjian Maria Gibson/American Aquifers Daniel Schatz Liz Becker Nickie Schatz *MSTAMD13Doc98 through MSTAMD13Doc104	Exhibit H and inadequate/outdated data relied upon for RFA13 assessment of seismic risks; seismic risks not adequately characterized. RFA13 Exhibit H Table H-8 is not based on USGS's 2020 geologic hazards map; recent USGS mapping show extensive faulting and cap rock exposure within the southernmost boundary of the gas field.	None provided	Structural Standard - OAR 345-022-0020, Exhibit H	Council previously authorized the Department to work with consultant Haley-Aldrich. The Department worked with Haley-Aldrich to evaluate the alleged dispute in facts related to the RFA13 Exhibit H. Based on Haley-Aldrich's memo, as provided in Attachment B-4, the issues raised in the American Aquifers letter do not negate the merits or validity of the geotechnical investigation or results provided by NWN in RFA13 Exhibit H. Additional facts from Haley-Alrich review memo[9] are included in Section III.C. Structural Standard.

[9] MSTAMD13Doc123 Proposed Order Haley Aldridge Review Exhibit H and DPO Comment Letter 2024-11-06

Table A-1: Council Review of Issues Raised in Comments Received and Proposed Order Revisions

Commenter and *location in record	Issues Raised/Comment Summary	Certificate Holder Responses Summary, as applicable	Related EFSC Standards and/or Requirements, as applicable	Department's Presentation to Council at DPO Review
				The Department requested DOGAMI review of Exhibit H and the comments received in the American Aquifers form letter submitted by multiple commenters and conferred with DOGAMI on November 18, 2024 to review the comment letter. In that conferral, DOGAMI noted that while additional sources could have been relied upon the sources and findings utilized in Exhibit H are sound and that the inclusion of additional sources would not change the evaluation in the geotechnical reports.
Written comments: Craig Samuel Semerjian Maria Gibson/American Aquifers Daniel Schatz Liz Becker Nickie Schatz, *MSTAMD13Doc96, *MSTAMD13Doc98 through MSTAMD13Doc104; Oral Comment: Daniel Schatz, * MSTAMD13Doc112	Alleged illegal dumping of contaminants, soil contamination and enforcement and other concerns about environmental compliance issues with facility	Certificate holder and several federal and state regulatory agencies, including DOGAMI, DEQ, ODOE, and U.S. Pipeline and Hazardous Materials Safety Administration reviewed the concerns that were raised and did not find any violations in how NWN operates and maintains natural gas storage operations.	NA	The issues raised in these comments are not specific to the proposed RFA13 changes to surface facilities.
Oral and Written Comments: Chief Joe Kaczenski, Mist-Birkenfeld Rural Fire Protection District, *MSTAMD13Doc110, *MSTAMD13Doc111	Written letter of support for RFA13 and ability to provide services to facility.	NA	Public Services – OAR 345-022-0110	The Department consulted with Mist Birkenfeld Rural Fire Protection District, as a reviewing agency, on impacts to public services. Based on this consultation, the Department recommends that the Proposed Order ~~i~~make a change to recommended Public Services Condition 2, to clarify that the agreement between certificate holder and Clatskanie Rural Fire Protection District also includes Mist Birkenfeld Rural Fire Protection District. Flemming Pond is owned/operated by Mist Birkenfeld; the pump system requested by Clatskanie RFPD will be shared by both RFPDs.
Council Members				

Table A-1: Council Review of Issues Raised in Comments Received and Proposed Order Revisions

Commenter and *location in record	Issues Raised/Comment Summary	Certificate Holder Responses Summary, as applicable	Related EFSC Standards and/or Requirements, as applicable	Department's Presentation to Council at DPO Review
Oral comment - Councilmember Condon question during Information Item prior to Public Comment period *MSTAMD13Doc115	Potential for fugitive methane emissions from pipeline operation	NWN uses Supervisory Control and Data Acquisition ("SCADA") and telemetry to monitor the system in real time and transmit data from remote sources. This technology makes it possible to quickly detect leaks even in remote locations. Biannual aerial patrols and two-week-long foot patrols are conducted at the f~~F~~acility. Regular valve maintenance occurs as well. Any fugitive emissions are publicly reported to the Oregon Department of Environmental Quality ("DEQ") on an annual basis. In addition to continuous monitoring of the storage wells and associated transmission line pressure via SCADA, wellheads, well safety systems, well piping, and site locations are inspected for operability, leaks, and mechanical or other faults weekly under our integrity monitoring program. Wellhead master valves and pipeline isolation valves are tested at least annually to ensure proper function and ability to isolate the well. DOGAMI enforces stringent storage well design and implementation standards to prevent the release of any natural gas into the atmosphere or contamination of the native aquifers. These standards remain at or above the level of national storage standards set by PHMSA.	Public Health and Safety Standards for Surface Facilities Related to Underground Gas Storage Reservoirs - OAR 345-024-0030	Additional facts provided by the certificate holder have been incorporated into Section IV.B. *Public Health and Safety Standards for Surface Facilities Related to Underground Gas Storage Reservoirs*.
Councilmember Devlin Oral Comment at Public Hearing *MSTAMD13Doc113	Questions about NWN future relationship with PGE and facility	NWN has a contract with PGE to provide long-term, no-notice underground gas storage service through 2049. PGE uses the facility to fuel its gas-fired electric power generation facilities, which backs up PGE's variable load of renewable energy on the electric grid. While HB 2021 sets clean energy targets by 2040 that include offramps for risks to reliability and cost, PGE is best positioned to answer how they plan to use the contracted capacity.	N/A	No changes to Proposed Order recommended.
Rule Change – Adopted Prior to Council's Decision on Amendment 13				

Table A-1: Council Review of Issues Raised in Comments Received and Proposed Order Revisions

Commenter and *location in record	Issues Raised/Comment Summary	Certificate Holder Responses Summary, as applicable	Related EFSC Standards and/or Requirements, as applicable	Department's Presentation to Council at DPO Review
Department	Council's adoption on October 25, 2024 of changes in the monetary offset rule at OAR 345-024-0580.	NA	Standard for Nongenerating Energy Facility: OAR 345-024-0620; Means of Compliance for Nongenerating Energy Facilities Standard: OAR 345-024-0630	Sections IV.D Standards for Nongenerating Energy Facility and IV.E. Means of Compliance have been revised in the Proposed Order to reflect the updated CO2 offset rate, changing from $4.27 to $6.40/ton of CO2.

Additional issues raised by Council during the October 25, 2024 DPO review are presented below.

During its review of the DPO, Council requested more information on any prior evaluation by state agencies of the allegation that Mist Facility operations contribute to contamination of domestic drinking water wells from subsurface operations.

This alleged issue was previously evaluated by the Department following a 2022 complaint. At the time, the Department initiated a compliance review and consulted with the Oregon Department of Environmental Quality (DEQ) and Department of Oregon Geology and Mineral Industries (DOGAMI). DEQ and DOGAMI have regulatory oversight responsibilities for subsurface components (DOGAMI for natural gas storage wells, withdrawal/injection wells and well heads; and, DEQ for domestic water wells and drinking water).

In November 2022, the Department conducted a site inspection and prepared a report in response to the complaint. The Department's report found no violations of the facility's site certificate conditions. DEQ and DOGAMI determined that there were no violations or evidence of violations. DOGAMI's letter verified compliance.[10]

Carbon Dioxide Related Statutes and Standards Applicable to Nongenerating Facilities (ORS 469.501(1)(o); OAR 345-024-0620; OAR 345-024-0630)

During its review of the DPO, Council member Condon stated she believed the proposed RFA13 changes would not comply with the statutory language in ORS 469.503(2)(c)(C) because the certificate holder had not provided evidence that total CO_2 emissions would be offset or that the CO_2 emission offsets to be purchased (at the Council's monetary offset rate) would offset the total amount of CO_2 emissions generated (based on current market value of CO_2 offsets). Therefore, she believed it would not be appropriate for the proposed offset funds to be "deemed sufficient" by the Council under ORS 469.503(2)(c)(C) and Council's applicable carbon standard.

ORS 469.501(1)(o) establishes Council's authority to adopt standards to address the impacts of CO_2 emissions on climate change from non-electricity generating energy facilities. (Statutory requirements for Council's issuance of a site certificate for fossil -fueled power plants are established in ORS 469.503(2)).

Consistent with ORS 469.501(1)(o), Council adopted OAR 345-024-0620, *Standards for Nongenerating Energy Facilities*, and OAR 345-024-0630, *Means of Compliance for Nongenerating Energy Facilities*, to address CO2 emission impacts from non-generating facilities. These standards are meant to be evaluated/applied together.

[10] MSTAMD13Doc119 Proposed Order DEQ Response to Complaint 2022-08-09 MSTAMD13Doc120 Proposed Order DOGAMI Response to Complaint 2022-07-26 MSTAMD13Doc121 Proposed Order ODOE Inspection Report 2022-11-02

Council's carbon dioxide standard for nongenerating facilities is OAR 345-024-0620; it establishes that Council must find that the net CO_2 emissions rate of a nongenerating facility does not exceed 0.428 pounds of CO_2 per horsepower hour.

OAR 345-024-0630 establishes the ways in which a nongenerating facility can comply with the carbon standard. OAR 345-024-0630(2) states compliance may be achieved by providing offset funds "in an amount *deemed sufficient* to *meet the applicable CO2 emissions standard."* This phrase must be read comprehensively, not independently or in isolation.

1. "In an amount" applies to a dollar amount;
2. "deemed sufficient" applies to a calculation based value; and
3. "applicable CO2 emissions standard" is 0.428 lb CO2/hp-hr as established in OAR 345-024-0620.

These three elements of the regulatory language are evaluated below.

1. "In an amount"

"In an amount" applies to the dollar amount necessary to offset CO_2 emissions. Pursuant to OAR 345-024-0580 and OAR 345-024-0630(2), the dollar amount to offset 1 ton of CO_2 is $6.40.

2. "Deemed sufficient"

The dollar amount "deemed sufficient" is then based on a calculation. OAR 345-024-0620(1) establishes that gross/actual CO_2 emissions for a nongenerating facility are to be calculated (based on new and clean basis, or 117 lb CO2/MMBtu) and compared to CO_2 emissions calculated using Council's established emission rate of 0.428 lb CO_2/hp-hr. Any emissions calculated in excess of the standard's established emission rate, calculated for a 30-year period, must be offset. Offset funds must be provided in an amount sufficient to offset the calculated excess CO_2 emission.

3. "Applicable CO2 emissions standard"

OAR 345-024-0620 establishes that Council must find that the net CO_2 emissions rate of a nongenerating facility does not exceed 0.428 pounds of CO_2 per horsepower hour.

If a non-generating facility does not meet the standard, Council rules allow it to meet the standard by using one of the means described in OAR 345-024-0630 or any combination thereof – *i.e.*, by implementing an offset project directly or providing offset funds to a third party in an amount that is sufficient to meet the standard – i.e. an amount sufficient to offset the CO_2 emissions in excess of 0.428 pounds of carbon dioxide per horsepower hour.

The standard does not require that gross CO_2 emissions be fully offset or that evidence be provided that gross CO_2 emissions can be fully offset based on current market value of CO_2 offsets. The Department does not recommend that such a change would be appropriate at this stage in the review of RFA13.

~~To raise an issue on the record of the Draft Proposed Order, a person must raise the issue in a written comment submitted between the date of the Public Notice of the Draft Proposed Order and the written comment deadline established in the Public Notice. Council will not accept or consider public comments on the Request or on the Draft Proposed Order (DPO) received after the written comment deadline.~~

~~To properly raise an issue in a request for a contested case proceeding for an amendment (discussed further in the following section), the issue must be within the jurisdiction of the Council, and the person must have raised the issue in person or in writing on the record of the public hearing of the DPO. If a person has not raised an issue at the DPO public hearing with sufficient specificity to afford the Council, Department and certificate holder an adequate opportunity to respond to each issue, the Council may not grant a contested case proceeding for that issue.[11] To have raised an issue with sufficient specificity, the person must have presented facts at the public hearing that support that person's position on the issue.[12] Any issue that may be the basis for a contested case shall be raised not later than the close of the record at or following the final public hearing prior to issuance of the Department's proposed order.~~

II.B.3. Proposed Order

~~Under OAR 345-027-0371(1), no later than 30 days after the Council has reviewed the DPO and considered all comments received on the record of the DPO public hearing under OAR 345-027-0367, the Department must issue a Proposed Order recommending approval, modification or denial of the request for amendment to the site certificate. The Department must consider any oral comments made at the public hearing, written comments received before the close of the record of the public hearing, agency consultation, and any Council comments. The Department may issue the Proposed Order at a later date, but the Department must, no later than 30 days after the Council has reviewed the DPO and considered all comments received on the record of the public hearing, notify the certificate holder in writing of the reasons for the delay. Concurrent with issuing the Proposed Order, the Department must send notice of the Proposed Order to Council's general mailing list, any special mailing list for the facility, reviewing agencies, as well as property owners under OAR 345-027-0360(1)(f). Under OAR 345-027-0371(4), on the same date the notice of Proposed Order, the Department must send a notice of the opportunity to request a contested case by mail or email to the certificate holder, and to all persons who commented in person or in writing on the record of the public hearing.~~

~~[11] 469.370(3).~~

~~[12] OAR 345-027-0371(5).~~

On November 21, 2024, the Department issued this Proposed Order recommending the Council approve RFA13, with recommended findings of fact and conditions of approval based on the Department's consideration of timely comments on the Draft Proposed Order, comments provided by the Council at its September 19 and October 25, 2024 meetings. On the same day, a Public Notice of the Proposed Order and Opportunity to Request a Contested Case was sent to Council's general mailing list, any special mailing list for the facility, reviewing agencies, as well as property owners under OAR 345-027-0360(1)(f). In accordance with OAR 345-027-0371(4), the Department also sent the notice of the opportunity to request a contested case by mail or email to the certificate holder, and to all persons who commented in person or in writing on the record of the DPO public hearing.

~~If there are no requests for a contested case proceeding, the Council may adopt, modify or reject the proposed order based on the considerations described under the Scope of Council Review in OAR 345-027-0375. In a written order, the Council must either grant or deny issuance of an amended site certificate.[13]~~

II.B.4. Council Evaluation of Requests for Contested Case Proceeding

Only those persons, including the certificate holder, who commented in person or in writing on the record of the DPO public hearing, extending from August 15 through September 19, 2024 until the close of the public hearing, ~~unless extended by Council,~~ may request a contested case proceeding on the proposed order for an amendment to the site certificate. Council's evaluation of whether to hold a contested case is described in OAR 345-027-0371 and is summarized below.

For consideration in a contested case, issues must:

- Be submitted within the comment timeframe;
- Be within the jurisdiction of the Council; and
- Include sufficient specificity with facts so that the Council, the Department, and the certificate holder understand the issue raised and are afforded an opportunity to respond to the issue.

Threshold for a contested case for a Type A Amendment:

- Council must find that the request raises a significant issue of fact or law that is reasonably likely to affect the Council's determination whether the facility, with the change proposed by the amendment, meets the applicable laws and Council standards included in chapter 345 divisions 22, 23 and 24.

Council Options on Requests for a Contested Case:

- Hold a contested case on properly raised issue(s) that could affect the Council's determination

~~[13] OAR 345-027-0371(11).~~

- Remand Proposed Order to Department – Properly raised issue(s) could be addressed through new findings and/or conditions
- Deny – Request does not include properly raised issue(s)

II.B.5. Final Order

If there are no requests for a contested case proceeding, the Council, may adopt, modify or reject the Proposed Order based on the considerations described in OAR 345-027-0375. If the Proposed Order is adopted or adopted, with modifications, Council shall issue a Final Order granting issuance of an amended site certificate. If the Proposed Order is denied, Council shall issue a Final Order denying issuance of the amended site certificate.

~~The Council's Final Order, including any denials of requests for contested case, is subject to judicial review by the Oregon Supreme Court as provided in ORS 469.403.~~

III. EVALUATION OF COUNCIL STANDARDS

III.A. GENERAL STANDARD OF REVIEW: OAR 345-022-0000

(1) To issue a site certificate for a proposed facility or to amend a site certificate, the Council shall determine that the preponderance of evidence on the record supports the following conclusions:

(a) The facility complies with the requirements of the Oregon Energy Facility Siting statutes, ORS 469.300 to 469.570 and 469.590 to 469.619, and the standards adopted by the Council pursuant to 469.501 or the overall public benefits of the facility outweigh any adverse effects on a resource or interest protected by the applicable standards the facility does not meet as described in section (2);

(b) Except as provided in OAR 345-022-0030 for land use compliance and except for those statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council, the facility complies with all other Oregon statutes and administrative rules identified in the project order, as amended, as applicable to the issuance of a site certificate for the proposed facility. If the Council finds that applicable Oregon statutes and rules, other than those involving federally delegated programs, would impose conflicting requirements, the Council shall resolve the conflict consistent with the public interest. In resolving the conflict, the Council cannot waive any applicable state statute.

(2) The Council may issue or amend a site certificate for a facility that does not meet one or more of the applicable standards adopted under ORS 469.501 if the Council determines that the overall public benefits of the facility outweigh

any adverse effects on a resource or interest protected by the applicable standards the facility does not meet. The Council shall make this balancing determination only when the applicant has shown that the proposed facility cannot meet applicable Council standards or has shown, to the satisfaction of the Council, that there is no reasonable way to meet the applicable Council standards through mitigation or avoidance of any adverse effects on a protected resource or interest. The applicant has the burden to show that the overall public benefits outweigh any adverse effects on a resource or interest, and the burden increases proportionately with the degree of adverse effects on a resource or interest. The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows:

(a) The Council shall evaluate any adverse effects on a resource or interest by considering factors including, but not limited to, the following:

(A) The uniqueness and significance of the resource or interest that would be affected;

(B) The degree to which current or future development may adversely affect the resource or interest, if the proposed facility is not built;

(C) Proposed measures to reduce any adverse effects on a resource or interest by avoidance of impacts;

(D) The magnitude of any anticipated adverse effects on a resource or interest, taking into account any proposed mitigation.

(b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following:

(A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effects;

(B) The degree to which the proposed facility promotes Oregon energy policy as described in ORS 469.010 by demonstrating or advancing new efficiency or renewable technology or by expanding electric generating capacity from renewable energy sources;

(C) Recommendations from any special advisory group designated by the Council under ORS 469.480;

(D) Evidence that the benefits are likely to occur only if the proposed facility is built;

(E) For facilities that are subject to a need standard, evidence underlying the Council's decision on compliance with the rules in OAR 345, Division 23, except that the Council shall not find that need for a facility is sufficient, by itself, to outweigh any adverse effects on a resource or interest affected by the proposed facility.

(3) Notwithstanding section (2) of this rule, the Council shall not apply the balancing determination to the following standards:

(a) The organizational expertise standard described in OAR 345-022-0010;

(b) The land use standard described in OAR 345-022-0030;

(c) The retirement and financial assurance standard described in OAR 345-022-0050;

(d) The need standards described in OAR 345-023-0005;

(e) The standards for energy facilities that emit carbon dioxide described in OAR 345-024-0500 through 345-024-0720;

(f) The protected areas standard described in OAR 345-022-0040, if the statutes or administrative rules governing the management of the protected area prohibit location of the proposed facility in that area; or

(g) The sage-grouse specific habitat mitigation requirements under the Council's fish and wildlife habitat standard described in OAR 345-022-0060, except that the Council may apply the balancing determination to the requirements of 635-140-0025(2)(a) and (b) for indirect impacts on core and low density sage-grouse habitat, as defined in 635-140-0015, which are caused by transmission lines or pipelines as defined in ORS 469.300(11)(a), and by transmission lines or pipelines that are related or supporting facilities to an energy facility as defined in ORS 469.300(24), proposed to be sited entirely outside of core and low density sage-grouse habitat.

(4) In making determinations regarding compliance with statutes, rules and ordinances normally administered by other agencies or compliance with requirements of the Council statutes if other agencies have special expertise, the Department of Energy shall consult with such other agencies during the notice of intent, site certificate application and site certificate amendment processes. Nothing in these rules is intended to interfere with the state's implementation of programs delegated to it by the federal government.[14]

[14] OAR 345-022-0000, effective March 8, 2017.

III.A.1. Findings of Fact

OAR 345-022-0000 provides Council's General Standard of Review and requires Council to find that a preponderance of evidence on the record supports the conclusion that the facility, with proposed RFA13 changes, complies with the requirements of EFSC statutes and the siting standards adopted by Council and that the facility, with proposed RFA13 changes, complies with all other Oregon statutes and administrative rules applicable to the issuance of an amended site certificate for the facility.

The requirements of OAR 345-022-0000 are discussed in the sections that follow. The Department consulted with other state agencies, and the Columbia County Board of Commissioners, as the appointed Special Advisory Group (SAG) for the facility, during review of the preliminary Request for Amendment 13 (pRFA13) to aid in the evaluation of whether the proposed changes would satisfy the requirements of applicable statutes, rules and ordinances otherwise administered by other agencies. Additionally, in many circumstances the Department relies upon these reviewing agencies' special expertise in evaluating compliance with the requirements of Council standards.

OAR 345-022-0000(2) and (3) apply to a request for an amendment where a certificate holder has shown that the proposed changes cannot meet Council standards or has shown that there is no reasonable way to meet the Council standards through mitigation or avoidance of the damage to protected resources; and, for those instances, establish criteria for the Council to evaluate in making a balancing determination. The certificate holder does not assert that the proposed RFA13 changes would not meet an applicable Council standard. Therefore, OAR 345-022-0000(2) and (3) do not apply to this review.

Certificate Expiration (OAR 345-027-0000)

Under OAR 345-015-0085(9), the site certificate is effective upon execution by the Council Chair and the site certificate holder. ORS 469.370(12) requires the Council to "specify in the certificate the date by which construction of the facility must begin." ORS 469.401(2) requires that the site certificate contain a condition "for the time for completion of construction." Under OAR 345-027-0000, the certificate holder must begin construction no later than the construction beginning date specified by Council in the site certificate, unless an amendment is requested and granted. "Construction" is defined in ORS 469.300(6) to mean "work performed on a site, excluding surveying, exploration or other activities to define or characterize the site, the cost of which exceeds $250,000." OAR 345-001-0010(12) adopts the statutory definition.

As provided in RFA13, the duration of construction activities is expected to extend 30 months, across 5 years. Therefore, the Department recommends Council establishes a requirement that certificate holder initiate construction within two years of EFSC approval of the amended site certificate, and that certificate holder complete construction of RFA13 changes within five years of the actual construction commencement date.

Accordingly, and in compliance with OAR 345-025-0006(4), the Department recommends Council adopt the following conditions to the site certificate:

> **Recommended General Standard Condition 1 [GEN]:** The certificate holder must begin and complete construction of the Mist Resiliency Project by the following dates:
>
> a. Construction of a phase or component of the Mist Resiliency Project must begin on or before [ENTER DATE 2 YEARS FROM ISSUE DATE]. Within 7 days of construction commencement, the certificate holder must provide the Department with written verification that it has met the deadline by satisfying applicable preconstruction conditions and completing at least $250,000 work at the site.
>
> b. All construction must be completed within 5 years after the date construction commenced under (a) of this condition. Within 7 days after completing construction, the certificate holder shall provide the Department written verification that it has met the deadline.
>
> [GEN GS-01; Final Order on AMD13]

Mandatory and Site-Specific Conditions in Site Certificates [OAR 345-025-0006 and OAR 345-025-0010]

Council's mandatory and site-specific conditions, as established in OAR 345 Division 25, are addressed under the General Standard of Review. Council previously imposed conditions in the Final Order on Amendment 11 mirroring the requirements of OAR 345-025-0006. The Department recommends Council administratively amend these conditions to clarify that the condition requirements apply to the Mist Resiliency Project. These administrative updates are omitted from this section for brevity but are presented in red-line format in Attachment 1 (draft amended Site Certificate) of this order.

Site Specific Conditions [OAR 345-025-0010]

OAR 345-025-0010 establishes "site specific" conditions that Council may include in a site certificate to address issues specific to certain facility types or proposed features of facilities. OAR 345-025-0010(5) states:

> "If the proposed energy facility is a pipeline or a transmission line or has, as a related or supporting facility, a pipeline or transmission line, the Council must specify an approved corridor in the site certificate and must allow the certificate holder to construct the pipeline or transmission line anywhere within the corridor, subject to the conditions of the site certificate. If the applicant has analyzed more than one corridor in its application for a site certificate, the Council may, subject to the Council's standards, approve more than one corridor."

Council rules define "corridor" as "a continuous area of land not more than one-half mile in width and running the entire length of a proposed..pipeline.."[15] To satisfy the intent of OAR 345-025-0010(5), consistent with the Council's definition of a "corridor", the Department recommends Council impose the following condition

> **Recommended General Standard Condition 2 [GEN]:** The certificate holder is authorized to construct the underground pipelines extending from Crater, Medicine, Newton and Stegosaur reservoirs to the North Mist Compressor Station within an established 80-foot corridor.
> [GEN-GS-02; Final Order on AMD13]

III.A.2. Conclusions of Law

Based on the foregoing analysis, and subject to compliance with the proposed site certificate conditions described throughout this order, the Department recommends Council find that the facility, with the proposed changes, would continue to comply with the requirements of ORS 469.300 to 469.570 and 469.590 to 469.619, Council's standards in OAR chapter 345, and all other Oregon statutes and administrative rules applicable to the issuance of an amended site certificate.

III.B. ORGANIZATIONAL EXPERTISE: OAR 345-022-0010

> *(1) To issue a site certificate, the Council must find that the applicant has the organizational expertise to construct, operate and retire the proposed facility in compliance with Council standards and conditions of the site certificate. To conclude that the applicant has this expertise, the Council must find that the applicant has demonstrated the ability to design, construct and operate the proposed facility in compliance with site certificate conditions and in a manner that protects public health and safety and has demonstrated the ability to restore the site to a useful, non-hazardous condition. The Council may consider the applicant's experience, the applicant's access to technical expertise and the applicant's past performance in constructing, operating and retiring other facilities, including, but not limited to, the number and severity of regulatory citations issued to the applicant.*
>
> *(2) The Council may base its findings under section (1) on a rebuttable presumption that an applicant has organizational, managerial and technical expertise, if the applicant has an ISO 9000 or ISO 14000 certified program and proposes to design, construct and operate the facility according to that program.*

[15] OAR 345-001-0010(7)

(3) If the applicant does not itself obtain a state or local government permit or approval for which the Council would ordinarily determine compliance but instead relies on a permit or approval issued to a third party, the Council, to issue a site certificate, must find that the third party has, or has a reasonable likelihood of obtaining, the necessary permit or approval, and that the applicant has, or has a reasonable likelihood of entering into, a contractual or other arrangement with the third party for access to the resource or service secured by that permit or approval.

(4) If the applicant relies on a permit or approval issued to a third party and the third party does not have the necessary permit or approval at the time the Council issues the site certificate, the Council may issue the site certificate subject to the condition that the certificate holder shall not commence construction or operation as appropriate until the third party has obtained the necessary permit or approval and the applicant has a contract or other arrangement for access to the resource or service secured by that permit or approval.[16]

III.B.1. Findings of Fact

Organizational Expertise of Certificate Holder

Certificate holder is Northwest Natural Gas Company (NWN), a public utility that supplies gas service to approximately two million people in Oregon and Southwest Washington.[17] In the 1980s, certificate holder began developing the natural gas fields in the Mist area for the reinjection and storage of natural gas. Since 1989, the certificate holder has operated its underground natural gas storage operation at the Mist facility under the EFSC site certificate. Certificate holder has two additional EFSC site certificates authorizing it to operate the South Mist Feeder Pipeline and South Mist Pipeline Extension, that both bring natural gas to and from the storage facility.

The approved facility includes naturally occurring underground natural gas storage reservoirs, which NWN has retrofitted to allow pipeline quality natural gas injection and underground storage during off-peak periods and withdrawal when market demand exceeds available supplies from other sources. Surface facilities related to the underground gas storage reservoir and ~~R~~related or supporting surface facilities currently include compressors, pipelines, control equipment, dehydration and auxiliary systems, most of which are located at NWN's Miller Station. Other related surface facilities include gathering lines and facilities for maintenance and operations staff. Proposed RFA13 changes would allow construction and operation of new facilities like those in operation at the Mist facility including above-ground components, compressor stations and equipment, underground transmission line, and pipelines.

[16] OAR 345-022-0010, effective April 3, 2002.

[17] https://www.nwnatural.com/about-us/the-company/overview

A construction contractor has not been selected for the Mist Resiliency Project. The Department recommends Council impose the following conditions to allow verification of contractor qualifications once selected.

Preconstruction Conditions

Recommended Organizational Expertise Condition 1 [PRE]: Prior to construction of a phase or component of the Mist Resiliency Project, the certificate holder shall select construction contractors with a low rate of past environmental and safety compliance incidents and citations. Certificate holder shall provide the following documentation to the Department:

a. Qualifications and contact information of the major design, engineering and construction contractor(s) and subcontractors, as applicable, including but not limited to the contractor(s) hired to serve as the construction manager.
b. Construction contractor compliance history.
c. Copy of signature page(s) and excerpt from each contract with the aforementioned contractors affirming that the contractor is required to comply with the terms and conditions of the site certificate, including selecting design layout and construction materials that minimize impacts to resources protected under Council standards.

[PRE-OE-01; Final Order on AMD13]

Construction Conditions

Recommended Organizational Expertise Condition 2 [CON]: During construction, the certificate holder shall:

a. Maintain an onsite construction manager.
b. Require that the construction manager implement and monitor all applicable construction related site certificate conditions.
c. Within six months after beginning construction, and every six months thereafter during construction, submit a semiannual construction progress report to the Department. In each construction progress report, the certificate holder shall describe any changes to major milestones for construction. The certificate holder shall report on the progress of construction and shall address the following:
    i. Facility Status: An overview of site conditions, the status of components under construction and a summary of the operating experience of components that are in operation. The certificate holder shall describe any events, such as earthquakes, windstorms, major accidents or the like that occurred during the year and that had an adverse impact on the facility.
    ii. Status of Surety Information: Documentation demonstrating that bonds or letters of credit as described in the site certificate are in full force and effect and will remain in full force and effect for the term of the next reporting period.
    iii. Compliance Report: A report describing the certificate holder's compliance with all site certificate conditions that are applicable during the reporting period. For

ease of review, the certificate holder shall, in this section of the report, use numbered subparagraphs corresponding to the applicable sections of the site certificate.

iv. Facility Modification Report: A summary of any changes to the facility that the certificate holder has made during the reporting period without an amendment of the site certificate in accordance with OAR 345-027-0050.

[CON-OE-01; Final Order on AMD13]

Other Permits

There are no third-party permits needed to support construction or operation of the facility, with proposed RFA13 changes. Other permits necessary for the proposed RFA13 changes include, but are not limited to,

- Oregon Department of Environmental Quality (DEQ) National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit 1200-C;
- DEQ Air Contaminant Discharge Modification Permit;
- DEQ 401 Water Quality Certification;
- DEQ Onsite Sewage Disposal Construction-Installation Permit;
- Oregon Department of Forestry (ODF) Notification of Operation;
- Oregon Department of State Land's (DSL) General Authorization;
- Oregon Department of Water Resources' (ODWR) groundwater permit; and
- Department of Geology and Mineral Industries (DOGAMI) Gas Well Drill Permit.

The Department recommends the Council impose Organizational Expertise Condition 3, as presented below, to ensure that all necessary permits and approvals are obtained prior to the beginning of construction of the phase or component for which the permit applies or is necessary.

Recommended Organizational Expertise Condition 3 [PRE]: Prior to construction of a facility component or phase of the Mist Resiliency Project, as applicable, the certificate holder shall:

a. Provide the Department a list of federal, state and local permits, including any third-party permits for resources needed for construction and operation; and a schedule for obtaining identified permits.

b. Once obtained, provide copies of all permits, including third-party permits, required for the Mist Resiliency Project to the Department.

[PRE-OE-02; Final Order on AMD13]

III.B.2. Conclusions of Law

Based on the foregoing analysis, and subject to compliance with the recommended site certificate conditions described above, the Department recommends Council find that the certificate holder has the organizational expertise to construct, operate and retire the facility,

with the proposed RFA13 changes, in compliance with Council standards and conditions of the site certificate.

III.C. STRUCTURAL STANDARD: OAR 345-022-0020

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that:

(a) The applicant, through appropriate site-specific study, has adequately characterized the seismic hazard risk of the site; and

(b) The applicant can design, engineer, and construct the facility to avoid dangers to human safety and the environment presented by seismic hazards affecting the site, as identified in subsection (1)(a);

(c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and

(d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

(2) The Council may not impose the Structural Standard in section (1) to approve or deny an application for an energy facility that would produce power from wind, solar or geothermal energy. However, the Council may, to the extent it determines appropriate, apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.

(3) The Council may not impose the Structural Standard in section (1) to deny an application for a special criteria facility under OAR 345-015-0310. However, the Council may, to the extent it determines appropriate, apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.[18]

III.C.1. <u>Findings of Fact</u>

OAR 345-022-0020 requires Council to find that the certificate holder has adequately characterized the potential seismic, geological and soil hazards of the proposed RFA13 site, and that the certificate holder can design, engineer and construct the proposed RFA13 changes to

[18] OAR 345-022-0020, effective October 18, 2017, as amended by minor correction filed May 28, 2019.

avoid dangers to human safety from these hazards. The analysis area for the Structural Standard is the area within the site boundary.

To facilitate Council's evaluation of compliance with the Structural Standard, OAR 345-021-0010(1)(h)(A) requires that the certificate holder provide a geologic report meeting Oregon State Board of Geologist Examiners geologic report guidelines. Current guidelines must be determined based on consultation with the Oregon Department of Geology and Mineral Industries (DOGAMI). And OAR 345-021-0010(1)(h)(E) requires the certificate holder to provide an assessment of seismic hazards, in accordance with standard-of-practice methods and best practices, that addresses all issues raised in consulting with DOGAMI.

Consultation between Department staff, certificate holder and DOGAMI occurred on September 21, 2023. ~~on the preliminary RFA13 included recommendations for sources to utilize for identifying seismic and nonseismic risks and input on site-specific analysis to be performed prior to construction with recommendations that erosion and landslide risks due to intense precipitation events or landslides due to fault rupture were potential risks that require additional analysis~~. Various sources and methods were presented by the certificate holder during the consultation, as described below. DOGAMI concurrence on the methods and sources was obtained and is provided in RFA13 Exhibit H Attachment H-1.

Certificate holder retained GeoEngineers, Inc. (GeoEngineers) to perform an evaluation meeting current OSBGE guidelines (OSBGE 2014) "Guideline for Preparing Engineering Geologic Reports." GeoEngineers conducted several reconnaissance visits to the Mist Resiliency Project's proposed injection and withdrawal (I/W) pipeline routes, powerline route, well pads, NMCS, Miller Station and selected landslides on several dates. Site-specific geotechnical work was conducted by certificate holder's contractor, GeoEngineers in 2023. Geotechnical work completed in 2023 at NMCS included: 4 borings (two 100-foot deep and 2 60-foot deep); downhole seismic testing in 2 100-foot borings; electrical resistivity testing; and soil classification and corrosion resistant testing. Geotechnical work completed in 2023 at Miller Station included: 2 80-foot borings; downhole seismic testing in 1 80-foot boring; soil classification and corrosion design. Geotechnical reports, with seismic design and foundation recommendations, specific to ~~the North Mist Compressor Station~~ NMCS and Miller Station are provided ~~as attachments to Exhibit H~~in RFA13 Exhibit H Attachment H-3 and H-4. Based on completion of the consultation meeting and DOGAMI review and concurrence, as documented in RFA13 Exhibit H Attachment H-1, the Department recommends Council find that the sources relied upon for the evaluation of seismic and non-seismic hazards represent reasonably available sources, consistent with OAR 345-021-0010(1)(h).

Seismic Hazard Risk at Site

Subsection (1)(a) of the standard requires Council to find that certificate holder "through appropriate site-specific study, has adequately characterized the seismic hazard risk of the site." As noted above, certificate holder contracted with GeoEngineers to prepare a geologic

report pursuant to the DOGAMI guidelines. To study the seismic hazard risks that the facility with the RFA13 changes would face at the site, GeoEngineers, among other actions:

- evaluated seismic hazards for the proposed well pads, injection/withdrawal pipelines, NMCS, Miller Station and Power line,
- evaluated potential presence of faults using USGS fault and fold database (as of August 2023), and by ~~LiDAR~~ review of a Light Detection and Ranging (LiDAR) hillshade model, as interpreted by GeoEngineers;~~,~~
- obtained a list of recorded earthquakes within approximately 50 miles of the proposed route using United States Geologic Survey's (USGS) earthquake catalog Search (as of August 2023);,
- evaluated contributing earthquake sources using USGS Probabilistic Seismic Hazard Mapping Tool;~~, and~~
- evaluated the geologic setting, stratigraphy, geologic structure, site geology, geologic unit stability, soils and groundwater of the site using Oregon Geologic Data Compilation (OGDC) Version 6 mapping; and the Statewide Landslide Information Database for Oregon (SLIDO) Version 3.4; and
- completed borings at NMCS and Miller Station to evaluate geologic conditions

Based on a September 21, 2023 discussion and subsequent email confirmation, DOGAMI agreed with GeoEngineers' seismic hazard evaluation approach. Therefore, the Department recommends Council find the certificate holder has engaged in "appropriate site-specific study" to characterize the seismic hazard risk, in compliance with OAR 345-022-0020(1)(a).

Contributing Earthquake Sources

As noted above, in compliance with OAR 345-021-0010(1)(h)(E), certificate holder conducted a site-specific study of seismic hazards, known as a Probabilistic Seismic Hazard Analysis (PSHA). Certificate holder states in Exhibit H that seismic hazard de-aggregations were performed for 475-year, 2,475-year, and 4,975-year hazard levels for rock outcrop conditions. The 475-year motion corresponds to a 10 percent probability of exceedance in 50 years, the 2,475-year motion corresponds to a 2 percent probability of exceedance in 50 years, and the 4,975-year motion has a 1 percent probability of exceedance in 50 years. The modeling is described in detail in RFA13 Exhibit H. The results show that the dominant seismic hazard source for the 475-year, 2,475-year and 4,975-year earthquake levels are magnitude (M) 8.8 to M9.1 Cascadia Subduction Zone (CSZ) interface event. The second greatest seismic hazard is a M6.9 to M7.0 deep (35 to 70 kilometers in depth) intraslab earthquake similar to the M6.8 Nisqually earthquake that occurred in February 2001 near Olympia, Washington. Crustal earthquakes of M6.2 from background seismicity also pose a risk in the 475-year earthquake level, but the background seismicity risk is effectively muted by the hazard presented by the CSZ earthquake when longer return periods are considered.

Based on USGS's Quarternary Fault and Fold Database, as of August 2023, there are 13 quaternary faults within 50 miles of the site, as presented in ~~These faults are shown in~~ Figure 5 below and in RFA13 Exhibit H Table H-8. Figure 5 below and Table H-8 from RFA13 Exhibit H include only mapped Quaternary active fault traces (from 2.6 million years to present day). USGS's Quaternary Fault and Fold Database accounts for crustal rotations and displacement along with other geological and seismological data in the interpretation of potential seismicity in the region.[19]

Within the area of the facility and proposed Mist Resiliency Project site, there are older faults that date from the Late Eocene (38 to 33.9 million years ago).[20] Three mapped fault traces are identified within the facility site (Niem et al. 1990), which are documented as being inactive.[21,22]

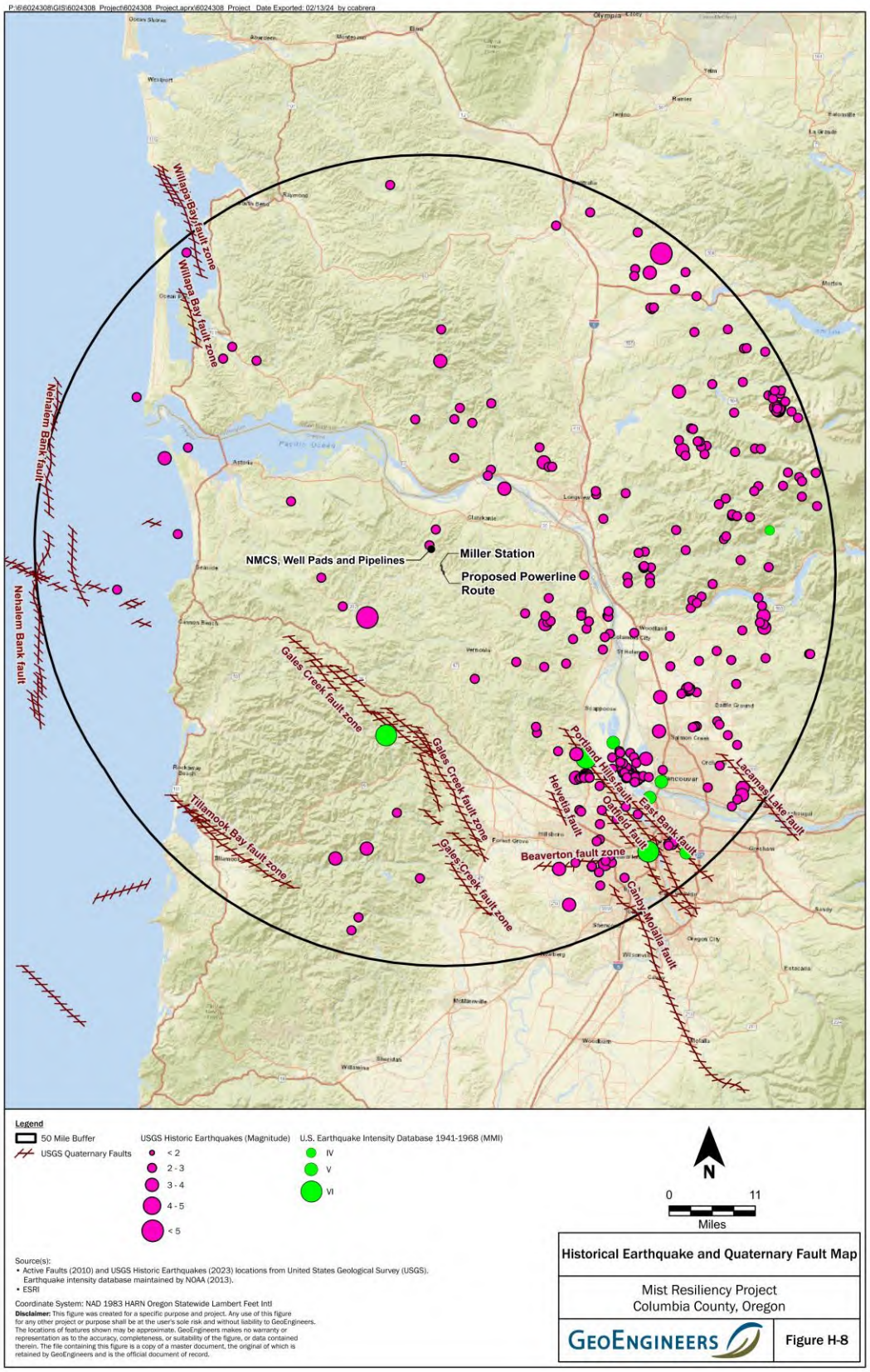
[19] On the record of the DPO, American Aquifers expressed concerns that geologic hazards had not been adequately evaluated at the site, based on rotation beneath the gas field. MSTAMD13 DPO Public Comment 5 Maria Gibson 2024-09-19. Based on review by the Department's third-party consultant, Haley-Aldrich, crustal rotation and displacement impacts are accounted for in USGS's Fault and Fold Database, which was the source relied upon by the certificate holder. See Attachment B-4 of this order.

[20] MSTAMD13 RFA13 Exhibit H Geologic 2024-08-09, Section 4.1.3.

[21] MSTAMD13 RFA13 Exhibit H Geologic 2024-08-09, Figure H-3.

[22] On the record of the DPO, American Aquifers expressed concerns that the geologic hazards had not been adequately evaluate at the site, based on the USGS's 2020 Portland Map that was alleged not to have been relied upon by the certificate holder. MSTAMD13 DPO Public Comment 5 Maria Gibson 2024-09-19. Based on review by the Department's third-party consultant, Haley-Aldrich, the evaluation of faults and geologic mapping presented in RFA13 Exhibit H are appropriate to inform the site and seismic design parameters. See Attachment B-4 of this order.

Figure 5: Geological Faults within 50 miles of RFA13 Site Boundary



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Site Seismic Hazards

- Ground shaking

Certificate holder's consultant assessed ground shaking for the 475-year, 2,475-year, and 4,975-year hazard level, characterized ground motion amplification effects along the proposed pipeline route and collected mapped acceleration parameters at each well pad, approximate midpoint of each pipeline between well pads, the NMCS, Miller Station, the south end of the powerline alignment, and the approximate midpoint of the powerline alignment. They are of the opinion that there is a low risk of ground shaking in the absence of other deformation adversely affecting the proposed pipeline or the proposed powerline.

- Fault rupture

Two faults are mapped by DOGAMI (2020) crossing the powerline alignment within the Nehalem River Valley. These faults are not considered active because they are not mapped by the USGS quaternary fault and fold database. Accordingly, certificate holder's consultant concluded that there is a low probability of fault rupture adversely affecting the facility, however DOGAMI coordination[23] indicated that fault rupture could potentially impact buried transmission lines, and for this reason, recommended that the preconstruction site-specific geotechnical study should include a detailed assessment of potential impacts of fault rupture on underground transmission.

- Seismically Induced Landslides

The proposed pipelines, NMCS and Stegosaur and Medicine well pads are not located in proximity to existing landslides that could be re-activated during a seismic event and avoid very steep slopes. Therefore, there is a relatively low risk of seismically induced landsliding affecting these facility components.

Miller Station is near two past landslides (Lindgren Creek/LS-4 and Miller Station/LS-5). The powerline alignment also crosses LS-4. LS-5 has been regraded and mitigated by installing drainage features and GeoEngineers did not observe indications of instability, therefore it is unlikely it would be reactivated by earthquake shaking. There is a risk LS-4 could be reactivated during a seismic event, potentially affecting Miller Station and the powerline alignment. If LS-4 is reactivated, there is a low to moderate risk that the scarp would retrogress through a weathered formation underlying the compressor station replacement area and adversely affect the proposed Miller Station. A reactivated LS-4 could damage the powerline and adjacent pipelines within the right of way (ROW) following the powerline, but the risk to the public should be low because the landslide is in an unpopulated area.

[23] MSTAMD13Doc46 pRFA13 ODOE-DOGAMI Consultation Notes 2023-09-21

The Miller Station Storage Area is located close to LS-7 and LS-7, which is a road fill related to a past failure. However, given mitigation and the upslope location of Miller Station Storage Area, certificate holder's consultant believes it is unlikely additional failure of LS-7 would impact the Miller Station Storage Area.

- Liquefaction and Liquefaction-Induced Hazards

Liquefaction takes place when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking. During a liquefaction event, such as that which could be produced by an earthquake, soil particles, in combination with the water located in the pore spaces between them, tend to behave like quicksand.

The Nehalem River Valley contains alluvial materials (sand, silt, clay, gravel) and relatively high groundwater levels and therefore may be susceptible to liquefaction during earthquake shaking. Based on four borings conducted by GeoEngineers within the Nehalem River Valley and a review of well logs, the Exhibit H concludes that soils susceptible to liquefaction will be between 20 and 30 feet in thickness overlying bedrock. No structures are proposed for construction within the Nehalem River Valley, but the proposed powerline alignment is partially located within the valley, which may be susceptible to liquefaction during earthquake shaking.

GeoEngineers conducted a liquefaction triggering and settlement analysis for each of the four logged soil borings that represent subsurface conditions along the proposed powerline alignment using three separate methods[24] and assuming groundwater is within 5 feet of the ground surface along the portion of the powerline alignment in the Nehalem River Valley. The analyses were conducted using methods developed by Boulanger and Idriss (2014), Youd et al (2001), and Seed et al (2003).[25] The methods and results were submitted to DOGAMI for review and comment. Based on this analysis, liquefaction induced settlement is estimated to result in approximately 1½ inches to 7 inches of surface settlement along the powerline alignment located within the Nehalem River Valley after a design level earthquake. The liquefaction settlement primarily occurs from 5- to 10-foot thick loose sand layers observed in the borings

Based on geological conditions along the proposed pipeline alignments and at the NMCS, Miller Station, Miller Station Storage Area and well pads, and the evaluation conducted by GeoEngineers, the certificate holder concludes, with their consultant that analysis does not identify liquefaction to be a likely hazard to the RFA13 proposed facility components.

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[24] ATC (Applied Technology Council). 2023. ATC Hazards by Location. Reference Document ASCE 7-16. Accessed August 30, 2023. https://hazards.atcouncil.org/; USGS. 2023b. Interactive Deaggregations, Earthquake Hazards Program, 2008. Accessed August 30, 2023. https://earthquake.usgs.gov/hazards/interactive/

[25] Boulanger, R. W., and Idriss, I. M. (2014). "CPT and SPT based liquefaction triggering procedures.", Univ. of California, Davis, CA.; Youd, T.L., et. al., October 2001, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils.," Journal of Geotechnical and Geoenvironmental Engineering, Vol. 127, No. 10.; Seed, R. B., et al., 2003, "Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework," 26th Annual ASCE Los Angeles Geotechnical Spring Seminar.

As discussed above, Council's Structural Standard, OAR 345-022-0020(1)(a), requires Council to find that the certificate holder, through appropriate site-specific study, has adequately characterized the seismic hazard risk of the site. Considering the foregoing analyses and the certificate holder's reliance on qualified consultants and coordination and reliance on DOGAMI-recommended sources, the Department recommends Council find the certificate holder has adequately characterized the seismic hazard risks at the location of the proposed RFA13 components.

Mitigation of Seismic Hazards

Certificate holder commits to designing and building the RFA13 components to meet the standards of the Oregon Structural Specialty Code, which incorporates the 2021 International Building Code (IBC), specifically the design codes related to geology, seismicity, and near-surface soil, in IBC Section 1613, with slight modifications by the current amendments of the state of Oregon and local agencies. Buildings and foundations will be designed assuming Risk Category IV. Using USGS's 2014 National Seismic Hazard Model (NSHM), with a 2,475 year return period, predicted ground acceleration (PGA) values could be 0.5 g at the size, based on a magnitude MW 9.1 megathrust event on the CSZ. Therefore, the seismic design parameters for PGA are 0.558 g (NMCS) and 0.523 g Miller Station).[26,27] Constructing the proposed RFA13 changes to meet these standards will reduce potential dangers to human safety presented by seismic hazards at the site. These requirements are addressed by existing site certificate conditions adopted in alignment with Council's mandatory conditions in OAR 345-025-0006. As presented in Section III.A. General Standard of Review, the Department recommends Council administratively amend these conditions to ensure applicability to the proposed RFA13 changes.

Subject to compliance with Council's mandatory conditions, the Department recommends Council find that the certificate holder can design, engineer, and construct the facility, with proposed RFA13 changes, to avoid dangers to human safety and the environment presented by seismic hazards affecting the site, and therefore meets OAR 345-022-0020(1)(b).

Non-seismic Geologic and Soils Hazards

[26] MSTAMD13 RFA14 Exhibit Geologic 2024-08-09, Attachment H-3, Table 4 and Attachment H-4, Table 1.

[27] On the record of the DPO, America Aquifers expressed concern that because the 2023 version of the earthquake catalogue was not used, seismic hazards at the site were not properly evaluated. MSTAMD13 DPO Public Comment 5 Maria Gibson 2024-09-19. Based on review by the Department's third-party consultant, Haley-Aldrich, USGS released a new NSHM in 2023. It incorporates the most recent seismic data and models available in the literature, as well as the feedback received from academia, industry, and public. Based on a comparison of RFA13 Table H-9 and relevant values using the 2023 USGS NSHM (Peterson et al., 2024), there is an approximate 12 percent difference in the certificate holder's data sources compared to the 2023 USGS NSHM. This difference is not considered to represent a significant difference for the purpose of informing seismic risk hazard, IBC code requirements or seismic design parameters as provided in the GeoEngineers Report. See Attachment B-4 of this order.

The certificate holder also analyzed potential geological and soils hazards that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed RFA 13 components, as summarized below.

- Erosion

Wind erosion is not a significant concern along the pipeline/powerline due to tree cover and gravel surfacing along the alignments, planned post-construction revegetation of the pipeline/powerline corridors that do not follow gravel roads, and subgrade protection measures that will be implemented to provide equipment access

Although soil in the proposed RFA13 areas is highly susceptible to water erosion, the certificate holder expects that water erosion will be minimal where the pipeline and powerline alignments follow the existing roadways because of existing surface water drainage systems and culverts and crushed rock road surfacing. The risk of water erosion where the Newton to Stegosaur pipeline alignment and the powerline alignment traverse slopes cross country is high. Certificate holder proposes to mitigate against that risk as described in the discussion below of non-seismic hazard mitigation.

- Flooding and Groundwater

The risk of groundwater or flooding affecting the proposed pipelines, well pads, NMCS, Miller Station Storage Area and Miller Station site is low because these components are in mountainous terrain north of Highway 202 and more than 500 feet higher in elevation than the Nehalem River and because static groundwater in this terrain is more than 150 feet below the ground surface.

As previously discussed, certificate holder proposes to replace the underground powerline and conduit running from the existing meter near Highway 202 to Miller Station. A portion of the powerline will run beneath an area the Federal Emergency Management Agency has denoted as Flood Zone A (a 1 percent annual chance of flood hazard). Certificate holder will install the powerline in conduits beneath the mapped flood hazard zone using horizontal directional drilling (HDD) installation, which mitigates potential buoyancy associated with flooding. They believe that because they will utilize HDD installation and the area has only a 1% annual chance of flood hazard, there is a low risk of flooding adversely affecting the powerline.

The southern part of the powerline alignment is within the Nehalem River valley, where groundwater levels could be located near the surface during heavy rain events. In that area, certificate holder will install the powerline within High-density polyethylene (HDPE) conduits placed in approximately 3- to 4-foot-deep trenches within the fill using conventional open trench methods, except beneath Lyons and Lindgren Creeks where it will use HDD installation methods. They believe that because the conduit will be located above the regional ground surface, or confined by the drilled hole of an HDD, there is a low risk of high groundwater levels adversely affecting the powerline installations.

- Landslide and Slope Stability

Certificate holder ’s consultant completed a desktop study and field investigation of the potential landslide and slope stability hazards present in the analysis area. The desktop study included a review of the State Landslide Inventory Database (SLIDO) and interpretation of a LiDAR generated hillshade model.

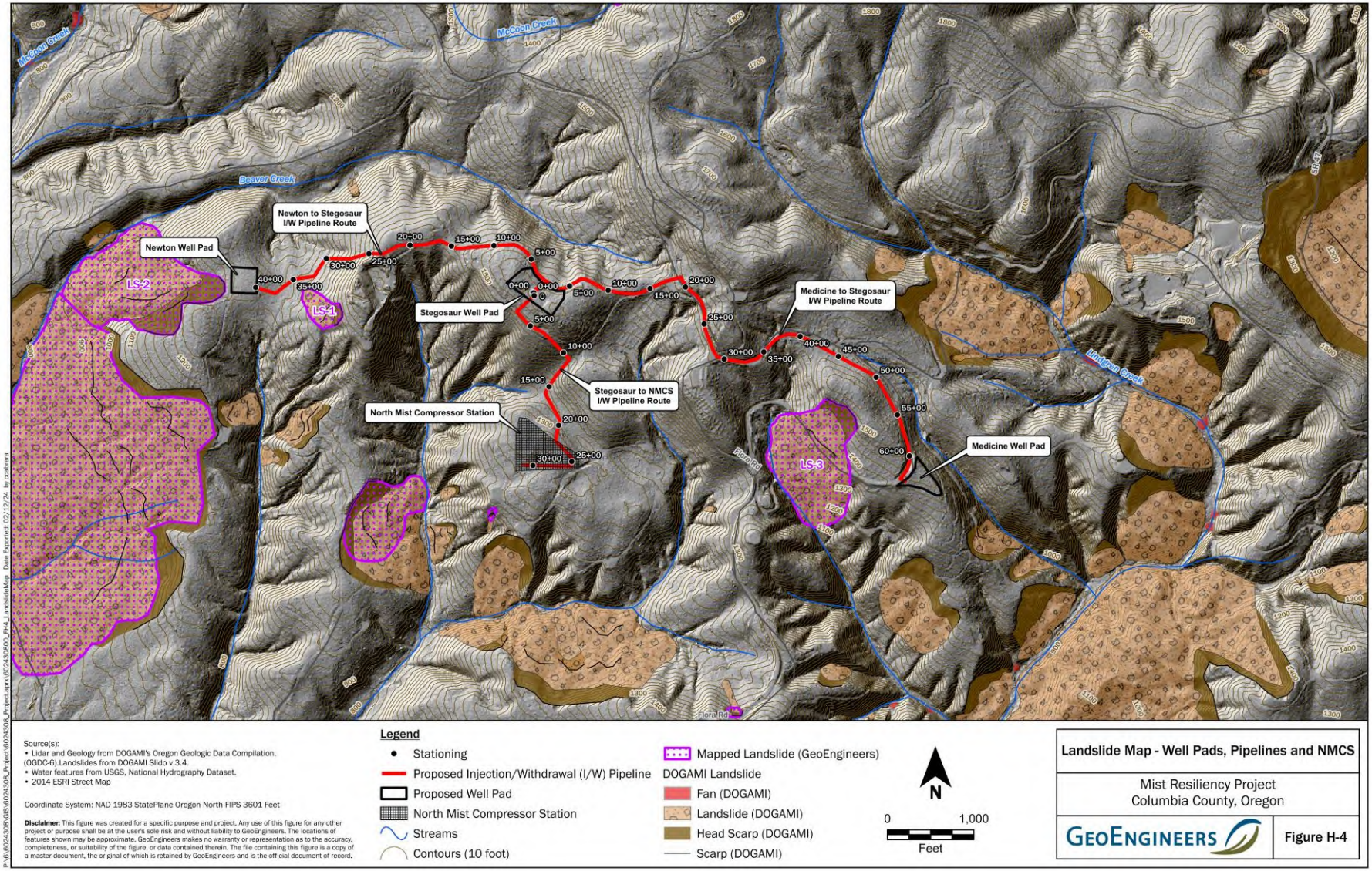
Based on the desk top surveys followed by site reconnaissance, certificate holder’s consultant identified seven landslides (LS-1 through LS-7) near facility components or crossed by the powerline alignment, as discussed below. Certificate holder had already been monitoring two of the landslides (LS-4 and LS-5).

Pipeline Alignments

Two landslides, LS-1 and LS-3 are near the proposed Newton to Stegosaur and Medicine to Stegosaur pipeline routes, respectively. See Figure 6 below.[28]

[28] MSTAMD13Doc57 RFA13 Exhibit H Geologic 2024-08-09, Figure H-4.

Figure 6: Overview of Landslides within RFA13 Analysis Area



The toe (downslope portion) of LS-1 is approximately 180 feet south of the proposed Newton to Stegosaur pipeline route. LS-1 is a deep-seated rotational feature, approximately 200 feet wide and 550 feet long. It initiated from a moderate to steep (approximately 50 to 70 percent) northeast facing slope and came to rest on a gentle (approximately 20 percent) portion of the slope. The proposed route for the Newton to Stegosaur pipeline is on gentle (10 to 20 percent) slopes downhill of LS-1 to avoid the landslide. Certificate holder's consultant has determined LS-1 presents a low risk to the proposed Newton to Stegosaur pipeline, because the landslide is dormant and due to its location relative to the proposed Newton to Stegosaur pipeline.

LS-3 is a relict deep-seated landslide up to approximately 1,200 feet wide and is about 1,150 feet long. It's on a southwest facing slope of a topographical knob opposite the Medicine to Stegosaur pipeline. Certificate holder 's consultant concludes the slide does not pose a risk to the pipeline due to its topographical relationship to the pipeline.

Well Pads

Landslide LS-2's headscarp (steep slope at the upper edge of the landslide) is approximately 100 feet west of the proposed Newton well pad.[29] LS-2 is approximately 1,250 feet long and 1,200 feet wide. The scarp of the slide was clearcut between 2012 and 2016, and the body of the slide was clear cut between 2017 and 2018. DOGAMI classified the landslide age as historic (>150 years). Certificate holder 's consultant believes LS-2 presents a low risk of affecting the Newton Well Pad due to the activity level and age of the landslide.

Powerline Alignment

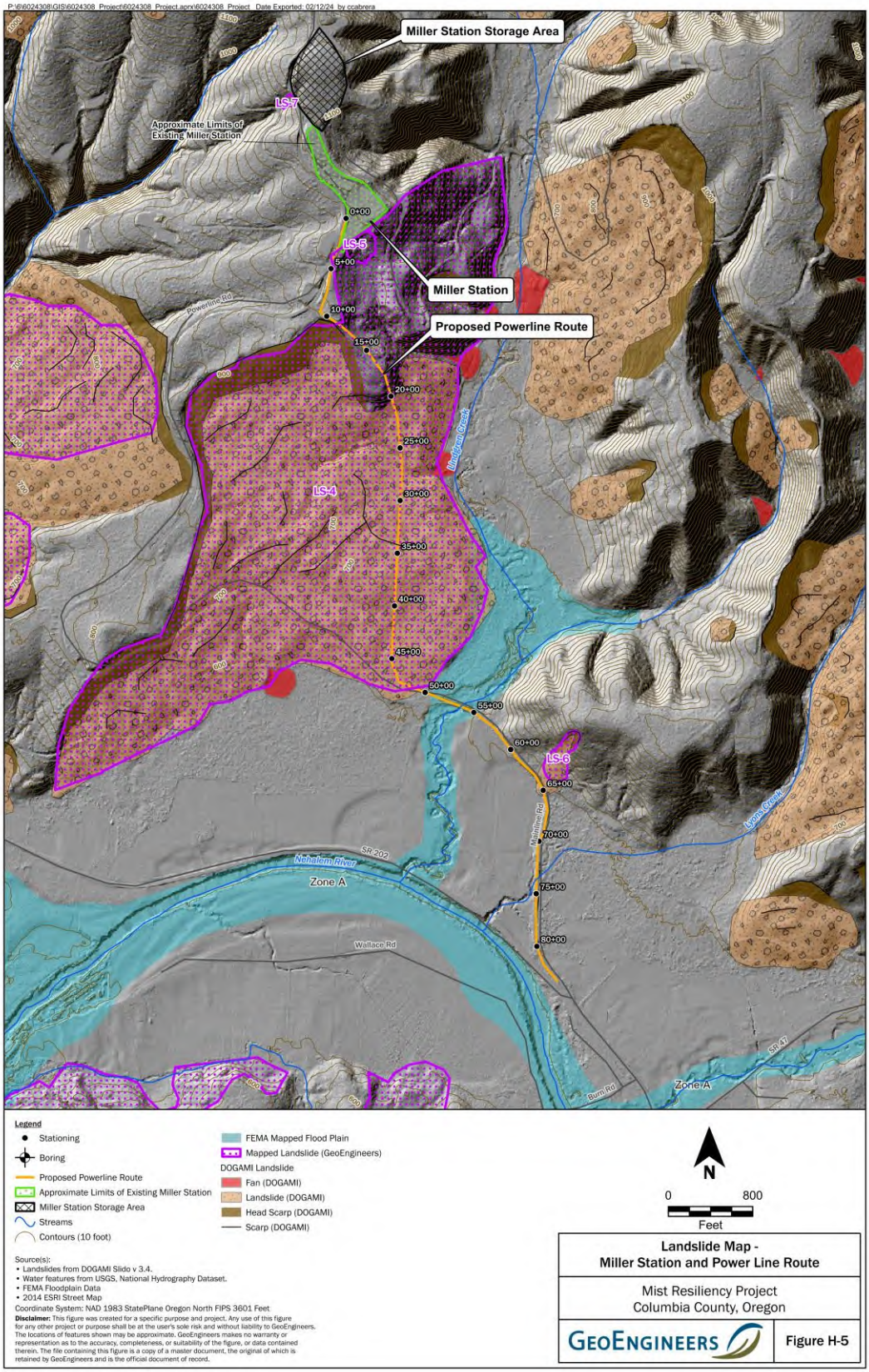
The powerline route crosses LS-4 (the Lindgreen Creek Landslide) between stations 11+00 and 50+00 and passes near LS-6 located near station 65+00 along Mainline Road. See Figure 8 below.[30] Much of LS-4 had been clearcut at the time certificate holder 's consultant conducted reconnaissance. The consultant did not observe any indications of recent movement of this landslide. Areas of the landslide that were still forested were vegetated with tall conifer trees that were growing straight. In-tact old growth stumps are present within the slide. Based on the landslide morphology and lack of surficial evidence of recent movement, the consultant concludes LS-4 poses a low risk to the proposed powerline alignment.

LS-6 is a dormant-mature landslide, approximately 115 feet wide by 400 feet long. Certificate holder 's consultant did not observe any indications of recent activity of the landslide (e.g., bowed conifer trees or ground cracks) and concludes there is a low risk of it affecting the proposed powerline.

[29] Id.

[30] MSTAMD13Doc57 RFA13 Exhibit H Geologic 2024-08-09, Figure H-5

Figure 7: Landslides Near RFA13 Proposed Miller Station and Powerline Route



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Miller Station

As can be seen in the above Figure 8, LS-4 (Lindgren Creek Landslide) and LS-5 (Miller Station Landslide) are near Miller Station. Certificate holder ’s consultant believes LS-4 poses a low risk to the proposed compressor infrastructure at the Miller Station compressor replacement area due to the landslide morphology and lack of evidence of recent surficial movement.

Certificate holder and its consultant first identified LS-5 in October 1999, which at that time, was approximately 200 feet wide by 300 feet long that initiated from a gravel pad on the southeast corner of Miller Station. It was caused by a combination of fill placement on the scarp of the LS-4, and direction of surface and near surface water to the area of the slope failure. The risk that the landslide posed to NW Natural was mitigated by installing drainage features and regrading the landslide. The landslide is densely vegetated with deciduous trees and young to submature conifer trees that were growing straight during reconnaissance. Certificate holder ’s consultant did not observe indications of instability (e.g., scarp retrogression, recent landsliding or ground cracks above the landslide).

Miller Station Annex

As can be seen in the above Figure, Landslide L-7 is close to the Miller Station Storage Area. The slide is approximately 100 feet wide by 200 feet long. The scarp of the slide was stabilized through construction of a solider pile and lagging wall with tiebacks in late 2023. Given this stabilization, the Geotechnical report included as Attachment H-3 in RFA13 Exhibit H concludes there is a low risk of LS-7 adversely affecting the Miller Station Storage Area.

NMCS

There are no mapped landslides near the NMCS.

Mitigation of Non-Seismic Hazards

RFA13 proposes specific measures to minimize the risks of erosion and landslides, the two dominant non-seismic risks in the vicinity.

- Erosion

Certificate holder will implement an erosion and sediment control plan consistent with National Pollutant Discharge Elimination System (NPDES) 1200-C Permit requirements. As discussed in detail in Exhibit I, erosion control measures that may be employed during and after construction include:

- Installing sediment fence or other approved best management practices at downslope side of excavations and disturbed areas.
- Straw mulching within disturbed cross-country segments of the pipeline and powerline corridors and locations adjacent to roads that have been affected during construction.
- Planting designated seed mixes within disturbed cross-country segments of the pipeline and powerline corridors at affected areas adjacent to the road.
- Planting designated seed mixes or hydroseeding of cut and fill slopes at the well pads and Miller Station Storage Area.
- Waterbars along cross country segments of the pipeline and powerline routes.
- Restoration of gravel surfacing along roadways.
- Gravel surfacing within well pads and the Miller Station Storage Area.

Exposed soil areas that are affected by the construction will be seeded after construction when there is adequate soil moisture and will be reseeded in the spring if a healthy cover crop doesn't grow. Sediment fences will remain in place until the affected areas are well vegetated.

- Slope Stability and Landslides

As discussed in RFA13 Exhibit H, there may be areas where excavation into steep slopes is required for temporary construction workspace, and that cutting and filling on slopes in excess of 50 percent could create localized slope instability. To mitigate for this risk, certificate holder has committed to incorporating the following measures into the final design of construction corridors along overland segments of the proposed RFA13 changes:

- Permanent cut and fill slopes will be included at a maximum gradient of 2H:1V (horizontal to vertical).
- Though not anticipated, any permanent fill slopes will be keyed into undisturbed, firm native material.
- Corridors on sloping ground will be constructed with waterbars to prevent capturing and concentrating surface water runoff.

Certificate holder will take other measures in the final design and construction of the NMCS, Miller Station, well pads and Miller Station Storage Area as outlined in RFA13 Exhibit H to minimize the potential to adversely affect slope stability. ~~The certificate holder has committed to conducting a geotechnical investigation for RFA13.~~ For these reasons, the Department recommends Council adopt the following new condition specific to RFA13 activities.

> **Recommended Structural Standard Condition 1 [PRE]:** Prior to construction of a phase or component of the Mist Resiliency Project, as applicable, the certificate holder shall submit a site-specific geotechnical investigation report, consistent with the Oregon State Board of Geologist Examiners Guideline for Preparing Engineering Geologic Reports, or newer guidelines if available to the Department, for review in consultation with its third-party consultant. Certificate holder must adequately address comments provided by the Department.

[PRE-SS-01; Final Order on AMD13]

Landslide Monitoring

Certificate holder has a system-wide landslide monitoring program, which assigns a risk level to known landslides that may affect its pipeline and associated facilities and monitors the landslides on a regular basis. As previously noted, certificate holder had already been monitoring two of the seven landslides that it identified as posing a potential risk to RFA13 components (LS-4 and LS-5). NWN's consultant identified three new landslides (LS-1, LS-2, and LS-6) that present a low risk to the proposed Newton to Stegosaur Pipeline, proposed Newton Well Pad, or proposed powerline.[31] One landslide that was identified during the study prior to RFA13, LS-7 near the Miller Station Storage Area, was mitigated. This landslide presents a low risk to the Miller Station Storage Area. Certificate holder has committed to evaluating any newly reported surface indications of landslide movement or obtain a consultant to evaluate the reported movement further.

DOGAMI recommended landslide monitoring over the life of the facility, which is an existing site certificate condition (Condition VII.C.6.a.4).

III.C.2. Conclusions of Law

Based on the foregoing analysis, and subject to compliance with the proposed and existing conditions described above, the Department recommends that Council find the certificate holder has adequately characterized potential seismic and geologic hazards at the site and can design, engineer and construct the facility, with the proposed changes, to avoid dangers to human safety and the environment presented by those hazards.

III.D. SOIL PROTECTION: OAR 345-022-0022

> *To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in a significant adverse impact to soils including, but not limited to, erosion and chemical factors such as salt deposition from cooling towers, land application of liquid effluent, and chemical spills.*[32]

III.D.1. Findings of Fact

[31] Certificate holder's consultant categorizes a landslide as "low risk" when the facility component (e.g. pipeline or well pad) is outside the landslide expansion hazard zone of a potentially active landslide/dormant-young landslide; or the component (e.g., pipeline) crosses a landslide that is inactive or moves at a very slow and predictable rate.
[32] OAR 345-022-0022, effective May 15, 2007.

The analysis area for the Soil Protection standard is the area within and surrounding the RFA13 site boundary.

General Land Uses within RFA13 Analysis Area

Land uses within the RFA13 analysis area north of the Nehalem River Valley include managed timber lands, rock quarry development to obtain gravel for haul roads, forested wildlife habitat and natural gas production. Timber harvesting has required construction of a network of skid roads and gravel haul roads for operation and maintenance activities. Gravel roads have also been constructed for the operation of the existing natural gas energy facilities in the area, for injection/withdrawal wells and pipelines.

Land uses within the Nehalem River Valley, which is traversed by the proposed powerline alignment, are primarily rural residential development and agricultural fields. In the RFA13 vicinity, a gravel road, named Mainline Road, traverses the Nehalem River Valley between Highway 202 in the south to mountainous terrain in the north. Land uses directly adjacent to Mainline Road within the valley are forested land and grass pastureland.

The proposed Newton, Stegosaur and Medicine well pads, and Miller Station Storage Area are situated on managed timberland that is either forested with mature conifer trees or has been relatively recently clear cut. The NMCS is located on a relatively flat mid-slope bench within managed timberland that has been previously developed as a compressor station site. The compressor replacement area at Miller Station is located on a relatively flat gravel surface within the existing Miller Station compressor station site which is also situated on managed timber land.

Soils within RFA13 Analysis Area

Shallow subsurface soil conditions in the analysis area were identified using the 2023 Natural Resource Conservation Service (NRCS) website[33] soil maps and the Soil Conservation Service Soil Survey of Columbia County[34]. Eleven soil types and characteristics were identified within the RFA13 analysis area with the results summarized in Table 5 and shown in Figures 8-10 below. The certificate holder contracted with qualified consultants at GeoEngineers, Inc. to prepare the updated soils report and impacts assessment with recommended soil protection measures in the preliminary Erosion and Sediment Control Plan (ESCP) in Exhibit I, Attachment I-1.

The Department has reviewed the sources used and based upon the information submitted in RFA13 and Exhibit I, recommends that Council find that the certificate holder has relied upon updated and current sources and qualified consultants to identify and characterize soils within the RFA13 analysis area.

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[33] 2023. U.S. Department of Agriculture Web Soil Survey, Available at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

[34] Smythe, R.T. Soil survey of Columbia County, Oregon: U.S.D.A., Soil Conservation Service, 1986.

Table 5: Soils in RFA13 Analysis Area

Soil Unit (label)	Setting	Approximate Thickness	Permeability	Runoff	Hazard for Erosion
Alstony Gravelly Loam (3E)	Moderate to steep slopes at higher elevations near ridge tops	2 feet	Moderate	Very Rapid	High
Anunda Silt Loam (5D)	Gentle ridge top	4 feet	Moderately high to high	Medium	High
Braun- Scaponia Silt Loam,5-30 percent slopes (7D)	Gentle to steep, active and stable, convex slopes	2.5 feet	Moderate	Medium to rapid	High
Braun- Scaponia Silt Loam,60-90 percent slopes (9F)	Steep stream channel banks	3.5 feet	Moderately high to high	Medium	High
Eilertsen Silt Loam (20)	Stream terraces	4 feet	Moderately high to high	Medium	High
Hapludalfs-Udifluvents Complex (24)	Gentle, concave slopes and side slopes	5 feet	Moderate	Medium to rapid	High
Murnen Silt Loam (36D)	Gentle to moderate, ridge tops and side slopes	4 feet	Moderate to high	Medium to rapid	Moderate to high
Natal Silty Clay loam (37)	Stream terraces	4 feet	Moderately low to high	Medium to rapid	High
Scaponia- Braun Silt Loam (50E)	Active north and south convex slopes	3 to 5 feet	Moderate	Very rapid	High

Table 5: Soils in RFA13 Analysis Area

Soil Unit (label)	Setting	Approximate Thickness	Permeability	Runoff	Hazard for Erosion
Tolke Silt Loam (56D)	Broad stable ridge tops and on gentle to moderate side slopes	5 feet	Moderate	Medium to rapid	Moderate to high
Treharne Silt (58)	Broad terraces above river	3 to 5 feet	Moderate	Medium to rapid	High
Eilertsen Silt Loam (20)	Stream terraces	5 feet	Moderate	Slow	Slight

Figure 8: Soil Types in RFA13 Analysis Area (1 of 3) – NMCS Area

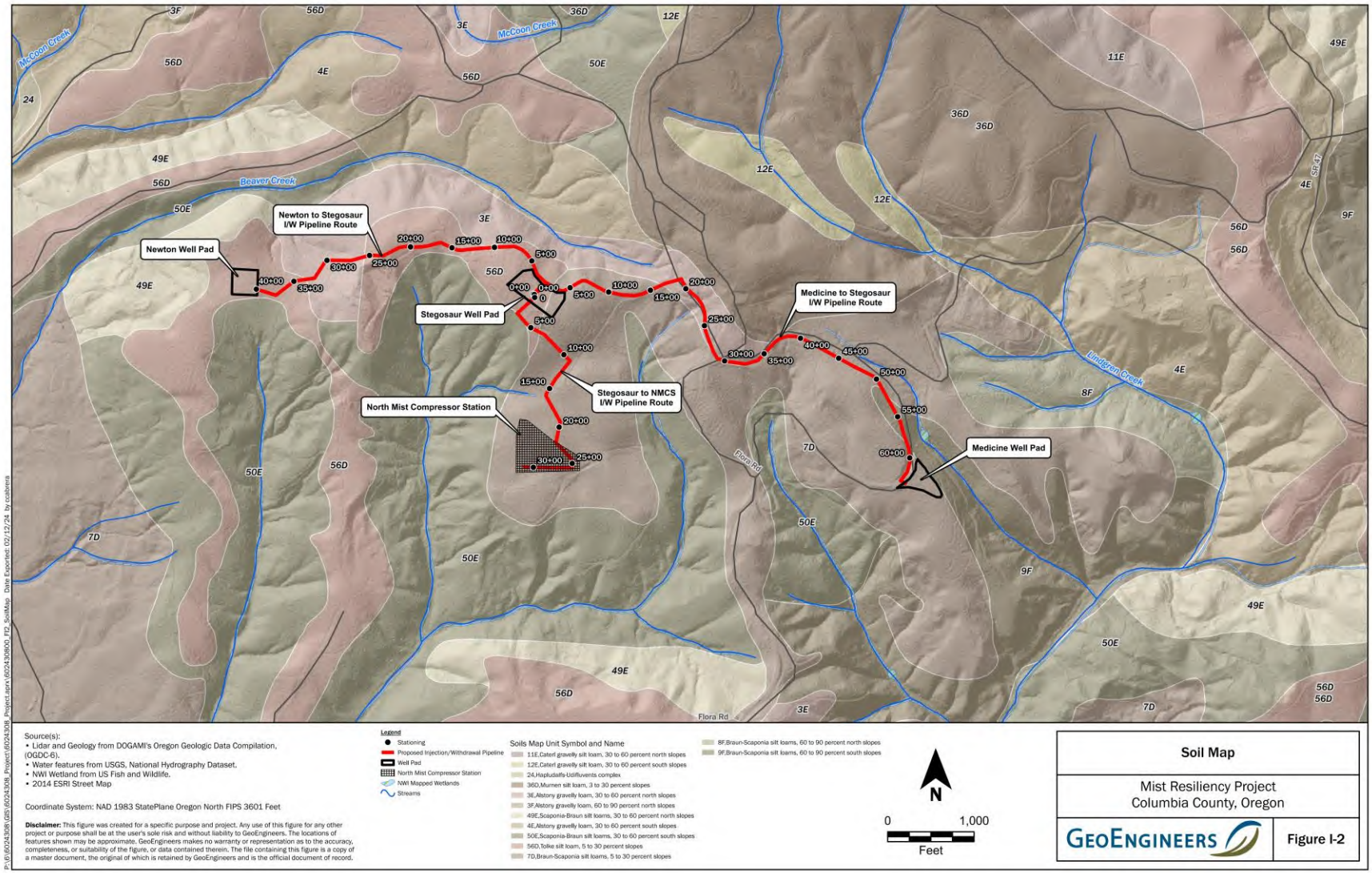


Figure 9: Soil Types in RFA13 Analysis Area (2 of 3) – Miller Station Area

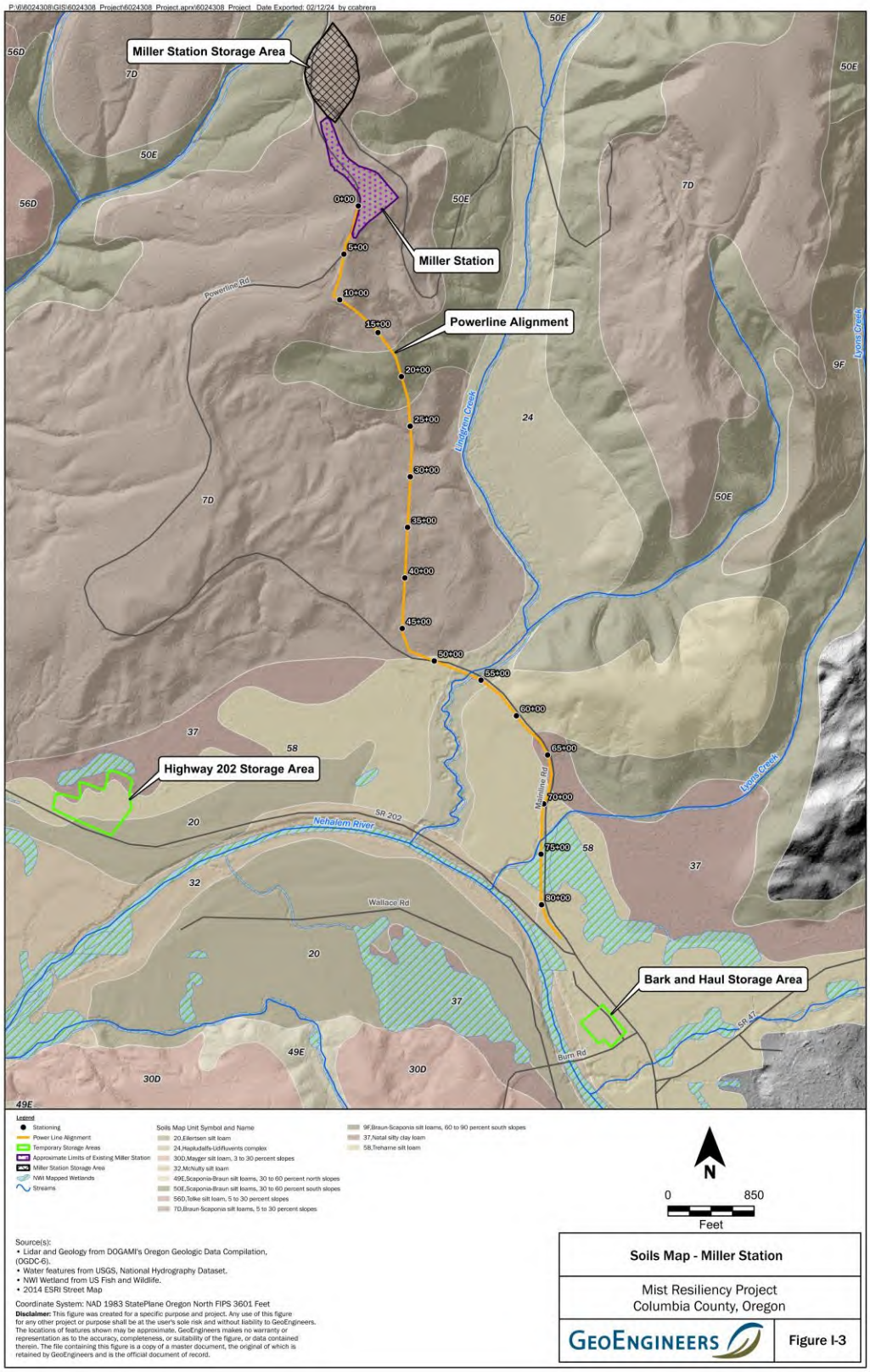
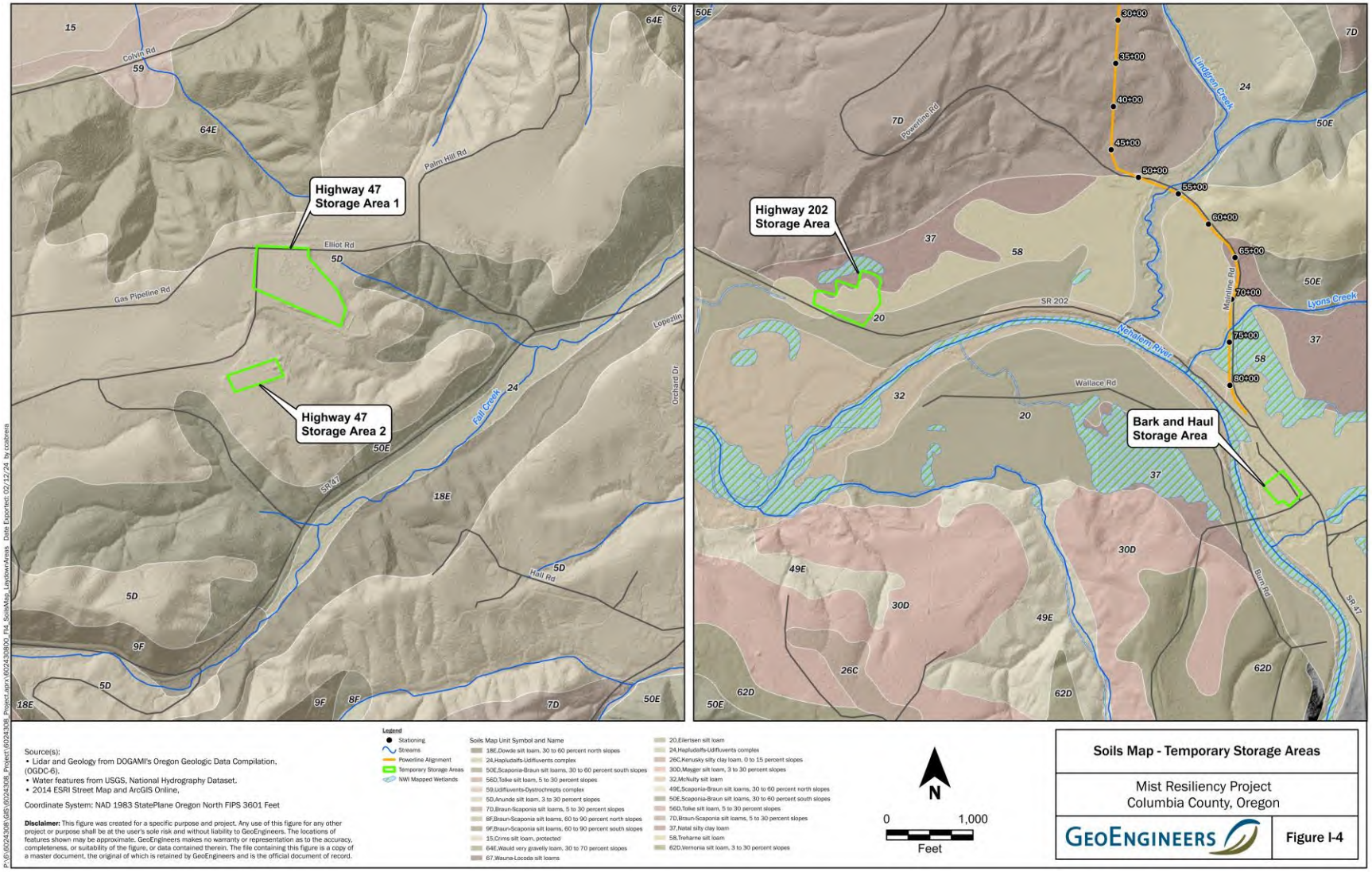


Figure 10: Soil Types in RFA13 Analysis Area (3 of 3) – Laydown Yards and Storage Areas



Potential Impacts to Soils

Construction activities are estimated to result in 65.1 acres of temporary impacts and 27.7 acres of permanent impacts. Construction will include trenching, excavating, horizontal directional drilling (HDD), vegetation removal, grading and levelling work and the use of heavy equipment, laydown areas, and access roads.

These activities have the potential to result in an adverse impact on soil. Soil loss by wind (dust) and erosion (tracking and runoff) have the potential to occur during construction activities. As presented in Table 5, the runoff potential and water erosion hazard for the identified soils ranges between slight and high depending on the location. The NRCS reports that the site vicinity receives 60-80 inches of rainfall per year. The erosion potential and available precipitation, therefore, make site soils sensitive to water erosion during much of the year particularly where slopes are steep.

During operations, routine operations and maintenance activities, access road maintenance, and vegetation management have a minor potential to impact soils.

Soil Protection Measures

<u>Construction</u>

Most construction-related impacts to soils will be temporary in nature because the impacts will be minimized through implementation of best management practices (BMPs) and restored upon completion of construction activities. Additional BMPs are included in the facility's Restoration of Temporary Impacts Plan to address and minimize the likely impacts from trenching and use of HDD to install underground transmission lines.

To minimize potential impacts on soils during construction, the certificate holder will adhere to the requirements of a National Pollutant Discharge Elimination System Construction Stormwater General Permit 1200-C (NPDES 1200-C) and accompanying Erosion and Sediment Control Plan (ESCP). This permit is issued by the Oregon Department of Environmental Quality (DEQ), under federal delegation by the U.S. Environmental Protection Agency for implementation of the Clean Water Act. Under separate legal authority, Council can continue to rely upon the implementation and adherence to the requirements of a NPDES 1200-C/ESCP to ensure that construction-related impacts to soil from wind and water erosion are minimized, in compliance with the Soil Protection standard.

A NPDES 1200-C permit with ESCP with site-specific BMPs is required to be approved and obtained prior to RFA13 construction and implemented and adhered to during construction. With appropriate BMPs, soil erosion can be prevented and minimized.

The soil disturbed during construction will be retained and protected during construction using current and approved erosion control BMPs. An updated RFA13-specific ESCP was completed to address potential erosion concerns during construction and post construction site stabilization (See RFA13 Exhibit I, Attachment I-1). Erosion control measures to be employed during construction generally include but not necessarily be limited to the following:

- Maintaining vegetative borders between components and work areas
- Installing silt fence and work zone fencing
- Creating and maintaining secure temporary stockpiles of soils
- Grading as needed
- Seeding and mulching of exposed areas during construction
- Installation of BMPs until revegetation is complete
- Use of erosion control measures, fabric straw wattles, silt fencing etc.
- Use of mats to protect any wetland areas, as approved by Department of State Lands permit requirements

Under the NPDES 1200-C permit, an ESCP can be revised throughout construction to address numerous changes.[35] Because the NPDES 1200-C permit is a permit regulated by DEQ, but the certificate holder relies in part on the BMPs under the NPDES 1200-C ESCP to minimize erosion impacts under the Council's standard, the Department recommends Council include language in the condition that provides the Department the authority to require that changes be implemented in an ESCP, as presented below:

> **Recommended Soil Protection Condition 1 [PRE]:** Prior to construction of a phase or component of the Mist Resiliency Project, as applicable, the certificate holder shall obtain a NPDES 1200-C Permit from DEQ. A copy of the approved permit and attached Erosion and Sediment Control Plan (ESCP) must be submitted to the Department.
> [PRE-SP-01; Final Order on AMD13]
>
> **Recommended Soil Protection Condition 2 [CON]:** During construction of a phase or component of the Mist Resiliency Project, the certificate holder shall conduct all construction work in compliance with a final Erosion and Sediment Control Plan (ESCP). The ESCP shall be revised if determined necessary by the certificate holder, certificate holder's contractor(s) or the Department. Any Department-required ESCP revisions shall be implemented within 14-days, unless otherwise agreed to by the Department based on a good faith effort to address erosion issues.
> [CON-SP-01; Final Order on AMD13]

In addition to the standard erosion control measures and BMPs, the certificate holder prepared a site-specific plan for restoration that includes specific steps for mitigating and minimizing any

[35] DEQ Construction Stormwater Application and Forms Manual. Accessed June 11, 2023: wqp1200cInfo.pdf (oregon.gov), pg. 17-18. ESCP revisions under the 1200-C permit can be made for: emergency situations; registrant change of address; change in size of project; change in size or location of disturbed areas; changes to best management practices; changes in erosion and sediment control inspector; and changes in DEQ or agent requests.

potential impacts from the HDD proposed to cross underneath Lindgren Creek. The draft HDD Inadvertent Return Response Plan (Attachment C of this order) details the steps to be implemented in the event of an inadvertent release during the HDD that could impact adjacent waters.

Recommended Soil Protection Condition 3 [PRE]: Prior to HDD for the Mist Resiliency Project, the certificate holder shall:

a. Submit the HDD plan (scope and detailed maps) to ODFW and the Department for final review and comment. Comments shall be addressed in a final HDD Inadvertent Return Response Plan, substantially as provided in Final Order on Amendment 13 Attachment C.
b. Submit a final HDD Inadvertent Return Response Plan, based on the review of (a), for review and approval by the Department, in consultation with ODFW.

[PRE-SP-02; Final Order on AMD13]

The draft Restoration of Temporary Impacts Plan includes the measure to be taken to restore vegetation and habitat after construction is completed (See Attachment P-1 of this order) and imposed under recommended Fish and Wildlife Conditions 1 and 2.

Recommended Soil Protection Condition 4 [CON]: During HDD for the Mist Resiliency Project, the certificate holder shall:

a. Implement and adhere to the requirements of the final HDD Inadvertent Return Response Plan.
b. Employ a monitor during HDD to watch for surface fluid release at the entry and exit points of the HDD drill and the area within 150 feet of the entry/exit locations;
c. Add the Oregon Department of Energy to the list of agencies that will be contacted by phone within 24 hours of an inadvertent return that impacts a wetland or perennial stream;
d. Contact the department within 48 hours if there is an inadvertent return that does not impact wetlands or waterways but does require issuance of a containment installation order.

[CON-SP-02; Final Order on AMD13]

Operations

Operation of the facility, with proposed RFA13 changes, will not result in new or different impacts on soils not previously addressed by Council. Previously imposed Condition VII.C.6.b(5) requires that the certificate holder adhere to the requirements of a Spil Prevention and Management Plan. The requirements of this condition will continue to apply to the facility, with proposed changes.

III.D.2. Conclusions of Law

Based on the foregoing analysis, and subject to compliance with the proposed and existing site certificate conditions described above, the Department recommends Council find that the facility, with proposed RFA13 changes, is not likely to result in a significant adverse impact on soils.

III.E. LAND USE: OAR 345-022-0030

(1) To issue a site certificate, the Council must find that the proposed facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission.

(2) The Council shall find that a proposed facility complies with section (1) if:

(a) The applicant elects to obtain local land use approvals under ORS 469.504(1)(a) and the Council finds that the facility has received local land use approval under the acknowledged comprehensive plan and land use regulations of the affected local government; or

(b) The applicant elects to obtain a Council determination under ORS 469.504(1)(b) and the Council determines that:

(A) The proposed facility complies with applicable substantive criteria as described in section (3) and the facility complies with any Land Conservation and Development Commission administrative rules and goals and any land use statutes directly applicable to the facility under ORS 197.646(3);

(B) For a proposed facility that does not comply with one or more of the applicable substantive criteria as described in section (3), the facility otherwise complies with the statewide planning goals or an exception to any applicable statewide planning goal is justified under section (4); or

(C) For a proposed facility that the Council decides, under sections (3) or (6), to evaluate against the statewide planning goals, the proposed facility complies with the applicable statewide planning goals or that an exception to any applicable statewide planning goal is justified under section (4).

(3) As used in this rule, the "applicable substantive criteria" are criteria from the affected local government's acknowledged comprehensive plan and land use ordinances that are required by the statewide planning goals and that are in effect on the date the applicant submits the application. If the special advisory group recommends applicable substantive criteria, as described under OAR 345-021-0050, the Council shall apply them. If the special advisory group does not recommend applicable substantive criteria, the Council shall decide either to make its own determination of the applicable substantive

criteria and apply them or to evaluate the proposed facility against the statewide planning goals.

(4) The Council may find goal compliance for a proposed facility that does not otherwise comply with one or more statewide planning goals by taking an exception to the applicable goal. Notwithstanding the requirements of ORS 197.732, the statewide planning goal pertaining to the exception process or any rules of the Land Conservation and Development Commission pertaining to the exception process, the Council may take an exception to a goal if the Council finds:

(a) The land subject to the exception is physically developed to the extent that the land is no longer available for uses allowed by the applicable goal;

(b) The land subject to the exception is irrevocably committed as described by the rules of the Land Conservation and Development Commission to uses not allowed by the applicable goal because existing adjacent uses and other relevant factors make uses allowed by the applicable goal impracticable; or

(c) The following standards are met:

(A) Reasons justify why the state policy embodied in the applicable goal should not apply;

(B) The significant environmental, economic, social and energy consequences anticipated as a result of the proposed facility have been identified and adverse impacts will be mitigated in accordance with rules of the Council applicable to the siting of the proposed facility; and

(C) The proposed facility is compatible with other adjacent uses or will be made compatible through measures designed to reduce adverse impacts.

(5) If the Council finds that applicable substantive local criteria and applicable statutes and state administrative rules would impose conflicting requirements, the Council shall resolve the conflict consistent with the public interest. In resolving the conflict, the Council cannot waive any applicable state statute.

(6) If the special advisory group recommends applicable substantive criteria for an energy facility described in ORS 469.300(11)(a)(C) to (E) or for a related or supporting facility that does not pass through more than one local government jurisdiction or more than three zones in any one jurisdiction, the Council shall apply the criteria recommended by the special advisory group. If the special advisory group recommends applicable substantive criteria for an energy facility described in ORS 469.300(11)(a)(C) to (E) or a related or

supporting facility that passes through more than one jurisdiction or more than three zones in any one jurisdiction, the Council shall review the recommended criteria and decide whether to evaluate the proposed facility against the applicable substantive criteria recommended by the special advisory group, against the statewide planning goals or against a combination of the applicable substantive criteria and statewide planning goals. In making the decision, the Council shall consult with the special advisory group, and shall consider:

(a) The number of jurisdictions and zones in question;

(b) The degree to which the applicable substantive criteria reflect local government consideration of energy facilities in the planning process; and

(c) The level of consistence of the applicable substantive criteria from the various zones and jurisdictions.[36]

The Land Use Standard requires the Council to find that a proposed facility, or proposed facility changes, complies with the statewide planning goals adopted by the Land Conservation and Development Commission (LCDC).

The certificate holder may elect to demonstrate compliance with the land use standard / statewide planning goals by either obtaining land use approval from the affected local government, or by obtaining a determination of land use compliance from the Council. The certificate holder elects to seek a Council determination of compliance under ORS 469.504(1)(b).[37] However, consistent with previous amendments, the certificate holder must obtain local land use approval from Columbia County for the injection/withdrawal (I/W) well pads, which are not within EFSC jurisdiction.[38] Pursuant to that statute, a proposed facility or proposed facility changes shall be found in compliance with the statewide planning goals if Council determines:

ORS 469.504(1)(b)(A) The facility complies with applicable substantive criteria from the affected local government's acknowledged comprehensive plan and land use regulations that are required by the statewide planning goals and in effect on the date the application is submitted, and with any Land Conservation and Development Commission administrative rules and goals and any land use statutes that apply directly to the facility under ORS 197.646;

[36] OAR 345-022-0030, effective September 3, 2003, as amended by minor correction filed May 28, 2019.

[37] MSTAMD13Doc60 RFA13 Exhibit K Land Use 2024-08-09, Section 1.

[38] MSTAMD13Doc55 RFA13 Exhibits A-F Project Description 2024-08-09, Section 5.4, Table 6. The injection/withdrawal wells necessary to develop Crater, Medicine, Newton and Stegosaur reservoirs also require gas well drill permits from DOGAMI, which must be obtained prior to construction.

ORS 469.504(1)(b)(B) For an energy facility or a related or supporting facility that must be evaluated against the applicable substantive criteria pursuant to subsection (5) of this section, that the proposed facility does not comply with one or more of the applicable substantive criteria but does otherwise comply with the applicable statewide planning goals, or that an exception to any applicable statewide planning goal is justified under subsection (2) of this section; or

ORS 469.504(1)(b)(C) For a facility that the council elects to evaluate against the statewide planning goals pursuant to subsection (5) of this section, that the proposed facility complies with all applicable statewide planning goals or that an exception to any applicable statewide planning goal is justified under subsection (2) of this section.

III.E.1. <u>Findings of Fact</u>

The analysis area for the evaluation of compliance with the Land Use standard is the area within and extending ½-mile from the site boundary, or 5,529 acres within Columbia County. As presented in Figure 11, zones within the analysis area include: Primary Forest (PF-80), Primary Agriculture (PA-80) and Resource Industrial – Planned Development (RIPD).

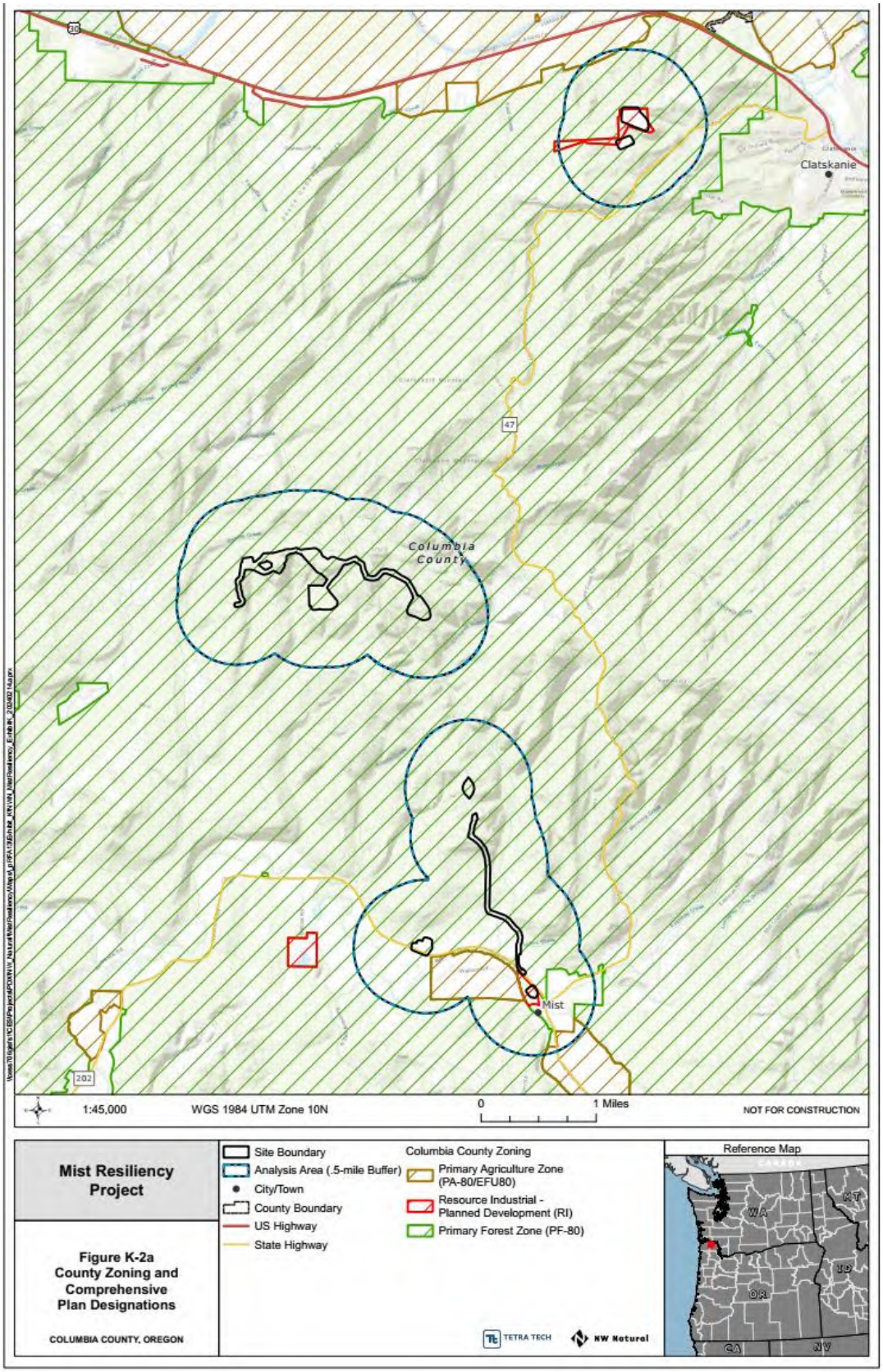
The Mist Resiliency Project would be located within PF-80 and RIPD zones, as presented below based on applicable land use category within the zone:

- Exploring, mining and processing of oil, gas or other subsurface resources; PF-80 zone
    - Develop existing Newton, Medicine, Stegosaur and Crater underground storage reservoirs
    - Miller Station: upgrade and replace two natural-gas fired turbines
    - North Mist Compressor Station (NMCS): Expand fenceline by 4,000 square feet or 0.09 acres
    - NMCS: Install three natural-gas fired compressors
    - NMCS: construct and operate a new O&M building, potable water tank and septic system

- New electrical transmission lines with right of way widths of up to 100 feet; PF-80 zone
    - Install up to 2.6 miles of underground, natural gas transmission pipelines within 50 foot right of way, extending from the Newton, Stegosaur, and Crater underground storage reservoirs to NMCS
    - 3.1 miles of underground powerline within 100 foot right of way

- Production, processing, assembling, packaging, or treatment of materials; research and development laboratories; and storage and distribution of services and facilities..; RIPD zone
    - Temporary construction laydown yards

Figure 11: Land Use Analysis Area – Columbia County Zones



Local Applicable Substantive Criteria

Pursuant to OAR 345-027-0375(1) and (3) and OAR 345-022-0030(3), in evaluating amendment requests, Council must apply the applicable substantive use criteria. Applicable substantive criteria are the requirements from the affected local government's acknowledged comprehensive plan and land use ordinances that are required by the statewide planning goals and in effect on the date the pRFA is filed. The preliminary RFA13 was filed on March 15, 2024. Columbia County is the affected local government.[39] The applicable substantive criteria, analyzed below, include provisions from Columbia County's Zoning Ordinance (CCZO)[40] and the Columbia County Comprehensive Plan (CCCP).[41]

Council appointed the Columbia County Board of Commissioners as the Special Advisory Group (SAG) for the original application for site certificate filed in 1981; that appointment remains in effect for subsequent amendments that affect components located in Columbia County.[42] The Department provided notice of this RFA13 to the Columbia County SAG on March 28 and August 15, 2024.

The applicable substantive criteria for the Mist Resiliency Project are summarized in Table 6 below.

Table 6: Columbia County Zoning Ordinance - Applicable Substantive Criteria

Article III – Resource Districts	
Section 500	Primary Forest Zone, PF-80
Section 505	Conditional Uses
Section 507	Siting of Dwellings and Structures
Section 508	General Review Standards
Section 509	Standards for Development
Article IV – Rural Development Districts	
Section 680	Resource Industrial – Planned Development
Section 683	Uses Permitted Under Prescribed Conditions
Section 685	Standards
Article VI – Special Districts, Overlay Districts and Special Provisions	

[39] Pursuant to ORS 469.401(3), after issuance of the amended site certificate, Columbia County shall "upon submission by the applicant of the proper applications and the payment of proper fees, but without hearings or other proceedings" promptly issue" the related permits and approvals, subject only to the conditions set forth in the site certificate. Each state or local government agency that issues a permit, license or certificate continues to exercise enforcement authority over the permit, license or certificate.

[40] Integrated through March 2022 https://www.columbiacountyor.gov/media/Land_Development/planning%20division%20files/2022-01%20Zoning%20Ordinance.pdf

[41] Integrated through October 12, 2023 https://www.columbiacountyor.gov/media/Land_Development/planning%20division%20files/COMP%20PLAN%202023.pdf

[42] Order Appointing Columbia County Commissioners as Special Advisory Groups, March 13, 1981.

Table 6: Columbia County Zoning Ordinance - Applicable Substantive Criteria

Section 1100	Flood Hazard Overlay
Section 1170	Riparian Corridors, Wetlands, Water Quality, and Fish and Wildlife Habitat Protection Overlay Zone
Section 1190	Big Game Habitat Overlay
Article VII – Discretionary Permits	
Section 1503	Conditional Uses
Section 1550	Site Design Review

Following is an evaluation of compliance with the applicable substantive criteria.

<u>CCZO Section 500 Primary Forest Zone (PF-80)</u>

Section 505: Conditional Uses. The following conditional uses may be allowed subject to the general review standards and process in Sections 1503 and 1603 of the Zoning Ordinance. All authorized uses and permanent structures shall also meet the applicable standards listed in Sections 506, 507, and 508 of the Zoning Ordinance and all other local, state, and federal laws pertaining to these uses.

*****

505.2 Exploring, mining and processing of oil, gas, or other subsurface resources, as defined in ORS Chapter 520 and the mining and processing of mineral and aggregate resources as defined in ORS Chapter 517.

*****

505.7 New electrical transmission lines with right-of-way width of up to 100 feet as specified in ORS 772.210 and new distribution lines (e.g., electrical, gas, oil, geothermal) with right-of-way 50 feet or less in width.

The components associated with the Mist Resiliency Project would predominately be located within PF-80 zoned land. Components include:

- Developing existing Newton, Medicine, Stegosaur and Crater underground storage reservoirs
- Upgrading and replacement of two natural-gas fired turbines at Miller Station
- Installation of three natural-gas fired compressors at NMCS
- Expansion of the NMCS site fenceline
- Construction and operation of a new O&M building, potable water tank and septic system
- Construction of gas transmission pipelines within 50 foot right of way, extending from the Newton, Stegosaur, and Crater underground storage reservoirs to the North Mist Compressor Station (NMCS)
- Construction of 3.1 miles of underground powerline within 100 foot right of way

Consistent with OAR 660-006-0025(4), which implements Statewide Planning Goal 4, these improvements relate to the processing of gas resources and therefore are allowed conditional uses under CCZO Section 505.2, subject to applicable standards in CCZO Sections 507, 508 and 1503. The proposed underground gas pipelines to the NMCS and power supply line would be within a right-of-way of 50 feet or less and 100 feet or less, respectively, and are therefore also allowable as a conditional use in the PF-80 zone under CCZO Section 505.7, subject to applicable standards in CCZO Sections 507, 508 and 1503.

<u>Section 507 Siting of Dwellings and Structures</u>

> *507.1 All new dwellings and structures are subject to the siting standards in this section. Relevant physical and locational factors including, but not limited to, topography, prevailing winds, proximity to existing roads, access, surrounding land use and source of domestic water shall be used to identify a site which:*
>
> > *A. Has the least impact on nearby or adjacent lands zoned for forest or agricultural use;*

The proposed RFA13 changes (Mist Resiliency Project) include over 20 above-ground structures within the PF-80 zone, including a warehouse building, diesel and gasoline storage tanks, compressor building and an operations building.[43] As noted above, approximately 4,000 square feet would be added to the NMCS fence line boundary. The proposed structures would be constructed within the expanded fence line of the existing NMCS site. The proposed new structures within the expanded fence line will have a permanent impact on timber production. The NMCS site will be accessed by existing logging roads. While some roads may be widened or shoulders added to provide access for construction vehicles, those areas will be restored upon completion of construction.[44] Additionally, certificate holder will utilize 7.5 acres adjacent to Miller Station for a permanent storage yard. This laydown area will also be accessed by existing roads. Overall, up to 27.7 acres of forest land will be permanently impacted by the proposed changes in the PF-80 zone.

While over 27 acres of forest land will be permanently impacted, the Mist Resiliency Project would add only 4,000 square feet, less than one acre, to the existing NMCS boundary and no new roads would be constructed.

Based on these facts, the Department recommends Council find the new structures proposed in RFA13 to comply with CCZO Section 507.1(A).

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[43] Certificate holder lists all aboveground structures proposed in the PF-80 Zone under RFA 13 Ex. K, pp. 8-9. The operations and maintenance building is not a dwelling (it would only be used for overnight stay in case of inclement weather or emergencies), therefore provisions related to dwellings are not applicable.

[44] MSTAMD13Doc60 RFA13 Exhibit K Land Use 2024-08-09, pp. 10-11.

B. Ensures that forest operations and accepted farming practices on the tract will not be curtailed or impeded by locating dwellings and structures as near to each other and to existing developed areas as possible considering topography, water features, required setbacks and firebreaks;

The proposed RFA13 changes include siting new structures adjacent to existing facility infrastructure, through expansion of the existing NMCS fenceline. The NMCS fenceline will be expanded by 4,000 square feet or 0.09 acres to allow for the siting of numerous additional structures.[45] RFA13 Figure 3 provides an "Equipment Location Key Plan" representing the siting of the new equipment, near the existing NMCS equipment. Given these facts, the Department recommends Council find the structures proposed in RFA13 to satisfy this criterion.

C. Minimizes the amount of forest lands used for building sites, road access and service corridors;

The proposed RFA13 changes do not include new road access. The proposed 2.6 miles of underground, natural gas pipelines will be designed within an 80-foot temporary impact corridor, reduced to a 40-foot permanent easement following construction. Following construction, the impacts corridor and permanent easement area would be reseed in accordance with the requirements with recommended Fish and Wildlife Habitat Conditions 1 and 2, as described in Section III.H. Fish and Wildlife Habitat of this order.

To the extent there are new structures, these structures will minimize impacts to forest lands by being sited next to existing infrastructure at the NMCS. RFA13 proposes to expand the NMCS fence line by approximately 4,000 square feet or 0.09 acres, which is a relatively limited amount of impacts to forest lands. Given these facts, the Department recommends Council find that the proposed RFA13 changes would minimize the amount of forest land used for building sites and road access, in compliance with this criterion.

D. Is consistent with the provisions of Section 510 related to Fire Siting Standards and minimizes the risk associated with wildfire;

The provisions of CCZO Section 510 related to Fire Siting Standards apply to new dwellings located in the PF-80 zoned land uses. RFA13 does not include any new dwellings. Therefore, this criterion does not apply.

E. Is consistent with other requirements contained in the Comprehensive Plan or implementing ordinances, including, but not limited to, regulations which apply to flood, steep slopes, and landslide hazard areas, development within the Willamette River Greenway, development in forested areas or development in

[45] CCZO Section 100(114) defines structures as "a building or other major improvement that is built, constructed or installed, not including minor improvements, such as fences, utility poles, flagpoles or irrigation system components, that are not customarily regulated through zoning ordinances.

significant resource and natural areas, such as wetland riparian and slide-prone areas.

Compliance with each applicable substantive criterion from the County's zoning ordinance and the CCCP are addressed throughout this Order.

507.2 The applicant shall provide evidence consistent with OAR 660-006-0029(3) that domestic water supply is from a source authorized in accordance with the Department of Water Resources' administrative rules for the appropriation of ground water or surface water in OAR Chapter 690 and not from a Class II stream as defined in the Forest Practices Rule in OAR Chapter 629. If the water supply is unavailable from public sources or sources located entirely on the subject property, then the applicant shall provide evidence that a legal easement has been obtained permitting domestic water lines to cross the properties of affected owners.

The proposed RFA13 changes will result in approximately 72,000 gallons of potable water use annually. Water would be trucked to the site from a local municipal water source or an existing well at Miller Station. To ensure that the domestic water supply is obtained from a source authorized to provide water for the intended use and in the intended quantity, the Department recommends Council impose the following condition:

Recommended Land Use Condition 1 [PRO]: <u>Prior to operation of the expanded NMCS, certificate holder shall provide evidence of an authorized domestic water supply serving the NMCS domestic water need. Certificate holder shall provide one of the following:</u>

a. <u>Verification from a water purveyor that the use described in the application will be served by the purveyor under the purveyor's rights to appropriate water.</u>
b. <u>A water use permitted issued by Oregon Water Resources Department for the use described in the application; or</u>
c. <u>Verification from Oregon Water Resources Department that a water use permit is not required for the use described in the application.</u>

[PRO-LU-01; Final Order on AMD13]

Based on compliance with the above-recommended condition, the Department recommends Council find that the certificate holder will satisfy this criterion.

507.3 As a condition of approval, if road access to the dwelling is by a road owned and maintained by a private party or by the Oregon Department of Forestry or the U.S. Bureau of Land management, then the applicant shall provide proof of a long-term road access use permit or agreement. The road use permit may require the applicant to agree to accept responsibility for road maintenance.

507.4 Pursuant to OAR 660-006-0029 (5), approval of a dwelling shall be subject to the following requirements:

A. The owner of the tract shall plant a sufficient number of trees on the tract to demonstrate that the tract is reasonably expected to meet Department of Forestry stocking requirements at the time specified in the Department of Forestry administrative rules;

B. Land Development Services shall notify the Columbia County Assessor of the above condition at the time the dwelling is approved;

C. If the property is over 10 acres the owner shall submit a stocking survey report or a Forest Land Assessment and Stocking Compliance Application to the Columbia County Assessor and the Assessor shall verify that the minimum stocking requirements have been met by the time required by the Department of Forestry administrative rules;

D. Upon notification by the Assessor, the Department of Forestry shall determine whether the tract meets minimum stocking requirements of the Forest Practices Act. If the Department determines that the tract does not meet those requirements, the Department shall notify the owner and the Assessor that the land is not being managed as forest land. The Assessor shall then remove the forest land designation pursuant to ORS 321.359 and impose additional tax pursuant to ORS 321.372; and

E. A waiver of remonstrance shall be recorded with the County Clerk certifying that the owner will not remonstrate against or begin legal action or suit proceeding to cause or persuade the owner or operator of any farm and forest lands to modify the conduct of legal and accepted farm and forest operations.

The proposed RFA13 changes do not include dwellings. Therefore, CCZO Sections 507.3 and 507.4 do not apply.

507.5 Dwellings and other structures to be located on a parcel within designated Big Game Habitat areas pursuant to the provisions of Section 1190 are subject to the additional siting criteria contained in Section 1190.

All proposed structures will be within the expanded NMCS site fence line, within ODFW Big Game Habitat areas and County designated Big Game Habitat. The Department's evaluation of CCZO Section 1190 is addressed below (under the heading for CCZO Section 1190).

<u>CCZO Section 508 General Review Standards</u>

The Planning Director or hearings body shall determine that a use authorized by Sections 504 and 505 meets all of the following requirements:

508.1 The proposed use will not force significant change in, or significantly increase the cost of, accepted farming or forest practices on agriculture or forest lands;

Accepted forest practices include long-term forest management for timber and reproduction. Impacts to forest-practices from the proposed RFA13 changes include temporary loss of 65 acres and permanent loss of 27.7 acres of land zoned for forest use. Of the 27.7 acres, only the 7.52-acre laydown area adjacent to the Miller Station currently includes harvestable timber. The certificate holder affirms that it will purchase the land for the 7.52 acre laydown area to convert it to a permanent storage area. The remaining 20 acres are on land owned by existing property owners with gas storage leases; the certificate holder states that impacts to the landowner from the removal of this amount of land from forest use is consistent or commensurate with the impacts that are addressed by the terms of the lease agreement (meaning that that landowner has been compensated for the loss).

The certificate holder's representation to purchase the land identified for the 7.5 acre laydown area adjacent to Miller Station would minimize the impact to the landowners' forest practices through negotiation and purchase agreement. Therefore, the Department recommends Council impose the following condition:

Recommended Land Use Condition 2 [PRE]: <u>Prior to development and use of the 7.5-acre laydown area adjacent to Miller Station, the certificate holder shall demonstrate that it has legally purchased or otherwise secured access for permanent use of the laydown area based on terms agreed to by the underlying landowner.</u>
[PRE-LU-01; Final Order on AMD13]

The proposed 2.6 miles of underground natural-gas pipeline will result in an 80-foot wide impact corridor, reduced to a 40-foot permanent easement following construction. The certificate holder will seed and allow vegetation regrowth within the easement, except for the center 10-foot corridor, which is to remain clear of vegetation.

Based on the limited amount of permanent impacts and compliance with the above-recommended condition, the Department recommends Council find that the proposed RFA13 changes will not force a significant change in or increase the cost of accepted forest practices and would thus comply with this requirement.

508.2 The proposed use will not significantly increase fire hazard or significantly increase fire suppression costs or significantly increase risks to fire suppression personnel;

The Clatskanie Rural Fire Protection District (RFPD) has jurisdiction over the north part of the facility site and the laydown areas west of Clatskanie; the Mist-Birkenfeld RFPD has jurisdiction over the remainder of the facility site. Certificate holder contacted the Clatskanie and Mist-Birkenfeld RFPDs to solicit input regarding the potential effect that proposed changes to the proposed RFA13 changes could have on their fire protection work.

The Fire Chief for the Clatskanie RFPD indicated that the potential impact to his district would depend on the number of emergencies that occurred during construction and operation. The Fire Chief for the Mist-Birkenfeld Fire District did not anticipate that the proposed RFA13 changes would have a significant adverse impact on their ability to provide fire protection and EMS services.[46] The history of safe operation of the facility and the statements from the Fire Chiefs support Council finding the proposed use will not significantly increase fire hazard or significantly increase fire suppression costs.

As presented in Section III.N *Wildfire Prevention and Risk Mitigation*, the Department recommends Council impose Conditions 1 and 2 requiring that the certificate holder adhere to the requirements of Wildfire Mitigation Plans (WMPs), during construction and operation of the proposed RFA13 changes. These WMPs require various provisions be implemented including vegetation monitoring and maintenance (10-foot vegetation free clearance area extending from the boundary of the NMCS and Miller Station fencelines); maintain a fire watch during fire season; ensure vehicles are properly equipped with fire response equipment; and, that all onsite workers receive fire prevention and response training.

Subject to compliance with these conditions, the Department recommends Council find that the proposed RFA13 changes are not likely to significantly increase fire hazard, significantly increase fire suppression costs or significantly increase risks to fire suppression personnel and, therefore, meets this criterion.

> *508.3 A waiver of remonstrance shall be recorded with the County Clerk certifying that the owner will not remonstrate against or begin legal action or suit proceeding to cause or persuade the owner or operator of any farm or forest lands to modify the conduct of legal and accepted farm or forest operations; and*

The Department recommends Council adopt the following condition requiring that the certificate holder record a waiver of remonstrates with the Columbia County clerk for the subject tax lots and owners or operators of forest lands adjacent to or near the subject tax lots.

> **Recommended Land Use Condition 3 [PRO]:** <u>Following completion of the Mist Resiliency Project's expansion at NMCS and Miller Station, as applicable, the certificate holder shall provide evidence to the Department that it has recorded a waiver of remonstrance with the Columbia County Clerk that applies to the subject and adjacent tax lots.</u>
> [PRO-LU-02; Final Order on AMD13]

Based on compliance with the above recommended condition, the Department recommends Council find this criterion is satisfied.

[46] MSTAMD13Doc69 RFA13 Exhibit U Public Services 2024-08-09, Attachment U-2, second of two February 16, 2024 letters from Joe Kaczenski, Fire Chief Mist-Birkenfeld RFPD.

508.4 The proposed use is consistent with requirements contained in the Comprehensive Plan or implementing ordinances, including, but not limited to, regulations which apply to flood hazard areas, development within the Willamette River Greenway, development in forested areas or development in significant resource areas, such as riparian, wetlands or slide-prone areas.

Compliance with applicable CCCP provisions is addressed below and are largely implemented through the CCZO. Based on the recommended findings and subject to the land use conditions of approval, the Department recommends Council find the proposed RFA13 changes comply with applicable CCCP and CCZO provisions and, therefore, complies with this criterion.

<u>CCZO Section 509 Standards for Development</u>

.1 The minimum average lot or parcel width and minimum average lot or parcel depth shall be 100 feet for all activities except farming or forestry.

As part of RFA13, certificate holder is proposing to adjust Tax Lot 75W000004700 to transfer approximately 35 acres to Tax Lot 75W000004701. The resulting parcel size for Tax Lot 75W000004701 will be approximately 40 acres and Tax Lot 75W000004700 will be over 200 acres. Property line adjustment requires that the certificate holder provides an application, inclusive of underlying property-owner consent, and fee payment. The Department recommends Council impose the following condition to ensure that property line adjustment is completed in a manner that allows the lot or parcels utilized for the proposed RFA13 changes to comply with CCZO Section 509.1.

Recommended Land Use Condition 4 [PRE]: <u>Prior to construction of the Mist Resiliency Project, as applicable to the subject tax lot and construction areas, the certificate holder shall obtain approval from Columbia County of property line adjustments required to ensure lots or parcel depth is a minimum 100 feet for Tax Lot 75W000004700 and 75W000004701.</u>
[PRE-LU-02; Final Order on AMD13]

Both parcels will remain larger than 100 feet wide and deep after the adjustment. Based on compliance with the recommended condition, the Department recommends Council find that the certificate holder complies with this criterion.

.2 Access to parcels in this zone shall meet Fire Safety Design Standards for Roads in the County Road Standards and access standards found in Section 510 of the Zoning Ordinance.

The CCZO Section 510 standards apply to new dwellings proposed in the PF-80 zone. Certificate holder is not proposing any new dwellings as part of RFA13. Therefore, this criterion is not applicable.

.3 There shall be no height limitation for forest operation and management- related structures unless otherwise permitted in the Primary Forest Zone. The maximum building height for all non-farm, non-forest structures shall be 50 feet or 2 ½ stories, whichever is less.

The NMCS structures certificate holder proposes in the PF-80 zone will be under 50 feet tall. Therefore, this criterion would be met.

.4 The standards and requirements described in Section 1300 of the Zoning Ordinance shall apply to all signs and name plates in the Primary Forest Zone.

Certificate holder does not propose any new signs under RFA13; therefore, this criterion is not applicable.

.5 The Oregon Department of Fish & Wildlife shall be notified and provided with the opportunity to comment on any development within major and peripheral Big Game Habitat.

The Department notified and coordinated with ODFW on the review of RFA13. The proposed RFA13 changes are located within the County's designated Big Game Habitat Overlay zone. However, ODFW did not have any specific comments or concerns related to the impacts of the proposed RFA13 changes within Big Game Habitat.

.6 Setbacks:

A. There shall be a minimum setback of 50' for front, side, and rear yards for all development in the Primary Forest Zone.

B. When this Ordinance or any other ordinance requires a greater or lesser setback than is required by this subsection, the greater setback shall apply.

C. All structures are subject to any special setbacks when adjacent to arterial or collector streets designated in the County Transportation Systems Plan.

The Department recommends Council impose the following condition to ensure that the final design of facility components associated with the Mist Resiliency Project adhere to the applicable yard setback requirements.

Recommended Land Use Condition 5 [PRE]: <u>Prior to construction, the certificate holder shall provide a final facility design of the Mist Resiliency Project components and taxlot map that demonstrates that front, side and rear yards of all taxlots maintain a 50-foot front, side and rear yard setback.</u>
[PRE-LU-03; Final Order on AMD13]

Based on compliance with the recommended condition, the Department recommends Council find that the certificate holder complies with this criterion.

> *D. No structure or use shall be established in a manner likely to cause contamination of a stream, lake or other body of water. Riparian and natural hazard setbacks set forth in Sections 1170 and 1180 of the Zoning Ordinance shall apply.*

Certificate holder's Wetland Delineation Report (RFA13 Exhibit J) confirms there will be no impacts to wetlands and waterbodies. Per the Report, the placement of a buried powerline starting at Highway 202 and ending at Miller Station will temporarily impact wetlands in an existing powerline corridor, but the wetlands will be restored post-construction. The Department recommends Council impose Removal-Fill Conditions 1 through 3 which would apply to work within and near riparian areas. These conditions are to protect wetland habitat and endangered salmon in Lindgren creek during construction by requiring that impacts be flagged and avoided. Temporary impacts would be accounted for and restored in accordance with DSL's General Authorization for Temporary Impacts. Based on compliance with these recommended conditions, the Department recommends Council find that the certificate holder complies with this criterion.

> *E. When land divisions create parcels of less than 40 acres for uses listed in Subsection 511.2A., provided those uses have been approved pursuant to this Ordinance, required building setbacks for these parcels will be determined on a case-by-case basis by the Director or the hearings body.*

The proposed RFA13 changes do not include land divisions. Therefore, this criterion is not applicable.

> *F. The owner shall provide and maintain primary fuel-free fire break and secondary fire break areas on land surrounding the dwelling and primary fuel-free break areas surrounding accessory structures in the Primary Forest Zone pursuant to the provisions in Subsections 510.2 and .3.*

The proposed RFA13 changes do not include new dwellings; therefore, this criterion is not applicable.

<u>CCZO Section 680 - Resource Industrial – Planned Development</u>

> *681 Purpose: The purpose of this district is to implement the policies of the Comprehensive Plan for Rural Industrial Areas. These provisions are intended to accommodate rural and natural resource related industries which:*
>
> *.1 Are not generally labor intensive;*

.2 Are land extensive;

.3 Require a rural location in order to take advantage of adequate rail and/or vehicle and/or deep water port and/or airstrip access;

.4 Complement the character and development of the surrounding rural area;

.5 Are consistent with the rural facilities and services existing and/or planned for the area; and

.6 Will not require facility and/or service improvements at significant public expense. The uses contemplated for this district are not appropriate for location within Urban Growth Boundaries due to their relationship with the site specific resources noted in the Plan and/or due to their hazardous nature.

As stated above, the majority of proposed RFA13 changes would be in on lands zoned PF-80. However, the proposed RFA13 changes include three temporary construction laydown yards, two of which would be entirely within the Resource Industrial – Planned Development (RIPD) zone and one of which would partially be in the RIPD zone. The three laydown yards will be used to store construction materials and equipment during construction. The activities that would occur in the laydown areas will be temporary and short-term. Based on the duration and limited activities, the Department recommends Council find the proposed RFA13 changes will comply with CCZO Section 681.

<u>Section 683 Uses Permitted Under Prescribed Conditions</u>

The following uses may be permitted subject to the conditions imposed for each use:
.1 Production, processing, assembling, packaging, or treatment of materials; research and development laboratories; and storage and distribution of services and facilities subject to the following findings:

A. The requested use conforms with the goals and policies of the Comprehensive Plan - specifically those policies regarding rural industrial development and exceptions to the rural resource land goals and policies.

As discussed below, the Department recommends Council find that the proposed RFA13 changes comply with the goals and policies of the Columbia County Comprehensive Plan.

B. The potential impact upon the area resulting from the proposed use has been addressed and any adverse impact will be able to be mitigated considering the following factors:

.1 Physiological characteristics of the site (ie., topography, drainage, etc.) and the suitability of the site for the particular land use and improvements;

The temporary laydown yard sites have previously been cleared of vegetation and used as storage sites and sorting yards. The sites are all generally flat with slopes ranging from zero to twenty-five degrees. Given these past uses and the flat topography, the sites are suitable for the proposed use as laydown yards. Further, certificate holder will not alter the physiological character of the sites. Therefore, the Department recommends Council find certificate holder's proposed temporary laydown yards to comply with this criterion.

.2 Existing land uses and both private and public facilities and services in the area;

The temporary laydown yard sites have been used as storage sites and sorting yards. No private or public facilities and services are required for use of these sites as temporary laydown yards. Therefore, the Department recommends Council find the laydown yards comply with this criterion.

.3 The demonstrated need for the proposed use is best met at the requested site considering all factors of the rural industrial element of the Comprehensive Plan.

Because the three proposed laydown yards sites were previously disturbed and used for storage, hauling, or sorting, locating the temporary laydown yards at the requested areas will minimize any impact to other land within Columbia County. Therefore, the Department recommends Council find certificate holder's proposed temporary laydown yards to comply with this criterion.

.4 The property is within, and is capable of being served by, a rural fire district; or, the proponents will provide on-site fire suppression facilities capable of serving the proposed use. On-site facilities shall be approved by either the State or local Fire Marshall.

The laydown yards are within the Clatskanie Rural Fire Protection District (RFPD) and Mist-Birkenfeld Joint RFPD. The Clatskanie RFPD, which has jurisdiction for fire protection services over the northern portion of the site, expressed concerns over the adequacy of its fire suppression water supply necessary to protect the certificate holder's assets. The Clatskanie RFPD identified that upgrades to its high-volume hydraulic pump system serving Flemming Pond were needed to support the site. Because the Mist Resiliency Project is expanding operations and increasing hazards at the site, the Department recommends Council impose a condition requiring the certificate holder to enter into an agreement with the RFPD to provide pump upgrades and require that the certificate holder pays the proportionate share of RFPDs costs for those upgrades. As presented in Section III.M. Public Services, the Department recommends Council impose Public Services Condition 1 requiring the certificate holder to enter into an agreement with the RFPD to provide pump upgrades and require that the certificate holder pay the proportionate share of RFPDs costs for those upgrades.

RFA13 Exhibit U Attachment U-2 includes a letter from the Mist-Birkenfeld RFPD Fire Chief confirming that the RFPD does not anticipate that the proposed RFA13 changes would have a

significant adverse impact on their ability to provide fire protection and EMS services.[47] Given these facts, the Department recommends Council find the laydown yards comply with this criterion.

CCZO Section 685 Standards

.1 The minimum lot or parcel size for uses allowed under Section 682 shall be 38 acres.
.2 The minimum lot or parcel size, average lot or parcel width and depth, and setbacks for uses allowed under Section 683, shall be established by the Planning Commission, and will be sufficient to support the requested rural industrial use considering, at a minimum, the following factors:

A. Overall scope of the project. Should the project be proposed to be developed in phases, all phases shall be considered when establishing the minimum lot size.
B. Space required for off street parking and loading and open space, as required.
C. Setbacks necessary to adequately protect adjacent properties.

The proposed RFA13 changes do not include any new parcels or modification of existing parcels in the RIPD zone. As discussed, certificate holder proposes to use existing parcels for three temporary laydown yards, which would be reverted to their prior use once construction is complete. Therefore, these criteria do not apply.

.3 Access shall be provided to a public right-of-way of sufficient construction to support the intended use, as determined by the County Roadmaster.

As mentioned above, the temporary laydown yards will be accessed from existing public rights-of-way. These public rights-of-way are paved and can support the anticipated increase in travel during construction of the proposed RFA13 changes. Therefore, the Department recommends Council find the laydown yards within RIPD zone will comply with this criterion.

CCZO Section 1100 Flood Hazard Overlay

Section 1105 Administration

.3 Establishment of Development Permit

A. Floodplain Development Permit Required: A development permit shall be obtained before construction or development begins within any area horizontally within the special flood hazard area established in section 1104.2. The development permit shall be required for all structures, including manufactured dwellings, and for all

[47] MSTAMD13Doc69 RFA13 Exhibit U Public Services 2024-08-09, Attachment U-2, second of two February 16, 2024 letters from Joe Kaczenski, Fire Chief Mist-Birkenfeld RFPD.

other development, as defined in section 1103, including fill and other development activities.

One of the proposed laydown yards (the "Bark N Haul" laydown yard) and a 469-foot segment of the underground powerline proposed between Highway 202 and the Miller Station will intersect with the Flood Hazard Overlay.[48] The actions and activities to occur at the laydown yard and as part of the installation of the underground powerline are not considered structures or other development, as defined in CCZO Section 1103.[49] Therefore, a floodplain development permit and compliance with Section 1106 provisions is not required.

<u>CCZO Section 1170 Riparian Corridors, Wetlands, Water Quality, and Fish and Wildlife Habitat Overlay Zone, RP</u>

Per CCZO Section 1171 A., this Section is:

is intended to protect habitat for fish and other aquatic life, protect habitat for wildlife, protect water quality for human uses and for aquatic life, control erosion and limit sedimentation, prevent property damage during floods and storms, protect native plant species, and conserve the scenic and recreational values of riparian areas.

<u>CCZO Section 1172 Riparian Corridor Standards</u>

A. The inventory of Columbia County streams contained in the Oregon Department of Forestry Stream Classification Maps specifies which streams and lakes are fish-bearing. Fish-bearing lakes are identified on the map entitled, "Lakes of Columbia County." A copy of the most current Stream Classification Maps is attached to the Comprehensive Plan, Technical Appendix Part XVI, Article X(B) for reference. The map, "Lakes of Columbia County" is attached to the Comprehensive Plan, Technical Appendix Part XVI, Article X(B), and is incorporated therein. Based upon the stream and lake inventories, the following riparian corridor boundaries shall be established:

1. Lakes. Along all fish-bearing lakes, the riparian corridor boundary shall be 50-feet from the top-of-bank, except as provided in CCZO Section 1172(A)(5), below.
2. Fish-Bearing Streams, Rivers and Sloughs (Less than 1,000 cfs). Along all fish-bearing streams, rivers, and sloughs with an average annual stream flow of less than 1,000 cubic feet per second (cfs), the riparian corridor boundary shall be 50-feet from the top-of-bank, except as provided in CCZO Section 1172(A)(5), below. Average annual stream flow information shall be provided by the Oregon Water Resources Department.

[48] See MSTAMD13Doc60 RFA13 Exhibit K Land Use 2024-08-09, Figure K-2b.

[49] CCZO Section 1103 .11 defines "Development" as "any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations located within the area of special flood hazard."

3. *Fish-Bearing and Non-Fish-Bearing Streams, Rivers and Sloughs (Greater than 1,000 cfs). Along all streams, rivers, and sloughs with an average annual stream flow greater than 1,000 cubic feet per second (cfs), the riparian corridor boundary shall be 75-feet upland from the top-of-bank, except as provided in CCZO Section 1172(A)(5), below. Average annual stream flow information shall be provided by the Oregon Water Resources Department.*
4. *Other rivers, lakes, streams, and sloughs. Along all other rivers, streams, and sloughs, the riparian corridor boundary shall be 25 feet upland from the top-of-bank, except as provided in CCZO Section 1172(A)(5), below.*
5. *Wetlands. Where the riparian corridor includes all or portions of a significant wetland, as identified in the State Wetlands Inventory and Local Wetlands Inventories, the standard distance to the riparian corridor boundary shall be measured from, and include, the upland edge of the wetland. Significant wetlands are also regulated under provisions in the Wetland Overlay Zone, Columbia County Zoning Ordinance, Section 1180.*

The proposed construction of the underline power line will result in temporary impacts to wetlands. The Department recommends Council impose Removal-Fill Conditions 1 through 3 which would apply to work within and near riparian areas and require that impacts be flagged and avoided, and temporary impacts would be governed by the DSL General Authorization for Temporary Impacts. These conditions are designed to avoid and protect wetland areas and salmon in Lindgren creek. Subject to compliance with the recommended condition, the Department recommends Council find proposed RFA13 changes comply with the Riparian Corridors, Wetlands, Water Quality, and Fish and Wildlife Habitat Protection Overlay Zone standards.

<u>CCZO Section 1190 – Big Game Habitat Overlay</u>

1192 Permitted Uses: All uses permitted in the underlying zone either outright or conditionally shall be permitted in the Big Game Range Overlay provided that such use or development is consistent with the maintenance of Big Game and Columbian White-tailed Deer Habitat identified in the Comprehensive Plan.

RFA13 facility components are permitted conditionally in the PF-80 zone and RIPD zone. Discussion of how the facility is consistent with big game and white-tailed deer habitat is evaluated through review of CCZO Section 1193, 1194 and 1195 below.

1193 Development Siting Standards: All new residential development and uses located in Major and Peripheral Big Game or Columbian White-tailed Deer Habitat shall be subject to following siting standards:

A. Dwellings and structures shall be located as near each other and existing developed areas as possible considering topography, water features, required setbacks, and firebreaks.

The proposed RFA13 changes do not include dwellings. The only structures proposed will be located within an expanded fenceline of the existing NMCS; the fenceline expansion would occupy an additional 0.09 acres. Proposed new structures will be sited as close to existing structures and previously disturbed areas as possible. Based on these facts, the Department recommends Council find that the proposed RFA13 changes will comply with this criterion.

B. Dwellings and structures shall be located to avoid habitat conflicts and utilize least valuable habitat areas.

The proposed RFA13 changes do not include dwellings. The only structures proposed will be located within an expanded fenceline of the existing NMCS; the fenceline expansion would occupy an additional 0.09 acres. Expansion of an existing industrial site (the NMCS site) by only 0.09 acres demonstrate that habitat conflicts would be avoided. In addition, permanent impacts to habitat will be mitigated in accordance with the Council's Fish and Wildlife Habitat standard. As presented in Section III.H. *Fish and Wildlife Habitat*, the Department recommends Council impose Fish and Wildlife Habitat Conditions 1 and 2, requiring that the certificate holder finalize and implement, for the life of the facility, a habitat mitigation plan that secures, protects, manages and enhances a mitigation site in an amount and quality necessary to offset the acres and quality of habitat impacted. Based on these findings of fact, the Department recommends Council find that the proposed RFA13 changes will comply with this criterion.

C. Road development shall be minimized to that which is necessary to support the proposed use and the applicant shall utilize existing roads as much as possible.

The proposed RFA13 changes do not include any new access roads. Proposed improvements to existing access roads may include widening some existing roads to provide access for construction. These areas will be restored upon completion of construction. Based on these facts, the Department recommends Council find that the proposed RFA13 changes will comply with this criterion.

D. The owner/occupant of the resource parcel shall assume responsibility for protection from damage by wildlife.

Damage by wildlife at the site of the facility, with proposed RFA13 changes, is not expected. The site is secured by a perimeter fence; the proposed expansion also includes expansion of perimeter fence lines. These design features will support protecting the parcel from wildlife damage. Based on these facts, the Department recommends Council find that the proposed RFA13 changes will comply with this criterion.

E. Riparian and Wetland areas shall be protected in accordance with Sections 1170 and 1180.

Certificate holder retained professional wetland scientists to conduct a field delineation to identify the location and boundaries of wetlands, waterbodies, and associated riparian areas where the proposed RFA13 components would be located. A wetland delineation report has been prepared to document the results of the field delineation and the location and boundaries of these resources (RFA13 Exhibit J). As addressed in RFA13 Exhibit J, certificate holder has sited the RFA13 components to avoid impacts on wetlands, waterbodies, and riparian areas during construction and operation. Since certificate holder will not impact wetlands or riparian areas, the Department recommends Council find that the RFA13 components comply with the various standards in CCZO Sections 1170 and 1180.

> *1194. The County shall notify the Oregon Department of Fish and Wildlife (ODFW) of all proposed uses or development activities which require a permit and are located in Major or Peripheral Big Game Habitat. The County will consider the comments and recommendations of ODFW, if any, before making a decision concerning the requested use or activity.*

The Department notified and coordinated with ODFW on the review of RFA13. The proposed RFA13 changes are located within the County's designated Big Game Habitat Overlay zone. However, ODFW did not have any specific comments or concerns related to the impacts of the proposed RFA13 changes within Big Game Habitat.

> *1195. The County shall notify the Oregon Department of Fish and Wildlife (ODFW) and the U.S. Fish and Wildlife (USFW) of all proposed uses or development activities which require a permit and are located in Columbian White-tailed Deer Habitat. The County will consider the comments and recommendations of ODFW and USFW, if any, before making a decision concerning the requested use or activity.*

The RFA13 facility changes are not located within ODFW white-tailed deer habitat. Therefore, this criterion is not applicable

<u>CCZO Section 1503 – Conditional Uses</u>

> *.5 Granting a Permit: The Commission may grant a Conditional Use Permit after conducting a public hearing, provided the applicant provides evidence substantiating that all the requirements of this ordinance relative to the proposed use are satisfied and demonstrates the proposed use also satisfies the following criteria:*
>
> > *A. The use is listed as a Conditional Use in the zone which is currently applied to the site;*

As discussed in the above analysis of CCZO Section 505, proposed RFA13 changes will be located in the County's PF-80 zone and are conditionally allowable uses within the zone.[50]

B. The use meets the specific criteria established in the underlying zone

Based on the analysis of proposed RFA13 changes compliance with CCZO Sections 507, 508, and 509, as provided above, the Department recommends Council find the proposed uses would comply with the specific criteria in the underlying PF-80 zone.

C. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements, and natural features;

The proposed RFA13 changes would add storage capacity at the facility by utilizing and developing existing underground storage reservoirs, which are located near existing facility infrastructure or areas that have been previously used for a similar use. At the NMCS site, the existing Newton, Medicine, Stegosaur, and Crater underground storage reservoirs will be developed with aboveground well pads, injection, and withdrawal (I/W) wells, and transmission pipelines so they can be utilized.[51] At Miller Station, certificate holder will upgrade and replace the two existing end-of-life turbine-driven natural gas compressors with modern turbine-driven natural gas compressors and add a new 7.52-acre permanent laydown yard. Certificate holder chose the location of the laydown yard because of its proximity to the Miller Station and an existing road that runs around the back of the proposed site

Based on the size of the site, location of existing gas processing and distribution facilities, and the existing commercial uses within the vicinity, the Department recommends Council find the NMCS and Miller Station sites would be suitable for the proposed uses and, therefore, comply with this criterion.

D. The site and proposed development is timely, considering the adequacy of transportation systems, public facilities, and services existing or planned for the area affected by the use;

The improvements at Miller Station would not require any public services. The O&M building within the NMCS boundary will require septic and water services.

[50] Proposed RFA13 changes within PF-80 zone are evaluated as uses under 505.2 Exploring, mining and processing of oil, gas, or other subsurface resources, as defined in ORS Chapter 520 and the mining and processing of mineral and aggregate resources as defined in ORS Chapter 517; and 505.7 New electrical transmission lines with right-of-way width of up to 100 feet as specified in ORS 772.210 and new distribution lines (e.g., electrical, gas, oil, geothermal) with right-of-way 50 feet or less in width.

[51] The injection/withdrawal wells necessary to develop Crater, Medicine, Newton and Stegosaur reservoirs are not within EFSC jurisdiction; land use review of well pads must be completed by Columbia County; gas well drill permits are required from DOGAMI, which must be obtained prior to construction.

Solid waste will be collected for disposal by a licensed solid waste collector and disposed of via the county in accordance with the Columbia County Solid Waste Management Ordinance. Recycling and garbage collection services are provided by private companies that are regulated by Columbia County and cities. As presented in RFA13 Exhibit U, certificate holder proposes to use existing access roads to access the NMCS and Miller Station and reduce potential traffic volume and congestion impacts during construction by using vanpools to transport workers from a designated meeting place to the site and requesting contractors to use locally sourced and prefabricated materials. Certificate holder anticipates that, once in operation, the RFA13 improvements will result in 12 additional fulltime employees, but that would not significantly increase the existing volume-to-capacity ratios or impact existing transportation systems.

Nor are the proposed RFA13 changes expected to result in significant adverse impacts to existing fire and police services. Certificate holder anticipates a temporary peak increase in population during construction of approximately 153 residents, which they state is equivalent to 0.1 percent of the population in the four counties that are part of the analysis area and 0.3 percent of the total combined populations of the cities of Longview and Clatskanie, where workers temporarily relocating to the area would likely stay.

Construction and operation could result in adverse effects on fire protection services if on-site activities were to result in fires or other incidents requiring emergency responses. However, as discussed above, the Fire Chief for the Mist-Birkenfeld Fire District has confirmed they do not anticipate that the proposed RFA13 changes would have any significant adverse impact on their ability to provide fire protection and EMS services. The Fire Chief for the Clatskanie RFPD indicated that the potential impact to his district would depend on the number of emergencies that occurred during construction and operation. However, certificate holder has operated the Facility since 1988 without causing any fires.

As presented in Section III.N Wildfire Prevention and Risk Mitigation, the Department recommends Council impose Wildfire Prevention and Risk Mitigation Conditions 1 and 2, requiring that the certificate holder adhere to the requirements of Wildfire Mitigation Plans (WMPs), during construction and operation of the proposed RFA13 changes. These WMPs require various provisions to be implemented including vegetation monitoring and maintenance (10-foot vegetation free clearance area extending from the boundary of the NMCS and Miller Station fence lines); maintain a fire watch during fire season; ensure vehicles are properly equipped with fire response equipment; and, that all onsite workers receive fire prevention and response training.

Based on the above facts and analysis, and compliance with the recommended conditions, the Department recommends Council find that the facility, with proposed RFA13 changes, will comply with this criterion.

E. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary uses listed in the underlying district.

The surrounding area is comprised of forest use and natural gas processing facilities. As discussed above, although the proposed RFA13 changes would result in up to 27.7 acres of permanent impact to forest lands, certificate holder is not proposing to remove any trees as part of RFA13. (The land onto which the NMCS fence line will expand is currently vacant and has been harvested by the current property owners). Based on these facts, the Department recommends Council find the facility, with proposed RFA13 changes, meets this criterion.

F. The proposal satisfies the goals and policies of the Comprehensive Plan which apply to the proposed use;

Consistency with applicable CCCP goals and policies is addressed below.

G. The proposal will not create any hazardous conditions.

Potential hazards related to the proposed RFA13 changes include impacts to slope stability during work in hillside areas, landslides, seismic hazards, erosion, and fire hazards. Certificate holder's geotechnical analyses[52] support a finding that the proposed RFA13 changes will not create or exacerbate geologic hazards.

Certificate holder had identified three new landslides (LS-1, LS-2, and LS-6) that present a low risk to the proposed Newton to Stegosaur Pipeline, proposed Newton Well Pad, and proposed power line. Council previously adopted Structural Standard Condition 4, requiring that certificate holder implement a landslide hazards monitoring program, inclusive of any landslides identifies during the siting process.

Further, as discussed above, including in the evaluation of compliance with CCZO Section 507.1.E and Section 508.2, certificate holder will take several mitigation measures to address potential hazards, including implementation of an erosion and sediment control plan under a National Pollutant Discharge Elimination System 1200-C Permit (See Recommended Soil Protection Conditions 1 and 2), fire safety and protection plans and Wildfire Mitigation Plans (See Recommended Wildfire Prevention and Risk Mitigation Conditions 1 and 2).

Subject to compliance with the conditions of approval listed above, the Department recommends Council find that the facility, with the proposed RFA13 changes, will not create any hazardous conditions and therefore complies with this criterion.

<u>CCZO Section 1550 – Site Design Review</u>

The Site Design Review process shall apply to all new development, redevelopment, expansion, or improvement of all community, governmental, institutional, commercial, industrial and multifamily residential (4 or more units) uses in the County.

[52] MSTAMD13Doc57 RFA13 Exhibit H Geologic 2024-08-09.

1563 Standards for Approval:

The Planning Commission or Director shall make a finding with respect to each of the following criteria when approving, approving with conditions, or denying an application:

A. Flood Hazard Areas: See CCZO §1100, Flood Hazard Overlay Zone. All development in Flood Hazard Areas must comply with State and Federal Guidelines.

As noted above, the certificate holder proposes to install a 469-foot segment of new underground powerline between Highway 202 and the Miller Station and the 1.6-acre temporary construction laydown yard (the "Bark N Haul Laydown Yard") within the flood hazard zone but does not propose any permanent above ground structures. Excavation, trenching and installation of the new segment of powerline may create a short-term, temporary, low level risk of flooding impacts. However, once operational, because it would be located underground there would be no anticipated impact on the water elevation of the base flood or on risks from flooding.

B. Wetlands and Riparian Areas: Alteration of wetlands and riparian areas shall be in compliance with State and Federal laws.

The proposed RFA13 changes are not expected to permanently impact any wetlands or riparian areas. Certificate holder has sited the proposed components to avoid impacts to wetlands, waterbodies and riparian areas during construction and operation.[53] While the placement of the buried powerline starting at Highway 202 and ending at Miller Station will temporarily impact wetlands, those wetlands will be restored post-construction.[54]

C. Natural Areas and Features: To the greatest practical extent possible, natural areas and features of the site shall be preserved.

The CCZO Section 100 .69 defines "Natural Resource Feature" as "[a] natural feature of the land, typically not man-made, that is protected to ensure its continued proper functioning condition. Examples include but are not limited to, streams, lakes, wetlands, significant wildlife sites, bird nests, endangered species areas, steep cliffs, waterfalls, and identified natural areas."

The proposed RFA13 changes within the PF-80 zone will be located on forest land that has already been harvested. The proposed temporary laydown yards would be on already disturbed sites previously used for storing, hauling, or sorting of materials. As discussed above, the proposed RFA13 changes are not expected to permanently impact any wetlands or riparian areas, and certificate holder will restore the wetland temporarily impacted by replacement of

[53] MSTAMD13Doc59 RFA13 Exhibit J Wetlands 2024-08-09.

[54] *Id.*, p. 4.

underground powerline. For these reasons, the Department recommends Council find that the facility, with the proposed RFA13 changes, meets this criterion.

> *D. Historic and Cultural sites and structures: All historic and culturally significant sites and structures identified in the 1984 Comprehensive Plan, or identified for inclusion in the County Periodic Review, shall be protected if they still exist.*

As described in RFA13 Exhibit S, after conducting records review and field surveys, no archaeological resources or historic-period buildings or structures were identified within the analysis area. In general, there appears to be a low probability of encountering Indigenous or non-Indigenous archaeological sites throughout most of the areas where the proposed RFA13 components are proposed except for the southernmost end of the proposed work site along Highway 202 in the Nehalem River Valley and the northernmost Weyerhaeuser and Elliot Road laydown areas. Certificate holder represents that they will take all reasonable measures to avoid physical damage or ground-disturbing activity in the vicinity of the southernmost end of the proposed RFA13 changes along Highway 202 in the Nehalem River Valley and the northernmost Weyerhaeuser and Elliot Road laydown areas. As presented in Section III.K. Historic, Cultural and Archeological Resources, the Department recommends Council impose conditions requiring that the certificate holder implement and adhere to the requirements of an Inadvertent Discovery Plan, which would include ceasing any work upon discovery; notifying ODOE, SHPO and Tribal Governments; and, coordinating on any necessary mitigation depending on the severity and significance of the impact and/or resource identified.

The Department recommends Council find that, subject to these conditions, this criterion is satisfied.

> *E. Lighting: All outdoor lights shall be shielded so as to not shine directly on adjacent properties and roads.*

There would be outdoor lighting at the proposed O&M building and NMCS. Certificate holder states it will shield outdoor lighting, so it does not shine directly on adjacent properties and roads. Therefore, this criterion is met.

> *F. Energy Conservation: Buildings should be oriented to take advantage of natural energy saving elements such as the sun, landscaping and land forms.*

Although building designs are preliminary, certificate holder anticipates the proposed O&M building will be oriented in a way that takes advantage of natural energy saving elements to the extent practical. Certificate holder does not propose any other buildings. Therefore, the Department recommends Council fine this criterion will be satisfied.

> *G. Transportation Facilities: Off-site auto and pedestrian facilities may be required by the Planning Commission, Planning Director or Public Works Director*

consistent with the Columbia County Road Standards and the Columbia County Transportation Systems Plan.

During construction of the proposed RFA13 changes, certificate holder will provide parking in the Bark and Haul laydown area and the proposed storage yard just north of Miller Station.

During operations, certificate holder will monitor and remotely control NMCS operations from Miller Station, approximately 5 miles by road from the NMCS site. Parking will be available at the NMCS for use by certificate holder employees for periodic inspection and maintenance. Certificate holder does not anticipate needing additional off-site auto and pedestrian facilities to support facility operations since the number of employees working on site during operations will be low.

The goals and policies of the CCCP Part XVIII Air, Land, and Water Quality are directives to the County and would not directly apply to the RFA13 facility changes. However, as previously discussed and as described in RFA13 Exhibit J, construction of the facility components will avoid, where possible, impacts to wetlands, streams, and other waterbodies, thereby minimizing potential impacts to fish and other wildlife species, which utilize these habitats. Certificate holder will comply with all state and federal regulations regarding air and water quality by securing the requisite permits and approvals. Further, as discussed in Section V.A. Noise Control Regulations of this order and RFA13 Exhibit Y, operational noise associated with the proposed RFA13 changes will comply with applicable Oregon DEQ noise control standards. Therefore, the Department recommends Council find that the facility, with proposed RFA13 changes, are consistent with these goals and related policies.

<u>Directly Applicable State Rules and Statutes</u>

OAR 345-021-0010(1)(k)(C)

If the applicant elects to obtain a Council determination on land use:

(iii) Identify all Land Conservation and Development Commission administrative rules, statewide planning goals and land use statutes directly applicable to the facility under ORS 197.646(3) and describe how the proposed facility complies with those rules, goals, and statutes.

The CCCP includes goals and policies as directives to Columbia County; these directives are then implemented by the County through the CCZO. As stated in RFA13 Exhibit K, both the CCCP and CCZO were submitted to and acknowledged by the state Department of Land Conservation and Development (DLCD) for compliance with the statewide planning goals. Local governments periodically update their acknowledged plans to account for new administrative rules or statutes adopted in furtherance of statewide planning goals. The current versions of the CCCP and CCZO fully implement Oregon's land use statutes, statewide planning goals, and administrative rules that are potentially applicable to the RFA13 changes.

Given this system of acknowledgement and periodic review, a local government's comprehensive plan and zoning ordinance typically account for all statewide planning goals and most statutes and administrative rules governing land use (unless adopted since the last periodic review). RFA13 Exhibit K and the foregoing analysis demonstrates that the RFA13 changes, subject to certain conditions, comply with the applicable provisions from the CCCP and the CCZO. There are no other administrative rules, statewide planning goals or land use statutes identified as directly applicable to the RFA13 changes.

> *(iv) If the proposed facility might not comply with all applicable substantive criteria, identify the applicable statewide planning goals and describe how the proposed facility complies with those goals*.

For the reasons discussed in the foregoing analysis of the Land Use Standard, the Department recommends Council find that the proposed RFA13 changes comply with all applicable substantive criteria.

> *(v) If the proposed facility might not comply with all applicable substantive criteria or applicable statewide planning goals, describe why an exception to any applicable statewide planning goal is justified, providing evidence to support all findings by the Council required under ORS 469.504(2).*

For the reasons discussed in the foregoing analysis of the Land Use Standard, the Department recommends Council find that the proposed RFA13 changes comply with all applicable substantive criteria. Therefore, the RFA13 changes comply with all applicable statewide planning goals and no exception is required.

III.E.2. <u>Conclusions of Law</u>

Based on the foregoing analysis, and subject to compliance with the recommended and existing site certificate conditions described above, the Department recommends Council find that the facility, with proposed RFA13 changes, will comply with the identified applicable substantive criteria and, therefore, complies with the Council's Land Use Standard.

III.F. PROTECTED AREAS: OAR 345-022-0040

> *(1) To issue a site certificate, the Council must find:*
>
> *(a) The proposed facility will not be located within the boundaries of a protected area designated on or before the date the application for site certificate or request for amendment was determined to be complete under OAR 345-015-0190 or 345-027-0363;*

(b) The design, construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to a protected area designated on or before the date the application for site certificate or request for amendment was determined to be complete under OAR 345-015-0190 or 345-027-0363.

(2) Notwithstanding section (1)(a), the Council may issue a site certificate for: (a) A facility that includes a transmission line, natural gas pipeline, or water pipeline located in a protected area, if the Council determines that other reasonable alternative routes or sites have been studied and that the proposed route or site is likely to result in fewer adverse impacts to resources or interests protected by Council standards; or

(b) Surface facilities related to an underground gas storage reservoir that have pipelines and injection, withdrawal or monitoring wells and individual wellhead equipment and pumps located in a protected area, if the Council determines that other alternative routes or sites have been studied and are unsuitable.

(3) The provisions of section (1) do not apply to:

(a) A transmission line routed within 500 feet of an existing utility right-of-way containing at least one transmission line with a voltage rating of 115 kilovolts or higher; or

(b) A natural gas pipeline routed within 500 feet of an existing utility right of way containing at least one natural gas pipeline of 8 inches or greater diameter that is operated at a pressure of 125 psig.

(4) The Council shall apply the version of this rule adopted under Administrative Order EFSC 1-2007, filed and effective May 15, 2007, to the review of any Application for Site Certificate or Request for Amendment that was determined to be complete under OAR 345-015-0190 or 345-027-0363 before the effective date of this rule. Nothing in this section waives the obligations of the certificate holder and Council to abide by local ordinances, state law, and other rules of the Council for the construction and operation of energy facilities in effect on the date the site certificate or amended site certificate is executed.[55]

III.F.1. <u>Findings of Fact</u>

The analysis area is the area within and extending 20 miles from the RFA13 site boundary.

[55] OAR 345-022-0040, effective December 19, 2022.

Protected Areas in the Analysis Area

There are 17 protected areas in the RFA13 analysis area[56] as shown in Table 7 below:

Table 7: Protected Areas in RFA13 Analysis Area

Protected Area[1] Per OAR 345-001-0010(26)	Distance (miles) and Direction from RFA13 Site Boundary	Previously Evaluated by Council?
(a) National Parks - Unit		
Lewis and Clark National Historic Trail*	2.8 N	No – See evaluation below
(e) National and State Wildlife Refuges		
Lewis and Clark National Wildlife Refuge	13.6 NW	Yes – no significant impact
Julia Butler Hansen Wildlife Refuge	1.4 NE	Yes – no significant impact – See RFA13 evaluation below
(j) State Parks and Waysides		
LL "Stub" Stewart State Park	17.1 SE	Yes – no significant impact
Bradley State Scenic Viewpoint	10.1 NW	Yes – no significant impact
Banks-Vernonia State Trail	11.5 S	Yes – no significant impact
(a) Oregon Register of Natural Areas/Designated Natural Areas		
Skull and Little Wallace Island*	2.7 N	No – See evaluation below
Saddle Mountain State Natural Area	17.0 SW	Yes - no significant impact
Tenasillahe Island Research Natural Area	11.9 NW	Yes - no significant impact
Blind Slough Swamp Preserve	15.9 NW	Yes - no significant impact
(o) State Wildlife Refuges or Management Areas		
Jewell Meadows Wildlife Area, Humbug Tract and Contract Refuge Tract	10.2 SW	Yes - no significant impact
Jewell Meadows Wildlife Area, Creek and Fish Hawk Creek Tract	10.2 SW	Yes - no significant impact
(p) State Fish Hatcheries		
Klaskanine Salmon Hatchery*	19.6 NW	No -See evaluation below
Gnat Creek Hatchery	11.6 NW	Yes - no significant impact

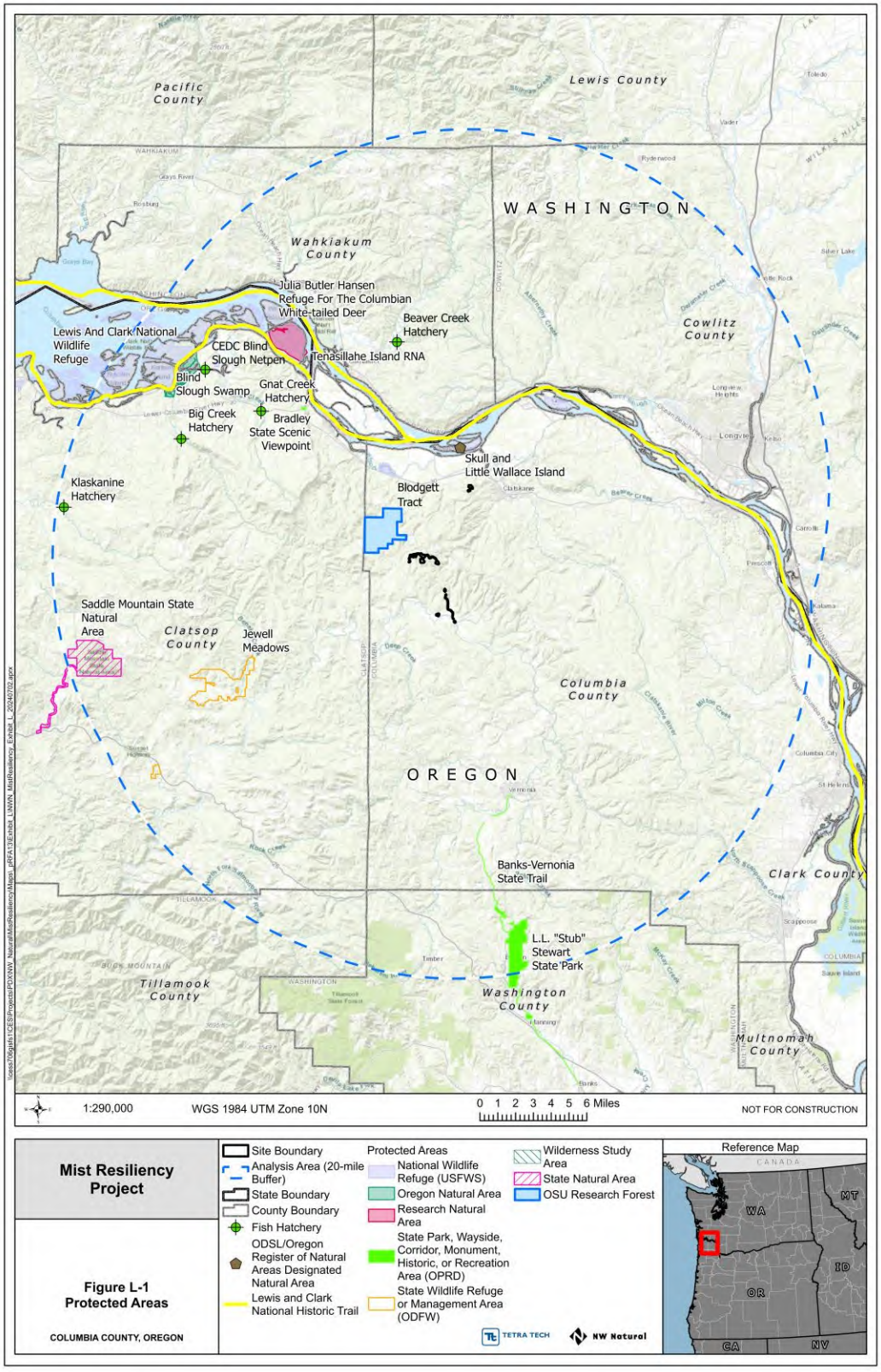
[56] Due to changes in Protected Area definitions in 2022, previously evaluated sites: Blind Slough Netpen is no longer a Protected Area under this standard. Council previously evaluated in the Final Order on AMD11 and found no significant impact from this facility.

Table 7: Protected Areas in RFA13 Analysis Area

Protected Area[1] Per OAR 345-001-0010(26)	Distance (miles) and Direction from RFA13 Site Boundary	Previously Evaluated by Council?
Big Creek Hatchery	14.4 NW	Yes - no significant impact
Beaver Creek Hatchery, WA	9.0	Yes - no significant impact – See RFA13 evaluation below
(r) Oregon State University Research Forests		
Blodgett Tract Research Forest	1.0 NW	Yes - no significant impact – See RFA13 evaluation below
RFA13 Sources: BLM 2023a, BLM 2023b, BLM 2023c, BLM 2023d, BLM 2023e, Google Earth 2023, NOAA 2023, NPS 2023a, NPS 2023b, National Wild and Scenic Rivers System 2023, Natural Atlas 2023, ODFW 2023a, ODFW 2023b, OPRD 2020, OPRD 2023a, OPRD 2023b, OPRD 2023c, OPRD 2023d, OSU 2013, OSU 2022, OSU 2023, USFWS 2023a, USFWS 2023b, USFS 2023a, USFS 2023b, USFS 2023c, USGS 2022, Wilderness Connect 2023. * Protected Area not previously identified or evaluated by Council. See below or Department's evaluation.		

Figure 12 below shows the location of all protected areas identified in the RFA13 analysis area.

Figure 12: Protected Areas in RFA13 Analysis Area



Lewis and Clark National Historic Trail (2.8 miles /N)

The Lewis and Clark National Historic Trail is nearly 4,900 miles through the homelands of more than 60 Tribal nations and 16 states. It follows the historic outbound and inbound routes of the Lewis and Clark Expedition of 1803-1806 from Pittsburgh, Pennsylvania to the Pacific Ocean. The purpose of the Lewis and Clark National Historic Trail is to commemorate the 1803 to 1806 Lewis and Clark Expedition through the identification; protection; interpretation; public use and enjoyment; and preservation of historic, cultural, scenic, and natural resources associated with the expedition and its place in U.S. and tribal history. The trail was established by Congress in 1978 as part of the national trails system as one of four original national historic trails and extended by 1,200 miles in 2019. [57] The trail is managed under the National Park Service's 1982 Lewis and Clark National Historic Trail Comprehensive Management Plan. Portions of this trail cross the RFA13 analysis area.

Julia Butler Hansen Refuge (1.4 miles/ NE)

Created in 1971, the Julia Butler Hansen Refuge was originally established to protect and manage the then endangered Columbian white-tailed deer. It contains over 6,000 acres of pastures, forested tidal swamps, brushy woodlots, marshes and sloughs along the Columbia River in both Washington and Oregon. Diverse habitats that support the endangered Columbian white-tailed deer also benefit a large variety of wintering and migratory birds, Roosevelt elk, river otter, reptiles and amphibians, and nesting bald eagles, great horned owls and osprey. Regulation of recreation activities, such as day-use hours, hiking, and hunting regulations allow for public enjoyment of the refuge while still protecting the wildlife and habitats. Julia Butler Hansen Refuge is one of over 560 sites in the National Wildlife Refuge System, and one of 56 sites established to benefit specific threatened and endangered species managed by the U.S. Fish and Wildlife Service [58] As noted above, Council previously evaluated facility impacts on this protected area and found the facility would not result in any significant adverse impacts.[59]

Skull and Little Wallace Island Natural Area (2.7 miles/ N)

Skull & Little Wallace Island managed by Oregon Department of State Lands Listed in 1991 to the Oregon State Register of Natural Heritage Resources (Register). The Register lists Oregon's most important sites with significant natural heritage resources. There are 100 natural areas currently on the Register.[60] The Oregon Legislature established the Oregon Natural Areas Program in 1979 to protect high quality native ecosystems and rare plant and animal species. Natural Areas listed on the Register provide public and research access to native forests, grasslands, tide pools, bogs, and sagebrush communities and provide habitat for Oregon's rarest plants and animals. The

[57] Source: https://www.nps.gov/lecl/index.htm Accessed by the Department 2024-05-10.

[58]Source: https://www.fws.gov/refuge/julia-butler-hansen-columbian-white-tailed-deer Accessed by the Department 2024-05-10.

[59] MSTAMD11Doc123 Final Order on RFA11 2016-04-21

[60] Source: https://inr.oregonstate.edu/natural-areas/register-natural-heritage-resources
Accessed by the Department 2024-05-10.

program is managed by the Oregon Parks and Recreation Department and is guided by the Oregon Natural Area Plan, a document that describes the natural areas program in Oregon. This protected area is in the Register's Natural Areas Coast Range Ecoregion.[61]

Beaver Creek State Fish Hatchery, WA (9.0 miles/NW)

The Beaver Creek State Fish Hatchery is a Washington state-run fish hatchery managed by the located along the tributary to the Columbia River in Wahkiakum County, Washington. It was established in 2017 under the Mitchell Act and is managed by Washington Department of Fish and Wildlife (WDFW) for the purposes of incubation and rearing of summer steelhead salmon. It is authorized to administer fisheries management programs authorized under the Endangered Species Act (ESA) for Columbia River ESA-listed salmon and steelhead populations. Salmon and steelhead hatchery programs that WDFW operates in regions with fish and wildlife listed under the federal ESA are reviewed by National Oceans and Atmospheric Administration Fisheries and the U.S. Fish and Wildlife Service to ensure consistency with the requirements of the ESA.[62]

The Blodgett Tract Research Forest (1.0 miles/ NW)

The Blodgett Tract Research Forest is a 2,440-acre forest located in Columbia County about four miles south of the Columbia River in the upper Nehalem basin. It is managed by Oregon State University (OSU) Department of Forestry. The western boundary of the tract is the Clatsop County line, which is also the eastern boundary of the Clatsop State Forest. The other three sides of the tract are surrounded by private industrial forestlands. The upland conifer stands are predominantly Douglas-fir and western hemlock with a small amount of western redcedar and Sitka spruce. Riparian areas are dominated by red alder that in some areas is mixed with Douglas-fir, western redcedar and Sitka spruce. Coho salmon and other anadromous fish species spawn in the Tract's clear streams. OSU Research Forests were donated to the College of Forestry to serve as a living laboratory and outdoor classroom for students, researchers and managers to learn about forest ecosystems and management. OSU utilizes the Research Forests to find new ways to sustainably manage forests for conservation, education, business and recreation. These forests serve as a refuge for the community to connect with nature, learn about ecosystems, and enjoy favorite outdoor activities. All operations on the forests – including recreation and trails – are self-funded through timber harvests.

Potential Impacts on Protected Areas

<u>RFA13 Potential Direct Impacts</u>

Because RFA13 includes the addition of new related and supporting facilities not previously evaluated by Council, the certificate holder submitted an updated evaluation based on RFA13 proposed changes on all identified protected areas within the RFA13 analysis area.

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[61] Source: https://inr.oregonstate.edu/orbic/natural-areas-program; 2015_or_natural_areas_plan.pdf (oregonstate.edu) Accessed by the Department 2024-05-10

[62] Washington Department of Fish and Wildlife. Available at: https://wdfw.wa.gov/fishing/management/hatcheries Accessed by the Department 2024-08-06.

RFA13 Potential Visual Impacts

RFA13 activities would not generate any emissions plumes, so would not cause any visual impacts from air emissions.

RFA13 did identify new, additional protected areas not previously evaluated by Council and included an updated visual impact assessment on the potential visual impacts resulting from RFA13 proposed changes to the facility. The Department evaluates the updated information and the potential for visual impacts on all protected areas in the analysis area below.

- Construction

Visual effects of the facility from any protected areas will be primarily limited to visibility during construction activities, including activities at the temporary laydown yards, potential views of the area along the pipeline right-of-way and powerline alignment right-of-way that would be cleared of vegetation and construction activities will occur. In general, the portions of the facility that would likely be visible during construction are the cleared areas located within the forested lands south of US Highway 30 (US 30). All these construction impacts will be temporary impacts, and the certificate holder states that construction will be phased, occurring between July 2025 through November 2029, in part to minimize potential visual impacts from construction.

- Operations

RFA13 Exhibit T, Section 4.4 states that permanent above-ground facilities proposed in RFA13 would be limited to infrastructure at the North Mist Compressor Station (NMCS) and above-ground appurtenances at the Newton, Stegosaur, and Medicine well pads. At maximum these structures and components will not exceed 50 feet in height. The dimensions of these above-ground components are detailed in Table 3 of this order.

Once constructed, the majority of RFA13 facilities changes will be permanently installed underground. Permanent above-ground facilities proposed in RFA13 will include: the North Mist Compressor Station, a new compressor building and two dehydration trains, above-ground appurtenances at Newton, Stegosaur, and Medicine well pads, and the control and operations building. RFA13 proposes replacement and addition of equipment at both compressor stations that will include above ground components.

For RFA13 the certificate holder conducted a GIS-based visual impact assessment of the potential visual impacts from the facility changes on any of the 17 protected areas identified in the analysis area. Height assumptions used in the ZVI include a typical viewing height of 1.8 meters (6 feet) and 20 feet for the maximum height of the above-ground appurtenances at the well pads. At maximum the RFA13 facility components will be under 50 feet in height, as described below. The following maximum heights for the NMCS infrastructure were assumed:

- Gas compressor building – 48 feet
- Glycol regeneration building – 43 feet
- Office/control building – 18 feet

All other components proposed with RFA13 were determined to be less visually impactful (due to height, overall footprint, and/or adjacent or collocated with taller infrastructure) and are encompassed by the assessment of the NMCS infrastructure and well pad appurtenances[63].

In RFA13 the certificate holder utilized GIS and topographic maps to make the likely visibility of the facility from protected areas (See Exhibit L, Figures L-2.1 through 2.5). At 10 miles or further, and with underlying topography and intervening vegetation and the maximum height of above ground facility components under 50 feet in height, the visual impacts of the facility on any protected area beyond 10 miles are not likely to be significant. The results of this visual impact assessment, where portions of the facility could be visible from the 5 protected areas within 10 miles of the facility are summarized in the table below.

[63] Note that the Stegosaur well pad is located adjacent to the NMCS and thus impacts are deemed to be encompassed by the ZVI assessment of the NMCS components.

Table 8: Evaluation of Visual Impacts from Proposed RFA13 Changes at Protected Areas

Protected Area Name	Potential Visibility	Potential Visual Impact	Significant Visual Impact? Y/N
Lewis & Clark National Historic Trail	Some potential visibility of portions of the cleared rights-of-way; View of the NMCS infrastructure and well pad appurtenances blocked by terrain and/or vegetation (see Figure L-1 and L-2).	Negligible due to topography and intervening vegetation; where visible, the cleared rights-of-way would not represent new or unusual features in the landscape. Some portions of the pipeline and powerline alignment rights-of-way may be visible, at a minimum viewing distance of at least 8.7 miles. The NMCS infrastructure and well pad appurtenances would not be visible from any point along the LCNHT.	No
Julia Butler Hansen Refuge	Some potential visibility of portions of Project in hills south of US-30, from island units nearest the Project. View of the NMCS infrastructure and well pad appurtenances blocked by terrain and/or vegetation for entirety of the Refuge (see Figure L-1 and L-2).	Negligible due to topography and intervening vegetation; where visible, the cleared rights-of-way would not represent new or unusual features in the landscape. Some portions of the pipeline and powerline alignment rights-of-way may be visible from the Mainland Unit, at a distance of at least 11.7 miles. Some portions of some of the island units closer to the Analysis Area may have increased views of pipeline and powerline alignment rights-of-way at a minimum viewing distance of about 4.6 miles. The NMCS infrastructure and well pad appurtenances, and control and operations building would not be visible from any point in the Refuge.	No
Skull and Little Wallace Island	Some potential visibility of portions of Project in hills south of US-30. View of the NMCS infrastructure and well pad appurtenances blocked by terrain (see Figure L-1 and L-2).	Negligible due to topography and intervening vegetation; where visible, the cleared rights-of-way would not represent new or unusual features in the landscape. Some portions of the Island may have increased views of pipeline and powerline alignment rights-of-way. However, where visible, would not represent new or unusual visual features in the landscape and at a distance of over 6.1 miles, making the pipeline and powerline alignment rights-of-way difficult to discern; no portion of the pipeline or powerline alignment are aligned in such a way as to provide a long view down the cleared corridors. The island is accessible only by water so there would likely be few visitors' views affected. The NMCS infrastructure and, well pad appurtenances, and	No

Table 8: Evaluation of Visual Impacts from Proposed RFA13 Changes at Protected Areas

Protected Area Name	Potential Visibility	Potential Visual Impact	Significant Visual Impact? Y/N
		control and operations building would not be visible from any point on the Island.	
Beaver Creek Washington State Fish Hatchery	None.	Negligible due to topography and intervening vegetation. At over 9 miles NW from the facility, along a tributary on the Washington side of the Columbia River Washington State, the facility will not be visible, and views of the facility are blocked by terrain. The Hatchery is located at about 62 feet elevation and is 2.6-miles northeast of SR-4 and the Columbia River but is largely surrounded by forest vegetation. Potential views of the Project are blocked by two mountain ridges on either side of the Columbia River gorge, which rise to up to 1,572 feet elevation between the Hatchery and the above-ground Project components located over 11.8 miles away at approximately 1,100 feet elevation (see Figure L-1 and L-2).	No
Blodgett Tract Research Forest	Some potential visibility of the NMCS infrastructure and well pad appurtenances, and portions of the rights-of-way in timber lands (see Figure L-1 and L-2).	Negligible due to topography and intervening vegetation; where visible, the cleared rights-of-way would not represent new or unusual features in the landscape. The Blodgett Tract is a working research forest, consisting of a patchwork of clearcuts and recovering harvest areas, with a network of logging roads and log decks; it is not managed for scenic qualities. From a few high vantage points in the Tract, the NMCS infrastructure and well pad appurtenances, may be visible (located over 1.7 miles away); however, for most of the Tract the NMCS infrastructure and well pad appurtenances would be hidden from view. Some portions of the pipeline and powerline alignment rights-of-way may also be visible where permitted by terrain and clearcuts.	No

The results of the visual impact assessment conclude that the facility, with RFA13 changes, would be predominately blocked from view from any protected area due to the underlying topography and surrounding forests and would not have a significant visual impact. Council previously approved the facility to include at least one structure (a communications tower at the NMCS) up to 80 feet tall.[64] In previous evaluations, Council has found that this facility would not have any significant visual impact on any protected areas.[65] Based on the updated inventory and the results of the visual impacts assessment submitted for RFA13, the Department recommends that Council find that even if portions of the facility are visible from any protected areas, those visual impacts would be negligible, and would be similar to those previously evaluated and approved by Council for the facility. For these reasons the Department recommends that Council find that the facility, with RFA13 proposed changes, will not result in significant visual impacts because of construction or operations from any protected area within the RFA13 analysis area.

Potential Noise Impacts

The certificate holder assessed potential noise impacts from construction and operations of the facility, with proposed RFA13 changes, in Exhibit Y.

Council has previously evaluated construction noise at the Julia Butler Hansen Wildlife Refuge at 1.4 miles, the closest protected area at the time of Council's last evaluation and determined that the noise impacts from construction would not be significant. Based on current information, the nearest protected area is the Blodgett Tract Research Forest, located 1.0 miles from the RFA13 site boundary.

Construction

Construction activities will occur at the RFA13 work site and along the proposed pipeline route. In these areas there is one primary method of construction: trenched pipe installation. Trenched piping will involve logging and grading of the route, excavation, pipe welding, placement, and backfilling. In general, the types and loudness of sound sources associated with trenched pipe will be similar to logging and silviculture activities that already occur in the proposed trenched pipe section. Horizontal directional drilling pipe installation will primarily occur along the powerline alignment near the stretch of the mainline road near Oregon Highway 202 (OR 202).

RFA13, Exhibit Y states that only standard equipment is expected to be used during construction, with no dynamic compaction or pile driving activities. Construction would take place mostly during daytime working hours of 7:00 a.m. until 7:00 p.m. Horizontal directional drilling would occur only during construction, thus noise impacts to the hunting area are anticipated to be temporary in duration, and sound levels would return to current levels upon construction completion.

Construction sound calculations were performed with the Computer Aided Noise Abatement CadnaA) noise modeling model (Version 2023 MR 2 [build: 195.5312]). The estimated sound power level utilized in the RFA13 construction noise model was 118.9 A-weighted decibels (dBA)

[64] MSTAMD11Doc123 Final Order on RFA11 2016-04-21

[65] Ibid.

for all combined equipment types. The Oregon State Noise Control Regulations specifically exempt noise emanating from construction activities from compliance with Department of Environmental Quality (DEQ) noise regulations under OAR 340-035-0035(5). RFA13 proposed changes would continue to meet the requirements of these regulations and would not result in any additional noise impact or noise levels not previously considered by Council.[66,67]For these reasons, the Department recommends that Council find that facility construction, with RFA13 proposed changes will not result in significant noise impacts to any protected area.

Operation

The primary source of operational noise will be the mechanical equipment at the North Mist Compressor Station (NMCS). Exhibit Y included a noise assessment based on acoustic modelling for the proposed facility operations including the addition of new equipment. The facility with RFA13 proposed changes will include compressor engines, scrubbers, suction and discharge piping, and skids at the NMCS that will create audible noise; however, in RFA13 the certificate holder states that the NMCS will be designed with noise control mitigations and equipment[68] in order to ensure that the facility meets DEQ noise regulations at the nearest Noise Sensitive Receptors (NSRs) such as private residences to the site, located near Fishhawk Lake.

Based on the noise analysis submitted in Exhibit Y, the noise from operations of the facility, with noise mitigating equipment installed, will be inaudible or indistinguishable from background ambient noise levels (ie: 35 dBA or lower) at distances beyond 0.5 miles from the RFA13 site boundary. All the protected areas in the RFA13 analysis area are located further than 0.5 miles from the site boundary.

Based on this noise analysis the Department recommends that Council find that operational noise will not likely be audible from portions of any protected area.

<u>Potential Traffic-related Impacts</u>

Construction

RFA13 states that access to the facility site from Interstate 5 (I-5) will be via US Highway 30 (US 30), OR Highway 47 (OR 47), and OR 202. RFA13 construction would extend over 30 months, with a peak number of 113 workers onsite in month 20. This is a significantly lower worker estimate than what Council previously approved in the *Final Order on Amendment 11*, which approved up to 317 workers at peak construction.

RFA13 also states that construction traffic would utilize OR 47 between Clatskanie and Mist, and some of the local roads north of Clatskanie to access the facility but not U.S. Highway 26 (US 26). Most protected areas are accessed via US 30, but construction traffic is not expected to have a significant impact on visitors' access to any protected areas in the analysis area. The Blodgett

[66] MSTAMD12Doc16 Final Order on AMD12 2017-09-22, p. 12.

[67] MSTAMD11Doc123 Final Order on RFA11 2016-04-21, p. 91-92.

[68] See Section IV.C. Noise Control Regulations section of this order on RFA13 noise minimization and mitigation measures for compressor station equipment.

Experimental Forest is accessible via several routes, including roads from US 30, OR 47, and OR 202). The Julia Butler Hansen Refuge is also accessed by US 30 and is accessible at multiple points within the refuge. The Lewis and Clark National Historic Trail runs through the course of the Columbia River within the RFA13 analysis area and is accessible from multiple points on both the Washington (via Ocean Beach Highway/WA-4) and Oregon side (via US 30). Little Skull Island and Wallace Island are also accessible via water and accessed from US 30. Finally, located on the Washington side of the Columbia River, the Beaver Creek Fish Hatchery is also accessed via Oregon Beach Highway/WA-4. Construction-related traffic will generally involve the phased deliveries of equipment and materials for construction and installation of new components and removal and recycling of decommissioned/replaced components and will be temporary in nature. For these reasons the Department recommends that Council find that RFA13 construction-related traffic is not likely to impact user access to any protected areas in the RFA13 analysis area. For these reasons, the Department recommends that Council find that construction of the facility, with RFA13 proposed changes, will not likely impact traffic or access to or from any protected area.

Operation

RFA13 states that at current operations the facility employs approximately 12 full-time employees and that upon completion of RFA13 construction the facility will remain at the same staffing levels as RFA13, changes will not require additional employees for facility operations. Occasional access to Operational and Maintenance activities throughout the life of the facility is not expected to have any significant traffic impact. For these reasons the Department recommends that Council find that RFA13 potential operational traffic impacts will be negligible and are not likely to have a significant impact on any protected areas within the analysis area.

<u>Potential Impacts on Water Availability and Water Quality</u>

Water used for construction would be obtained from existing permitted sources with available capacity. The Mist Resiliency Project will not connect to a public or private water system.

During construction, approximately 2 million gallons of water over a 5-year period would be needed for dust abatement, hydrostatic testing of pipe and horizontal directional drilling. Water would be obtained from a third-party with an existing water right including Knappa Water Association and Mist Birkenfeld Fire Department. Water used for hydrostatic testing of the pipeline will be released pursuant to a discharge permit issued by DEQ; pressure test water is not industrial process discharge and would not carry pollutants. The facility will not discharge any water or wastewater into a protected area during construction. Nor will RFA13 proposed changes require the use or withdrawal of water from any protected area during construction.

During operations, the facility will not generate wastewater by itself and will not increase the amount of industrial water use or wastewater generated at the existing facility. The facility will not discharge any water or wastewater into a protected area during operations. Nor will RFA13 proposed changes require the use or withdrawal of water from any protected area during operations. For these reasons, the Department recommends that Council find that the facility, with RFA13 proposed changes will not have an adverse impact on the water availability or water quality of any protected area in the analysis area.

III.F.2. Conclusions of Law

Based on the foregoing analysis, the Department recommends Council find that the facility, with proposed changes, is not located within the boundaries of a protected area and that the design, construction and operation of the facility, with the proposed changes, are not likely to result in significant adverse impact to any protected areas.

III.G. RETIREMENT AND FINANCIAL ASSURANCE: OAR 345-022-0050

> *To issue a site certificate, the Council must find that:*
>
> *(1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.*
>
> *(2) The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition.*[69]

III.G.1. Findings of Fact

OAR 345-027-0375(2)(e) designates the Scope of Council's Review for all amendments to the site certificate. It states that for all requests for amendment, the amount of the bond or letter of credit required under OAR 345-022-0050 is adequate. Therefore, as presented below, the scope of the evaluation under OAR 345-022-0050 for RFA13 is an evaluation and recommendations limited to the proposed new and modified facility components which include updated unit costs for facility components, tasks, and actions. Certificate holder also provides updated evidence of their ability to secure a bond or letter of credit that reflects the updated cost to restore the site to a useful, nonhazardous condition.

III.G.1.a Restoration of the Site Following Cessation of Construction or Operation

Certificate holder does not anticipate retiring the Mist facility, noting it has been fully operational since 1988, and the process equipment will be replaced as needed. However, if retirement were necessary, certificate holder indicates that retirement and decommissioning would be conducted in accordance with the nature of the equipment and structures and that the processes would be the same as for those described in Amendments 4, 9, and 11. This work would include the following:

[69] OAR 345-022-0050, effective April 3, 2002.

- Gas processing equipment would be removed and sold as used equipment or scrap.[70] Any hazardous materials stored in the buildings or located within the process equipment would be removed and disposed of following the applicable state and federal hazardous materials statutes and rules.
- The underground portion of the injection/withdrawal (I/W) pipelines would be left in place to avoid unnecessary disruption to the environment. Before abandoning the pipelines, certificate holder would inspect them and remove any hazardous materials. The aboveground portions of the pipelines would be removed and sold as scrap metal.
- At the powerline, which will extend from Highway 202 to Miller Station, copper wire and fiber cale would be removed and hauled off site, while underground raceways and cable splice values would be abandoned in place.
- The I/W and monitoring wells are composed of an aboveground portion, the wellhead, and an underground portion, the encased well. The wells would be plugged and capped in compliance with Oregon Department of Geology and Mineral Industries (DOGAMI) regulations. The wellhead would be sold as scrap metal and the concrete base broken up and the concrete recycled or disposed of at an appropriate landfill.

RFA13 Exhibit X includes detailed cost estimates and descriptions of decommissioning activities for the NMCS Miller Station powerline replacement, and the Miller Station powerline replacement. The NMCS and Miller Station powerline replacement cost estimate reports were provided by licensed engineers at Burns & McDonnell, Inc. (RFA13 Exhibit M Attachment M-3 and M-1).[71] The cost estimate report for Miller Station was provided by licensed engineers at Basic Systems, Inc. (Exhibit M, Attachment M-2).[72] Important assumptions the certificate holder and its consultant relied upon for its cost estimate and tasks and actions for retiring the proposed RFA13 changes include:

- Costs include removal of all mechanical equipment, electrical equipment, process building, pipe racks, platforms, facility piping and any other miscellaneous steel;
- Costs to remove all copper wire and fiber cable and hauled off site. Underground raceways and cable splice vaults will be abandoned in place;
- All drilled piers that are more than 1’ below grade will be left in place, and any other drilled piers will be cut/knocked down and removed to 1’ below grade.
- Concrete pads are assumed to be 40x9x5 feet or approximately 70 cubic yards (per unit);
- The grade of the site would be left as-is and all buried piping would be purged, then cut and capped below grade and left in place;
- Structural fill would be removed, topsoil would be provided and restored, and the site would be revegetated, as applicable, to enable growth of commercial timber.

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[70] Certificate holder indicates that materials may be sold for scrap value, Council, however, does not consider scrap value of potentially recycled materials in their retirement cost estimates. Cited reasons for not considering the value of scrap metal include difficulty in tracking the total value over a facility’s operational lifetime, uncertainty as to the actual value, difficulty ensuring that the assets remain onsite, and potential problems associated with creditor’s rights. BSPAPPDoc2 Final Order 2020-04-24, pp. 139-141.

[71] Source: https://www.burnsmcd.com/

[72] Source: https://www.basic-systems.com/

The Department recommends Council find that the certificate holder used reasonable methods and assumptions to develop the cost estimate, which is provided in MSTAMD12Doc16 Final Order on AMD12 2017-09-22below.

III.G.1.b Estimated Costs of Site Restoration

The Department compiled the certificate holder's cost estimates for each proposed RFA13 change/location into Table 9 below. The estimate (in 4th Quarter 2023 Dollars) $8,243,396 million. Department-applied contingencies to this total are discussed below the table.

Table 9: RFA13 Retirement Cost Estimate

Tasks/Actions for Each RFA13 Location/Component		**Unit Cost[1]**
Removal & Disposal Costs (North Mist Compressor Station)		
Removal cost of equipment, pipe, steel, and insulated copper wire		$4,572,283.00
Removal of foundations		$508,720.00
Remove yard stone and hydroseed		$127,316.00
Decommission of surface equipment at the well pads & pipeline		$1,265,539.00
Subtotal Removal Cost (NMCS)		$6,473,858.00
Removal & Disposal Costs (Miller Station)		
Removal cost of equipment, pipe, steel, and insulated copper wire		$1,029,078.00
Removal of foundations		$507,192.00
Remove yard stone and hydroseed		$127,316.00
Subtotal Removal Cost (MS)		$1,663,586.00
Removal & Disposal Costs (Miller Station Powerline Replacement)		
Removal cost of insulated copper wire		$105,952.00
Subtotal Removal Cost (MS Powerline)		$105,952.00
Total RFA13 Retirement Cost		**$8,243,396.00**
Council Contingencies		
Performance Bond (1%)	0.01	$82,433.96
Administration and Project Management (4 %)	0.04	$329,735.84
Future Development Contingency (10%)	0.1	$824,339.60
Total Contingencies		$1,236,509.40
Total Cost with Contingencies		**$9,479,905.40**

Notes:
1. Unit Costs in Q4 2023 dollars.
2. Unit for Tasks and Actions based on days of work to complete task. See RFA13 Exhibit M, Attachments M-1, M-2, and M-3.

The Department adds a one percent performance bond contingency applied to the total decommissioning cost before Contractor markup, however, Council typically imposes that cost on

the total cost with markup, this is reflected in Table 9.[73] The four percent contingency for administrative and management expenses would cover the anticipated direct costs borne by the State in the course of managing site restoration and would include the preparation and approval of a final retirement plan, obtaining legal permission to proceed with demolition of the facility, legal expenses for protecting the State's interest, preparing specification bid documents and contracts for demolition work, managing the bidding process, negotiations of contracts, and other tasks. This contingency is consistent with other Oregon Public Utility Commission (OPUC) regulated utilities; where OPUC regulates rates passed onto consumers as well as rate recovery (as well as other matters).[74] Consistent with recommended conditions below, Council reserves the right to adjust the contingencies, as appropriate and necessary to ensure that costs to restore the site are adequate to maintain health and safety of the public and environment, consistent with Council standards. In addition, the Department recommends Council impose a 10 percent future development contingency on costs associated with the RFA13 changes to be consistent with other EFSC energy facilitates, and to address uncertainty and potential environmental hazards associated with natural gas storage facilities.[75] The total cost estimated to retire the site associated with the RFA13 changes to a useful nonhazardous condition is $ 9,479,905 million (Q4 2023).[76] The Department recommends Council find that this is a sufficient amount to retire the site associated with the RFA13 changes to a useful nonhazardous condition and impose Recommended Retirement and Financial Assurance Conditions 5, 6, and 7, below, to require that a bond in this total be submitted prior to construction of the facility and that the bond be maintained for the useful life of the facility.

Recommended Retirement and Financial Assurance Condition 1 [PRE]: Prior to construction of- components or phase of the Mist Resiliency Project, as applicable, the certificate holder shall submit to the State of Oregon, through Council, a bond or letter of credit naming the State of Oregon, acting by and through Council, as beneficiary or payee. The approved bond or letter of credit amount of $9,479,905 (Q4 2023 dollars) may be adjusted based on the design configuration of the facility, or phase of the facility, as

[73] For all types of energy facilities, the subtotal of line-item costs, including contractor's overhead, profit and insurance costs, and specialty contract costs is increased by one percent to account for the cost of a performance bond that would be posted by the contractor as assurance that the work would be completed as agreed, if the facility needed to be retired absent the certificate holder.

[74] B2HAPPDoc31 Final Order on ASC and Attachment 2022-09-27, pp. 331-332.

[75] BSPAPPDoc2 Final Order 2020-04-24, p. 135; NHWAPPDoc1 Final Order (clean) 2023-08-30 signed, pp. 184-186.

[76] MSTAMD13Doc55 RFA13 Exhibits A-F Project Description 2024-08-09, Attachment 1, includes the certificate holder's redline site certificate, with proposed certificate holder revisions to site certificate conditions. The certificate holder provides edits to Retirement and Financial Assurance Conditions 2 and 4, imposed in the Final Order on RFA11. The Department emphasizes that these edits are not recommended because it is not the certificate holder's intent to combine RFA11 and RFA13 components and retirement bonding; the intent is for RFA13 components/changes to be additive. Certificate holder and Department recommend RFA13 changes have their own site certificate conditions as designated in this order.

provided in Sub(a) and adjusted to the year and quarter of issuance as provided under Sub(b).

a. The bond or letter of credit amount may be adjusted based on actual design/number of components of the facility or phase, as applicable, and shall use the same unit costs and contingencies presented in the Final Order on the RFA13 Table 9.
b. Adjust the amount of the bond or letter of credit using the U.S. Gross Domestic Product Implicit Price Deflator, Chain Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency by using the index value for the year and quarter of the nominal value and the quarterly index value for the date of issuance of the new bond or letter of credit. If at any time the index is no longer published, Council shall select a comparable calculation to adjust the amount for inflation.
c. The bond or letter of credit must be issued by a financial institution that is included on Council's pre-approved financial institution list. The certificate holder may request to have a financial institution added to the list at any time.
d. The bond or letter of credit must be prepared using the most recent Council-approved template.

[PRE-RT-01; Final Order on AMD13]

Recommended Retirement and Financial Assurance Condition 2 [CON]: During construction, the certificate holder shall:

a. Describe the status of the bond or letter of credit in the semi-annual report submitted to the Department pursuant to OAR 345-026-0080.
b. The Department and Council reserve the right to adjust the contingencies, as necessary to ensure that costs to restore the site are adequate.

[CON-RT-01; Final Order on AMD13]

Recommended Retirement and Financial Assurance Condition 3 [OPR]: During operation, the certificate holder shall:

a. Annually adjust the amount of the bond or letter of credit using the U.S. Gross Domestic Product Implicit Price Deflator, Chain Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency by using the index value for the year and quarter of the nominal value and the quarterly index value for the date of issuance of the new bond or letter of credit. If at any time the index is no longer published, Council shall select a comparable calculation to adjust the amount for inflation.
b. Any changes to the template made by Council must be incorporated into the bond or letter or letter of credit whenever the amount is adjusted under Sub(a).
c. The Department and Council reserve the right to adjust the contingencies, as necessary to ensure that costs to restore the site are adequate.

[OPR-RT-01; Final Order on AMD13]

III.G.1.c Ability of the Certificate Holder to Obtain a Bond or Letter of Credit

As noted in the beginning of this section, the certificate holder maintains that the estimated facility life is indefinite because it is not anticipated that the natural underground reservoirs will lose their storage capacity, and the process equipment will be replaced as needed. The original Mist storage facility has been fully operational since 1988. Council imposed Retirement and Financial Assurance Condition 4, requiring the certificate older to submit and maintain a bond for the facility. The Certificate holder has maintained compliance with this condition since 2017 and in RFA13 submits a copy of the current bond rider in the amount of $4,827,000 million, to demonstrate its ability to obtain a bond or letter of credit.[77] The certificate holder also provided a copy of its' 2022 Annual Report,[78] and an opinion from certificate holder 's General Counsel affirming the legal authority of certificate holder to construct and operate the facility, with proposed RFA13 changes without violating existing bond indenture provisions, common stock covenants, or similar agreements.[79]

The 2022 Annual Report highlights that the utility reported net income for 2022 of $86.3 million, an increase of 10% in net income, compared to $78.7 million for 2021. The Report also highlights that the utility achieved an annual customer growth rate of 1.1% by adding 8,600 new natural gas meters, bringing their customers to approximately 2.5 million. The Department recommends Council find that based on the certificate holder's historic business experience, the maintenance of current authorized payment bond, and the financial and customer growth data provided in its 2022 Annual Report, the certificate holder has demonstrated a reasonable likelihood of obtaining a new bond in the amount specified to restore the site to a useful nonhazardous condition.

III.G.2. <u>Conclusions of Law</u>

Based on the foregoing findings of fact, and subject to compliance with new Recommended Retirement and Financial Assurance Conditions 1, 2, and 3 provided above, the Department recommends Council find that under OAR 345-027-0375(2)(e), the amount of the bond or letter of credit required under OAR 345-022-0050 is adequate, and that the certificate holder has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount to retire the RFA13 facility components and site to a useful, nonhazardous condition.

III.H. FISH AND WILDLIFE HABITAT: OAR 345-022-0060

> *To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are consistent with:*
>
> *(1) The general fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025(1) through (6) in effect as of February 24, 2017, and*

[77] MSTAMD13Doc62 RFA13 Exhibit M Financial Capability 2024-08-09, Attachment M-5 and MSTOPS 2024 Bond Rider 2024-03-06.

[78] MSTAMD13Doc62 RFA13 Exhibit M Financial Capability 2024-08-09, Attachment M-4.

[79] MSTAMD13Doc62 RFA13 Exhibit M Financial Capability 2024-08-09, Attachment M-6.

(2) For energy facilities that impact sage-grouse habitat, the sage-grouse specific habitat mitigation requirements of the Greater Sage-Grouse Conservation Strategy for Oregon at OAR 635-415-0025(7) and OAR 635-140-0000 through -0025 in effect as of February 24, 2017.[80]

III.H.1. <u>Findings of Fact</u>

The analysis area for the Fish and Wildlife Habitat standard is the area within and extending 0.5 miles from the RFA13 site boundary.

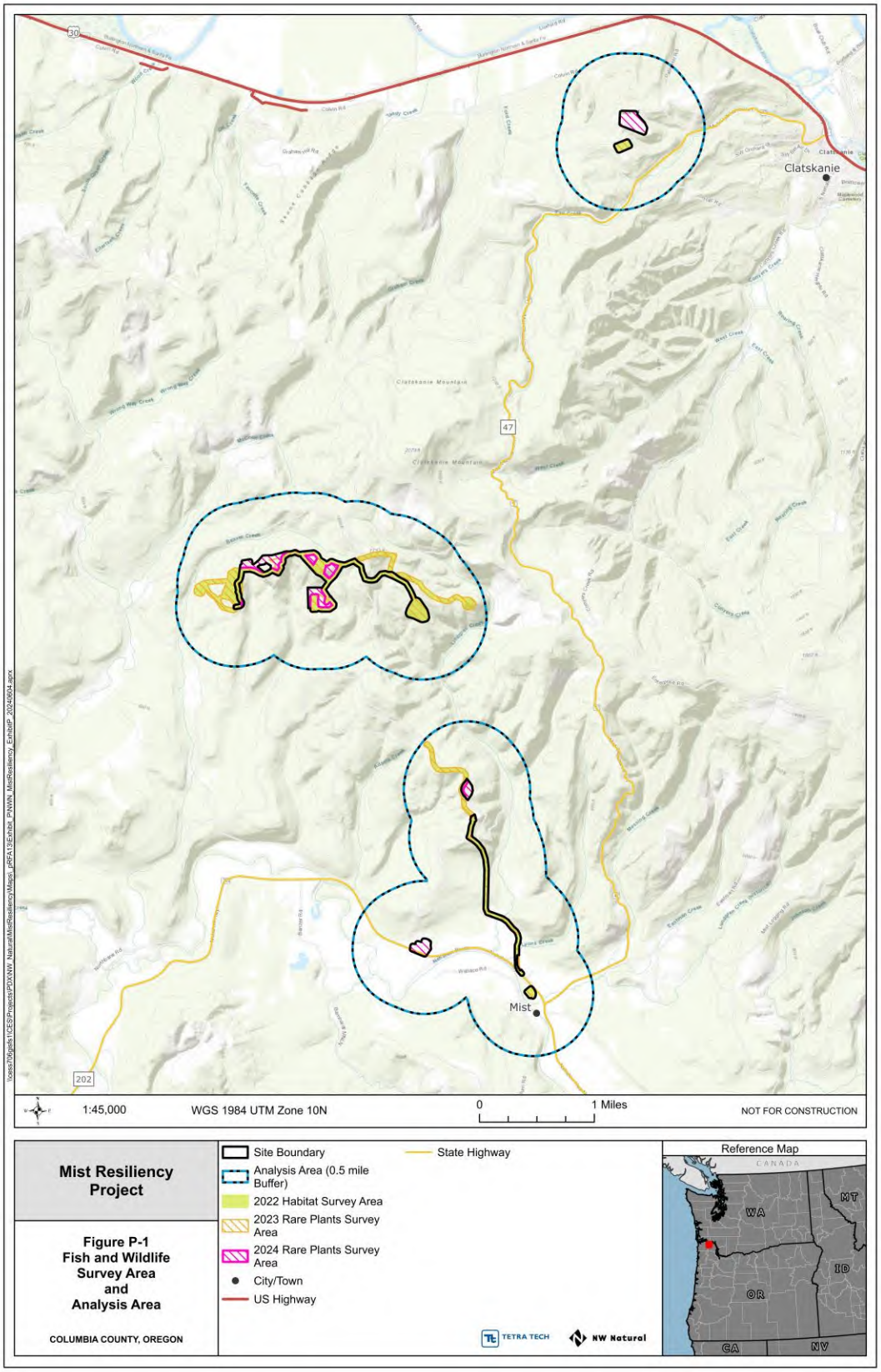
<u>Certificate Holder Methodology</u>

Literature review and field studies were conducted in 2022 and 2023. Habitat categorization surveys were conducted along with a generalized, simultaneous search for all special status wildlife species. Surveys were planned primarily for the month of June to coincide with the period of highest biological activity of neotropical migrant and breeding birds, foraging and breeding wildlife species, flowering plants, and other taxa. Surveyors compiled a comprehensive list of species (or their sign) encountered.

In preparation for biological and botanical field surveys, the certificate holder conducted desktop analyses of information regarding special status species (e.g., federal or state listed, state sensitive, U.S. Fish and Wildlife Service (USFWS) species of concern) occurrence and habitat requirements and special habitats (e.g., west side big game range spatial data, ODFW 2017) that could occur within the analysis area. The certificate holder consulted the Oregon Biodiversity Information Center (ORBIC) to identify special status species that may occur within the Analysis Area, as well as other sources, including National Oceanic and Atmospheric Administration and Oregon Department of Fish and Wildlife (ODFW) data resources. They also used aerial imagery to inform the desktop analysis of potential habitat types and subtypes within the RFA13 site boundary and analysis area as shown in Figures 14 and 15 below. The survey area is presented in Figure 13 below. Habitat Categories within the RFA13 analysis area are presented in Figures 14 and 15.

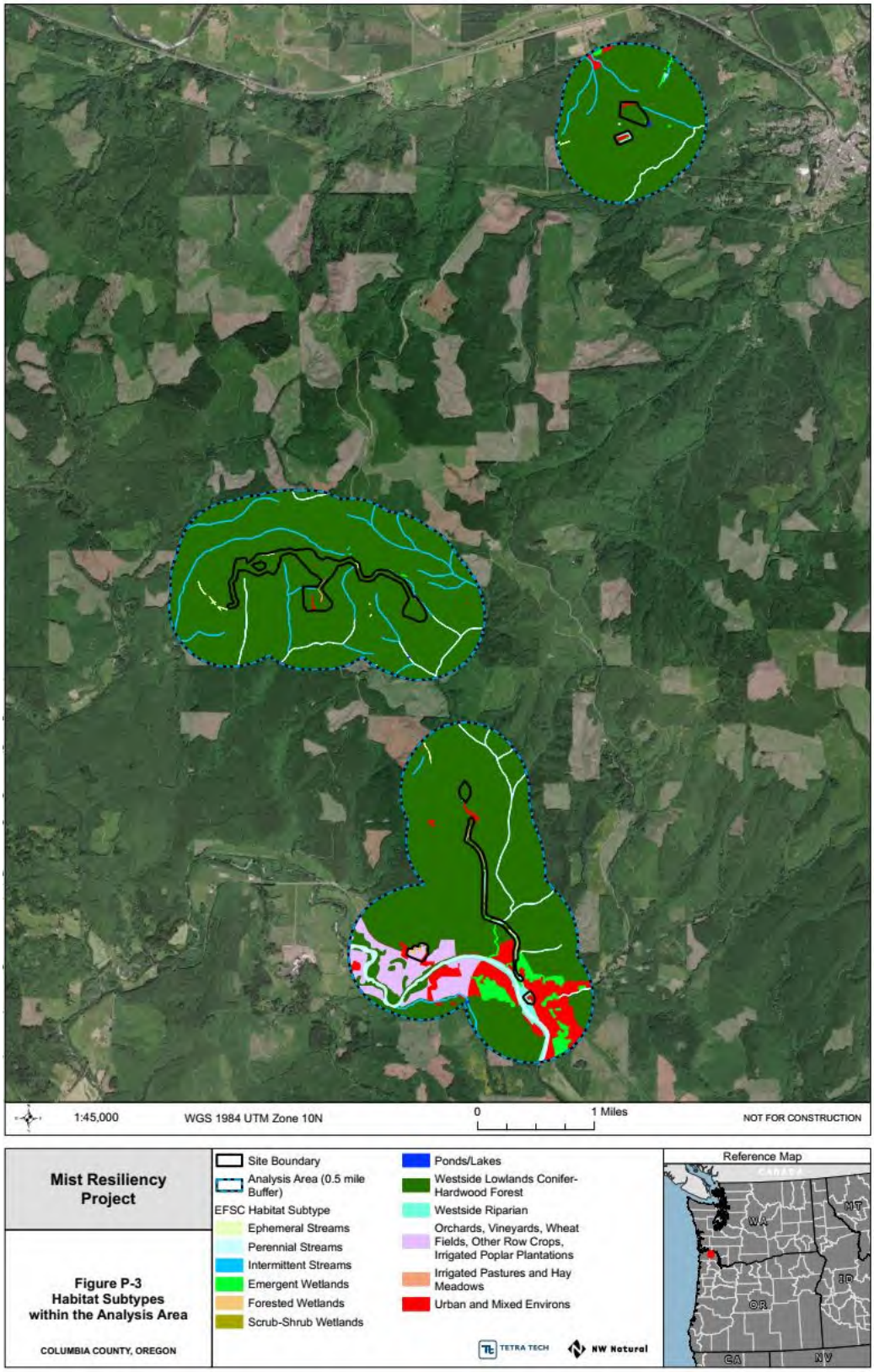
[80] OAR 345-022-0060, effective Mar. 8, 2017.

Figure 13: RFA13 Biological and Botanical Surveys within Analysis Area



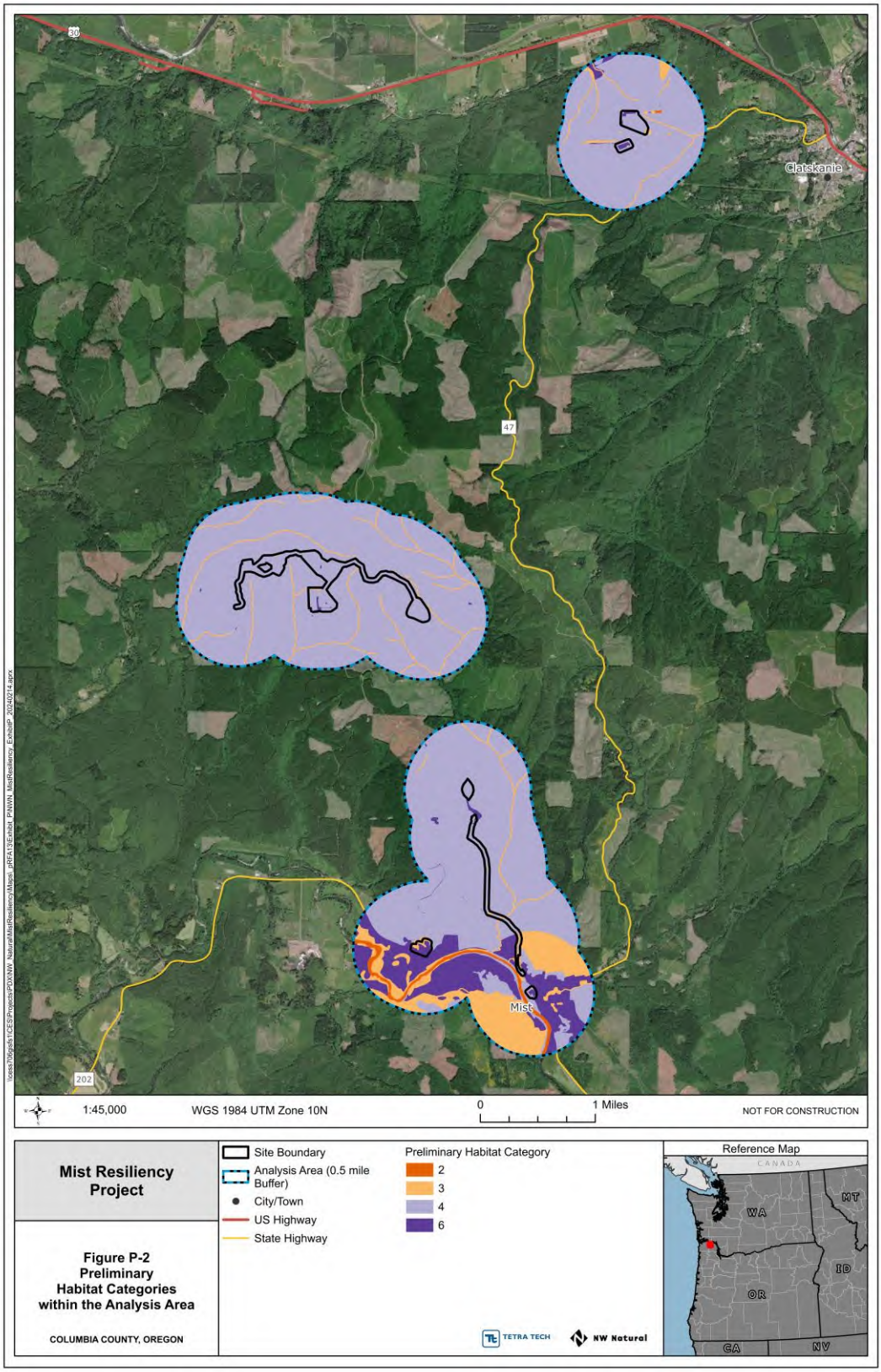
1

Figure 14: ODFW Habitat Types and Subtypes in RFA13 Analysis Area



1

Figure 15: ODFW Habitat Categories within RFA13 Analysis Area



The certificate holder identified wetlands during a separate wetland delineation survey effort described in RFA13 Exhibit J and in Section IV.D Removal-Fill of this order. As part of ODFW consultation of RFA13 proposed changes, the certificate holder submitted to ODFW their wetland delineation results and estimates of wetlands as habitat. ODFW concurred on the wetlands classifications as ODFW Habitat Categories 3 and 4 for wetland areas identified in RFA13 as potentially impacted during RFA13 construction. These areas are included in habitat impacts totals (temporary and permanent) and are included in the associated mitigation plans as described and shown in Tables 10 and 11 below.

Identified habitat types and categories in the analysis area are:

- Open water (ODFW habitat categories 2, 3 and 4)
- Upland forests and woodlands (ODFW habitat categories 2, 3 and 4)
- Riparian forest and shrubland complexes (ODFW habitat categories 3 and 4)
- Wetlands (ODFW habitat categories 3 and 4)
- Agriculture, pasture, and mixed environs (ODFW habitat categories 3 and 4)
- Urban and mixed environs (ODFW habitat category 6)

Habitat Impacts and Mitigation

RFA13 changes would result in approximately 63.7 acres of temporary disturbance and up to 27.7 acres of permanent habitat impacts, as presented in Table 10 below.

Table 10: Habitat Impacts from Proposed RFA13 Changes

Habitat Category	Habitat Type-Subtype[1]	Permanent Impact - Acres	Temporary Impact - Acres
3	Upland Forests and Woodlands- Westside Lowlands Conifer-Hardwood Forest	–	0.004
	Wetlands- Emergent Wetlands	–	0.01
	Wetlands- Scrub-Shrub Wetlands	–	0.005
	Agriculture, Pasture, and Mixed Environs- Irrigated Pastures and Hay Meadows	–	5.55
	Open Water - Lakes, Rivers, Streams- Ephemeral Streams	–	0.01
	Upland Forests and Woodlands- Westside Lowlands Conifer-Hardwood Forest	26.90	27.55
Total Impacts Category 3 Acres		**26.90**	**33.13**
4	Agriculture, Pasture, and Mixed Environs- Irrigated Pastures and Hay Meadows	–	0.24
	Open Water - Lakes, Rivers, Streams- Ephemeral Streams	–	–
	Riparian Forest and Shrubland Complexes- Westside Riparian	–	0.50
	Upland Forests and Woodlands- Westside Lowlands Conifer-Hardwood Forest	–	12.59

Table 10: Habitat Impacts from Proposed RFA13 Changes

Habitat Category	Habitat Type-Subtype[1]	Permanent Impact - Acres	Temporary Impact - Acres
	Agriculture, Pasture, and Mixed Environs- Orchards, Vineyards, Wheat Fields, Other Row Crops, Irrigated Poplar Plantations	–	5.26
Total Impacts Category 4 Acres		**-–**	**18.58**
6	Urban and Mixed Environs- Urban and Mixed Environs	0.83	11.98
Total Impacts Category 6 Acres		**0.83**	**11.98**
Total RFA13 Estimated Impacts - Acres		**27.73**	**63.69**

Temporary impacts

Construction will involve vegetation removal, trenching, grading, and excavation work, use of heavy equipment, all which have the potential to impact habitat and wildlife. Construction impacts include temporary habitat loss and habitat fragmentation. Potential indirect impacts from construction include increased potential for invasion of noxious weeds into the right-of-way and adjacent habitats.

The certificate holder will mitigate areas temporarily impacted by RFA13 activities as described in the draft Restoration of Temporary Impacts Plan (Attachment P-1 of this order). These measures include restoring, revegetating, and returning all areas temporarily impacted by construction to original contours and vegetation type. The Department recommends Council impose new conditions to require that the certificate holder finalize and implement the Restoration of Temporary Impacts Plan as set forth in recommended Fish and Wildlife Conditions 1 and 2, below. Following restoration of temporary impacts, ongoing maintenance of the restored areas will be addressed through the certificate holder's adherence to its Vegetation Control and Management Plan as provided in RFA13 Exhibit P Attachment P-2. This plan includes obligations to monitor and control for noxious weeds, along with vegetation clearance requirements that address wildfire risk. This plan is incorporated into the certificate holder's Wildfire Mitigation Plan, provided in Attachment V-2 of this order, required to be implemented under recommended Wildfire Prevention and Risk Mitigation Condition 1.

Recommended Fish and Wildlife Condition 1 [PRE]: Prior to construction of components or phase of the Mist Resiliency Project, as applicable, the certificate holder shall finalize the Restoration of Temporary Impacts Plan similar to the draft plan provided in Attachment P-1 of this order, to be prepared in consultation with ODFW and approved by ODOE. The scope of finalization shall adhere to the requirements established in Section 1.0 of the plan.
[PRE-FW-01; Final Order on AMD13]

Recommended Fish and Wildlife Condition 2 [GEN]: Following construction of components or phase of the Mist Resiliency Project, as applicable, and during operations,

for the duration required for restoration, the certificate holder shall implement the Restoration of Temporary Impacts Plan.
[GEN-FW-01; Final Order on AMD13]

Permanent impacts

The proposed RFA13 changes will result in approximately 27.73 acres of permanent impacts to Category 3 habitat. The mitigation goal for Category 3 habitat, as set forth in OAR 635-415-0025, is presented below:

- **Habitat Category 3:** Essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.
  Mitigation Goal: No net loss in either existing habitat quantity or quality. Mitigation must be in-kind and in-proximity.
  Mitigation Ratio: 1:1
  Permanent impacts: 26.90 acres

Permanent habitat impacts require long-term mitigation. Certificate holder proposes to minimize and mitigate all permanent impacts that cannot be avoided, as described in the draft Habitat Mitigation Plan (See Attachment P-3 of this Order). The HMP would mitigate any permanent impacts to Category 3 and 4 habitats at a 1:1 ratio: 1 acre of in-kind mitigation to every 1 acre of permanent impact. The draft HMP identifies a permittee mitigation option to be implemented at a mitigation area. Three potential sites are identified (referred to as Options 1 through 3). The draft HMP offers a second mitigation approach (Option 4), a compensatory mitigation payment program to ODFW, which is not an available option through ODFW currently and is not evaluated in this order.

The three potential habitat mitigation areas presented in the draft HMP are proposed adjacent to HMCS, Miller Station, and near the site. The HMA conditions and potential enhancement are summarized below.

HMA Site - Option 1: Habitat Mitigation Area Adjacent to NMCS. Potential enhancement actions at this site include: removing the site from harvest rotation; reshaping the existing rock quarry by adding soil to fill in the quarry; restoring contours and installing erosion control structures as needed; and replanting with an ODFW-approved seed mix.

HMA Site - Option 2: Habitat Mitigation Area Adjacent to Miller Station. Potential enhancement actions at this site include: removing the site from harvest rotation and other enhancement actions to be determined, prior to construction, based on consultation with ODFW.

HMA Site - Option 3: Habitat Mitigation Area Near the proposed RFA13 changes. Potential enhancement actions at this site include: removing the site from harvest rotation and

other enhancement actions to be determined, prior to construction, based on consultation with ODFW.

ODFW Coordination

The Department held a coordination call with ODFW on the preliminary RFA13 on May 8, 2024, conducted a site visit with ODFW on June 12, 2024, and held a follow-up coordination call with ODFW biologists on July 20, 2024. ODFW concurred with the habitat categorizations and acres of potential impacts to habitat requiring mitigation. The May 8th call focused on the surveys and findings, the requirements for the HMP/HMA and discussed the habitat protection and HMP habitat enhancement measures for an HMA. ODFW comments are summarized and included in Attachment B of this order.

The draft HMP provided in RFA13 Exhibit P Attachment P-1 is in draft form. The Department recommends Council establish the following requirements and scope to finalize the HMP.

- Prior to fully securing the legal right to the habitat mitigation area, if other than HMA Site – Option 1 as presented in the draft HMP, certificate holder shall be required to complete desktop and field surveys of the HMA site and propose suitable enhancement actions for the site, and obtain concurrence from ODOE, in coordination with ODFW, on the adequacy of the enhancement actions in meeting the Category 3 mitigation goal for no net loss of habitat quality. If concurrence is not obtained from ODOE and ODFW, certificate holder shall propose another HMA site.
- Certificate holder shall be required to demonstrate that it has acquired the legal right to create, enhance, maintain and protect the HMA site concurred with by ODOE and ODFW, by means of outright purchase, conservation easement or similar conveyance.
- Certificate holder shall finalize the plan by specifying the scope and schedule of the selected enhancement actions, including monitoring protocol and success criteria that apply both short-term and for the operational life of the facility.

Recommended Fish and Wildlife Condition 3 [PRE]: <u>Prior to construction of components or phase of the Mist Resiliency Project, as applicable, the certificate holder shall finalize the draft Mist Resiliency Project Habitat Mitigation Plan as provided in Final Order on Amendment 13 Attachment P-3. The scope of finalization shall adhere to the requirements established in Section 1.0 of the plan.</u>
[PRE-FW-02; Final Order on AMD13]

Recommended Fish and Wildlife Condition 4 [OPR]: <u>During operation, the certificate holder shall implement and adhere to the requirements of the Mist Resiliency Project Habitat Mitigation Plan.</u>
[OPR-FW-01; Final Order on AMD13]

<u>Potential Adverse Impacts to State Sensitive Fish and Wildlife Species</u>

In addition to habitat impacts as discussed above, individual species can be affected by other aspects of a project, such as construction noise or other sensory disturbance, and direct mortality

through vehicle collision, among other concerns. Risks common to all species include direct impacts from injury or mortality due to collision with construction or maintenance vehicles and equipment or exposure to herbicides potentially used to control the growth of woody vegetation in the pipeline corridor. Indirect impacts could include increased mortality because of noise, loss of habitat, disturbances causing nest abandonment.

As required by OAR 345-021-0010(1)(p), certificate holder conducted a desktop analysis, as described in RFA13 Exhibit P, that resulted in the identification of 24 state sensitive species with the potential to occur in the analysis area. RFA13 Exhibit P also summarizes the results of field surveys. Tetra Tech surveyed the 259-acre survey area[81] on June 7, 8, and 9, 2022. Species targeted during general surveys included federal and state endangered, threatened, proposed, and candidate species, species of concern, birds of conservation concern, sensitive and sensitive-critical species.

There were 24 state sensitive species identified as having the potential to occur within the analysis area.

State Sensitive Mammals

State sensitive mammals that may occur in the analysis area include 3 species of bats (silver-haired, fringed myotis long-legged myotis) and 1 red tree vole. Certificate holder and its consultants did not observe any bats during wildlife surveys but also did not perform any acoustic or other surveys used to identify bats.

State Sensitive Birds

State sensitive bird species that may be present in the analysis area include olive-sided flycatcher, caspian tern, purple martin, western bluebird, white-breasted nuthatch (slender billed nuthatch), American peregrine falcon, arctic peregrine falcon, bald eagle. Of these species, the olive-sided flycatcher was the only one observed during the field surveys. The olive-sided flycatcher is a state sensitive species, as well as a Bird of Conservation Concern, and a Conservation Strategy Species.

State Sensitive Amphibians and Reptiles

State sensitive amphibians and reptiles that may be present in the analysis area include western pond turtle, coastal tailed frog, northern red-legged frog, foothill yellow-legged frog, western toad, clouded salamander, Cope's giant salamander, Columbia torrent salamander, and Southern torrent salamander.

The use of HDD at stream crossings should largely avoid the need to clear riparian areas, reducing the potential for upland impacts to amphibians.

State Sensitive Fish

[81] Field survey area was based on footprint of RFA13 activities within the larger analysis area.

In addition to T&E listed fish, state sensitive fish species that may be present in the analysis area (the Nehalem River, Lindgren Creek, Lyons Creek) include Pacific lamprey, western brook lamprey, coastal cutthroat trout (Southwestern Washington/Columbia River ESU), steelhead (Southwest Washington ESU, winter run; Oregon Coast ESU, winter run). Impacts on streams, rivers, riparian areas, and wetlands are addressed in Section V.B. Removal Fill Law of this order.

The certificate holder proposes to implement the following measures to avoid and minimize impacts to habitat and state sensitive species. Based upon certificate holder representations, the Department recommends Council impose the following conditions:

> **Recommended Fish and Wildlife Condition 5 [CON]:** <u>During construction of components or phase of the Mist Resiliency Project, as applicable, certificate holder shall not remove vegetation during the nesting bird season (February 1 to September 15).</u>
>
> a. <u>If vegetation removal is necessary during the nesting season, a qualified biologist will conduct a preconstruction nesting bird survey on and within 500 feet of the construction area no more than 14 days prior to proposed initiation of any vegetation removal or construction activities and provide the results of the survey to the Department no less than 10 days prior to any vegetation removal.</u>
>
> b. <u>The certificate holder shall not begin vegetation removal until the nesting bird survey has been approved by the Department, in consultation with ODFW. If there are construction delays of greater than 14 days during the nesting season, the certificate holder shall repeat the surveys in vegetated areas and obtain Department approval of the surveys prior to restarting construction.</u>
>
> [CON-FW-01; Final Order on AMD13]

Finally, to ensure that construction of the proposed RFA13 changes are conducted in a manner that minimizes potential impacts to sensitive fish and wildlife habitat, the Department recommends that Council impose the following conditions to require adequate environmental awareness training of contractors, workers, and staff, and monitoring during construction and operations:

> **Recommended Fish and Wildlife Condition 6 [CON]:** <u>During construction of components or phase of the Mist Resiliency Project, as applicable, certificate holder shall require that all onsite workers attend an environmental awareness training session conducted by an environmental professional.</u>
>
> a. <u>The training shall include, but not be limited to, the following topics: identification of approved Project boundaries and access roads including flagged exclusion areas; identification of sensitive wetland and waterbody resources; identification of sensitive and special status plant and wildlife species found in the analysis area; techniques regarding avoidance and minimization measures the certificate holder will implement; the notification process to be followed if new sensitive resources are identified; permit requirements; buffer distances from sensitive and protected resources; work timing restrictions including seasonal restrictions; the role of the onsite environmental</u>

inspector(s) and NWN environmental personnel; 25 mph speed limit restrictions; and other topics as necessary.

b. A copy of the training shall be provided to the department.

c. Records of completed worker training shall be maintained onsite and made available to the department upon request.

[CON-FW-02; Final Order on AMD13]

III.H.2. Conclusions of Law

Based on the foregoing analysis, and subject to compliance with the recommended site certificate conditions described above, the Department recommends Council find that the design, construction and operation of the facility, with proposed RFA13 changes, are consistent with the mitigation goals and requirements of the Oregon Department of Fish and Wildlife's Fish and Wildlife Habitat Mitigation Policy under OAR 635-415-0025.

III.I. THREATENED AND ENDANGERED SPECIES: OAR 345-022-0070

To issue a site certificate, the Council, after consultation with appropriate state agencies, must find that:

(1) For plant species that the Oregon Department of Agriculture has listed as threatened or endangered under ORS 564.105(2), the design, construction and operation of the proposed facility, taking into account mitigation:

(a) Are consistent with the protection and conservation program, if any, that the Oregon Department of Agriculture has adopted under ORS 564.105(3); or

(b) If the Oregon Department of Agriculture has not adopted a protection and conservation program, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species; and

(2) For wildlife species that the Oregon Fish and Wildlife Commission has listed as threatened or endangered under ORS 496.172(2), the design, construction and operation of the proposed facility, taking into account mitigation, are not likely to cause a significant reduction in the likelihood of survival or recovery of the species.[82]

III.I.1. Findings of Fact

The analysis area for threatened or endangered plant and wildlife species is the area within 5 miles of the RFA13 site boundary.

RFA13 Discovery Measures

[82] OAR 345-022-0070, effective May 15, 2007.

RFA13 Exhibit Q provides a desktop analysis of potential T&E species within the analysis area.

The desktop review relied on academic literature, a review of previous field surveys in the vicinity, and the following sources to identify the potential species that are known to occur, or may be likely to occur within the analysis area:

- 2022-2023 National Oceanic and Atmospheric Administration (NOAA) Fisheries, National Marine Fisheries Service;
- 2022-2023 Oregon Department of Agriculture (ODAg); Plant Conservation Program;
- 2007- 2024 Oregon Department of Fish and Wildlife (ODFW) fish and wildlife habitat data;
- Oregon Biodiversity Information Center (ORBIC), Threatened and Endangered species of Oregon;
- Oregon State University, Department of Botany and Plant Pathology, 2023 Oregon Flora Project. 2023;
- U.S. Fish and Wildlife Service (USFWS), White Tailed Deer data.

Based on the available data from the sources reviewed, 15 species or populations listed as state threatened, endangered, or candidate were identified as having the potential to occur within the analysis area: 1 mammal, 11 vascular plants, and 3 fish as shown in Table 11 below.

Table 11: State-Listed T&E and Candidate Species

Species[1]	State Status	Occurrence within Analysis Area[2]
Columbian white-tailed deer - *Odocoileus virginianus leucurus*	T	No
Coho salmon (Oregon Coast Evolutionarily Significant Unit [ESU]) -*Oncorhynchus kisutch*	S	**Yes**
Coho salmon (Lower Columbia River ESU) -*Oncorhynchus kisutch*	E	**Yes**
Chinook salmon (Lower Columbia River ESU, spring run and fall run) *Oncorhynchus tshawytscha*	SC	**Yes**
Tall bugbane - *Actaea elata* var. *elata* (syn. *Cimicifuga)*	C	No
Willamette Valley larkspur - Delphinium oreganum	C	No
Peacock larkspur - Delphinium pavonaceum (syn. Delphinium menziesii ssp. pallidum)	E	No
Coast Range fawn-lily - Erythronium elegans	T	No
Queen-of-the-forest - Filipendula occidentalis	C	No
Howell's montia - Montia howellii	C	**Yes**
Saddle Mt. saxifrage - Saxifraga hitchcockiana (syn. Micranthes hitchockiana)	C	No
Meadow checkermallow - Sidalcea campestris	C	No
Bristly-stemmed sidalcea - Sidalcea hirtipes	C	No
Nelson's sidalcea - Sidalcea nelsoniana	T	No

Table 11: State-Listed T&E and Candidate Species

Species[1]	State Status	Occurrence within Analysis Area[2]
Oregon sullivantia - Sullivantia oregana	C	No

1

T&E Fish - Salmon Species

The desktop analysis identified that there are 3 known T&E-listed salmon species in the analysis area:

- Coho salmon (Oregon Coast Evolutionarily Significant Unit [ESU])
  Oncorhynchus kisutch
- Coho salmon (Lower Columbia River ESU)
  Oncorhynchus kisutch
- Chinook salmon (Lower Columbia River ESU, spring run and fall run)
  Oncorhynchus tshawytscha

The Oregon Coast ESU of coho salmon is federally listed as Threatened and is Sensitive in the state of Oregon; the Lower Columbia River ESU is federally listed as Threatened and is listed as Endangered in the state of Oregon. The Lower Columbia River ESU of Chinook salmon is federally listed as Threatened and is Sensitive Critical in the state of Oregon. All 3 species are known to utilize Lindgren Creek and Nehalem River as habitat.

Howell's Montia (*Montia howellii*)

The desktop analysis identified one state candidate plant species as occurring within the RFA13 site boundary: Howell's Montia (*Montia howellii*). Howell's montia occurs west of the Cascades from British Columbia to California. Howell's montia occurs in sparsely vegetated moist to seasonally wet areas such as riparian and wetland areas. Threats to the species include timber harvest, road construction and maintenance, vehicles, and competition. The species is not T&E-listed at the federal or state level.

Field Surveys for T&E Species in RFA13 Analysis Area

Based upon the results of the updated desktop analysis, the certificate holder retained qualified biologists to conduct wildlife habitat and botanical field surveys in 2022 and 2023 within the RFA13 site boundary.

T&E Fish and Wildlife Surveys

Qualified biologists conducted wildlife and habitat categorization surveys in 2022 (June 7, 8, and 9) for compliance with EFSC's Fish and Wildlife Habitat standard. Transect surveys were performed to characterize habitat throughout the RFA13 project boundary, with simultaneous searches for special status wildlife species and special habitats. No proposed, candidate, threatened, or endangered fish or wildlife species were observed during these surveys, however none of these surveys were protocol-level surveys designed for specific species. No field surveys for T&E fish were conducted as part of RFA13 analysis in Exhibit Q.

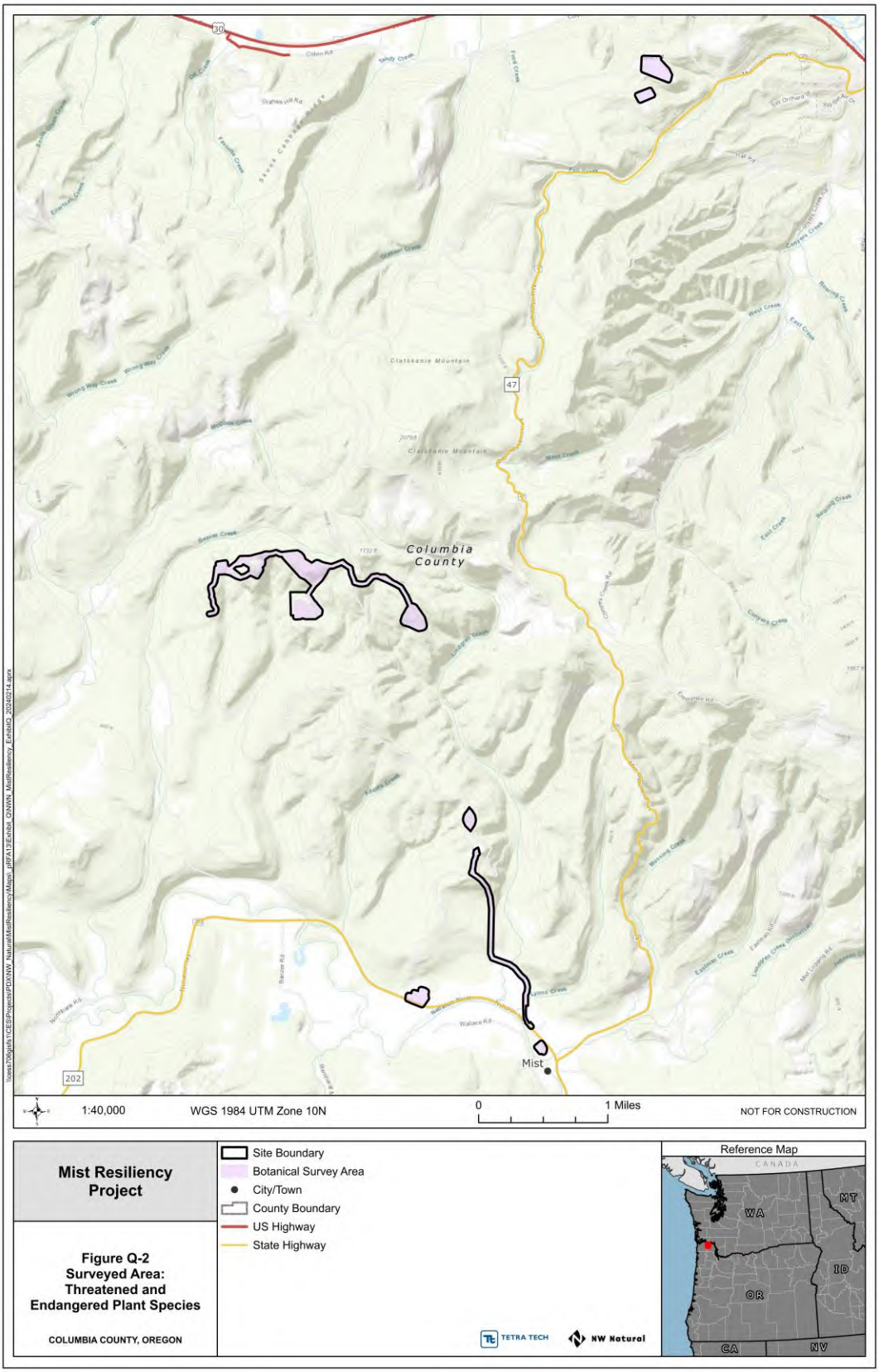
T&E Plant Surveys

Field surveys for listed and candidate plant species were conducted in 2022 and 2023 (See Figure 16 below). Surveyors used the intuitive controlled transect method[83] to document the presence or absence of target plant species. Surveys were conducted within the RFA13 site boundary in suitable habitat and when an area with high potential for target plants was encountered (e.g., wetland). In 2022, field surveys were conducted during the appropriate time of year to capture target species during blooming or fruiting. The 2023 field surveys within the site boundary occurred outside the recommended survey period and did not follow a species-level protocol.

Of the 11 potential plant species that are state listed or are a candidate or proposed for state listing, only one of these, Howell's montia (*Montia howellii*), was found to occur within the RFA13 analysis area and site boundary during 2022 field surveys. During 2022 surveys, a single population consisting of approximately 2,700 plants growing densely within the two-track road matrix comprising approximately 800-square feet. Two additional Howell's montia sub-populations consisting of one plant and eight dispersed plants (35 square foot area) were 15 and 40 feet further north along the mainline road's eastern edge. In 2023, surveys of additional areas were conducted in September, outside of the Howell's montia blooming period. While it is a candidate for listing as a state-listed T&E plant species, it has not been listed and is not listed as a T&E species at a federal or state level.

[83] An intuitive controlled survey is a complete survey of habitats with the highest potential for supporting rare plant populations and a less intense survey of all other habitats present. This type of survey requires botanists familiar with the habitats of all the plant species that may reasonably be expected to occur in the project area. The botanist traverses through the project area enough to see a representative cross section of all the major plant habitats and topographic features. During the survey, the botanist compiles a species list of all plant taxa seen en route and keeps track of the plant community or habitat type where each taxon occurs. Source: https://www.cnps.org/wp-content/uploads/2019/10/Bot-Cert_US-BLM-plant-survey-protocols-LR.pdf

Figure 16: Threatened and Endangered Plant Survey Area



Threatened and Endangered Species within the Analysis Area

The Department has reviewed the information used to identify T&E species within the analysis area and based on the information submitted in Exhibits Q and P, the Department recommends that Council find that there are 3 known T&E listed species within the analysis area: the Oregon Coast ESU of coho salmon, the Lower Columbia River ESU of coho salmon and the Lower Columbia River ESU of Chinook salmon.

Potential Impacts to Identified Threatened and Endangered Species

The RFA13 changes will cross Lindgren Creek, designated as essential spawning habitat for these 3 T&E-listed salmon species, near its confluence with the Nehalem River. These fish species could be impacted by RFA13 activities near streams, wetlands, and associated aquatic habitat within the analysis area. Impacts on streams, rivers, riparian areas, and wetlands are addressed in Section V.B. Removal Fill Law of this order.

RFA13 proposed changes will not impact any T&E listed plant species and the only state candidate plant species, *Howell's Montia*, while known to occur in the analysis area, will be avoided entirely during construction, if encountered. For these reasons, the Department recommends that Council find that RFA13 proposes changes that will not impact any T&E plants under this standard.

ODFW and ODAg Coordination

The Department held a coordination call with ODFW on the preliminary RFA13 on May 8, 2024, conducted a site visit with ODFW on June 12, 2024, and held a follow-up coordination call with ODFW biologists on July 20, 2024. Coordination with ODFW habitat biologists focused on RFA13 proposed changes, RFA13 survey and report methods and findings for T&E wildlife, and the certificate holder's proposed minimization and avoidance measures to avoid any impacts to T&E listed fish. ODFW also provided technical review on the methods proposed to avoid impacts to T&E salmon using horizontal directional drilling (HDD) to cross under Lindgren Creek. Based on that coordination and review, the certificate holder revised and submitted the Inadvertent Return Response Plan (See Attachment C of this Order) for the use of HDD near Lindgren Creek. The revised plan incorporated comments from ODFW to ensure the use of HDD does not impact T&E fish. ODFW will continue to be consulted on the finalization of the plan prior to construction.

The Department consulted with ODAg, on July 24, 2024 on the potential for T&E plants in the RFA13 analysis area, RFA13 survey and report methods and findings, and concurred that the only T&E candidate species likely to occur is Howell's Montia, and that methods used to identify the species were sufficient and confirmed that it is not currently a T&E-listed plant. No other T&E plants are likely to occur in the analysis area. There are no recommendations or mitigations required for T&E plants for RFA13. ODAg appreciated the efforts to avoid Howell's Montia, but acknowledges it is not T&E listed and warrants no additional T&E protection.

Minimization and Mitigation Measures

RFA13 proposes to work near and around areas designated as essential habitat for federal and state T&E-listed fish: the Oregon Coast ESU of coho salmon is federally listed as Threatened and is Sensitive in the state of Oregon; the Lower Columbia River ESU of coho is federally listed as Threatened and is listed as Endangered in the state of Oregon; and the Lower Columbia River ESU of Chinook salmon. The certificate holder proposes avoiding all impacts to T&E fish through the placement and use of HDD to cross under Lindgren Creek and through the implementation of BMPs to ensure that HDD and other trenching work does not impact T&E fish or their habitat.

In RFA13 Exhibit Q, the certificate holder states that HDD will be used to cross under Lindgren Creek, thereby avoiding all impacts to T&E fish. Additionally, the certificate holder has proposed methods and BMPs to minimize any impact to T&E fish in the draft HDD Inadvertent Return Response Plan (See Attachment C of this Order). Based upon consultation with ODFW, the certificate holder identified the following BMPs to ensure that the use of HDD will not impact T&E fish or their habitat. These representations have been added to the draft HDD Inadvertent Return and Response Plan:

- NWN will minimize the use of herbicides to the extent practicable including avoiding their use in the vicinity of sensitive environments or species. If use of herbicides is required to control the growth of vegetation in the pipeline corridor, NWN will comply with all applicable federal and state regulations.

- An HDD Design has been prepared to reduce the risk of impacts on Lindgren Creek. This design includes analysis of hydraulically fracturing the bore hole during drilling, which could lead to drilling fluid surface release, and adjusting the depth of the HDD profile such that the risk of drilling fluid surface release is minimized. In addition, entry and exit points are set back from Lindgren Creek between approximately 175 and 185 feet to minimize impacts to the creek and riparian areas surrounding the creek. Entry and exit workspace are located within Mainline Road or an adjacent pull out to reduce impacts to surrounding areas.

- Silt fences will be installed adjacent to the entry and exit workspaces to limit migration of any surface water or drilling fluid. However, the risk of drilling fluid leaving the workspace is low as discussed in the following bullet point.

- Drilling fluid will be contained in drilling fluid returns pits excavated at the entry and exit points. These pits are typically 4 feet wide by 4 feet long by 4 feet deep. Drilling fluid used during drilling will return to these pits where they will be pumped to a vacuum truck and hauled off site.

- Drilling fluids can be inadvertently released to the ground surface during HDD operations. The likelihood of drilling fluid surface release is typically higher near the HDD entry/exit pits. Therefore, the HDD is being designed to cross the stream in the

HDD profile's bottom tangent (deepest depth of the profile). Hydraulic fracture analyses completed during preliminary design of the HDD indicate that the risk of hydraulic fracture (and subsequent drilling fluid release to Lindgren Creek) is low, with calculated factors of safety against hydraulically fracturing the bore hole greater than 1.5.

- Drilling fluid returns to the entry or exit pits are visually monitored during drilling to verify that drilling fluid returns are maintained to the entry or exit pits at all times during construction. If a decrease in drilling fluid returns is observed (which could indicate a blockage downhole that could lead to hydraulic fracture and subsequent drilling fluid surface release) the contractor will take measures such as tripping out tooling to clean the hole and reestablish drilling fluid returns. Provided drilling fluid returns are maintained during drilling, there is typically a low risk of hydraulic fracture and subsequent inadvertent returns.

- The HDD contractor will designate a person to continually monitor the HDD alignment for surface indications of drilling fluid surface release. If observed, the contractor will immediately disengage drilling fluid pumps to minimize the release and will immediately contain and clean the release.

- Downhole drilling fluid pressures will be monitored during construction and compared to the hydraulic fracture analysis. If drilling fluid pressures are significantly higher than anticipated, the contractor will implement mitigation measures to reduce the downhole drilling fluid pressures. Such measures may include tripping out tooling to clean the hole, adjusting drilling fluid properties to more effectively clean the hole and reduce drilling fluid pressures or performing partial reaming passes to enlarge the hole thereby creating more annular space downhole for drilling fluid flow which in turn reduces downhole annular pressures.

- An HDD design and associated report are being prepared, including specifications for deviance from the HDD profile depth and HDD alignment. The contractor will be required to maintain the HDD alignment and profile specifications, follow the designed HDD alignment and profile, and follow recommendations contained within the HDD design report. Requiring the contractor to follow the HDD design alignment and profile, alignment and profile specifications, and recommendations of the HDD design report will reduce the risk of impact on essential fish habitat.

The draft HDD Inadvertent Return Response Plan as relied upon to protect soils under the Council's Soil Protection standard, as evaluated in Section III.D of this order. The Department recommends Council adopt the above representations into the draft HDD plan and require adherence to those requirements under recommended Soil Protection Condition 3.

III.I.2. <u>Conclusions of Law</u>

Based on the foregoing analysis, and subject to compliance with the proposed site certificate conditions described above, the Department recommends Council find that the design, construction and operation of the facility, with proposed 13 changes, are not likely to cause a significant reduction in the likelihood of survival or recovery of species listed as threatened or endangered by the Oregon Department of Agriculture or Oregon Fish and Wildlife Commission.

III.J. SCENIC RESOURCES: OAR 345-022-0080

(1) To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse visual impacts to significant or important scenic resources.

(2) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). In issuing such a site certificate, the Council may impose conditions of approval to minimize the potential significant adverse visual impacts from the design, construction, and operation of the facility on significant or important scenic resources.

(3) A scenic resource is considered to be significant or important if it is identified as significant or important in a current land use management plan adopted by one or more local, tribal, state, regional, or federal government or agency.

(4) The Council shall apply the version of this rule adopted under Administrative Order EFSC 1-2007, filed and effective May 15, 2007, to the review of any Application for Site Certificate or Request for Amendment that was determined to be complete under OAR 345-015-0190 or 345-027-0363 before the effective date of this rule. Nothing in this section waives the obligations of the certificate holder and Council to abide by local ordinances, state law, and other rules of the Council for the construction and operation of energy facilities in effect on the date the site certificate or amended site certificate is executed.[84]

III.J.1. <u>Findings of Fact</u>

Scenic Resources in the Analysis Area

The analysis area for Scenic Resources is 10 miles from the RFA13 site boundary.

[84] OAR 345-022-0080, effective December 19, 2022.

Management Plans Applicable to Lands within the Analysis Area

As part of the assessment completed by the applicant for RFA13, the certificate holder conducted and updated review of plans for the purposes of identifying important or significant scenic resources within the analysis area. The review covered two Oregon counties, (Columbia County and Clatsop County), as well as the city of Clatskanie, Oregon. There are also many rural communities within the analysis area: Pittsburg, Vesper, Birkenfeld, Mist, Marshland, Kerry, Westport, Wauna, Quincy, and Mayger; however, these are unincorporated areas that are managed under county land use plans. Council has previously identified two locations in Washington state as scenic resources under this standard for this facility and those are located in Cowlitz and Wahkiakum counties and include the city of Cathlamet, Washington. Because they were included in Council's previous findings for the facility, they are included and evaluated, as applicable, for RFA13.

State land administered by the Oregon Department of State Lands (DSL) and Oregon Department of Forestry (ODF), and Washington State Department of Transportation (WSDOT) are located within the analysis area. There are no tribal lands or plans located within the analysis area. Federal lands within the analysis area are limited to land administered by the U.S. Fish and Wildlife Service (USFWS) at Julia Butler Hansen National Wildlife Refuge and the National Park Service (NPS) for the Lewis and Clark National Historic Trail. Based on this updated review, the certificate holder identified a total of 11 potentially important or significant scenic resources as shown in Figure 17 below.

Council has previously evaluated all but two of these areas in the *Final Order on Request for Amendment 11* and found that the facility could be constructed and operated without having a significant adverse impact on those scenic resources. RFA13 evaluated potential scenic resources under this standard and within the RFA13 analysis area. RFA13 includes the identification and evaluation of two potential scenic resources not previously evaluated by C~~c~~ouncil as described below:

DSL Special Stewardship Lands

Special Stewardship Lands are managed by the Department of State Lands to ensure the protection of scenic, natural resource, cultural, educational and recreation values. The applicable DSL parcels are located along the Columbia River adjacent to the Julia Butler Hansen National Wildlife Refuge parcels, at 2.2 miles northwest at its nearest point to the RFA13 site boundary. These lands are generally managed for uses other than income production, such as aquatic and riparian habitat, threatened and endangered species, or visual quality.[85] These lands are part of the lands managed by DSL for the purpose of supporting the Common Schol Fund for the state of Oregon. While these Special Stewardship Lands are within the analysis area, and are likely scenic areas, there are no specific scenic management criteria or recommendations for these lands in the DSL Real Estate Asset Management Plan. For these

[85] Oregon Department of State Lands, Real Estate Asset Management Plan. 2012. Available at: https://www.oregon.gov/dsl/lands/Documents/DSL_REAMP.pdf Accessed by the Department 2024-05-14.

reasons, the Department recommends that Council find it is not an important or significant scenic resource under this standard.

Lewis and Clark National Historic Trail

Located 2.8 miles at its nearest point to the RFA13 site boundary, the Lewis and Clark National Historic Trail is managed under the National Park Service's 1982 Lewis and Clark National Historic Trail Comprehensive Management Plan. Portions of this trail cross the RFA13 analysis area. The purpose of the Lewis and Clark National Historic Trail is to commemorate the 1803 to 1806 Lewis and Clark Expedition through the identification; protection; interpretation; public use and enjoyment; and preservation of historic, cultural, scenic, and natural resources associated with the expedition and its place in U.S. and tribal history. While the Lewis and Clark National Historic Trail is within the analysis area, and scenic resources and values are mentioned in the NPS 1982 Lewis and Clark National Historic Trail Comprehensive Management Plan, it is not a designated scenic trail and there are no specific scenic management criteria or recommendations for managing scenic resources within the management plan. For these reasons, the Department recommends that Council find it is not an important or significant scenic resource under this standard.

The Department reviewed the information submitted in RFA13 Exhibit R, and the record for the facility, and recommends that Council find that the certificate holder has adequately and accurately identified the relevant plans and important or significant scenic resources and accurately identified 11 important or significant scenic resources in the RFA13 analysis area, as shown in Table 12 below.

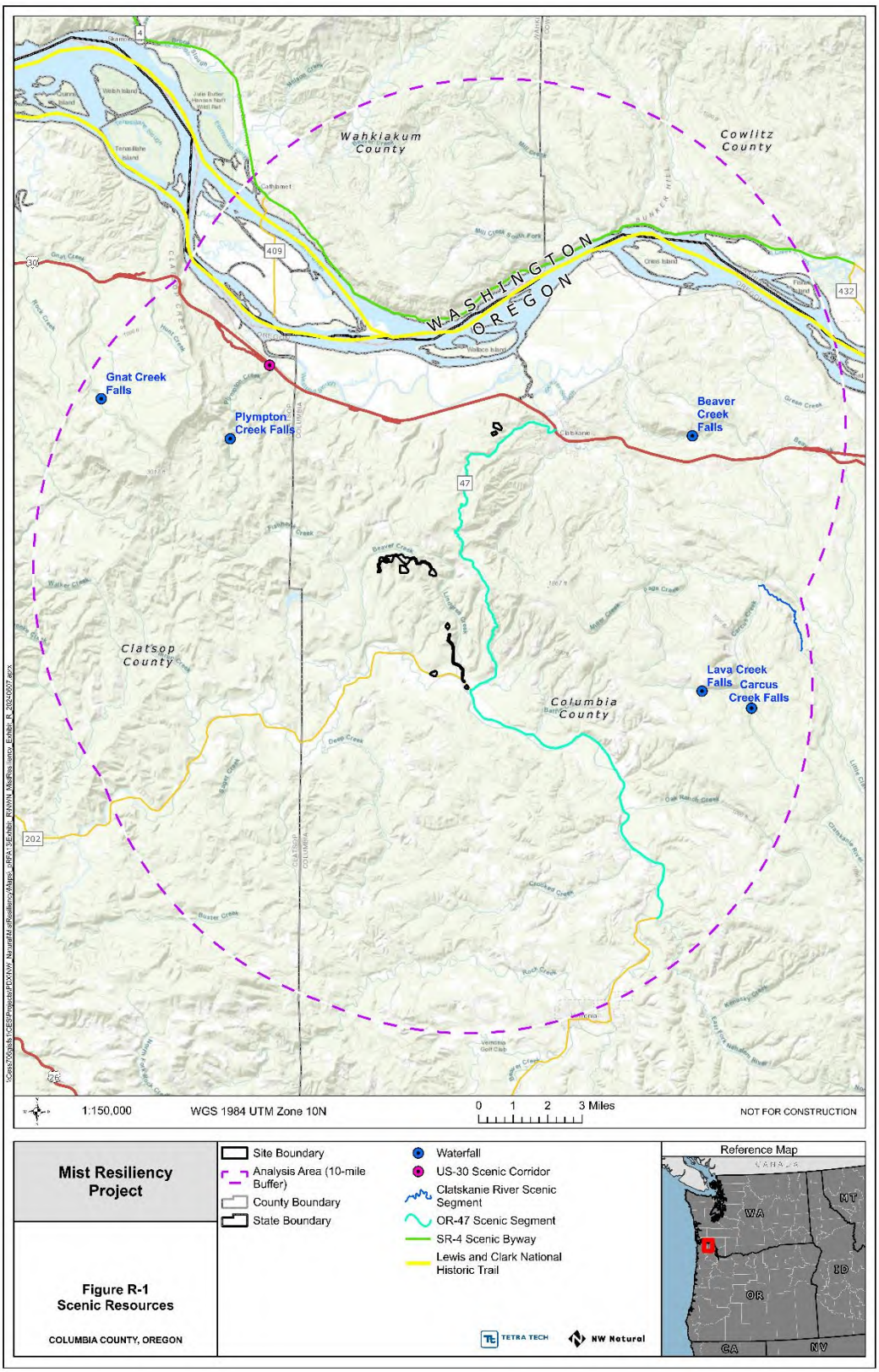
Table 12: Important or Significant Scenic Resources in RFA13 Analysis Area

Jurisdiction	Plan	Scenic Resources Specified in Plan (Y/N)	Important or Significant (Y/N)	Name of Scenic Resource(s)	Scenic Resource Description	Distance from Site Boundary (miles)	Direction from Site Boundary	Location of Scenic Resources Discussed in Plan
Counties								
Columbia County, OR	Columbia County Comprehensive Plan (Columbia County 2011)	Yes	Yes	**Beaver Creek Falls**	Beautiful natural falls in narrow creek valley; access by public road.	5.2	E	Part XVI. Goal 5, Article XIII. Scenic Resources (pp. 280-284)
				Carcus Creek Falls	A scenic 105-foot waterfall in a wild stream surrounded by privately owned timber lands of second growth alder, fir, cedar, and maple. No public access.	8.1	E	
				Lava Creek Falls	Waterfall on Lava Creek over 100 feet high, this site is surrounded by privately owned timber lands. No road access is available to the falls. No public access.	6.5	E	
				Clatskanie River – Apiary Falls to Carcus Creek	A wild, deep gorge on the Clatskanie River winding through a large second growth Douglas Fir forest. This is one of the few remaining roadless river segments in the northern Coast Range. No public access.	9.7	E	
				Scenic segment of OR-47	State-designated scenic highway segment of OR-47 between Pittsburg and Clatskanie [1/]	0.1	E	
Clatsop County, OR	Clatsop County Comprehensive Plan (Clatsop County 2023)	Yes	Yes	**Gnat Creek Falls**	A series of waterfalls in private and ODF ownership. The portion on Oregon Department of Forestry (ODF) land has been designated as a Scenic Conservation Area, and the private owner has voluntarily restricted logging within the river canyon.	9.3	NW	Chapter 5/Goal 5. Open Spaces, Scenic/Historic Areas, and Natural Resources, Outstanding Scenic Views and Sites (pp. 43-50 [document is misnumbered]); Draft 05, Chapter 5/Goal 5 document (p. 9)
				Plympton Creek Falls	Scenic 75-foot waterfall in a steep forested canyon, in lands owned by ODF. ODF has designated 40 acres around the falls as a Protective Conservancy, encompassing most of the older growth timber along the creek.	5.5	NW	
				Westport-Scenic Conservancy, Highway 30 Corridor	This area is on the south side of US-30 near Westport, extending for approximately one mile west of the road leading to the ferry dock. ODF defines the scenic corridor as extending 150 feet from the edge of the highway right-of-way, and limits timber management and harvest in this area.	6.6	NW	
State								
Oregon Department of State Lands (ODSL)	Real Estate Asset Management Plan (ODSL 2012)	Yes	Yes	**Special Stewardship Lands**	Special Stewardship Lands are managed to ensure the protection of scenic, natural resource, cultural, educational and recreation values. The applicable ODSL parcels are located along the Columbia River adjacent to the Julia Butler Hansen National Wildlife Refuge parcels.	2.2	NW	Chapter I, Introduction & Background (p. 7); Chapter II, Land Classification, Current Asset Land Base by Class, Special Stewardship Lands (pp. 12-13)
Oregon Department of Forestry (ODF)	Northwest Oregon State Forests	Yes	Yes	**Westport-Scenic Conservancy,**	This area is on the south side of US-30 near Westport, extending for approximately one mile west of the road leading to the ferry dock. ODF defines the scenic	6.6	NW	Chapter 2. Understanding the Forest: Planning and Resources,

Jurisdiction	Plan	Scenic Resources Specified in Plan (Y/N)	Important or Significant (Y/N)	Name of Scenic Resource(s)	Scenic Resource Description	Distance from Site Boundary (miles)	Direction from Site Boundary	Location of Scenic Resources Discussed in Plan
	Management Plan (ODF 2010)			**Highway 30 Corridor**	corridor as extending 150 feet from the edge of the highway right-of-way, and limits timber management and harvest in this area. Same scenic resource as identified by Clatsop County; see above.			Scenic Resources (pp. 2-71 – 2-72); Chapter 3. Guiding Principles, Vision, and Goals, Resource Management Goals, Recreation and Scenic Resources (p. 3-15); Chapter 4. Resource Management Concepts and Strategies, Scenic Resources (pp. 4-105 – 4-107)
Washington State Department of Transportation (WSDOT)	Chapter 47.39 Scenic and Recreational Highway Act of 1967, Revised Code of Washington 47.30.020 (Washington State Legislature 2023)[2]	Yes	Yes	**State Route 4 (SR-4)/Lewis and Clark State Scenic Byway**	SR-4 beginning at the junction with SR 101, easterly through Cathlamet to Coal Creek Road, approximately 0.5 miles west of Longview city limits, has been designated under the Scenic and Recreational Highway Act of 1967. SR-4 is designated as part of the Lewis and Clark Trail Scenic Byway.	3.3	N	Scenic and Recreational Highway Act of 1967, RCW 47.39.020. Designation of portions of existing highways and ferry routes as part of system (pp. 1)

1. The current Oregon Highway Plan (ODOT 2023) does not designate this segment of OR-47 as a scenic highway. This segment of OR-47 is not a part of a designated state or national Scenic Byway, All-American Road, or Oregon Tour Route.
2. SR-4/Lewis and Clark State Scenic Byway is not a newly reviewed scenic resource, however, the plan associated with the scenic resource has been updated since the last RFA.

Figure 17: Scenic Resources in RFA13 Analysis Area



Potential Visual Impacts of Proposed Facility

Topographical maps were used to determine the extent of visual impacts, if any, on the identified scenic resources.

Facility Structures

Council previously evaluated the potential visual impacts to all but one of the scenic resources identified in the RFA13 analysis area in the *Final Order on Request for Amendment 11* and found that there would be no significant adverse visual impacts to these resources from facility structures. The *Final Order on Request for Amendment 11* included an evaluation of facility structures up to 80 feet in height. Most of the RFA13 proposed changes will be below-ground and under the maximum height previously evaluated and approved by Council in the *Final Order on Request for Amendment 11*. Permanent above-ground facilities as proposed in RFA13 are limited to the North Mist Compressor Station including a new compressor building and two dehydration trains, above-ground appurtenances at Newton, Stegosaur, and Medicine well pads, and the control and operations building. The maximum height of RFA13 proposed structures will be under 50 feet.

In the updated visual impact assessment submitted with RFA13 (See Exhibit L, Figures L-2.1-2.5), the certificate holder relied on GIS and topography to identify what portions of the facility might be visible. Based on this assessment, only 2 scenic resources would have limited and minimal views of the facility components. The visual impacts will be limited to areas of cleared vegetation along the right of way and limited views of facility components which will be obscured in large part be underlying terrain and vegetation and distance. All these facility components are in areas previously evaluated by Council and under the previously approved 80 feet in height and these locations are surrounded by mature forest vegetation that would effectively screen them from public view during operations. For these reasons, the Department recommends that Council find that facility structures, with RFA13 proposed changes, would not have a significant visual impact on any scenic resources within the analysis area.

Table 13: Evaluation of Visual Impacts from Proposed RFA13 Changes at Scenic Resources

Scenic Resource	Potential Project Visibility	Potential Visual Impact
Scenic segment of OR-47	Some potential visibility of the cleared rights-of-way and above-ground Project components; however, views of the Project facilities are largely if not entirely blocked by terrain and/or vegetation. The Project runs to the west of OR-47, approaching within 0.1 mile in one area and substantially farther away for most of the highway segment. The above-ground Project components would be a minimum of 1.7 miles from the highway. The highway runs at a similar elevation to much of the Project, and terrain would only partially intervene; however, the Project would not require clearing of intervening vegetation (see Figure R-1 and L-2).	None to Negligible depending on location on highway. The Project would be located a minimum of 0.1 mile from OR-47 and would not require clearing of intervening vegetation making views of the cleared rights-of-way unlikely. Limited views of the above-ground Project components may be possible from some specific vantage points along the highway where not blocked by terrain and where ongoing forest management activities along the highway corridor have enabled a view. However, the above-ground Project components would likely be hidden from view at all potential highway vantage points by forest vegetation maintained around the NMCS infrastructure.
SR-4/Lewis and Clark State Scenic Byway	Some potential visibility of portions of the cleared rights-of-way; potential views of above-ground Project components are blocked by terrain and/or vegetation (see Figures R-1 and L-2).	Negligible. Potential views of the Project from the SR-4/Scenic Byway are largely blocked by vegetation and terrain. Some portions of the SR-4/Scenic Byway may have increased views of pipeline and powerline alignment rights-of-way. However, where visible, the rights-of-way would be seen in the context of actively managed commercial timber lands with a network of logging roads and a patchwork of clearcuts and recovering harvested areas, and at a distance of over 7.0 miles, making the pipeline and powerline alignment rights-of-way difficult to discern; no portion of the pipeline or powerline alignment are aligned in such a way as to provide a long view down the cleared corridors. Additionally, besides the SR-4/scenic byway that is essentially collocated with the LCNHT, the portion of the LCNHT within the Analysis Area is accessible only by water so there would be few viewers affected. The LCNHT in general is anticipated to have similar views of the Project as SR-4/Lewis and Clark State Scenic Byway, with a minimum distance of 2.8 miles from the northern-most Project Site Boundary, 8.7 miles from the cleared rights-of way, and 6.5 miles from the closest above-ground Project components. The NMCS infrastructure and well pad appurtenances would not be visible from any point on the SR-4/Scenic Byway or LCNHT.

Loss of Vegetation

Council previously evaluated the potential visual impacts to all of the significant or important scenic resources identified in the RFA13 analysis area in the *Final Order on Request for Amendment 11* (RFA11) and found that there would be no significant adverse visual impacts to these resources from the loss of vegetation. Similar activities are proposed for RFA13 that include temporary clearing of vegetation during construction and the long-term vegetation management within right of ways during operations. Neither are anticipated to result in significant visual impacts on scenic resources. The visual impacts of facility vegetation management within the right of ways will be like other rights of way in the surrounding landscape and ongoing for the existing facility. Most of the facility will be obscured from view from these scenic resources by existing vegetation and underlying topography. For these reasons, the Department recommends that Council find that the loss of vegetation will not pose any significant visual impacts from any significant or important scenic areas within the RFA13 analysis area.

III.J.2. Conclusions of Law

Based on the foregoing analysis, the Department recommends Council find that the that the design, construction, and operation of the facility is not likely to result in significant adverse visual impacts to significant or important scenic resources.

III.K. HISTORIC, CULTURAL, AND ARCHAEOLOGICAL RESOURCES: OAR 345-022-0090

> *(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to:*
>
> *(a) Historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places;*
>
> *(b) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in 358.905(1)(c); and*
>
> *(c) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c).*
>
> *(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.*

(3) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.[86]

III.K.1. Findings of Fact

The direct analysis area under this standard is the area within the RFA13 site boundary. The indirect analysis area is the area within an extending 1 mile from the RFA13 site boundary.

RFA13 Discovery Measures

Historical Research Associates, Inc. (HRA) conducted a records review using the Oregon State Historic Preservation Office (SHPO) Oregon Archaeological Records Remote Access (OARRA), GIS database, and Oregon Historic Sites Database (OHSD), reviewing reports and forms associated with previous archaeological and historical studies to determine if buildings, structures, districts, objects, or archaeological resources had been previously recorded within the analysis area and its vicinity. The records review included all areas within 1 mile of the analysis area for the Project. The records review also included regional and local environmental histories, ethnographic studies, and documents pertaining to local history. Results of the records review included four previous cultural resource surveys within the analysis area and 12 previous surveys within one-mile of the analysis area.

The results of the records review indicate that no previously recorded historic, cultural, or archaeological resources have been recorded within the direct analysis area. There have been two sites, and seven isolates previously recorded within the indirect analysis area: a precontact lithic scatter, a precontact isolate, a historic-period refuse scatter, and six historic-period isolates. None of these are eligible for listing on the National Register of Historic Places (NRHP).

Following the records search, HRA conducted field surveys between June 19 and 21, 2023 and September 25 through 28, 2023. Field surveys methods followed current SHPO guidelines and included 10-to-20-meter pedestrian transects, subsurface sampling in areas with high probability for potential archeological resources, and inspection of soil exposures. It is noteworthy that the field survey report observes that most of the survey area is highly disturbed from previous land management activities such as grading, roadbuilding, and logging. The RFA13 direct analysis area for cultural resource field surveys was approximately 276.7 acres and encompasses all proposed RFA13 components with an additional 200-foot buffer around each of the proposed components. Approximately 251 acres of the RFA13 direct analysis area, the area where RFA13 activities will occur plus a buffer, was surveyed by HRA. No archaeological resources or historic-period buildings or structures were identified during the RFA13 field surveys.

[86] OAR 345-022-0090, effective May 15, 2007, amended by minor correction filed on July 31, 2019.

The certificate holder submitted the RFA13 confidential field survey report to SHPO as part of the preliminary RFA13 review on April 1, 2024 and the Department sent the notification of the preliminary RFA13 on March 28, 2024 and followed up with a SHPO submittal form and request from the Department for SHPO review and comments on the RFA13 and the Exhibit S and confidential cultural survey report on April 9, 2024. No comments were received on RFA13 from SHPO.

The certificate holder submitted the cultural resources survey report to the Confederated Tribes of the Grand Ronde, the Confederated Tribes of Siletz Indians, and the Confederated Tribes of the Warm Springs on April 1, 2024 requesting tribal review and comments. The Department sent tribal coordination emails on the RFA13 notice and follow up emails requesting tribal review and comment on the proposed amendment on March 28, 2024 and July 11, 2024 to the Confederated Tribes of the Grand Ronde, the Confederated Tribes of Siletz Indians, and the Confederated Tribes of the Warm Springs. No comments were received from any of the tribes on RFA13 at the time of this order.

The Department has reviewed the information submitted as part of Exhibit S and recommends that Council find that the certificate holder has used appropriate methods, and followed SHPO guidelines, to adequately identify the potential for historic, cultural and archaeological resources within the direct and indirect analysis areas for RFA13.

Potential RFA13 Impacts on Significant Resources

There are no historic or cultural resources identified within the analysis area that are listed or likely eligible for listing on the NHRP. No “archaeological objects” as defined at ORS 358.905(1)(a), or “archaeological sites” as defined at ORS 358.905(1)(c) were identified within the direct or indirect analysis area.

Because no resources were identified within the direct or indirect analysis area that are or would likely be eligible for NRHP listing or qualify as archaeological “sites” or “objects” per ORS 358.905(1), the Department recommends that Council find that RFA13 proposed changes will not have any impact on significant historic, cultural or archaeological resources.

Potential Impacts and Protection of Significant Resources

The Department further recommends that Council find that because there are no findings for cultural, archaeological or historic resources, there will be no significant impacts because of RFA13, and for these reasons, no mitigation measures are required for RFA13 proposed changes.

Because RFA13 includes ground disturbing activities that could result in an inadvertent discovery of cultural resources, and to update the requirements in existing Historic, Cultural and Archaeological Site Certificate Conditions 1 -3 to reflect the current SHPO practice of

including the same information in a formal Inadvertent Discovery Plan (IDP), the Department recommends that Council impose the following conditions to require the implementation of the IDP provided in Attachment S of this order, for use during RFA13 construction and on-going facility operations.

> **Recommended Historic, Cultural and Archeological Condition 1 [PRE]**: Prior to construction of a facility component or phase of the Mist Resiliency Project, as applicable, the certificate holder shall update the contact information provided in the Inadvertent Discovery Plan, as provided in the Final Order on Amendment 13 Attachment S.
> [PRE-HC-01; Final Order on AMD13]
>
> **Recommended Historic, Cultural and Archeological Condition 2 [CON]**: During construction of the Mist Resiliency Project, the certificate holder shall require all onsite employees and contractors to implement and adhere to the requirements of the Inadvertent Discovery Plan.
> [CON-HC-01; Final Order on AMD13]
>
> **Recommended Historic, Cultural and Archeological Condition 3 [OPR]**: During operations and maintenance activities resulting in ground disturbance, the certificate holder shall require all onsite employees and contractors to implement and adhere to the requirements of the Inadvertent Discovery Plan (IDP). The IDP shall be reviewed and updated annually for current contact information.
> [OPR-HC-01; Final Order on AMD13]

III.K.2. Conclusions of Law

Based on the foregoing analysis, and subject to compliance with the proposed site certificate conditions described above, the Department recommends Council find that the construction and operation of the facility, with the proposed changes, are not likely to result in significant adverse impacts to historic, cultural or archaeological resources that have been listed on, or would likely be listed on the NHRP or other archaeological objects or sites identified under OAR 345-022-0090.

III.L. RECREATION: OAR 345-022-0100

> *(1) To issue a site certificate, the Council must find that the design, construction and operation of a facility, taking into account mitigation, are not likely to result in a significant adverse impact to important recreational opportunities.*
>
> *(2) The Council must consider the following factors in judging the importance of a recreational opportunity:*

(a) Any special designation or management of the location;

(b) The degree of demand;

(c) Outstanding or unusual qualities;

(d) Availability or rareness;

(e) Irreplaceability or irretrievability of the opportunity.

(3) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). In issuing such a site certificate, the Council may impose conditions of approval to minimize the potential significant adverse impacts from the design, construction, and operation of the facility on important recreational opportunities.

(4) The Council must apply the version of this rule adopted under Administrative Order EFSC 1-2002, filed and effective April 3, 2002, to the review of any Application for Site Certificate or Request for Amendment that was determined to be complete under OAR 345-015-0190 or 345-027-0363 before the effective date of this rule. Nothing in this section waives the obligations of the certificate holder and Council to abide by local ordinances, state law, and other rules of the Council for the construction and operation of energy facilities in effect on the date the site certificate or amended site certificate is executed.[87]

III.L.1. Findings of Fact

Recreational Opportunities within the Analysis Area

The analysis area for recreational opportunities is the area 5 miles from the RFA13 site boundary.

In the *Final Order on Amendment 11* Council found that there were two important recreational opportunities located within the RFA11 analysis area for the facility: the Julia Butler Hansen Refuge for the Columbia While-tailed Deer and the Lower Columbia River Water Trail. Both important recreational opportunities are within the RFA13 analysis area. Council previously found that the Julia Butler Hansen Refuge is an important recreational opportunity as defined in OAR 345-022-0100(1) because it is operated under a special designation by a management plan, which includes goals for enhancing wildlife-dependent recreational opportunities, and

[87] OAR 345-022-0100, effective December 19, 2022.

includes irreplaceable islands with unique and unusual wildlife-dependent recreational opportunities including hunting, fishing, wildlife observation and photography, environmental education and interpretation. Council also previously found that considering its location, management of the location, and its irreplaceable and unusual qualities, the Lower Columbia River Water Trail is an important recreational opportunity as defined in OAR 345-022-0100(1).[88]

In RFA13 Exhibit T, the certificate holder identified five additional recreational areas within the RFA13 analysis area not previously identified or evaluated by Council under this standard:

- Lewis and Clark National Historic Trail
- North Coast Travel Management Area/Hunting Area
- Clatskanie City Park
- Cope's Park
- OSU Blodgett Tract Research Forest

The Department provides a summary of these five previously unevaluated recreational opportunities below:

<u>Lewis and Clark National Historic Trail</u>

Located approximately 2.8 miles north from the nearest point to the RFA13 site boundary, the Lewis and Clark National Historic Trail spans nearly 4,900 miles through the homelands of more than 60 Tribal nations and 16 states. It follows the historic outbound and inbound routes of the Lewis and Clark Expedition of 1803-1806 from Pittsburgh, Pennsylvania to the Pacific Ocean. The purpose of the Lewis and Clark National Historic Trail is to commemorate the 1803 to 1806 Lewis and Clark Expedition through the identification; protection; interpretation; public use and enjoyment; and preservation of historic, cultural, scenic, and natural resources associated with the expedition and its place in U.S. and tribal history. The trail was established by Congress in 1978 as part of the national trails system (NTS) as one of four original national historic trails and extended by 1,200 miles in 2019. The trail is managed under the National Park Service's (NPS) 1982 Lewis and Clark National Historic Trail Comprehensive Management Plan. It is designated as a national historic trail by the NPS and is available for recreational visitors and uses. Portions of this trail trend east-west and cross the RFA13 analysis area. Due to the route within the analysis area and the mode of transportation (boat) used at the time, the Lewis and Clark National Historic Trail in the analysis area is on the Columbia River.

<u>North Coast Travel Management Area/Hunting Area</u>

This recreational opportunity is an approximately 1-million-acre hunting area open to the public and managed by ODFW of which approximately 113,814 acres are within the RFA13 analysis area and includes the entire site boundary. The North Coast Travel Management Area (TMA) designated hunting area is not open for camping or ATV recreational users. This area is specified in the ODFW's Big Game Regulations. The North Coast TMA is a cooperative access program made up of lands owned by several public entities and private landowners. The

[88] MSTAMD11Doc123 Final Order on RFA 11 2016-04-21

program helps control wildlife damage and maintains public hunting access on private and surrounding public land. The TMA provides public hunting opportunity for deer, elk, bear, cougar, grouse, and quail. All Oregon Department of Fish and Wildlife Regulations and Seasons apply to these designated areas. Many of the roads that are closed to motor vehicles by gates, posted signs or barriers are open for walk-in hunting only.[89] This TMA provides unique and important recreational opportunities for the north coast of the state. For these reasons, the Department recommends that Council find that it is an important and irreplaceable recreational opportunity under this standard.

Clatskanie City Park

Clatskanie City Park is a 23-acre day use area that includes a boat ramp, swimming pool, skate park, sports facilities, playground, and picnic areas within the city of Clatskanie. It is located approximately 2 miles from the RFA13 site boundary. While the park provides recreational opportunities to the public that may sound common, the fact remains that it offers recreational opportunities that are not offered by other parks in the analysis area and for this reason, the Department recommends that Council find that Clatskanie Park is a rare and irreplaceable opportunity. For these reasons the Department recommends that Council find it is an important recreational opportunity under this Council standard.

Cope's Park

Cope's Park is a 5-acre public park also located within the City of Clatskanie and approximately 2 miles from the RFA13 site boundary. The park has a 1.4 mile padded walking trail with fitness stations along the trail route. It also is the location of a Veterans' Memorial and the location of the city's Farmer's Market. These two uses are unique and rare for the area and the Veterans' Memorial could be considered both rare and irreplaceable for the local area and vicinity. For these reasons, the Department recommends that Council find it is an important recreational opportunity.

OSU Blodgett Tract Research Forest

The Blodgett Tract Research Forest is a 2,440-acre forest located in Columbia County about four miles south of the Columbia River in the upper Nehalem basin. It is managed by Oregon State University (OSU) Department of Forestry. OSU utilizes the Research Forests to find new ways to sustainably manage forests for conservation, education, business and recreation. These forests serve as a refuge for the community to connect with nature, learn about ecosystems, and enjoy favorite outdoor activities. All operations on the forests – including recreation and trails – are self-funded through timber harvests. The forest includes streams that serve as spawning areas

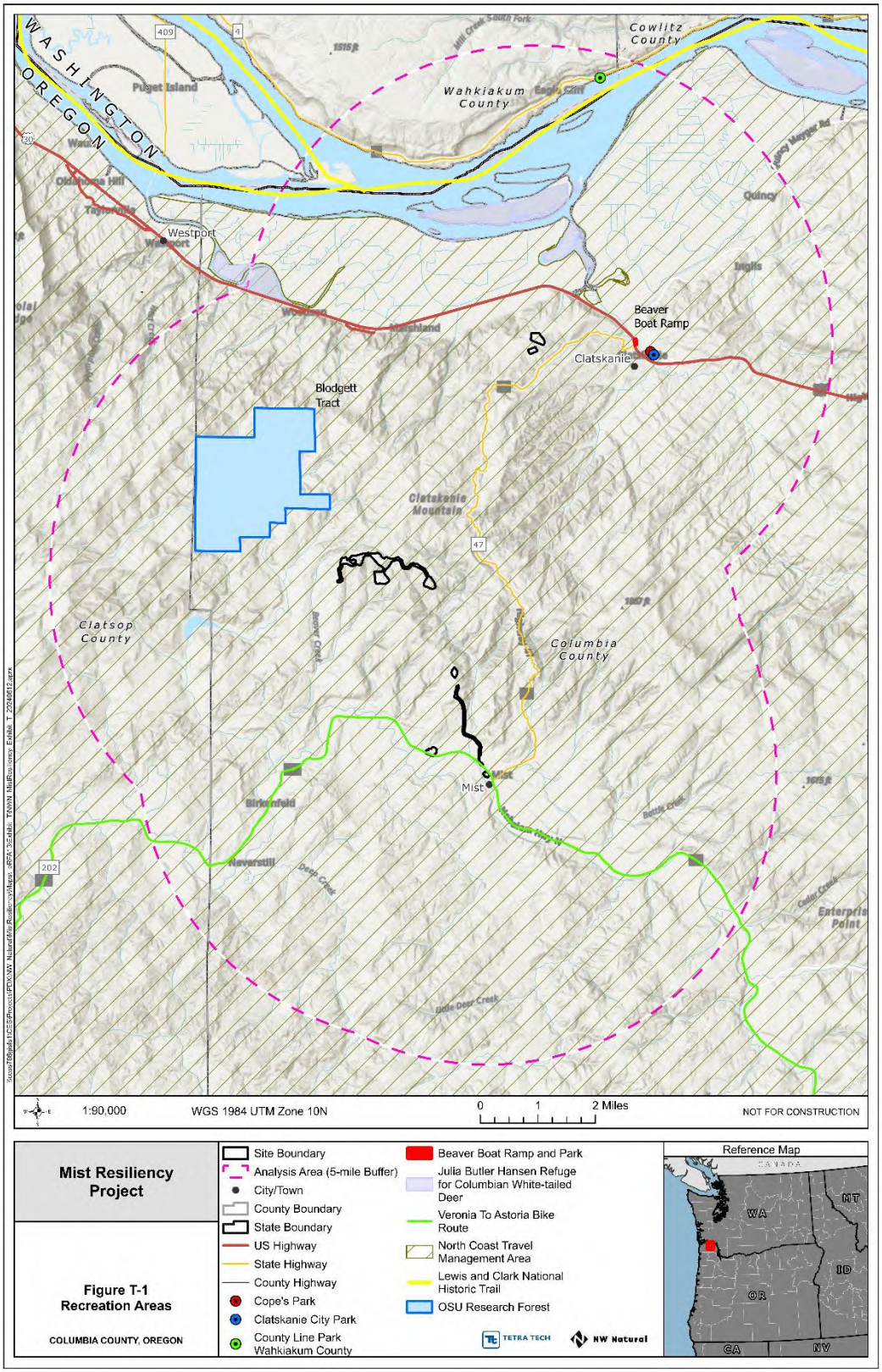
[89] ODFW. North Coast Travel Management Area 2023. Available at: https://www.dfw.state.or.us/maps/travel_management_areas/N_coast_north_geopdf.pdf and https://www.dfw.state.or.us/maps/travel_management_areas/N_coast_south_geopdf.pdf Accessed by the Department 2024-05-28.

for endangered coho salmon. It is both a rare and irreplaceable recreational natural resource area. For these reasons, the Department recommends that Council find it is an important recreational opportunity.

Based upon the Department's review of the information submitted in RFA13 and a review of Council's prior evaluation of recreational opportunities and the updated assessment of the three recreational opportunities identified above and not previously evaluated by Council, the Department recommends that Council find that there are 7 important recreational opportunities in the RFA13 analysis area (See Figure 18 below):

- Julia Butler Hansen Refuge for the Columbia White-tailed Deer
- Lewis and Clark National Historic Trail
- Lower Columbia River Water Trail
- North Coast Travel Management Area
- Clatskanie City Park
- Cope's Park
- Blodgett Tract Research Forest

Figure 18: Recreational Opportunities in RFA13 Analysis Area



RFA13 Potential Impacts to Important Recreation Opportunities

Council has previously evaluated the potential facility impacts to the Julia Butler Hansen Refuge for the Columbia White-tailed Deer and the Lower Columbia River Water Trail and found that there would be no significant impact or loss of these important recreational opportunities as the result of the construction or operations of the facility. Council has not previously evaluated the potential impacts to the North Coast Travel Management Area, Lewis and Clark National Historic Trail, Clatskanie City Park, Cope's Park, or Blodgett Tract State Forest. Because RFA13 includes the addition of related and supporting facilities not previously evaluated by Council within the site boundary, the Department provides its evaluation of RFA13 potential impacts to all seven of these important recreational opportunities below, as summarized in Table 14.

Table 14: Important Recreational Opportunities in RFA13 Analysis Area

Recreational Opportunity	Distance from RFA13 Site Boundary (miles)	Important Recreational Opportunity?	Previously Evaluated by Council?
Julia Butler Hansen Refuge for the Columbia White-tailed Deer	1.4 miles	Yes – this wildlife area is designated specifically for its rareness/uniqueness for specific wildlife. It is also a unique and rare recreational opportunity and due to its ecological significance, it is considered irreplaceable.	Yes – Council previously has found no significant impact or loss of this important recreational opportunity because of the facility. RFA13 impacts are evaluated below.
Lewis and Clark National Historic Trail	2.8 miles	Yes – it is both unique and irreplaceable	No – See evaluation below
Lower Columbia River Water Trail	1.4 miles	Yes - The unique geography of the water trail and associated aquatic ecosystems along and within the water trail are unusual, uncommon and irreplaceable.	Yes – Council previously has found no significant impact or loss of this important recreational opportunity because of the facility. RFA13 impacts are evaluated below.
North Coast Travel Management Area/Hunting Area	0 – the RFA13 site boundary is entirely within this designated area.	Yes – These are ODFW-designated and managed lands are set aside for hunting of specific species and are both rare and irreplaceable.	No - See evaluation below
Clatskanie City Park	2.0 miles	Yes – the park offers a pool, skatepark and other amenities	No – See evaluation below

Table 14: Important Recreational Opportunities in RFA13 Analysis Area

Recreational Opportunity	Distance from RFA13 Site Boundary (miles)	Important Recreational Opportunity?	Previously Evaluated by Council?
		that are both rare and irreplaceable for the area.	
Cope's Park	2.0 miles	Yes – the presence of the War Memorial and its uses as a local farmer's market make it both rare and irreplaceable for the area.	No – See evaluation below
Blodgett Tract Research Forest	1.0 miles	Yes – These are OSU forest lands that include trails, cultural resources, recreational opportunities, and include spawning areas for endangered coho salmon.	No – See evaluation below

Direct Loss of Recreational Opportunity

The RFA13 site boundary is entirely within portions of the North Coast Travel Management Area (NCTMA). The RFA13 analysis area includes approximately 113,814 acres of this 1-million-acre designated area. The area is managed for hunting, not for visual resources, and it is unlikely that any visual impacts from the facility construction, with RFA13 proposed changes, will have a significant impact on the designated uses of, or public access to, this important recreational opportunity.[90] RFA13 also notes that the facility is already operational and thus shared usage of the analysis area already occurs at the site and has been approved in the Final Orders on Requests for Amendments 11 and 12. All permanent portions of the facility, as modified per RFA13, are sited within the previously approved site boundary.[91,92] In RFA13, the certificate holder explains that this land within the NCTMA is entirely privately-owned land and that per the landowner, the access for hunting is limited and restricted and seasonal in nature. It is unlikely that either construction or operations will impact this limited hunting use. The RFA13 site boundary represents less than one percent of the total area of the North Coast Travel Management Area/Hunting Area, which totals over one million acres. For these reasons, the Department recommends that Council find that the facility with RFA13 requested changes will not result in a significant direct loss of this important recreational opportunity.

[90] The North Coast Travel Management Area/Hunting Area overlaps the site boundary, however the facility as modified by RFA13 would be constructed on private property on which access/hunting will not be permitted without a Sporting Permit from the private landowner.

[91] MSTAMD11Doc123 Final Order on RFA 11 2016-04-21, p. 7.

[92] MSTAMD12Doc16 Final Order on AMD12 2017-09-22, p. 4.

RFA13 activities are not likely to result in a direct loss of recreational opportunities for any of the remaining locations because they are all located 1.0 or more miles from the RFA13 site boundary.

Potential Visual Impacts

- Construction

RFA13 proposed changes will have above-ground and below ground visual impacts with visual impacts during construction primarily resulting from equipment stored at temporary laydown yards, and potential views of the construction area along the pipeline right-of-way and powerline alignment right-of-way that would be cleared of vegetation for construction activities.

For RFA13 the certificate holder submitted updated visual impact analysis based on GIS and topography to identify and assess any RFA13 potential visual impacts on any of these 7 important recreational opportunities. In general, due to underlying vegetation and topography, surrounding landscape of logging roads and logged parcels within an area actively managed for forestry and timber harvest, the visual impacts from construction will be temporary in nature, tend to blend in with the surrounding landscape and are not likely to present any significant visual impacts on any important recreational areas.

While the entire facility is within the designated North Coast Travel Management Area (NCTMA), the area is managed for hunting, not for visual resources, and it is unlikely that any visual impacts from the facility construction, with RFA13 proposed changes, will have a significant impact on the uses of, or public access to, this important recreational opportunity. The portion of the NCTMA within the RFA13 analysis area and site boundary is entirely privately-owned land, and while hunting access is allowed, it is restricted, seasonal and permitted. For all these reasons, the Department recommends that Council find that construction-related visual impacts on the NCTMA are not likely to be significant.

New or additional visual impacts from construction will be temporary in nature and most of those visual impacts will be blocked by topography and vegetation surrounding the facility and will blend into the surrounding landscape. When construction is complete, areas will be revegetated where feasible within areas where vegetation has been removed during construction. For these reasons, the Department recommends that Council find that the visual impacts during construction, with RFA13 proposed changes, will not likely have a significant adverse impact on any important recreational opportunities.

- Operations

Potential visual impacts from RFA13 would be from the construction of new related and supporting facilities. RFA13 Exhibit T, Section 4.4 states that permanent above-ground facilities

proposed by the certificate holder in this amendment request would be limited to infrastructure at the NMCS and above-ground appurtenances at the Newton, Stegosaur, and Medicine well pads. At maximum these structures and components will not exceed 50 feet in height. The dimensions of these above-ground components are detailed in Table 3 of this order. Table 15 below summarizes the potential visual impacts.

Table 15: Evaluation of Potential Visual Impacts from Proposed RFA13 Changes on Recreational Opportunities

Protected Area	Potential Project Visibility	Potential Visual Impact
Julia Butler Hansen Refuge	Some potential visibility of portions of Project in hills south of US-30, from island units nearest the Project. View of the NMCS infrastructure and well pad appurtenances blocked by terrain and/or vegetation for entirety of the JBHR (see Figure T-1 and L-2).	Negligible. Potential views of the Project from refuge headquarters and primary public use areas in the Mainland Unit are largely blocked by vegetation within the JBHR and by terrain. Some portions of the pipeline and powerline alignment rights-of-way may be visible from the Mainland Unit, at a distance of at least 11.7 miles. Some portions of some of the island units closer to the Project may have increased views of pipeline and powerline alignment rights-of-way at a minimum viewing distance of about 4.6 miles. However, where visible, the rights-of-way would be seen in the context of actively managed commercial timber lands with a network of logging roads and a patchwork of clearcuts and recovering harvested areas, so would not represent new or unusual visual features in the landscape. Additionally, the island units are accessible only by water and reportedly receive little public use (USFWS 2010) so there would be few viewers affected. The NMCS infrastructure and well pad appurtenances would not be visible from any point in the JBHR.
Lewis and Clark National Historic Trail	Some potential visibility of portions of the cleared rights-of-way; View of the NMCS infrastructure and well pad appurtenances blocked by terrain and/or vegetation (see Figure T-1 and L-2).	Negligible. Potential views of the Project along the LCNHT are largely blocked by vegetation and terrain. Some portions of the pipeline and powerline alignment rights-of-way may be visible, at a minimum viewing distance of at least 8.7 miles. However, where visible, the rights-of-way would be seen in the context of actively managed commercial timber lands with a network of logging roads and a patchwork of clearcuts and recovering harvested areas, so would not represent new or unusual visual features in the landscape. The NMCS infrastructure and well pad appurtenances would not be visible from any point along the LCNHT.

Table 15: Evaluation of Potential Visual Impacts from Proposed RFA13 Changes on Recreational Opportunities

Protected Area	Potential Project Visibility	Potential Visual Impact
North Coast Travel Management Area/Hunting Area	Some potential visibility of the NMCS infrastructure and well pad appurtenances, and portions of the rights-of-way in timber lands (see Figure T-1 and L-2).	Negligible. The hunting area within the Analysis Area is located almost entirely on private land (aside from identified protected areas/scenic resources within the Analysis Area that are not included in the Travel Management Area). Otherwise, the hunting area within the Analysis Area consists predominately of a patchwork of clearcuts and recovering harvest areas, with a network of logging roads and log decks and is not managed for scenic qualities. From a few high vantage points in the hunting area, and directly adjacent to the Site Boundary containing aboveground structures, the NMCS infrastructure and well pad appurtenances, may be visible; however, for most of the hunting area (the remaining 99 percent of the over one million acre hunting area) the NMCS infrastructure and well pad appurtenances would be hidden from view by high hills just to the northwest of the site, as well as by terrain in the hunting area and by forest vegetation surrounding the NMCS infrastructure and well pad appurtenances. Some portions of the pipeline and powerline alignment rights-of-way may also be visible where permitted by terrain and clearcuts; where visible, the cleared rights-of-way would not represent new or unusual features in the landscape.
Blodgett Tract Research Forest	Some potential visibility of the NMCS infrastructure and well pad appurtenances, and portions of the rights-of-way in timber lands (see Figure T-1 and L-2).	Negligible. The Blodgett Tract is a working research forest, consisting of a patchwork of clearcuts and recovering harvest areas, with a network of logging roads and log decks; it is not managed for scenic qualities. From a few high vantage points in the Tract, the NMCS infrastructure and well pad appurtenances, may be visible (located over 1.7 miles away); however, for most of the Tract the NMCS infrastructure and well pad appurtenances would be hidden from view by high hills just to the northwest of the site, as well as by terrain in the Tract and by forest vegetation surrounding the NMCS infrastructure and well pad appurtenances. Some portions of the pipeline and powerline alignment rights-of-way may also be visible where permitted by terrain and clearcuts; where visible, the cleared rights-of-way would not represent new or unusual features in the landscape.

Table 15: Evaluation of Potential Visual Impacts from Proposed RFA13 Changes on Recreational Opportunities

Protected Area	Potential Project Visibility	Potential Visual Impact
Lower Columbia River Water Trail	Some potential visibility of portions of Project in hills south of US-30. View of the NMCS infrastructure and well pad appurtenances blocked by terrain and/or vegetation (see Figure T-1 and L-2).	Negligible. Potential views of the Project along the Trail are largely blocked by vegetation and terrain. Some portions of the pipeline and powerline alignment rights-of-way may be visible, at a minimum viewing distance of at least 5.1 miles. However, where visible, the rights-of-way would be seen in the context of actively managed commercial timber lands with a network of logging roads and a patchwork of clearcuts and recovering harvested areas, so would not represent new or unusual visual features in the landscape. The NMCS infrastructure and well pad appurtenances would not be visible from any point along the Trail.

Additionally, limited vegetation management along permanent rights of way may have limited views, but these are likely to blend into the surrounding landscape and are not likely to have a significant visual impact from any of these recreational opportunities. While the entire facility is within the designated NCTMA, the area is managed for hunting, not for visual resources, and it is unlikely that any visual impacts from the facility operations, with RFA13 proposed changes, will have a significant impact on the designated uses of, or public access to, this important recreational opportunity. The facility is already operational within the NCTMA, and shared usage already occurs for the facility and within the RFA13 analysis area. All permanent portions of the facility, as modified per RFA13, would be within the previously approved site boundary. Underlying topography, surrounding forests and vegetation will likely obscure most visual impacts of the operational facility from any of these important recreational opportunities.

The Department has reviewed the information submitted in RFA13 and the visual impact assessment of RFA13 proposed changes and recommends that Council find that the certificate holder has adequately identified and assessed potential visual impacts on identified important recreational opportunities within the RFA13 analysis area. Based upon the Department's evaluation of this information, the Department recommends that Council find that the visual impacts of facility above-ground components during RFA13 construction or operations on any of these important recreational opportunities are not likely to be significant.

<u>Potential Noise Impacts</u>

- Construction

The primary noise from RFA13 construction activities will be temporary and will be from the horizontal directional drilling pipe installation and the powerline alignment near the stretch of the mainline road near Highway 202. Construction activities will occur at the NMCS, and along the proposed pipeline route. Along the pipeline route and within the NMCS, the certificate holder would utilize one primary method of construction: trenched pipe installation which would involve logging and grading of the route, excavation, pipe welding and placement, and backfilling. In general, the types and loudness of sound sources associated with trenched pipe will be like logging and silviculture activities that already occur in the proposed trenched pipe section. Horizontal directional drilling pipe installation will primarily occur along the powerline alignment near the stretch of the mainline road down near Highway 202. Horizontal directional drilling will occur only during construction and for this reason, the noise impacts on NCTMA will be temporary, and sound levels will return to current levels upon construction completion.

Construction sound calculations were performed with the CadnaA propagation model. The estimated sound power level utilized in the RFA13 construction noise model was 118.9 dBA for all combined equipment types. The noise modelling results fell within the ranges previously evaluated for the facility and approved by Council.

For these reasons, the Department recommends that Council find that noise impacts from RFA13 construction activities are not likely to result in any significant noise impacts on any important recreational opportunities in the RFA13 analysis area.

- Operations

Noise during operations will be from the compressor station. Based on the noise analysis submitted in Exhibit Y, the noise from operations of the facility will be inaudible or indistinguishable from background/ambient noise levels (ie: 35 dBA or lower) at distances beyond 0.5 miles from the RFA13 site boundary. All the important recreational opportunities in the RFA13 analysis area except the North Coast Travel Management Area (NCTMA) are further than 0.5 miles from the site boundary.

RFA13 assesses the potential noise impacts on the NCTMA. RFA13 proposed new mechanical equipment at the NMCS would create noise. The noise modelling results showed that only the NCTMA would experience operational noise, however, the hunting area is not considered to be a noise sensitive property and worst-case would receive sound levels of up to 60 decibels (immediately outside of the NMCS boundary), which are equivalent to less than that of a normal conversation. This noise level is like current and approved operational noise levels, for noise levels directly outside the NMCS boundary.

To ensure that operational noise impacts will not be significant the certificate holder has identified and committed to installing noise control equipment designed to ensure the facility will meet ODEQ standards at the nearest residences to the site, which are located near Fishhawk Lake. With proposed noise mitigations, the noise from operations of the NMCS would be inaudible generally or indistinguishable from background/ambient noise levels (35 decibels) at sites beyond 0.5 miles from the NMCS.

As provided in RFA13 Exhibit Y and included in *Section IV.C. Noise Control Regulation* of this order, the certificate holder commits to installing and operating a range of noise muffling and silencing equipment to ensure the facility, with RFA13 proposed changes would not exceed Oregon DEQ sound limits. The Department recommends that Council find, that with these design parameters, the operational noise from the facility will not have a significant impact on any important recreational opportunities within the RFA13 analysis area.

<u>Potential Traffic-Related Impacts</u>

- Construction

RFA13 states that access to the facility site from I-5 will be via US 30, OR 47, and OR 202. RFA13 construction would extend over 30 months, with a peak number of 113 workers onsite in month 20. The Julia Butler Hansen Refuge is accessed by US 30 and is accessible at multiple points within the refuge. The North Coast Travel Management Area is accessible from US 30, US 26 and OR 202 and access to it is restricted and limited for ATV and vehicle traffic as the area is primarily accessed and utilized by hunters on foot. Facility-related traffic is not likely to impact user access to this protected area during construction or operations. Cope's Park is a municipal park that is located within the City of Clatskanie at approximately 2 miles from the RFA13 site boundary. It is accessed via US 30. The Blodgett Tract Research Forest is accessed from multiple

points primarily from US 30. Because the facility construction will be phased over 30 months, with peak traffic estimated to be less than half of what was previously approved by Council, the Department recommends that Council find that RFA13 construction activities will not result in significant adverse traffic impacts to these recreational opportunities.

- Operations

Facility operations will only involve minimal traffic to or from the facility with an estimated 12 total full-time employees and occasional deliveries for operations and maintenance purposes and is not expected to have any impact on access to or from these recreational opportunities. For these reasons, the Department recommends that Council find that operation of the facility, with RFA13 proposed changes, will not likely impact traffic or access to or from any important recreational opportunities.

III.L.2. Conclusions of Law

Based on the foregoing analysis the Department recommends Council find that the design, construction and operation of a facility, with proposed RFA13 changes, are not likely to result in a significant adverse impact on important recreational opportunities.

III.M. PUBLIC SERVICES: OAR 345-022-0110

> *(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impact to the ability of public and private providers within the analysis area described in the project order to provide: sewers and sewage treatment, water, storm water drainage, solid waste management, housing, traffic safety, police and fire protection, health care and schools.*
>
> *(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.*
>
> *(3) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.*[93]

[93] OAR 345-022-0110, effective April 3, 2002.

III.M.1. Findings of Fact

The analysis area for the evaluation under the Public Services standard is the area within and extending 10-miles from the site boundary. The analysis area includes portions of Clatsop and Columbia counties, City of Clatskanie and the Mist community.[94]

Impact Assessment Assumptions

- The duration of construction activities is expected to extend 30 months, across 5 years.
- The number of construction workers is estimated to range from 12 to 113.
- Construction workers are expected to stay in Clatskanie and city of Longview (in Washington).
- The proposed RFA13 changes, including a new O&M building, would result in 12 new permanent onsite workers/staff.

Sewer and Sewage Treatment

The Mist Resiliency Project will not connect to a public or private sewer or sewage disposal system.

Construction-related sanitary waste will be collected on-site in portable toilets that will be provided and maintained by a licensed subcontractor. Operational sanitary waste will be limited to domestic wastewater from the O&M buildings, which will be discharged to an existing and new licensed onsite septic system. The onsite septic system will require an Onsite Sewage Disposal Construction-Installation Permit from DEQ. The certificate holder will be required to demonstrate, prior to construction of the septic system, that they have obtained this permit, under recommended Organizational Expertise Condition 3 (see Section III.B. of this order).

Because construction and operation of the Mist Resiliency Project will not result in interconnection to a public sewer or sewage disposal system; and, because the certificate holder will be required to obtain necessary permits prior to construction of the onsite septic system, the Department recommends the Council find that impacts from the facility, with proposed RFA13 changes, are not likely to result in significant adverse impact to the ability of any public or private sewage providers to provide sewer and sewage treatment services.

Water Use

The Mist Resiliency Project will not connect to a public or private water system.

[94] The analysis area extends to Washington, including Wahkiakum County and the cities of Westport and Cathlamet. Because these public services, and any impart, are within Washington, they are not included in the evaluation because these impacts are outside of EFSC jurisdiction.

During construction, approximately 2 million gallons of water over a 5-year period would be needed for dust abatement, hydrostatic testing of pipe and horizontal directional drilling. The estimated volume of water includes:

- Up to 390,000 gallons for dust abatement;
- Up to 63,000 gallons required for horizontal directional drilling fluid;
- Up to 185,000 gallons for hydrostatic testing of the completed pipeline lateral, well pad, and station piping at NMCS; and
- Up to 15,000 gallons of water will be needed for hydrostatic testing of the Miller Station piping.

Water would be obtained from a third-party with an existing water right including Knappa Water Association and Mist Birkenfeld Fire Department. RFA13 Exhibit U Attachment U-2 provides a letter from Mist Birkenfeld Fire Department acknowledging the certificate holders' potential request to utilize its fire pond water to divert or obtain up to 2-million gallons but affirms that certificate holder would first be required to obtain all necessary permits. Water may also be obtained through a new groundwater right on an existing well owned by Clatskanie Scion, LLC. The certificate holder will be required to demonstrate that it has been obtained all necessary permits prior to construction (see recommended Organizational Expertise Condition 3).

To ensure that allowable water usage is obtained from permitted sources, the Department recommends Council impose the following conditions:

> **Recommended Public Services Condition 1 [PRE]:** <u>Prior to construction of a phase or component of Mist Resiliency Project, as applicable, the certificate holder shall demonstrate to the Department that it has executed agreements with the owner of the water source and obtained necessary permits or approvals from Oregon Department of Water Resources for onsite construction-related water use.</u>
> [PRE-PS-01; Final Order on AMD13]

Following completion of the Mist Resiliency Project, approximately 72,000 gallons of potable water would be used annually. Water would be trucked to the site from a local municipal water source or an existing well at Miller Station.

Because water supply for construction and operation of the Mist Resiliency Project will not require interconnection to an existing public or private water system, and based on compliance with recommended Public Services Condition 1 ensuring that agreements and permits are obtained prior to use, the Department recommends the Council find that the facility, with proposed RFA13 changes, is not likely to result in significant adverse impact to the ability of any public or private water providers to provide services.

Stormwater Drainage

The Mist Resiliency Project will not connect to a public or private stormwater drainage system.

During construction, potential stormwater discharge to waters of the state will be managed and controlled onsite by the requirements of a National Pollutant Discharge Elimination System Construction Stormwater Discharge General Permit 1200-C. As presented in Section III.D. Soil Protection, recommended amended Soil Protection Condition 1 requires that the certificate holder obtain and comply with the requirements of the 1200-C permit.

During operation, the facility footprint will be predominately graveled minimizing potential runoff impacts.

Based on these recommended facts, the Department recommends the Council find that the facility, with proposed RFA13 changes, is not likely to result in adverse impacts on the ability of any community to provide stormwater drainage services.

Solid Waste Management

Construction activities are estimated to generate 4,281 cubic yards of non-recyclable waste. Construction related waste is anticipated to be disposed of at Coffin Butte Landfill in Corvallis, Oregon. Coffin Butte Landfill has approximately 15 years of remaining operational capacity, with the estimated construction waste utilizing approximately 0.4 percent of the remaining capacity.

Recyclable waste is required to be recycled to the maximum extent practicable. RFA13 Exhibit W Attachment W-1 includes the certificate holder's Waste Minimization and Recycling Plan. As presented in Section III.O. Waste Minimization, the Department recommends Council amend an existing condition to require that the certificate holder adheres to the requirements of its recycling and disposal requirements of the plan, as provided in Attachment W of this order.

Operation of the Mist Resiliency Project will not generate hazardous or non-hazardous waste.

Based on the quantity of solid waste and remaining operational capacity of Coffin Butte Landfill, and compliance with the recommended amended condition, the Department recommends Council find that the facility, with proposed RFA13 changes, would not be likely to result in significant adverse impacts to the ability of solid waste disposal providers to dispose generated waste.

Traffic Safety

Construction would result in short-term, temporary increases in traffic levels for approximately 30-months. Transportation routes that would be utilized by construction workers and haul trucks include US-30, OR-47 and OR-202. These transportation routes are operated and maintained by the Oregon Department of Transportation (ODOT). On US-30, construction is

anticipated to generate up to 200 roundtrips per day (151 passenger, and 49 operator vehicles) or a 0.2 percent increase compared to 2021 levels. On OR-202 west of Mist, construction is anticipated to generate up to 35 roundtrip bus trips or 0.02 percent increase compared to 2021 levels. On OR 47 and OR 202, construction is anticipated to generate up to 5 roundtrip bus trips or 0.02 percent increase compared to 2021 levels. A short term, temporary increase of less than 1 percent in AADT would not be expected to substantially impact traffic safety, traffic flow or access for existing roadway operations.

Transportation permits would be obtained from ODOT including an Oversize Load Movement Permit/Load Registration; Access Management Permit; and Permit to Occupy or Perform Operation Upon a State Highway. These permits would ensure ODOT reviews and authorize applicable transportation uses on the above-referenced highways. In accordance with recommended Organizational Expertise Condition 3, the certificate holder would be required to identify all necessary ODOT permits and demonstrate to the Department that those permits have been obtained prior to the action or location for which the permit applies.

Operation of the Mist Resiliency Project would result in twelve (12) new, fulltime employees, or 24 roundtrips per day, and would not be expected to result in substantial adverse traffic safety or roadway operation impacts.

Based on these recommended findings of fact, the Department recommends Council find that the facility, with proposed RFA13 changes, would not impact the ability of local traffic safety providers to provide traffic safety.

Police and Fire Protection

Police

Construction of the Mist Resiliency Project could result in impacts on police protection providers due to the increased possibility of theft at the site, safety issues associated with the increased population from temporary workers, and increased traffic on roads around the proposed facility. However, construction could extend across 5 years and would have short-term population and traffic increases from temporary workers. Operational impacts would be relatively minor, given the low number of resulting new, permanent workers that would be transporting to and from the site.

The Columbia County Sheriff's Office is the primary law enforcement agency for the site. The Columbia County Sheriff's Office Patrol Unit consists of 15 deputies, one detective and one canine. RFA13 Exhibit U Attachment U-2 includes a record of correspondence indicating the Sheriff's Office would respond to law enforcement issues at the site and did not expect construction and operation activities to adversely affect services in the area.[95]

[95] MSTAMD13 Request for Amendment 13 Exhibit U Public Services 2024-08-09. Attachment U-2, February 15, 2024 letter from the Columbia County Sheriff's Office.

Based upon the letter received from the Columbia County Sheriff's office, the construction schedule and minimal long-term population increase, the Department recommends Council find that the facility, with proposed RFA13 changes, would not result in a significant adverse impact on the ability of police departments to deliver police protection services.

Fire

Construction and operations have the potential to create fire risk at the site. The primary fire departments with jurisdiction of the site include the Clatskanie Rural Fire Protection District (RFPD) and the Mist-Birkenfeld RFPD. The Clatskanie RFPD includes nine full-time firefighters and volunteer staff. The Mist-Birkenfeld RFPD has one full-time firefighter and 43 volunteer firefighters.[96]

NWN contacted both the Clatskanie RFPD and Mist-Birkenfeld RFPD to understand the potential construction and operation-related impacts on both fire districts to provide fire protection services. Copies of the response letters from Clatskanie RFPD and Mist-Birkenfeld RFPD are provided in RFA13 Exhibit U Attachment U-2. RFA13 Exhibit U Attachment U-2 includes a letter from the Mist-Birkenfeld RFPD Fire Chief confirming that the RFPD does not anticipate that the proposed RFA13 changes would have any significant adverse impact on their ability to provide fire protection and EMS services.[97]

The Clatskanie RFPD and Mist Birkenfeld RFPD~~, which has jurisdiction for fire protection services over the northern portion of the site,~~ expressed concerns over the adequacy of its fire suppression water supply necessary to protect the certificate holder's assets.[98] The ~~Clatskanie~~ RFPDs identified that upgrades to ~~its~~ the Mist Birkenfeld's high-volume hydraulic pump system serving Flemming Pond were needed to support the site. Because the Mist Resiliency Project is expanding operations and increasing hazards at the site, the Department recommends Council impose a condition requiring the certificate holder to enter into an agreement with the RFPDs to provide pump upgrades and require that the certificate holder pays the proportionate share of ~~RFPDs~~ costs for those upgrades.

> **Recommended Public Services Condition 2 [PRE]:** Prior to construction of a phase or component of the Mist Resiliency Project, as applicable, the certificate holder shall enter into an agreement with the Clatskanie Rural Fire Protection District (RFPD) and the Mist-

[96] MSTAMD13Doc69 RFA13 Exhibit U Public Services 2024-08-09, Section 3.2.7.2

[97] MSTAMD13Doc69 RFA13 Exhibit U Public Services 2024-08-09, Attachment U-2, second of two February 16, 2024 letters from Joe Kaczenski, Fire Chief Mist-Birkenfeld RFPD.

[98] Based on consultation with Mist Birkenfeld RFPD, as a reviewing agency, the Department incorporated changes between the DPO to Proposed Order in recommended Public Services Condition 2. Flemming Pond is owned by Mist Birkenfeld RFPD; Mist Birkenfeld RFPD therefore requested to be part of any agreements, as referenced in the condition, between certificate holder the Clatskanie RFPD, for pumping improvements. See: MSTAMD13Doc111 DPO Public Comment 10 Mist-Birkenfeld RFPD Letter 2024-09-19.

Birkenfeld RFPD to pay the certificate holder's proportionate share of the costs necessary to upgrade the high-volume hydraulic pump system serving Flemming Pond. [PRE-PS-02; Final Order on AMD13]

Measures to reduce the potential for fires and other emergencies and avoid the need for responses from local fire protection agencies are evaluated in Section III.N. Wildfire Prevention and Risk Mitigation of this order and incorporated into Construction and Operations Wildlife Mitigation Plans (as provided in Attachments V-1 and V-2 of this order).

Subject to compliance with the above-described conditions, the Department recommends Council find that the facility, with proposed RFA13 changes, would not be likely to result in a significant adverse impact on the ability of fire districts to deliver fire protection services.

Housing

Temporary housing could be required for up to 112 workers during peak construction. Temporary or permanent housing would be required for 12 new, fulltime workers. There are approximately 126 and 1,697 housing units available for rent within Columbia and Clatsop counties, respectively.[99] There are at least 170 campsites and RV parking areas available within the analysis area. Based on the number of housing units available, campsites and RV spaces there is adequate availability within the analysis area to provide temporary and permanent housing for temporary and permanent workers.

Based on this analysis, the Department recommends Council find that the facility, with proposed RFA13 changes, would not impact the ability of housing providers to provide services.

Health Care

Impacts on health care could occur if construction activities or increases in temporary residents (during construction) and permanent residents (during operations) result in an increase in the use of emergency and routine health care services that exceeded the current capacity of local providers. Potential impacts could include onsite accidents or traffic-related incidents from increased traffic.

The peak number of temporary, non-local workers and non-local worker family members that could require health care services during construction is 153. Based upon the information provided in RFA13 Exhibit U, there is adequate capacity (346 bed capacity, with an average of 191 inactive beds), and services available (level 3 trauma center) at PeaceHealth St. John Medical Center located in Longview, Washington, to respond to the temporary incremental increase in potential needed health care services. Once completed, operations of the Mist Resiliency Project would result in twelve (12) new, fulltime employees and their families. Based upon the patient capacity at PeaceHealth St. John Medical Center, there is adequate health

[99] MSTAMD13Doc69 RFA13 Exhibit U Public Services 2024-08-09, Section 3.2.5.

care services to accommodate this minimal, long-term increase in potential needed health care services.

Based on the above findings and analysis, the Department recommends Council find that the facility, with proposed RFA13 changes, would not likely result in a significant adverse impact on the ability of health care providers to deliver services.

Schools

The number of school-age children that could enter local public schools during construction, based on the peak number of 113 non-local workers, ranges from 5 to 20. Operation of the Mist Resiliency Project would result in twelve (12) new, fulltime employees and approximately twelve (12) school-age children.

Within the analysis area, there are two Oregon counties: Columbia and Clatsop. Within Columbia County, there are 5 school districts and 24 schools. Within Clatsop County, there are 5 school districts and 14 schools. The student teacher ratio ranges from a low of 7.8 to 1 to 18 to 1. Oregon public schools must maintain an average ratio of 20 to 1. Based on the student teacher ratio at the Oregon schools within the analysis area, and the relatively low number of potential students that could result from construction (20) or operation (12), there is adequate capacity within the Oregon school districts within the analysis area to support the temporary incremental increase in students associated with construction and during operation.

Based on this analysis, the Department recommends Council find that the facility, with proposed RFA13 changes, would not likely result in a significant adverse impact on the ability of public school systems to deliver educational services.

III.M.2.<u>Conclusions of Law</u>

Based on the foregoing analysis, and subject to compliance with the recommended new site certificate conditions described above, the Department recommends Council find that construction and operation of facility, with proposed RFA13 changes, are not likely to result in significant adverse impacts to the ability of public and private providers to provide the services listed in OAR 345-022-0110.

III.N. WILDFIRE PREVENTION AND RISK MITIGATION: OAR 345-022-0115

(1) To issue a site certificate, the Council must find that:

(a) The applicant has adequately characterized wildfire risk within the analysis area using current data from reputable sources, by identifying:

(A) Baseline wildfire risk, based on factors that are expected to remain fixed for multiple years, including but not limited to topography, vegetation, existing infrastructure, and climate;

(B) Seasonal wildfire risk, based on factors that are expected to remain fixed for multiple months but may be dynamic throughout the year, including but not limited to, cumulative precipitation and fuel moisture content;

(C) Areas subject to a heightened risk of wildfire, based on the information provided under paragraphs (A) and (B) of this subsection;

(D) High-fire consequence areas, including but not limited to areas containing residences, critical infrastructure, recreation opportunities, timber and agricultural resources, and fire-sensitive wildlife habitat; and

(E) All data sources and methods used to model and identify risks and areas under paragraphs (A) through (D) of this subsection.

(b) That the proposed facility will be designed, constructed, and operated in compliance with a Wildfire Mitigation Plan approved by the Council. The Wildfire Mitigation Plan must, at a minimum:

(A) Identify areas within the site boundary that are subject to a heightened risk of wildfire, using current data from reputable sources, and discuss data and methods used in the analysis;

(B) Describe the procedures, standards, and time frames that the applicant will use to inspect facility components and manage vegetation in the areas identified under subsection (a) of this section;

(C) Identify preventative actions and programs that the applicant will carry out to minimize the risk of facility components causing wildfire, including procedures that will be used to adjust operations during periods of heightened wildfire risk;

(D) Identify procedures to minimize risks to public health and safety, the health and safety of responders, and damages to resources protected by Council standards in the event that a wildfire occurs at the facility site, regardless of ignition source; and

(E) Describe methods the applicant will use to ensure that updates of the plan incorporate best practices and emerging technologies to minimize and mitigate wildfire risk.

(2) The Council may issue a site certificate without making the findings under section (1) if it finds that the facility is subject to a Wildfire Protection Plan that has been approved in compliance with OAR chapter 860, division 300.

(3) This Standard does not apply to the review of any Application for Site Certificate or Request for Amendment that was determined to be complete under OAR 345-015-0190 or 345-027-0363 on or before the effective date of this rule.[100]

III.N.1. <u>Findings of Fact</u>

Council adopted the Wildfire Prevention and Risk Mitigation standard on July 29, 2022, after approval of the site certificate and past site certificate amendments. Compliance with the standard has, therefore, not previously been evaluated by Council and is applicable to the proposed RFA13 changes. The analysis area to evaluate potential wildfire risks is the site boundary and one-half mile from the site boundary.[101]

III.N.1.a. Characterization of Wildfire Risk within Analysis Area

Under OAR 345-022-0115(1)(a), a certificate holder must adequately characterize the wildfire risk within the analysis area using reputable sources to describe Baseline Wildfire Risk, Seasonal Wildfire Risk, Areas Subject to Heightened Risk of Wildfire, and High-fire Consequence Areas. Each of these are discussed in detail in this section with a description of the data source, as necessary to support the findings and recommended conclusions. The data sources the applicant used to evaluate wildfire risk include:

- Oregon Wildfire Risk Explorer-Advanced Report;[102]
- Columbia County Community Wildfire Protection Plan (CWPP), dated 1 August 2007[103]
- Oregon CWPP Planning Tool 2018;[104]
- Pyrologix 2018 Pacific Northwest Quantitative Wildfire Risk Assessment: Methods and Results. Prepared for the U.S. Forest Service by Pyrologix LLC;

[100] OAR 345-022-0115, effective July 29, 2022.
[101] OAR 345-001-0010(35)(c).
[102] MSTAMD13Doc70 RFA13 Exhibit V Wildfire 2024-08-09, Attachment V-2. Oregon Wildfire Risk Explorer-Advanced Report, Columbia County. Accessed September 8, 2023. Available online at: https://tools.oregonexplorer.info/OE_HtmlViewer/Index.html?viewer=wildfireplanning
[103] MSTAMD13Doc70 RFA13 Exhibit V Wildfire 2024-08-09, Attachment V-1. Columbia County Community Wildfire Protection Plan, Columbia County, Oregon. August 1, 2007. The Columbia County CWPP has been agreed upon and endorsed by a stakeholder group including the Columbia County Board of Commissioners, the District Forester of the Forest Grove District for Oregon Department of Forestry, Scappoose Rural Fire Protection District, Clatskanie Rural Fire Protection District, Columbia River Fire and Rescue, Mist-Birkenfeld Rural Fire Protection District, and Vernonia Rural Fire Protection District.
[104] Oregon Community Wildfire Protection Plan Planning Tool. Available online at: https://tools.oregonexplorer.info/OE_HtmlViewer/index.html?viewer=wildfireplanning

- Conservation Biology Institute (CBI), 2020 Wildfire Risk Assessment Data Layer Descriptions Spreadsheet;
- National Oceanic and Atmospheric Administration (NOAA) climate data;
- U.S. Forest Service (USFS) Guide for Application of Meteorological Information to Forest Fire Control Operations.

Based upon the analysis provided below of the certificate holder and Department evaluation of baseline and seasonal fire risk, areas subject to heightened fire risk, and high-fire consequence areas using current and reputable data sources and methods, the Department recommends Council find that the wildfire risk is moderate to high within the site boundary and analysis area.

III.N.1.b. Baseline Wildfire Risk

Baseline wildfire risk within the analysis area is evaluated based on factors expected to remain fixed for multiple years, including historic wildfires, topography of the site, vegetation, existing infrastructure, regional climate, and burn probability. The facility, with RFA13 changes, is located within a matrix of private timberlands, operation of the facility within this area is guided by the Oregon Department of Forestry (ODF) fire protection rules, namely ODF's Industrial Fire Precaution Level (IFPL) requirements and fire season requirements, which are discussed further in Section III.N.1.f, *Wildfire Mitigation Plan*, below.[105]

<u>Columbia County Wildfire History</u>

There are no historic fires recorded during 2008 and 2019 within the facility site boundary, and one 0.25-acre fire was recorded in 2007 at the northernmost edge of the wildfire analysis area, approximately 0.25 miles south of the Lower Columbia River Highway, northwest of Clatskanie town center. On average in Colombia County between 2008 and 2019, 18 fires occurred each year, and most of these fires were considered small. There were two causes of fire: 94.5 percent were human-caused, and 5.5 percent were caused by lightning strikes.[106] There were no large fires in Columbia County between 2008 and 2019, with" large fire" defined by the National Wildland Coordinating Group as any wildland fire in timber 100 acres or greater, 300 acres or greater in grasslands/rangelands, or has an Incident Management Team assigned to it.

<u>Topography</u>

Potential wildfires travel quicker on steeper slopes and slower on the flatter portions of land. Columbia County is delineated by the Columbia River in the northern and eastern portion of the County of and the western portion of the County extends into the Coast Range, providing a diverse topographical landscape. The elevation within the site boundary ranges from 461 to 1,576 feet above mean sea level with an average of 1,075 feet; the larger analysis area

[105] MSTAMD13Doc70 RFA13 Exhibit V Wildfire 2024-08-09, Attachment V-3, Section 1.0.
[106] MSTAMD13Doc70 RFA13 Exhibit V Wildfire 2024-08-09, Section 3.2.

elevation ranges from 18 to 1,739 feet, with an average of 843 feet. Over 98 percent of the site boundary and 93 percent of the analysis area have less than a 25-degree slope.[107]

Vegetation and Fuel Models

As discussed in Section III.H., *Fish and Wildlife Habitat*, of this order, most of the vegetation type and habitat category are Category 4 habitat that is made up of upland forests and woodlands, and westside lowlands conifer-hardwood forests. Approximately seven percent of the habitat within the site boundary is Category 6 habitat, with no burn potential because the area is urban or a waterbody.

The Oregon CWPP Planning Tool offers a data layer that provides Fuel Models which describe the composition and characteristics of fire fuels. Fuel Model groups describe the fire-carrying fuel type of surface fuel. The groups are broad categories (grass, shrub, timber, timber litter, timber understory, and slash/blowdown) of burnable fuels based on descriptions of live and dead vegetation that represent distinct fuel types, size classes, and load distributions. The dominant fuel models that the Oregon CWPP Planning Tool describes as making up the area within the site boundary are Fuel Models 162, 185, 101, and 102; ASC Exhibit V, Table V-2 lists all the Fuel Models that make up the site boundary and analysis area.

Fuel Model 162 (moderate load humid climate timber-shrub) makes up 33 percent of the site boundary. This Fuel Model is in the timber understory fuel group for which the primary carrier of fire is forest litter, in combination with herbaceous and shrub fuels, moderate litter load with a shrub component, moderate spread rate, and low flame length. Importantly, it also has high extinction moisture, indicating that the vegetation in these areas is less susceptible to ignition and combustion, and less likely to sustain fire than in other Fuel Models. This Fuel Model also makes up 30 percent of the larger analysis area.

Fuel Model 185 (high load conifer litter) makes up 21 percent of acres within the site boundary. This Fuel Model is in the timber litter fuel group and contains smaller, easily ignitable materials on the forest floor (light slash fuels) as well as dead plant material, such as dead trees, fallen branches, and standing dead trees. This Fuel Model burns slash quickly and can carry fires quickly keeping it on the forest floor, however, burning larger fuel sources (dead trees) can contribute to the intensity and duration of fires. Overall, it has a low spread rate and low flame length.

Fuel Models 101 (short, sparse dry climate grass) and 102 are (low load dry climate grass) both make up approximately 8 percent of the site boundary.

Existing Infrastructure

[107] Slope groupings are from 0-25%, 26-50%, and 51-75%.

Understanding the type and location of existing infrastructure for baseline fire risk is important because overall wildfire risk for an area is based, in part, on wildfire risk to assets, people and property which includes where people live, critical infrastructure, developed recreation, housing unit density, and other factors.

Existing structures within the site boundary that could potentially be impacted include underground pipelines, well pads and supporting infrastructure, underground powerlines, and the NMCS.[108] The majority of existing structures in the site boundary fall within the NMCS, where the hazard to potential structures is moderate to high. At the southern end of the proposed in RFA13 changes, the site boundary includes the Bark and Haul and Highway 202 laydown areas, and a buried electrical feed connecting at Miller Station. Bark and Haul Laydown Yard is in the norther part of the community of Mist where there are residential and farm structures, utilities, community buildings, and paved roads. Mist Grade School also falls within the wildfire analysis area, less than one half mile from the Bark and Haul laydown yard. Highway 202 Laydown Yard is west of the Community of Mist close to dispersed agricultural and residential buildings off Hwy 202. The Highway 202 laydown yard contains a barn and additional storage sheds within the site boundary. The well pads proposed to be modified in RFA13 are located centrally to the facility and do not have significant infrastructure around them, aside from the operational facility itself. The surrounding areas are forested, cleared forested areas and rural roads. The north Sorting Yard Laydown areas are surrounded by forested areas, rural roads with some nearby highways and sparse residential structures.

Climate

Columbia County has a modified marine climate with annual precipitation ranging from 40 inches in the eastern portion to 100 inches in the higher elevations of the Coast Range. Average annual precipitation is 61 inches. Winters are relatively wet and mild with warm and dry summers; and the total average annual precipitation for the area is 54.7 inches per year, which is indicative of a temperate warm-summer Mediterranean climate.

Table 16: Summary of Monthly Temperature and Precipitation at Clatskanie, Oregon, Station (1991 – 2020)

Month	Avg. Max Temperature (°F)	Avg. Temperature (°F)	Avg. Min Temperature (°F)	Avg. Precipitation (inches)
January	46.6	39.8	33.0	8.3
February	50.3	41.5	32.8	5.7
March	54.5	44.9	35.3	6.1
April	58.8	48.6	38.3	4.3
May	64.8	54.4	44.0	2.7

[108] MSTAMD13Doc70 RFA13 Exhibit V Wildfire 2024-08-09, Section 3.5.

Table 16: Summary of Monthly Temperature and Precipitation at Clatskanie, Oregon, Station (1991 – 2020)

Month	Avg. Max Temperature (°F)	Avg. Temperature (°F)	Avg. Min Temperature (°F)	Avg. Precipitation (inches)
June	68.8	58.6	48.5	1.7
July	74.7	63.5	52.2	0.6
August	75.8	64	52.2	0.7
September	72	59.8	47.6	2.1
October	61.6	51.3	41.1	4.5
November	51.7	43.9	36.1	8.6
December	45.7	39.3	32.8	9.4
Monthly / Annual Average[1]	60.5	50.8	41.2	54.7

Source: ASC Exhibit V, Table V-3; Clatskanie Station, OR US USC00351643 (NOAA 2023).
Note: The sum of annual precipitation was averaged annually from 1991 through 2020.

Burn Probability

Burn Probability shows the likelihood of a wildfire greater than 250 acres burning in each location, based on wildfire simulation modeling. This is an annual burn probability, adjusted to be consistent with the historical annual area burned. The burn probability classes range from non-burnable (including nonburnable groundcover types such as water, agriculture, or urban) to very high burn probability, which indicates greater than a 1 in 50 chance of a wildfire greater than 250 acres in a single year. Most of the land in both the site boundary (89 percent) and the analysis area (87 percent) fall within the very low burn probability regions (<= 1 in 10,000).[109] The only area with a low burn probability (1 in 10,000 to 1 in 5,000) in the site boundary falls due south of the proposed Newton well pad, directly east of Beaver Creek. There are no regions within the site boundary or analysis area which have moderate, high, or very high burn probabilities.

III.N.1.c. Seasonal Wildfire Risk

Seasonal wildfire risk within the analysis area is expected to remain fixed for multiple months but may be dynamic throughout the year, including cumulative annual and monthly precipitation, weather advisories which include fuel moisture content data, and Average Flame Length which is the average length of flames expected during a fire, given local fuel and weather conditions discussed below.

[109] MSTAMD13Doc70 RFA13 Exhibit V Wildfire 2024-08-09, Section 3.3.5.

Precipitation

As discussed above, under baseline climatic conditions and provided in Table 16: *Summary of Monthly Temperature and Precipitation at Clatskanie, Oregon, Station (1991 – 2020)*, the total average annual precipitation for the area is approximately 55 inches, which is indicative of a temperate warm-summer Mediterranean climate.

Fuel Moisture Content

Fuel moisture content varies depending on changes in weather (both seasonally and during short periods) and determination of exact fuel-moisture values at any time is complicated by both the nature of the fuels and their responses to the environment. Higher fuel moisture content makes it more challenging for fires to start and spread. Living plants and dead fuels react differently to changes in weather, and the wetting and drying processes of dead fuels result in significant fluctuations in their moisture content. These changes are affected by various factors such as precipitation, air moisture, surface and air temperatures, wind, and cloudiness, as well as fuel properties like surface to volume ratio, compactness, and arrangement. Current conditions such as precipitation to-date, current fuel moisture data, and local weather may increase or decrease seasonal fire risk.

A related and more easily measured concept to fuel moisture content is moisture of extinction: the moisture content of a specific fuel type above which a fire will not propagate itself. As such, Fuel Models with higher moisture of extinction levels decrease overall fire risk. The moisture of extinction rate also varies seasonally in response to changing weather and environmental conditions. During the wetter seasons, such as spring and early summer, live fuels tend to have a higher moisture content due to increased rainfall and higher humidity levels. This results in a higher moisture of extinction, making the fuel less flammable and reducing the risk of ignition. Conversely, in the drier seasons, like late summer and fall, live fuels become drier as moisture evaporates and is less replenished by rainfall, leading to a lower fuel moisture content that approaches the moisture of extinction threshold, and increases susceptibility to ignition, which can elevate the risk of wildfires.[110] As discussed above, the dominant Fuel Models within the site boundary are Fuel Model 162, at 33 percent and Fuel Model 185, at 21 percent, which are associated with moderate load humid climate timber-shrub and high load conifer litter vegetation types. The moisture of extinction levels for the Fuel Models within the site boundary and analysis area are relatively low but are subject to change according to seasonal weather changes and overall trending changes to the region's climate.

Discussed further below under Section III.N.1.d., *Wildfire Mitigation Plan*, the facility, with proposed RFA13 changes, is located within the National Interagency Fire Center's Predictive Service Area NW03, along with Portland, Oregon. The Northwest Interagency Coordination Center Predictive Services is a resource which provides links to relevant fuel status reports and

[110] MSTAMD13Doc70 RFA13 Exhibit V Wildfire 2024-08-09, Section 3.4.2.

fuel moisture content predictions. National Weather Service's fire weather advisories (such as Red Flag Warning and Fire Weather Watch) and fire behavior advisories for each Predictive Service Area in the Northwest.

Flame Length

According to the 2018 Oregon Wildfire Risk Explorer, Average Flame Length shows the average length of flames expected, given local fuel and weather conditions. Flame lengths have potential to exceed the mapped values shown, even under normal weather conditions. Flame length is commonly used as a direct visual indication of fire intensity and is a primary factor to consider for firefighter safety and for gauging potential impacts to resources and assets. Fires with a flame length of 4 to 8 feet can be expected to have moderate intensity under normal weather conditions and fires with a flame length of below four feet are expected to be low intensity under normal weather conditions. Table 17 below identifies the average flame length associated with the areas of proposed RFA13 changes. As shown, 50 percent of the site boundary has a modeled average flame length that is greater than zero and up to 4 feet followed by 26 percent that is modeled at 4 to 8 feet (76 percent of total RFA13 site boundary). Certificate holder indicates that there are two relatively large areas with greater than 11-foot flame length along canyons with steeper terrain in the vicinity of the NMCS and the Medicine well pad. Those areas contain, predominately, Fuel Models 162 and 185, which have low to moderate average flame lengths. The NMCS sits directly west of a steep, shallow canyon, which facilitates larger flames due to wind-channeling and updrafts. As discussed below, the NMCS would be graveled below and surrounding its structures, with the gravel acting as a functional fire break, but could still be affected by large, fast-moving flames from the neighboring canyon. Similarly, the Medicine well pad is at the top of a hill, which has steep slopes close to its base that will facilitate the growth of flames and expedite their speed up the hillside.

Table 17: Average Flame Length

Average Flame Length (feet)	Acres within Site Boundary (Percent of Area)	Acres within Wildfire Analysis Area (Percent of Area)
0	17 (7%)	517 (9%)
>0-4	116 (50%)	2,976 (54%)
4-8	59 (26%)	1,369 (25%)
8-11	10 (4%)	195 (4%)
>11	29 (13%)	471 (9%)
Totals	**232 (100%)**	**5,528 (100%)**
* Note that totals may not sum correctly due to rounding.		

III.N.1.d. Areas Subject to Heightened Risk of Wildfire and High-Fire Consequence Areas

Under OAR 345-022-0115(1)(a)(C), Council must find that the applicant has adequately characterized wildfire risk within the site boundary and analysis area by identifying areas subject to a Heightened Risk of Wildfire, using the information provided in support of the baseline and seasonal wildfire risk evaluation under OAR 345-022-0115(1)(a)(A) and (B), including the identification of existing infrastructure. Therefore, the Department recommends Council find that the areas within the RFA13 site boundary and analysis area that have higher wildfire risk are the areas described above under *Baseline Wildfire Risk for Existing Infrastructure* Section, which are the areas where there is existing infrastructure such as the operational facility, roads, residences, agricultural equipment, and community areas.

The certificate holder also explains that the Wildland Urban Interface (WUI), described in the 2007 Columbia County Community Wildfire Protection Plan (Columbia County CWPP), is another method for determining potential impact of wildfire on existing structures at a large scale. The WUI boundaries consider the distribution of structures and communities adjacent to or intermixed with wildland fuels. The Community at Risk within Columbia County are identified based on population density and assumed values at risk for threats to life, property and infrastructure by wildfire. The northernmost laydown yards, as well as the Highway 202 laydown yard, Bark and Haul laydown yard, and a small portion of the new buried powerline along Highway 202 falls within the Columbia County WUI and in the Community at Risk delineations. Additionally, the Newton and Medicine well pads may also cross into the Columbia County WUI. Most land within the site boundary and analysis area is non-WUI listed; based on the WUI delineations, the Department recommends Council find that the impact of wildfire on Columbia County communities is moderate to low across the site boundary and analysis area.

III.N.1.e. High-Fire Consequence Areas

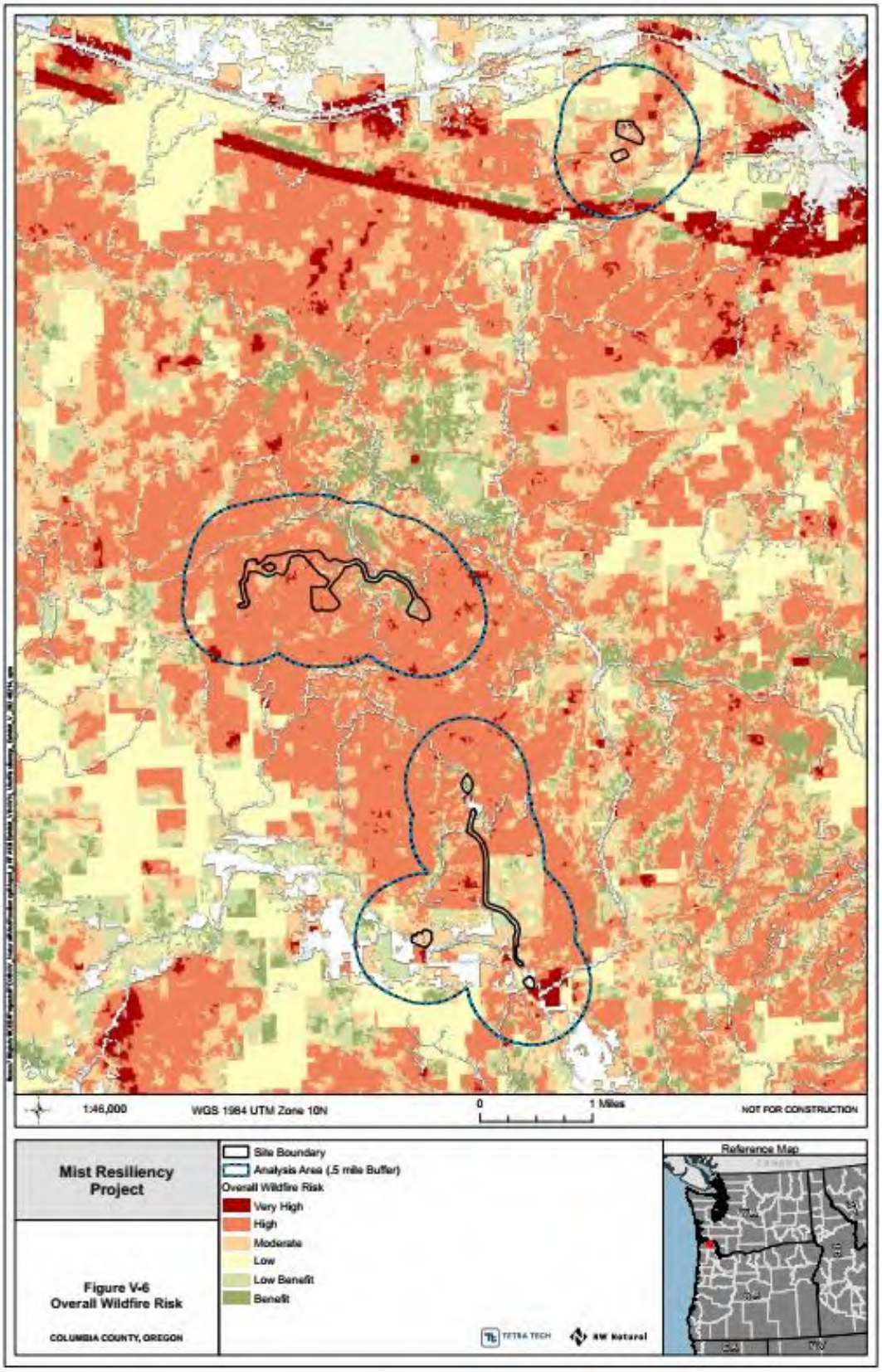
Under OAR 345-022-0115(1)(a)(D), Council must also find that the applicant has adequately characterized wildfire risk within the analysis area by identifying High-Fire Consequence Areas, which include but are not limited to areas containing residences, critical infrastructure, recreation opportunities, timber and agricultural resources, and fire-sensitive wildlife habitat. These are the data inputs that the Oregon CWPP Planning Tool uses to model and produce the Overall Wildfire Risk data layer. This dataset considers the likelihood of wildfire greater than 250 acres, the susceptibility of resources and assets to wildfire of different intensities, and the likelihood of those intensities. Risk ratings range from very high, wherein wildfire may be detrimental to one or more resources, to beneficial, where fires may improve resources, such as timber stands or wildlife habitat. Overall Wildfire Risk in the RFA13 site boundary and analysis area is illustrated below in Figure 19.

Fifty-six percent of the land within the site boundary has an overall fire risk rating of high, this is mostly because timber is a value asset that is reflected in the modeling. Sixteen percent of the site boundary has an overall wildfire risk of moderate. The overall fire risk for twelve percent of the site boundary acreage was listed as No Data, indicating that those regions contained no highly valued resources or assets (such as critical infrastructure or developed recreation areas),

or that simulated wildfires did not burn the area due to low historical occurrence or an absence of burnable fuel. The areas making up one percent of the site boundary that are listed with a very high overall fire risk rating; they are distributed throughout the northern and central sections of the site boundary. The area in the larger analysis area with a very high overall fire risk is neat the town of Mist, Oregon, which lies to the southeast of the Bark and Haul laydown yard.

According to this overall wildfire risk modeling and the evaluation of baseline and seasonal wildfire risk provided in this Section, the Department recommends Council find that the overall wildfire risk is moderate to high within the site boundary and analysis area.

Figure 19: Overall Wildfire Risk in Analysis Area



III.N.1.f. Wildfire Mitigation Plan

Under OAR 345-022-0115(1)(b), Council must find that the facility will be designed, constructed, and operated in compliance with a Wildfire Mitigation Plan (WMP) approved by Council. The certificate holder's construction and operational WMPs are included in RFA13 Exhibit V, Attachment V-3 and V-4, respectively. The Construction Wildfire Mitigation Plan is attached to this order as Attachment V-1 and the Operational Wildfire Mitigation Plan is attached as Attachment V-2.

<u>Facility Design:</u>

Facility design standards and measures that would minimize wildfire risk to and from the facility, with RFA13 changes, includes, but is not limited to the following:

- RFA13 facility components, and overall facility design, will meet National Electrical Code and Institute of Electrical and Electronics Engineers standards;
- Emergency shutdown systems, notification systems, and venting systems at the Miller Station and NMCS will be in place in the event of mechanical failure that could cause fire and will be equipped with internal fire suppression systems to reduce the potential for structural fires;
- A defensible space clearance along RFA13 facility features will be free of combustible vegetation or other materials;
- Roads and parking areas will be maintained to be free of vegetation tall enough to contact the vehicle undercarriage (see also vegetation management described below);
- Existing county roads will form a fire break between fields that will discourage the spread of wildfire between fields into wildlife habitat;
- Facility access roads will be sufficiently sized for emergency vehicle access, in accordance with local building code and local fire department requirements. The fenced areas around RFA13 infrastructure will be graveled, with no vegetation present;
- Installation of fire detection systems (including smoke detectors and fire alarms) will be installed throughout the buildings to detect and control fires in their early stages;
- The site plan will identify fire breaks, access roads, and other relevant features, as well as high hazard areas, including but not limited to, residences, croplands and agricultural operations, that will be prioritized for protection during fire suppression activities;
- Operation of the facility, with RFA13 changes, will be monitored and remotely controlled by trained operators at Miller Station, which is staffed 24 hours per day. Staff at NWN Gas Control, located in Portland, Oregon, will continue to provide additional monitoring of the newly integrated facilities on a 24-hour basis.

<u>Oregon Department of Forestry Fire Season Requirements:</u>

Council's Wildfire Prevention standard and Wildfire Mitigation Plan requirements apply to construction and operation of the proposed facility. RFA13, Exhibit V, Attachment V-3 provides a summary of the wildfire risk assessment described above as well as wildfire risk mitigation

measures that apply to both construction and operation of the facility, with RFA13 changes. Notably, the facility with RFA13 changes, is located within a matrix of private timberlands (commercial timber lands) and is subject to the Oregon Department of Forestry Oregon's (ODF) rules and statutes namely Industrial Fire Precaution Level (IFPL) Requirements (WMP Attachment A[111]) and Fire Season Requirements (WMP Attachment B[112]). The facility, with proposed RFA13 changes, is located within ODF Predictive Service Area fire district: PSA NW-03. The requirements specified for industrial facilities within these areas are designated in WMPs Attachment A and B and become effective when fire season is declared in each ODF Fire Protection District by an ODF forester. During fire season, ODF identifies the IFPL throughout fire season as listed below. The Department provides a short summary of some of the restrictions associated with each IFPL (Attachment A) that may be applicable to the facility:

- IFPL I – fire season:
    - Fire season requirements are in effect (See WMP Attachment B – summarized below). In addition to other fire prevention measures, a Firewatch is required at this and all higher levels unless otherwise waived.
- IFPL II – limited shutdown:
    - The following may operate only between the hours of 8 P.M. and 1 P.M.:
        - Power saws except at loading sites;
        - Blasting;
        - Welding, cutting, or grinding metal.
- IFPL III – restricted shutdown:
    - The following are permitted to operate between the hours of 8 P.M. and 1 P.M. where mechanized equipment capable of constructing fire lines is immediately available to quickly reach and effectively attack a fire start:
        - Ground-based operations;
        - Power saws on ground-based operations;
    - The following are permitted to operate between the hours of 8 P.M. and 1 P.M.:
        - Power saws at loading sites;
        - Loading or hauling of any product or material;
        - Blasting;
        - Welding, cutting, or grinding metal;
        - Any other spark emitting operation not specifically mentioned.
- IFPL IV – complete shutdown:
    - All operations are prohibited.

Once the ODF fire season becomes declared, the following Fire Season Requirements (WMP Attachment B), become applicable depending on the type of construction or operation activity:

- No smoking while working or traveling in an operation area;
- Supply hand tools for each operation site;

[111] Industrial Fire Precaution Levels (IFPLs) for Oregon Department of Forestry Protection west of the Cascades.

[112] FIRE SEASON REQUIREMENTS: The following fire season requirements become effective when fire season is declared in each Oregon Department of Forestry Fire Protection District, including those protected by associations (DFPA, CFPA, WRPA).

- Each internal combustion engine used in an operation, except power saws, shall be equipped with a chemical fire extinguisher;
- Power saws must meet Spark Arrester Guide specifications;
- Equip each truck driven in forest areas for industrial purposes with:
    - 1 round pointed shovel at least 8 inches wide, with a handle at least 26 inches long;
    - 1 axe or Pulaski with 26 inch handle or longer;
    - 1 fire extinguisher rated not less than 2A:10BC (5 pound).
- All non-turbo charged engines must meet Spark Arrester Guide specifications with a list of exceptions;
- Supply a pump, hose and water supply for equipment used on an operation;
    - Pump must be maintained ready to operate and capable of providing a discharge of not less than 20 gallons per minute at 115 psi at pump level;
    - One water supply is adequate if the operator can deliver water to the fire within 10 minutes.

Fire watch Service is also designated in the ODF Fire Season Requirements and described by the certificate holder in the WMP. Each operation area is to have a Firewatch, unless otherwise waived.[113] Fire watch shall be on duty during any breaks (up to 3 hours) and for three hours after all power driven machinery used by the operator has been shut down for the day.[114] Fire watch shall:

- Be physically capable and experienced to operate firefighting equipment;
- Have facilities for transportation and communications to summon assistance;
- Observe all portions of the operation on which activity occurred during the day.
- Upon discovery of a fire, Firewatch personnel must:
    - First report the fire, summon any necessary firefighting assistance, describe intended fire suppression activities and agree on a checking system; then, after determining a safety zone and an escape route that will not be cut off if the fire increases or changes direction, immediately proceed to control and extinguish the fire, consistent with firefighting training and safety.

As noted by the certificate holder, the tasks and actions identified in the IFPL Requirements WMP Attachment A and Fire Season Requirements WMP Attachment B apply to applicable activities during both construction and operation of the facility, with RFA13 changes.

[113] OAR 629-043-0030(1) and ORS 477.665 designate the applicability, timing, and requirements for Fire Watch Service. OAR 629-043-0030(2) and (3), identify state that the Oregon State Forrester may waive fire watch requirements. The Department recommends Council add the language of this rule to both the construction and operational WMPs to provide clarity if in the future there may be questions of Fire Watch duties or if any of the Fire Watch requirements may be waived by the Forrester.

[114] Some ODF districts waive this requirement based on the IFPL in place. See Attachment B and OAR 629-043-0030.

As stated in the WMPs and required by ODF procedures and policies, the certificate holder will follow the restrictions associated with each IFPL and the associated best management practices throughout the season. Both the construction and operational WMP include Attachment C: Oregon Department of Forestry Forest Activity Inspection Report (ODF Inspection Report). The ODF Inspection Report is used by ODF and provides a check list of compliance with the above-listed measures discussed in this section and is discussed further below. The certificate holder indicates that if it needs to be finalized and/or amended, on an annual basis while construction is occurring as a record of inspection during construction, it will be submitted to the Department. As highlighted below and under Recommended Wildfire Prevention and Risk Mitigation Conditions 1 and 2, the Department may also use this inspection form to ensure compliance with applicable measures outlined in the WMP's and may amend the inspection report to satisfy any concerns regarding wildfire risk during construction and operation.

Facility Construction:

The ODF fire season requirements discussed above apply and are included in the construction WMP. Construction personnel will be trained on the RACE (i.e., Remove, Alarm, Confine and Extinguish or Evacuate) procedure to implement in the event of a fire start. RACE procedure includes:

- Rescue anyone in danger (if safe to do so);
- Alarm – call the control room, who will then determine if 911 should be alerted;
- Contain the fire (if safe to do so); and
- Extinguish the incipient fire stage (if safe to do so).

As indicated above, during construction, the Department, certificate holder, and ODF may use the WMP Attachment C: Oregon Department of Forestry Forest Activity Inspection Report to record compliance with wildfire risk mitigation measures. If the Department, certificate holder, or ODF determine different or additional measures are needed to reduce or address wildfire risk, the ODF Inspection Report may be amended and submitted to the Department. To ensure the facility is constructed in compliance with a construction WMP, the Department recommends Council impose the Recommended Wildfire Prevention and Risk Mitigation Condition 1 which would require that the construction WMP be implemented by the certificate holder and its contractors during facility construction:

> **Recommended Wildfire Prevention and Risk Mitigation Condition 1 [CON]:** During construction of a phase or component of the Mist Resiliency Project, as applicable, the certificate holder shall implement and require all onsite contractors and employees to adhere to, the Construction Wildfire Mitigation Plan as provided in Attachment V-1 to the Final Order on RFA13. Updates to the Wildfire Mitigation Plan, including Attachment C: Oregon Department of Forestry Forest Activity Inspection Report, may be required if determined necessary by the certificate holder, certificate holder's contractor(s) or the Department to address wildfire hazard to public health and safety. Any Department

required updates shall be implemented within 14 days, unless otherwise agreed to by the Department based on a good faith effort to address wildfire hazard.
[CON-WF-01; Final Order on AMD13]

Facility Operation:

Facility Component Inspections and Vegetation Management

OAR 345-022-0115(1)(b)(B) requires the description of procedures, standards, and time frames that a certificate holder will use to inspect proposed facility components. Certificate holder explains that fire safety inspections at a natural gas facility involve a systematic assessment of various components to identify potential fire hazards and ensure the safety of personnel, equipment, and the surrounding environment. Up to 12 staff members are on site daily at the facility and the facility is remotely monitored 24 hours a day, as well as on-site staff present at the monitoring station for the new operations building at NMCS.

Visual inspections for facility components are as followed as described in Attachment V-2 to this order.[115] Visual inspections for:[116]

- Electrical systems and surrounding areas (components, grounding, clearances, vegetation, fencelines): conducted at least annually in accordance with NFPA and NERC safety requirements;
- Fuel supply systems occur at least monthly to detect and address gas leaks, damaged pipelines, or other issues that could lead to combustible gas escaping;
- Fuel tanks: performed semiannually to check for leaks, corrosion, or other vulnerabilities that could lead to fuel spillage and potential fires standards;
- Piping and valves: completed semiannually to detect leaks, damage, or malfunction;
- In-plant pipe and surround areas: conducted annually to check for leaks;
- Underground pipelines will be visually inspected on a seven-year assessment schedule to address any leaks or damage;
- Emergency shutdown, notification, and venting systems are in place at Miller Station and will be implemented at the NMCS, all of which will be visually inspected annually to ensure they are operational and capable of responding quickly to fire or safety incidents;
- Fire suppression systems, including fire extinguishers and fire sprinklers, occur annually or as recommended by the system manufacturer to verify functionality;
- Emergency response equipment, such as personal protective gear, first-aid kits, and communication devices, conducted annually;
- Facility grounds inspections occur weekly to maintain cleanliness, remove combustible debris, assure proper chemical storage and leak treatment as

[115] MSTAMD13Doc70 RFA13 Exhibit V Wildfire 2024-08-09, Attachment V-3, Section 3.2.2; Attachment V-2 to this order.

[116] Inspections are governed by Pipeline and Hazardous Materials Safety Administration (PHMSA) standards and Operational Spill Prevention, Control, and Countermeasure Plan, Subpart L 29 CFR 1910.155-165, as applicable.

applicable, and assure proper maintenance of all heat-producing equipment to prevent accidental ignition of combustible materials, in accordance with applicable equipment guidelines and manuals.

A defensible space clearance along RFA13 facility features will be maintained to be free of combustible vegetation or other materials. Roads and parking areas will be maintained to be free of vegetation tall enough to contact the undercarriage of the vehicle. Travel off road or parking in vegetated areas will be restricted during fire season and will adhere to IFPL restrictions and requirements, cited above. The operational WMP also includes Attachment C: Oregon Department of Forestry Forest Activity Inspection Report. As highlighted below under Recommended Wildfire Prevention and Risk Mitigation Condition 2, the Department, certificate holder or ODF may use this form to use as a check list for applicable BMPs that reduce wildfire risk at the site. The ODF Inspection Reports may be modified, as needed, to address any concerns on the site and submitted to the Department.

A physical vegetation survey assessment of the fenced area will be completed at least annually to monitor vegetation growth. The initial vegetation survey assessments will occur typically in the spring, prior to the start of the dry season, a time when wildfire risk is usually heightened due to low fuel moisture and high temperature. The vegetation survey assessment will be conducted by operations staff and will be used to assess the frequency of upcoming vegetation maintenance and identify areas that may need additional attention. Around the NMCS components will be installed with a gravel base and managed with herbicide or mechanical application on all associated gravel pads.

RFA13, Exhibit P, Attachment P-4 includes the certificate holder's Vegetation Control and Management Plan. The Vegetation Control and Management Plan includes measures to control noxious weeds, requirements for herbicide use and recordation, and prioritization and coordination for vegetation removal standards including tree clearance maintenance. The Department adds Attachment P-4: Vegetation Control and Management Plan to Attachment V-2, to the operational WMP because the vegetation management measures are consistent with those that also reduce and manage wildfire risk as the site and should be consolidated into one location (plan) for simplified referencing and compliance.

Preventative Actions and Programs and Mitigation of Wildfire Risks

OAR 345-022-0115(1)(b)(C) requires the identification of preventative actions that the applicant will carry out to minimize the risk of proposed facility components causing wildfire. Certificate holder indicates that all workers and the facility will operate under an OHSA-Compliant Fire Prevention Plan, which is designated under the Code of Federal Regulations 29 CFR 1910.39 and Subpart L 29 CFR 1910.155-165, some of these measures include:

- Procedures to control accumulations of flammable and combustible waste materials;
- Procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent the accidental ignition of combustible materials;

- The name or job title of employees responsible for maintaining equipment to prevent or control sources of ignition or fires;
- Facility contains properly maintained portable fire extinguishers, and staff are trained to use them;
- Automatic sprinkler, fire detection, fixed extinguishing, and employee alarm systems.

Plan Updates

RFA13 WMP states that the certificate holder will review its WMP in accordance with Mist Underground Storage operation and maintenance manuals. After each review, a copy of the updated WMP will be provided to the Department within the annual compliance report required under OAR 345-026-0080(2). In the annual monitoring report, a discussion of any significant changes to the wildfire mitigation program, including the reason for any such changes, will be described. The Department recommends clarifying in the operational WMP that the certificate holder's review will occur annually. As required under OAR 345-022-0115(1)(b), because the proposed facility site has a moderate to high wildfire risk, and to ensure the measures intended to reduce and mitigate wildfire risk at the site to during operation are conducted in compliance with the WMP, the Department recommends Council impose the following condition:

Recommended Wildfire Prevention and Risk Mitigation Condition 2 [OPR]: <u>During operation, the certificate holder shall:</u>

a. <u>Implement the Operational Wildfire Mitigation Plan, included as Attachment V-2 to the Final Order on RFA13.</u>
b. <u>After the first operational year, annually review and update the evaluation of wildfire risk under OAR 345-022-0115(1)(b) and submit the results in the annual report for that year, including any updates to Attachment C: Oregon Department of Forestry Forest Activity Inspection Report.</u>
c. <u>Submit an updated Operational Wildfire Mitigation Plan to the Department if substantive changes are made to the plan because of the review under sub (b) of this condition, or at any other time substantiative revisions are made to Attachment V-2 of the Final Order on RFA13.</u>

[OPR-WF-01; Final Order on AMD13]

III.N.2. <u>Conclusions of Law</u>

Based on the foregoing recommended findings of fact, and subject to compliance with recommended site certificate conditions, the Department recommends Council find that the certificate holder has adequately characterized wildfire risk at the site using current data from reputable sources, and that the facility, with proposed RFA13 changes, will be constructed and operated in compliance with a Wildfire Mitigation Plan approved by Council.

III.O. WASTE MINIMIZATION: OAR 345-022-0120

(1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that, to the extent reasonably practicable:

(a) The applicant's solid waste and wastewater plans are likely to minimize generation of solid waste and wastewater in the construction and operation of the facility, and when solid waste or wastewater is generated, to result in recycling and reuse of such wastes;

(b) The applicant's plans to manage the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility are likely to result in minimal adverse impact on surrounding and adjacent areas.

(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.
(3) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.[117]

III.O.1. <u>Findings of Fact</u>

Construction

Construction activities would result in the generation of non-hazardous solid waste and wastewater. Solid waste includes temporary structures; materials resulting from land clearing activities (timber, brush, refuse and flammable or combustible materials); scrap steel and welding rod; erosion control materials (silt fencing, straw bales, grinding chips, bio-bags); bentonite used during Horizontal Directional Drilling (HDD); and concrete wash-out materials (i.e. eco-bucket or similar material).[118]

Wastewater would be generated during the HDD and hydrostatic testing process. Excess fluid from the HDD process would be collected and placed through a process to separate the bentonite, sand, and water for reuse on subsequent HDD areas. The bentonite and water would be used again in the drilling process, whereby there would be no resulting wastewater requiring disposal. Water used in hydrostatic testing (up to 185,000 gallons) would either be reused onsite for dust abatement or for mixing of drilling fluids.

[117] OAR 345-022-0120, effective May 15, 2007.
[118] MSTAMD13Doc55 RFA13 Exhibits A-F Project Description 2024-08-09, Section VII.M Waste Minimization.

Sanitary wastewater will be collected on-site in portable toilets; and managed by a licensed subcontractor and disposed of offsite at a licensed facility.

Estimated waste and wastewater types and quantities are presented in Table 18 below.

Table 18: RFA13 Construction Waste Estimates

Waste Classification	Waste Description	Estimated Total	Unit	Disposal Method
Solid	Human waste / refuse	61,000	GAL	Portable Toilet Service Disposal
	Post-consumer food waste	150	LBS	Landfill
	Building materials (wood, lumber)	100,000	LBS	Landfill
	Scrap metals (pipe, steel, hardware – from removal, install and replacement of components)	91,000	LBS	Metal Recycling
	Plastics (packaging / containers)	28,000	LBS	Recycling & Landfill
	Oily rags and/or absorbents	700	LBS	Hazardous Waste Facility
	Excavated soils/boulders	3,875	CY	Landfill
	Concrete (Scrap and Washout)	58,800	LBS	Landfill
Liquids	Paints	7	GAL	Hazardous Waste Facility
	Solvents	7	GAL	Hazardous Waste Facility
	Lubricating Oils	14	GAL	Hazardous Waste Facility
	Water	750,000	GAL	Recycled & Drain on Site

Attachment W of this order is the Waste Minimization and Recycling Plan for NWN that will apply to the facility. The Department recommends Council impose the following condition to require that the certificate holder adhere to the waste minimization and recycling requirements of the plan through all phases of the facility:

> **Recommended Waste Minimization Condition 1 (GEN):** <u>During construction and operations, the certificate holder shall adhere to the requirements of the NWN Waste Minimization and Recycling Plan, as provided in Attachment W of the Final Order on Amendment 13.</u>
> [GEN-WM-01; Final Order on AMD13]

Operations

The Mist Resiliency Project will not generate hazardous or non-hazardous waste. It will generate some wastewater during the initial operational cycle of the storage wells, which will

be disposed of using water trucks that would collect and transport the wastewater to a licensed, local wastewater treatment plant.

III.O.2. Conclusions of Law

Based on the foregoing analysis, and subject to compliance with the recommended site certificate condition described above, the Department recommends Council find that the certificate holder's solid waste and wastewater plans are likely to minimize generation of solid waste and wastewater in the construction and operation of the facility, with the proposed RFA13 changes, result in recycling and reuse of such wastes, and would manage the accumulation, storage, disposal and transportation of wastes in a manner that would result in minimal adverse impacts to surrounding and adjacent areas.

IV. EVALUATION OF APPLICABLE DIVISION 23 and 24 STANDARDS

IV.A. Need for a Nongenerating Facility OAR 345-023-0005

This division applies to nongenerating facilities as defined in ORS 469.503(2)(e), except nongenerating facilities that are related or supporting facilities. To issue a site certificate for a facility described in sections (1) through (3), the Council must find that the applicant has demonstrated the need for the facility. The Council may adopt need standards for other nongenerating facilities. This division describes the methods the applicant shall use to demonstrate need. In accordance with ORS 469.501(1)(L), the Council has no standard requiring a showing of need or cost-effectiveness for generating facilities. The applicant shall demonstrate need:

(1) For electric transmission lines under the least-cost plan rule, OAR 345-023-0020(1), or the system reliability rule for transmission lines, OAR 345-023-0030, or by demonstrating that the transmission line is proposed to be located within a "National Interest Electric Transmission Corridor" designated by the U.S. Department of Energy under Section 216 of the Federal Power Act;

(2) For natural gas pipelines under the least-cost plan rule, OAR 345-023-0020(1), or the economically reasonable rule for natural gas pipelines, OAR 345-023-0040;

(3) For storage facilities for liquefied natural gas with storage capacity of three million gallons or greater under the least-cost plan rule, OAR 345-023-0020(1), or the economically reasonable rule for liquefied natural gas storage facilities, OAR 345-023-0040.

IV.A.1. Findings of Fact

Pursuant to ORS 469.501(1)(l) Council has the authority to adopt a standard addressing the "need for proposed nongenerating facilities as defined in ORS 469.503." Council exercised its authority by adopting the Need Standard for Nongenerating Facilities at OAR Chapter 345, Division 23. ~~Council's Need for a Facility rule at OAR 345-023-0005; however~~However, it only requires the applicant ~~of~~ for three specific types of nongenerating facilities to demonstrate a need for the facility.[119] The rule does not include a need standard for surface facilities related to an underground natural gas storage reservoir. Therefore, NWN ~~was~~ is not required to demonstrate need for the surface facilities related to an underground natural gas storage reservoir proposed through ~~previous~~ this amendment request~~s; nor was~~ and Council is not required to make a finding of need to grant the requested amended site certificate. ~~OAR 345-023-0005 further states that the division does not apply to "nongenerating facilities that are related or supporting facilities."~~

~~Council previously evaluated the applicability of this standard on the facility in the Final Order on AMD11 and found that this requirement does not apply to any related or supporting facilities. This fact would not change as a result of RFA13 requested changes, which continue to be nongenerating facilities that are related or supporting facilities.~~

IV.A.2. Conclusions of Law

~~Based on the foregoing findings of fact~~Because Council has not adopted a need standard for surface facilities related to an underground natural gas storage reservoir, the Department recommends that Council continue to find that the Division 23 Need Standard does not apply to ~~the facility~~RFA13.

IV.B. Public Health and Safety Standards for Surface Facilities Related to Underground Gas Storage Reservoirs: OAR 345-024-0030

To issue a site certificate for a proposed surface facility related to an underground gas storage reservoir, the Council must make the following findings:

(1) The proposed facility is located at distances in accordance with the schedule below from any existing permanent habitable dwelling:
(a) Major facilities, such as compressor stations, stripping plants and main line dehydration stations – 700 feet.
(b) Minor facilities, such as offices, warehouses, equipment shops and odorant storage and injection equipment – 50 feet.
(c) Compressors rated less than 1,000 horsepower – 350 feet.
(d) Roads and road maintenance equipment housing – 50 feet.
(2) The applicant has developed a program using technology that is both practicable and

[119] Pursuant to Oar 345-023-0005(1) – (3), the Council has adopted Need Standards for electric transmission lines, natural gas pipelines, and storage facilities for liquefied natural gas. While the rule states that "[t]he Council may adopt need standards for other nongenerating facilities," the Council has not yet done so.

reliable to monitor the facility to ensure the public health and safety.

IV.B.1. Findings of Fact

The Public Health and Safety Standards for Surface Facilities Related to Underground Gas Storage Reservoirs requires Council to find that the facility complies with the required setbacks from permanent habitable dwellings and that ~~the applicant has proposed~~the certificate holder has a monitoring plan to protect public health and safety. ~~Council has previously found that the facility complies with this standard.~~

RFA13 proposed changes would occur within the existing approved facility site boundary and both major and minor facilities would be located at over 1 mile (5,280 feet) from the nearest residence (habitable dwelling). There are no compressors proposed in RFA13 that are rated less than 1,000 horsepower and no new roads would be constructed. The updated underground powerline would be constructed via trenching in an existing private road located 500 feet or further from the nearest residence and no road maintenance equipment would be stored at the facility.

The facility complies with the monitoring and reporting requirements and regulations of the Pipeline and Hazardous Materials Safety Administration, Department of Transportation, and Public Utility Commission. DOGAMI enforces stringent storage well design and implementation standards to prevent the release of any natural gas into the atmosphere or contamination of the native aquifers. These standards remain at or above the level of national storage standards set by the U.S. federal Pipeline and Hazardous Materials Safety Administration.

The certificate holder committed to remote monitoring of the facility during operations on a 24-hour basis by trained operators at NWN's Miller Station and NWN Gas Control located in Portland, Oregon. The facility is equipped with a Supervisory Control and Data Acquisition ("SCADA") system and telemetry to monitor and transmit data from remote sources. This technology makes it possible to quickly detect leaks even in remote locations. NWN also conducts biannual aerial patrols and two-week-long foot patrols at the Facility. Regular valve maintenance occurs as well.

In addition to continuous monitoring of the storage wells and associated transmission line pressure via SCADA, wellheads, well safety systems, well piping, and site locations are inspected for operability, leaks, and mechanical or other faults weekly under certificate holder's integrity monitoring program. Wellhead master valves and pipeline isolation valves are tested at least annually to ensure proper function and ability to isolate the well.

Additional measures proposed to ensure public health and safety during operations included installation and ongoing maintenance of a fire and gas detection system, isolation valves, fire prevention and suppression equipment, and blowdowns. As previously approved, the NMCS would be enclosed with security fencing and yard lighting for security purposes, in compliance with the existing monitoring requirements.

For all these reasons, the Department recommends that Council find that the facility, with RFA13 proposed changes, continues to comply with this standard.

IV.B.2. Conclusions of Law

Based on the foregoing findings, Council finds that the proposed surface facilities related to an underground gas storage reservoir, with RFA13 proposed changes, complies with Council's Public Health and Safety Standards for Surface Facilities Related to Underground Gas Storage Reservoirs.

IV.C. Siting Standards for Transmission Lines OAR 345-024-0090

> *To issue a site certificate for a facility that includes any transmission line under Council jurisdiction, the Council must find that the applicant:*
>
> *(1) Can design, construct and operate the proposed transmission line so that alternating current electric fields do not exceed 9 kV per meter at one meter above the ground surface in areas accessible to the public;*
>
> *(2) Can design, construct and operate the proposed transmission line so that induced currents resulting from the transmission line and related or supporting facilities will be as low as reasonably achievable.*

IV.C.1. Findings of Fact

RFA13 proposes replacing an existing underground powerline that connects the existing meter located near Highway 202 to Miller Station. The method for replacing will involve use of trenching and horizontal directional drilling (HDD) to lay the conduit through which the powerline cable will be pulled to remove and to replace and then re-connected. The conduit and cable will be buried at approximately 5 feet deep in trenched areas and the maximum established depth of the HDD route under Lindgren and Lyons creeks. The purpose of the powerline is to supply power to Miller Station transformer, where the line terminates. Approximately 1.6 miles of 3.1 miles of electrical cable and conduit will be replaced within the existing easement following a right of way of 40 feet wide within existing roadbed and 40 feet wide in other areas outside existing road. Electrical pull boxes (for the conduit and line) will be spaced at 2,000 feet intervals along the route.

At a depth of 5 feet or more below surface and encased within conduit, the underground powerline will not result in alternating or induced current at detectable or significant levels. For this reason, the Department recommends that Council find that the facility, with proposed RFA13 changes, will continue to meet the requirements of this standard.

IV.C.2. Conclusions of Law

Based on the foregoing analysis, the Department recommends the Council find that the certificate holder can design, construct, and operate the facility, with proposed RFA13 changes, so that alternating current electric fields do not exceed 9-kV per meter at one meter above the ground surface in areas accessible to the public and that induced currents resulting from the buried powerline and other related or supporting facilities will be as low as reasonably achievable.

IV.D. Standard for Nongenerating Energy Facilities ~~(that emits carbon): OAR 345-024-0620~~

ORS 469.501(1)(o) establishes Council's authority to adopt standards to address the impacts of carbon dioxide (CO_2) emissions on climate change. ORS 469.501(1)(o) specifically applies to non-fossil fueled energy facilities; standards for fossil fueled energy facilities are established in ORS 469.503(2).

Consistent with ORS 469.501(1)(o), Council adopted OAR 345-024-0620, *Standards for Nongenerating Energy Facilities*, and OAR 345-024-0630, *Means of Compliance for Nongenerating Energy Facilities*, to address CO2 emission impacts from non-generating facilities. These standards are meant to be evaluated together.

OAR 345-024-0620

> *To issue a site certificate for a nongenerating energy facility that emits carbon dioxide, the Council must find that the net carbon dioxide emissions rate of the proposed facility does not exceed 0.428 pounds of carbon dioxide per horsepower hour. The Council shall determine whether the carbon dioxide emissions standard is met as follows:*
>
> *(1) The Council shall determine the gross carbon dioxide emissions that are reasonably likely to result from the operation of the proposed energy facility. The Council shall base such determination on the proposed design of the energy facility. In determining gross carbon dioxide emissions for a nongenerating facility, the Council shall calculate carbon dioxide emissions for a 30-year period unless the applicant requests, and the Council adopts in the site certificate, a different period. The Council shall determine gross carbon dioxide emissions based on its findings of the reasonably likely operation of the energy facility. The Council shall use a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel (higher heating value) and a rate of 161 pounds of carbon dioxide per million Btu of distillate fuel (higher heating value), if the applicant proposes to use such fuel. If the applicant proposes to use any other fossil fuel, the Council shall adopt by rule an appropriate carbon dioxide content rate for the fuel.*
>
> *(2) For any remaining emissions reduction necessary to meet the applicable standard, the applicant may elect to use any of the means described in OAR 345-*

024-0630 or any combination thereof. The Council shall determine the amount of carbon dioxide or other greenhouse gas emissions reduction that is reasonably likely to result from the applicant's offsets and whether the resulting net carbon dioxide emissions meet the applicable carbon dioxide emissions standard. The amount of greenhouse gas emissions means the pounds of carbon dioxide and the carbon dioxide equivalent of other greenhouse gases. For methane, one pound of methane is equivalent to 25 pounds of carbon dioxide. For nitrous oxide, one pound of nitrous oxide is equivalent to 298 pounds of carbon dioxide.

*****

(4) Before beginning construction, the certificate holder shall notify the Department of Energy in writing of its final selection of an equipment manufacturer and shall submit a written design information report to the Department sufficient to verify the facility's designed rate of fuel use and its nominal capacity for each fuel type. In the site certificate, the Council may specify other information to be included in the report. The Department shall use the information the certificate holder provides in the report as the basis for calculating, according to the site certificate, the amount of greenhouse gas emissions reductions the certificate holder must provide under OAR 345-024-0630.

(5) In the site certificate, the Council shall specify the schedule by which the certificate holder shall provide offsets. In the schedule, the Council shall specify the amount and timing of offsets the certificate holder must provide to an offset credit account. In determining the amount and timing of offsets, the Council may consider the estimate of total offsets that may be required for the facility and the minimum amount of offsets needed for effective offset projects. The Department shall maintain the record of the offset credit account.

~~IV.C.3.~~IV.D.1. Findings of Fact

The proposed RFA13 changes include construction and operation of three new natural-gas fired compressors at the North Mist Compressor Station (NMCS) and replacement of two existing turbines at Miller Station.

NMCS

Certificate holder will use three Caterpillar 3608 compressor engines at the NMCS. Each of the proposed compressors to be used at NMCS has a rated capacity of 2,750 horsepower (hp).[120] A conservative estimate based on the injection and withdrawal cycle assumes the three engines would operate at full load for 6,570 hours per year.

[120] MSTAMD13Doc75 RFA13 Exhibit DD Specific Standards 2024-08-09, Attachment DD-1.

The certificate holder conservatively estimates the gross carbon dioxide (CO_2) emissions from the proposed engine-driven compressors at 731,155 tons of CO_2 over a 30-year period. The certificate holder assumes the compressors will emit 0.940 pounds of carbon dioxide per horsepower hour (lb CO_2/HP-hr) operating at full load for 6,570 hours per year, each, with a maximum inlet air temperature of 100 degrees Fahrenheit. Following is the certificate holder's calculation:

19,170 hours/year X 30 years X 20.6 MMBtu/hr X ton/2,000 lbs = 713,155 tons of CO_2.

Per OAR 345-024-0620, Council must find that the net CO_2 emissions rate of the proposed RFA13 changes does not exceed 0.428 pounds of CO_2 per horsepower hour. Council determines the rate of excess carbon dioxide emissions based on the difference between the certificate holder's estimated gross CO_2 emission rate (0.94 lb CO2/HP-hr) and Council's CO_2 emission rate equal to 0.428 lb CO_2/HP-hr (Estimated CO2 – Allowable CO2 = Excess CO2 requiring offset). The following calculation uses the same operating assumptions as noted above but based on 0.428 pounds of CO_2 per horsepower hour:

19,170 hours/year X 30 years X 2,750 hp X 0.428 lbs. CO2/hp-hr X ton/2,000 lbs = 347,980 tons of CO_2.

Based on these calculations, the certificate holder must ~~reduce~~ offset the gross CO_2 emissions from the three new compressors by 365,175 tons CO2 over 30 years (713,155 tons – 347,980 tons = 365,175 tons).~~.~~

Miller Station

The certificate holder proposes replacing two turbines at Miller Station used to compress natural gas with Taurus 60 Turbines. Each of the replacement turbines has a rated capacity of 7,700 hp. The certificate holder conservatively estimates the turbine would cumulatively operate a total of 6,570 hours per year. The following calculation shows the expected cumulative CO_2 emissions from both turbines for 30 years:

6,570 hours/year X 30 years X 61.3 MMBtu/hr X 117 lbs CO2/MMBtu X ton/2,000 lbs = 707,162 tons of CO_2

The following calculation uses the same operating assumptions to calculate the allowable CO2 emissions based on 0.428 pounds of CO_2 per hp-hr allowed under Council's standard:

6,570 hours/year X 30 years X 7,700 HP X 0.428 lbs CO_2/hp-hr X ton/2,000 lbs = 324,781 tons of CO_2.

Based on these calculations, the certificate holder must reduce the gross CO_2 emissions from the replacement turbines by 382,381 tons CO_2 over 30 years (707,162 tons – 324,781 tons = 382,381 tons).

Offsets

The certificate holder proposes to meet Council's CO_2 standard as allowed under OAR 345-024-0630(2)(c)(C) by providing offset funds at the rate of $~~4.27~~6.40[121] for each ton of remaining CO_2 emissions reduction needed. For NMCS, this would result in a CO2 offset of $~~1,559,297~~ 2,337,120 (365,175 tons emission reduction × $6.40~~4.27~~ = $~~1,559,297~~ 2,337,120 offset). For Miller Station, this would result in a CO_2 offset of $~~1,632,766~~2,447,238.4 (382,381 tons emission x $~~4.27~~6.40 offset cost = $~~1,632,766~~2,447,238.4 offset). Based on this estimate and calculations, the total emissions in exceedance of 0.428 pounds of carbon dioxide per horsepower hour associated with RFA13 are 747,556 tons CO2:

365,175 (NMCS) + 382,381 (Miller Station) = 747,556 tons of CO2 emissions requiring offset.

This estimate will be verified and updated based on final facility design as required in the recommended Carbon Dioxide Emissions Condition 1 as proposed below.

Certificate holder proposes providing the emission offset in a single payment to the National Climate Trust.[122] In addition to the offset funds, certificate holder will provide an additional amount to be included in the one-time payment of up to 10 percent of the first $500,000 offset fund amount and 4.286 percent of offset funds in excess of $500,000 (an additional $~~95,401~~233,628~~ for NMSC and an additional $98,550 for Miller Station~~) if requested by the organization as specified in OAR 345-024-0710(4). These amounts are shown in Table 19 in Section IV.E below.

Recommended Carbon Dioxide Emissions Condition 1 below, and Carbon Dioxide Emissions Conditions 2 and 3 in Section IV.E Means of Compliance, will ensure compliance with the carbon dioxide standard for nongenerating facilities. These conditions will require the certificate holder, prior to construction to submit a report providing information about equipment design and emissions, obtain Department confirmation of the payment needed to meet Council's carbon dioxide standard for nongenerating facilities, remit the payment to The Climate Trust and every year after beginning operation of the new and replacement compressors report their annual hours of operation and fuel consumption and to replenish the offset credit account if the Department determines the account does not adequately offset the excess carbon dioxide emissions over the estimated 30-year life.

Based on the requirements of the standard, the Department recommends Council impose the following preconstruction condition:

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[121] Under OAR 345-024-0580 (effective ~~7/25/22),~~10/25/2024 the monetary offset rate is $~~4.27~~6.40 per ton of carbon dioxide emissions.

[122] Oregon Business Registration Number 455822-93. NWN provided proof of the Climate Trust's 501(c)(3) status for the organization at the end of MSTAMD13Doc75 RFA13 Exhibit DD Specific Standards 2024-08-09, Attachment DD-2.

Recommended Carbon Dioxide Emissions Condition 1 [PRE]: Prior to construction of new or replacement combustions turbines of the Mist Resiliency Project, as applicable, the certificate holder shall submit a written equipment design and estimated emissions report to the Department, including the following information for the engine-driven compressors and turbines:

a. Manufacturer specifications
b. Fuel consumption rate (Btu/HP-hr), based on higher heating value of fuel, and rated engine capacity (HP), based on manufacturer specifications
c. Engine load factor and adjusted HP
d. Estimated annual hours of operation (hr/yr) for engine-driven compressors
e. Carbon dioxide emission calculations including gross carbon dioxide emission rate, net carbon dioxide emission rate based on Council emission rate standard equal to 0.428 lb CO2/HP-hr, and estimated excess carbon dioxide emissions for the assumed 30-year operational lifetime. Calculations shall be based on information provided in (1)(a) – (1)(d) of this condition and consistent with OAR 345-024-0620(1). [PRE-CD-01; Final Order on AMD13]

~~IV.C.4.~~IV.D.2. Conclusions of Law

The Department recommends Council find that, taking into account offsets and subject to the recommended Carbon Dioxide Emissions Condition 1, the net CO2 emissions rate of the facility, with proposed RFA13 changes, will not exceed 0.428 pounds of CO2 per horsepower hour and therefore complies with Council's CO_2 standard for nongenerating energy facilities in OAR 345-024-0620.

~~IV.D.~~IV.E. Means of Compliance for Nongenerating Energy Facilities~~: OAR 345-024-0630~~

ORS 469.501(1)(o) establishes Council's authority to adopt standards to address the impacts of carbon dioxide (CO_2) emissions on climate change. ORS 469.501(1)(o) specifically applies to non-fossil fueled energy facilities; standards for fossil fueled energy facilities are established in ORS 469.503(2).

Consistent with ORS 469.501(1)(o), Council adopted OAR 345-024-0620, *Standard~~s~~ for Nongenerating Energy Facilities*, and OAR 345-024-0630, *Means of Compliance for Nongenerating Energy Facilities*, to address CO2 emission impacts from non-generating facilities. These standards are meant to be evaluated together.

OAR 345-024-0620

To issue a site certificate for a nongenerating energy facility that emits carbon dioxide, the Council must find that the net carbon dioxide emissions rate of the proposed facility

does not exceed 0.428 pounds of carbon dioxide per horsepower hour. The Council shall determ whether the carbon dioxide emissions standard is met as follows:
*****

OAR 345-024-0630

The applicant may elect to use any of the following means, or any combination thereof, to comply with the carbon dioxide emissions standard for nongenerating energy facilities:

(1) Implementing offset projects directly or through a third party, pursuant to OAR 345-024-0680. The Council may adopt site certificate conditions ensuring that the proposed offset projects are implemented by the date specified in the site certificate, but shall not require that predicted levels of avoidance, displacement or sequestration of greenhouse gas emissions be achieved.

(2) Providing offset funds, directly or through a third party, in an amount deemed sufficient to produce the reduction in greenhouse gas emissions necessary to meet the applicable carbon dioxide emissions standard according to the schedule set forth pursuant to OAR 345-024-0620(5). The applicant or third party shall use the funds as specified in 345-024-0710. The Council shall deem the payment of the monetary offset rate, pursuant to 345-024-0580, to result in a reduction of one ton of carbon dioxide emissions. The Council shall determine the offset funds using the monetary offset rate and the level of emissions reduction required to meet the applicable standard. If the Council issues a site certificate based on this section, the Council may not adjust the amount of the offset funds based on the actual performance of offsets.

(3) Any other means that the Council adopts by rule for demonstrating compliance with the carbon dioxide emissions standard.

(4) Each year after beginning commercial operation, the certificate holder shall report to the Department of Energy data showing the amount and type of fossil fuels used by the facility and its horsepower-hours of operation. The Council shall specify in the site certificate how the Department shall use those data to calculate the gross carbon dioxide emissions from the facility during the report year and the net emissions in excess of the carbon dioxide emissions standard. The Department shall then subtract excess emissions from the offset credit account. The Council shall specify in the site certificate the minimum amount of offset credits that a certificate holder shall provide to establish the offset credit account. The Council may specify an amount of offset credits equal to the total offsets required for the facility. The Council shall specify the minimum amount of offset credits that a certificate holder must maintain in the account and the minimum amount of offset credits the certificate holder shall provide to replenish the account. The Department shall notify the certificate holder when it must replenish its offset credit account according to the conditions in the site certificate. The certificate holder shall

maintain a positive balance in the offset credit account for 30 years, unless the Council specifies a different period in the site certificate.

(5) If the certificate holder is replenishing its offset credit account by meeting the monetary path payment requirement described in OAR 345-024-710, the certificate holder may replenish its offset credit account without amending the site certificate by using the calculation methodology detailed in conditions that the Council adopts in the site certificate.

(6) If the certificate holder proposes to replenish the offset credit account under OAR 345-024-0630(1), the Council may amend the site certificate conditions to ensure that the proposed offset projects are implemented.

(7) If the Council or a court on judicial review concludes that the applicant has not demonstrated compliance with the applicable carbon dioxide emissions standard under sections (1), (3) or (6) of this rule, or any combination thereof, and the applicant agrees to meet the requirements of section (2) for any deficiency, the Council or a court shall find compliance based on such agreement.

~~IV.D.1.~~IV.E.1. Findings of Fact

As described in the previous section, NWN has elected to comply with the Council's ~~Means of Compliance for Nongenerating Energy Facilities~~ Standard for Nongenerating Facilities under (2) of OAR 345-024-0630 ~~this standard~~ by providing ~~the required~~a monetary payment to The Climate Trust, a qualified organization, for offsets required to reduce excess emissions generated from operation of the ~~NMCS~~facility.

Sub(2) of OAR 345-024-0630 allows the certificate holder to provide offset funds, directly or through a third party, in an amount *deemed sufficient* to produce the reduction in greenhouse gas emissions necessary to meet the *applicable carbon dioxide emissions standard* according to the schedule set forth pursuant to OAR 345-024-0620(5) [Emphasis added].

The phrase "in an amount *deemed sufficient* to *meet the applicable CO2 emissions standard"* must be read and applied together, not independently or in isolation. The amount *deemed sufficient* must be the amount needed to *meet the applicable CO2 emission standard.*
The applicable CO2 emissions standard is OAR 345-024-0620. OAR 345-024-0620 establishes that Council must find that the net CO2 emissions rate of a nongenerating facility does not exceed 0.428 pounds of carbon dioxide per horsepower hour. If a non-generating facility does not meet the standard, Council rules allow it to meet the standard by using one of the means described in OAR 345-024-0630 or any combination thereof – *i.e.*, by implementing an offset project directly or providing offset funds to a third party in an amount that is sufficient to offset the emissions in excess of 0.428 pounds of carbon dioxide per horsepower hour.

As presented in Section IV.D *Standard for Nongenerating Energy Facilities*, the proposed Mist Resiliency Project would result in approximately 747,556 tons of CO2 emissions over the expected 30 year life of the facility in excess of the Council's standard of 0.428 pounds of CO2 per horsepower hour.

The monetary path payment required to offset excess emissions, based on a 30-year operational lifetime of the ~~proposed NMCS~~proposed Mist Resiliency Project, is estimated at $~~61,987~~5,017,986, as presented in Table 19, *Monetary Path Requirement.*[~~1~~2~~3~~]

Table 19: Monetary Path Requirement

Description	Value
Offset Fund Rate ($/ton CO_2)	$6.40 ~~4.27~~[~~1~~]
30-Year Total Excess CO_2 Emissions	747,556
Offset Funds Required	$4,784,358 ~~3,192,063~~
Contracting and Selection Funds[2]	$233,628~~193,951~~
Total Estimated Offset Cost =	$5,017,986~~3,386,014~~

Notes:

1. $~~4.27~~6.40 is the monetary offset rate per ton of carbon dioxide emission set at OAR 345-024-0580.
2. Contracting and selection funds are based on an amount equal to 10 percent of the first $500,000 of offset funds, and 4.286 percent in excess of $500,000.

As described above, the calculation of excess carbon dioxide emissions and monetary path payment must be updated prior to commencement of construction. To ensure ongoing accuracy of excess emission and monetary path payment calculations, the Department recommends Council adopt Carbon Dioxide Emissions Condition 2.

Recommended Carbon Dioxide Emissions Condition 2 [PRE]: Following receipt of written validation by the Department of monetary path payment calculations, and before beginning construction of compressors at Miller Station or NMCS, as part of the Mist Resiliency Project, the certificate holder shall:

a. Remit payment to The Climate Trust in the full amount of the monetary path payment requirement as determined by the calculations set forth in Carbon Dioxide Emissions Condition 1.
    1. Monetary path payment requirements shall be calculated using an offset rate of $~~4.27~~6.40 per ton of excess carbon dioxide emissions, adjusted from the year in

[~~1~~2~~3~~] ~~Final Order on MSTAMD11Doc21 Meriel Darzen, Public Comment. A comment submitted in response to the RFA requests information on the site certificate holder's proposed means of compliance for achieving the EFSC Carbon Dioxide Standard for Nongenerating Facilities. As explained above, NWN agrees to provide offset funds to The Climate Trust, a qualified organization, to comply with the EFSC Carbon Dioxide Standard of 0.504 lb CO_2/HP-hr; and Carbon Dioxide Emission Conditions 1 and 2 would ensure compliance with the standard.~~

which the Council issues the Final Order on Amendment 13, to present value dollars of the year in which payment is made to the Climate Trust.

2. Present value shall be calculated using the US Gross Domestic Product Implicit Price Deflator, as published by the US Department of Commerce, Bureau of Economic Analysis, or any successor agency ("the index"). As part of the monetary path payment, the certificate holder shall also pay selection and contracting funds in an amount equal to 10 percent of the first $500,000 of the offset funds and 4.286 percent of any offset funds in excess of $500,000.

b. Request that the Department establish an "offset credit account" for the Mist Resiliency Project. The initial offset credit account shall be the total carbon dioxide offsets for which the certificate holder has provided offset funds to The Climate Trust, pursuant to Carbon Dioxide Emissions Condition 1.
[PRE-CD-02; Final Order on AMD13]

Recommended Carbon Dioxide Emissions Condition 3 [OP~~S~~R]: Each year after beginning commercial operation of the new and replacement compressors associated with the Mist Resiliency Project ("annual carbon dioxide reporting period"), as applicable, certificate holder shall report to the Department the annual hours of operation (hr/yr) and annual fuel consumption (MMBtu/yr) for the new and replacement compressors. The certificate holder shall provide the annual report to the Department consistent with the annual reporting date for all Mist Facility components.

a. The Department shall calculate the excess carbon dioxide emissions during each annual carbon dioxide reporting period and subtract those emissions from the offset credit account annually.

b. The offset credit account shall maintain a minimum of 4,500 tons of carbon dioxide credits unless the Department determines that based on the calculations conducted in (a) that the balance in the carbon dioxide offset credit account is adequate to cover the estimated future emission of the Mist Resiliency Project over the expected 30-year life span of the NMCS and Miller Station. If the Department determines that based on calculations conducted in (a) that the offset credit account is unlikely to contain adequate credits to offset the Mist Resiliency Project carbon dioxide emissions over the estimated 30-year life, the certificate holder shall replenish the offset credit account. The certificate holder shall replenish the offset credit account equivalent to the full amount of the estimated future excess emissions. The Department shall estimate excess emissions for the remaining period of the deemed 30-year life of the Mist Resiliency Project, based on the average annual excess carbon dioxide emissions in the prior three years. The Department shall calculate the estimated future excess emissions of the new compressors and notify the site certificate holder of the amount of payment required, using the monetary path offset rate as described in (c) below.

c. For any additional future payments related to the carbon dioxide offset credit account as described in this condition, the carbon dioxide offset rate of $~~4.27~~6.40 shall be adjusted for inflation to present value from the date the Council issues the Final Order for Amendment 13, using the US Gross Domestic Product Implicit Price

Deflator, as published by the US Department of Commerce, Bureau of Economic Analysis, or any successor agency.

d. The Department shall calculate and the certificate holder shall pay additional contracting and selection funds to the qualified organization pursuant to Carbon Dioxide Emissions Condition 2(a).

e. The certificate holder shall remit payment of the additional monetary path payment requirement to replenish the offset credit account to The Climate Trust or other qualified organization (as defined in OAR 345-024-0720) within 30 days after notification by the Department of the amount that the certificate holder owes.

c. The two engine-driven compressors operated at the North Mist Compressor Station and the three compressors located at Miller Station, as part of the Mist Resiliency Project, shall be fueled solely with pipeline quality natural gas or with synthetic gas with a carbon content per million Btu no greater than pipeline quality natural gas. The department shall use a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel to calculate carbon dioxide emissions.

[OPS-CD-01; Final Order on AMD13]

~~IV.D.2.~~IV.E.2. Conclusions of Law

Certificate holder has identified ~~a means of compliance~~that it will ~~consistent with OAR 345-024-0630 requirements necessary to~~ comply with Council's ~~established~~ Standard for Nongenerating Energy Facilities in OAR 345-024-0620 through the offset path allowed under OAR 345-024-0630(2). The Department recommends that Council find, subject to compliance with the recommended site certificate conditions, the certificate holder complies with Council's ~~Means of Compliance~~ Standard for Nongenerating Energy Facilities.

V. EVALUATION OF OTHER APPLICABLE REGULATORY REQUIREMENTS

V.A. Noise Control Regulations: OAR 340-035-0035

(1) Standards and Regulations:

(a) Existing Noise Sources. No person owning or controlling an existing industrial or commercial noise source shall cause or permit the operation of that noise source if the statistical noise levels generated by that source and measured at an appropriate measurement point, specified in subsection (3)(b) of this rule, exceed the levels specified in Table 7, except as otherwise provided in these rules.

(b) New Noise Sources:

(A) New Sources Located on Previously Used Sites. No person owning or controlling a new industrial or commercial noise source located on a previously used industrial or commercial site shall cause or permit the

operation of that noise source if the statistical noise levels generated by that new source and measured at an appropriate measurement point, specified in subsection (3)(b) of this rule, exceed the levels specified in Table 8, except as otherwise provided in these rules. For noise levels generated by a wind energy facility including wind turbines of any size and any associated equipment or machinery, subparagraph (1)(b)(B)(iii) applies.

(B) New Sources Located on Previously Unused Site:

(i) No person owning or controlling a new industrial or commercial noise source located on a previously unused industrial or commercial site shall cause or permit the operation of that noise source if the noise levels generated or indirectly caused by that noise source increase the ambient statistical noise levels, L10 or L50, by more than 10 dBA in any one hour, or exceed the levels specified in Table 8, as measured at an appropriate measurement point, as specified in subsection (3)(b) of this rule, except as specified in subparagraph (1)(b)(B)(iii).

(ii) The ambient statistical noise level of a new industrial or commercial noise source on a previously unused industrial or commercial site shall include all noises generated or indirectly caused by or attributable to that source including all of its related activities. Sources exempted from the requirements of section (1) of this rule, which are identified in subsections (5)(b)–(f), (j), and (k) of this rule, shall not be excluded from this ambient measurement.
*****
DEQ 23-2018, minor correction filed 04/02/2018, effective 04/02/2018
DEQ 24-2017, minor correction filed 11/08/2017, effective 11/08/2017
DEQ 14-2017, amend filed 10/30/2017, effective 11/02/2017

Council has the authority to interpret and implement other state agency and Commission rules and statutes that are relevant to the siting of an energy facility,[124] including noise rules adopted

[124] See ORS 469.310 (stating that the legislative policy behind EFSC was to establish "a comprehensive system for the siting, monitoring and regulating of the location, construction and operation of all energy facilities in this state") and ORS 469.401(3) (giving EFSC the authority to bind other state agencies as to the approval of a facility).

by the Environmental Quality Commission and previously administered by the Department of Environmental Quality (DEQ).[125, 126]

V.A.1. Findings of Fact

The analysis area for the Noise Control Regulation includes the area within and extending 1-mile from the proposed site boundary.

Exempt Construction Noise

Under OAR 340-035-0035(5), noise generated during construction is exempt from the requirement to meet DEQ's noise standards. Nonetheless, construction-related noise impacts are evaluated under the Council's Protected Area, Scenic Resources, and Recreation standards, as provided in Sections III.F., III.J., and III.L of this order. To support the evaluation required under those standards, the approach and results of predicted construction-noise impacts is evaluated in this section.

Construction sound calculations were performed with the CadnaA propagation model, which accounts for local topography. Equipment usage factors were used per the Federal Highway Administration's 2006 Roadway Construction Noise Model version 1.1. Construction noise levels are estimated at 25.5 dBA at NSR 1 and 20.5 dBA at NSR 2. Both of these are below ambient levels of 26 dBA.

Operational Noise

Under OAR 345-035-0035(1)(b)(B)(i), a new industrial or commercial noise source located on a previously unused industrial or commercial site may not increase ambient statistical noise levels L10 or L50 by more than 10 dBA, or exceed the levels provided in Table 20 below.

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[125] The Environmental Quality Commission and the DEQ suspended their own administration of the noise program because in 1991 the state legislature withdrew all funding for implementing and administering the program. A July 2003 DEQ Management Directive provides information on DEQ's former Noise Control Program and how DEQ staff should respond to noise inquiries and complaints. The Directive states (among other items) that the Energy Facility Siting Council (EFSC), under the Department of Energy, is authorized to approve the siting of large energy facilities in the State and that EFSC staff review applications to ensure that proposed facilities meet the State noise regulations.

[126] "We (the Oregon Supreme Court) conclude that EFSC had the authority to grant (1) an exception to the noise standards under OAR 340-035-0035(6)(a), and (2) a variance under OAR 340-035-0100 and ORS 467.060." B2HAPPDoc7 Supreme Court Decision Stop B2H Coalition v. Dept, of Energy 2023-03-09, pp 805-807.

Table 20: Statistical Noise Limits for Industrial and Commercial Noise Sources

Statistical Descriptor	Maximum Permissible Hourly Statistical Noise Levels (dBA)	
	Daytime (7:00 AM – 10:00 PM)	Nighttime (10:00 PM to 7:00 AM)
L50	55	50
L10	60	55
L1	75	60

Note: The hourly L50, L10, and L1 noise levels are defined as the noise levels equaled or exceeded 50 percent, 10 percent, and 1 percent of the hour, respectively.
Source: OAR 345-035-0035, Table 8.

The applicable limits are based upon the measured ambient statistical sound levels and octave band sound pressure levels. The most stringent noise limitation within the regulation is the 10 dBA increase over the measured nighttime L50. The L50 sound level can be described as the sound level exceeded 50% of the time during the measurement period.

The noise limits apply at an appropriate measurement point on noise sensitive properties, such as dwellings, schools, churches, hospitals, or public libraries.[127] The appropriate measurement point is defined as the farther from the noise source of 25 feet toward the noise source from that NSR, or the point on the noise sensitive property line nearest the noise source using the DEQ Commission approved Sound Measurement Procedures Manual, NPCS-1 (Manual), unless other measurement points are specified or other measurement procedures are approved in writing by the Department, respectively.[128]

For this analysis, the certificate holder seeks approval for "other measurement procedures" as allowed under the rule. The "other measurement procedures" included identifying representative locations in proximity to the NSRs. There are two NSRs that have been evaluated for noise impacts, both are located outside of the 1-mile analysis area, at 1.7 and 2.6 miles from the compressor stations, respectively. (See Figure 20 below)

Ambient noise conditions were measured using a Larson Davis 831 real-time sound level analyzer. The real-time sound level analyzer recorded short-term (30-minute) ambient measurements, in 10- and 1-minute time intervals, during both the daytime and nighttime periods. The location of the short-term measurement locations is presented in RFA13 Exhibit Y Figure Y-1. The NPCS-1 Manual establishes a short-term spot sample approach stating that "a typical noise survey will require approximately 20 minutes of measurement to record the

[127] See OAR 340-035-0015(38).

[128] As previously described, because DEQ does not fund, administer, or enforce the noise control requirements established in OAR 345-035-0035, yet they are applicable OARs to the facility, the Council assumes authority to review, interpret, and apply the rules. Therefore, the Council has authority to review and approve sound measurement procedures that differ from the Sound Measurement Procedures Manual (NPCS-1).

required number of samples at 5-second intervals."[129] While the measurement procedure differs from the NPCS-1 Manual, the Department recommends Council approve the procedure because it is more robust and consistent with the duration and approach for evaluating ambient conditions.

Figure Y-1 and Y-2 present the location of the measurement locations and NSRs, where there is no discernable difference in location. Therefore, the Department recommends Council find that the measurement locations reasonable represent ambient conditions of the NSR. Ambient L50 noise levels at NSR1 were measured at 27 dBA; ambient L50 noise levels at NSR2 were measured at 32.7 dBA.

The CadnaA (Computer-Aided Noise Abatement), Version 2023 MR 2 computer noise model was used to calculate sound pressure levels from the new noise sources associated with the Mist Resiliency Project. Noise source and sound level (total dBA) as used in CadnaA to evaluate operational noise impacts is presented in Table 21 below.

Table 21: Mist Resiliency Project Noise Sources and Sound Levels

Noise Source	Total dBA
Miller Station	
Engine Intake, Taurus 60	160
Engine Exhaust, Taurus 60	129
Building Wall Panel Fan	95
Sound Level in Compressor Building at Inner Wall Surface	103
Exhaust Breakout, Taurus 60	97
Gas Coolers	98
Lube Oil Cooler, Taurus 60	100
Guel Gas Heater Skid	108
TEG Regen Skid	93
NMCS Station	
Caterpillar G3608 Compressor Engine	127
Caterpillar G3608 Compressor Engine Exhaust	139
Caterpillar G3606 Compressor Engine	122
Existing Caterpillar G3606 Compressor Engine Exhaust	139
Vertical Gas Cooler Discharge	101
Vertical Cooler Fan Inlet	101
Fuel Gas Heater Skids	108
Backup Generators	115
TEG Region Skids	93

[129] ODEQ Sound Measurement Procedure Manual, p. 27 of 38.

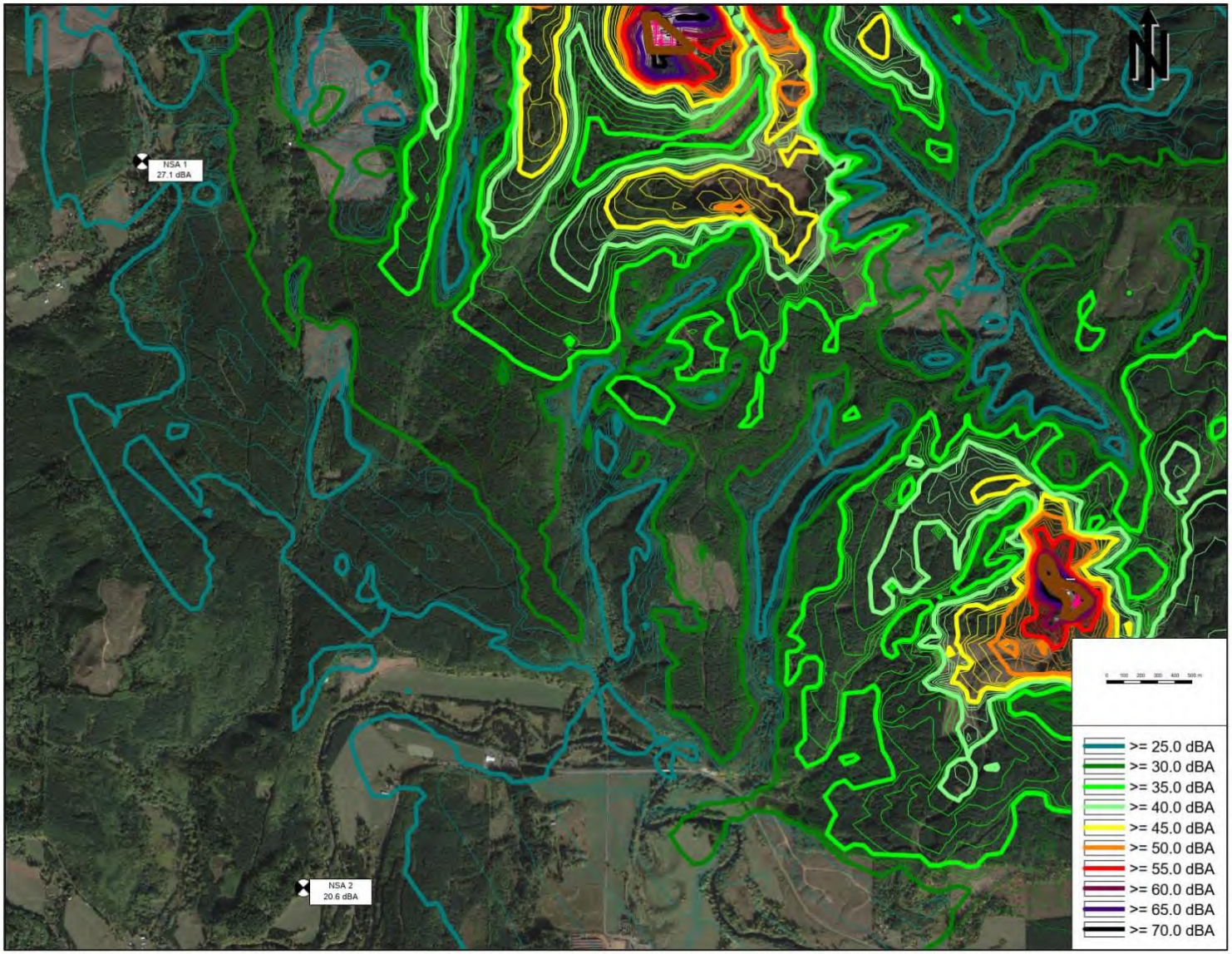
Table 22 below summarizes the modeled sound levels at each NSR. The predicted increase in sound level ranged from 0.03 to 3.1 dBA and would be below the allowable 10 dB increase over ambient conditions.

Table 22: Change in Operational Noise Levels at NSRs

NSR	Distance (miles) and Direction from Miller Station to NSR	Distance (miles) and Direction from NMCS to NSR	Ambient, Nighttime Average (L50)	Modeled RFA13 Noise Levels	Ambient + Modeled RFA13 Noise Levels	Increase Above Ambient
			dBA			
1	3.3 NW	1.7 W	27.0	27.1	30.1	3.1
2	2.6 SW	3.1 SW	32.7	20.6	33.0	0.3

The maximum allowable L50 sound level standard is 50 dBA. Results of the acoustic modeling analysis, as presented in Table 22 above, indicate that operational noise will not exceed 33 dBA. Therefore, the Department recommends Council find that because the maximum L50 sound levels would be less than the "Table 8" maximum allowable sound level, the facility, with proposed RFA13 changes, would be in compliance with the maximum allowable sound level standard identified in OAR 340-035-0035(1)(b)(B)(i).

Figure 20: Modeled Noise Contour Results from RFA13 Changes at Noise Sensitive Areas within 3 Miles of Site



V.A.2. Conclusions of Law

Based on the foregoing analysis, the Department recommends Council find that the facility, with proposed RFA13 changes, will comply with the applicable Noise Control Regulation in OAR 340-035-0035.

V.B. Removal-Fill Law: ORS chapter 196 and OAR chapter 141

Under ORS 196.795 through 196.990 and OAR chapter 141, division 085, no person may remove, fill, or alter 50 cubic yards or more of material within any state jurisdictional waters, or any amount of material within state-designated Essential Salmonid Habitat, State Scenic Waterways or compensatory mitigation sites, without a permit from the Department of State Lands (DSL).[130] State jurisdictional waters include among other types of waterways, wetlands, rivers, and intermittent and perennial streams, lakes, and ponds.[131]

V.B.1. Findings of Fact

The certificate holder contracted Tetra Tech, Inc. (Tetra Tech) to perform wetland delineation for the areas potentially impacted by RFA13 activities: three work areas and their associated buffers, ranging from 100 to 200 feet, encompassing all RFA13 facility components that would potentially involve ground disturbance for a survey area totaling approximately 240 acres. Tetra Tech conducted a desktop review and a wetland delineation field survey and prepared a wetlands delineation report in February 2024 and has submitted it to DSL for review and concurrence (See RFA13 Exhibit J, Attachment J-1).

As part of the desktop review and in preparation for field survey work, Tetra Tech reviewed the National Wetlands Inventory (NWI)[132], Local Wetlands Inventory, the National Hydrography Dataset (NHD)[133], Natural Resources Conservation Service[134] (NRCS) hydric soils data, and aerial photographs to identify potential wetlands and other waters in the RFA13 analysis area. Wetland and surface water data were also obtained from the Oregon Wetlands Database, which includes NWI and miscellaneous wetland mapping by state and federal agencies, non-governmental organizations, academia, and consultants, and from NHD and NWI. Soil data was also obtained from the NRCS Web Soil Survey. Desktop review of NWI data determined that

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[130] ORS 196.800(15) defines "Waters of this state." The term includes wetlands and certain other waterbodies.
[131] See definitions for "waters of this state" and the jurisdictional limits of the term under ORS 196.800 and OAR 141-085-0510, and 141-085-0515.
[132] U.S. Fish and Wildlife Service. 2012. National Wetlands Inventory Download Data: USFWS Online Data Website Available at: http://www.fws.gov/wetlands/Data/State-Downloads.html; US Fish and Wildlife Service. 2020. National Wetlands Inventory. Wetlands Data by State, Oregon. Available at: https://www.fws.gov/wetlands/data/mapper.html Accessed: March 2023 and September 2023.
[133] U.S. Geological Survey. 2001. National Hydrology Dataset (NHD). Available at: http://nhd.usgs.gov
[134] Natural Resources Conservation Service.1986. The Soils Survey of Columbia County, Oregon. Available at: http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/oregon/OR009/0/or009_text.pdf

seven NWI wetlands intersect the RFA13 analysis area. Five NHD streams were identified within the RFA13 analysis area including Lindgren and Lyons Creeks.

Tetra Tech conducted the field delineation of wetlands and other waters on September 27, 2022, September 29 and 30, 2022, October 4 to 6, 2022, October 10 to 12, 2022, September 26 to 28, 2023, and December 20, 2023. The desktop wetland data were used to focus the wetland delineations, while the desktop surface water data were used to focus the non-wetlands water evaluation, as necessary. Wetland presence was determined per the methods in the U.S. Army Corp of Engineers Corps of Engineers Wetlands Delineation Manual[135]. Wetland indicator status for plants was determined using the 2020 National Wetland Plant List[136]. During the delineation effort, each wetland or other water encountered was examined for field indicators (vegetation, soils, and hydrology) and this evidence was documented using standard field data sheets. The location and extent of each wetland or other water was mapped with GPS technology. Streams were characterized as intermittent or ephemeral using the Oregon Streamflow Duration Assessment Method.

Based on RFA13 desktop review and wetlands surveys, a total of 19 wetlands and nine other water features were delineated within the RFA13 analysis area as wetlands or other potential non-wetland waters of the state (WOS). Wetlands delineated within the analysis area included palustrine emergent (PEM), palustrine forested (PFO), and palustrine scrub-shrub (PSS) wetlands. (See Table 23 and Figure 21 below). The non-wetland waters consist of two perennial streams (Lindgren and Lyons creeks), three un-named ephemeral streams, and four roadside ditches.

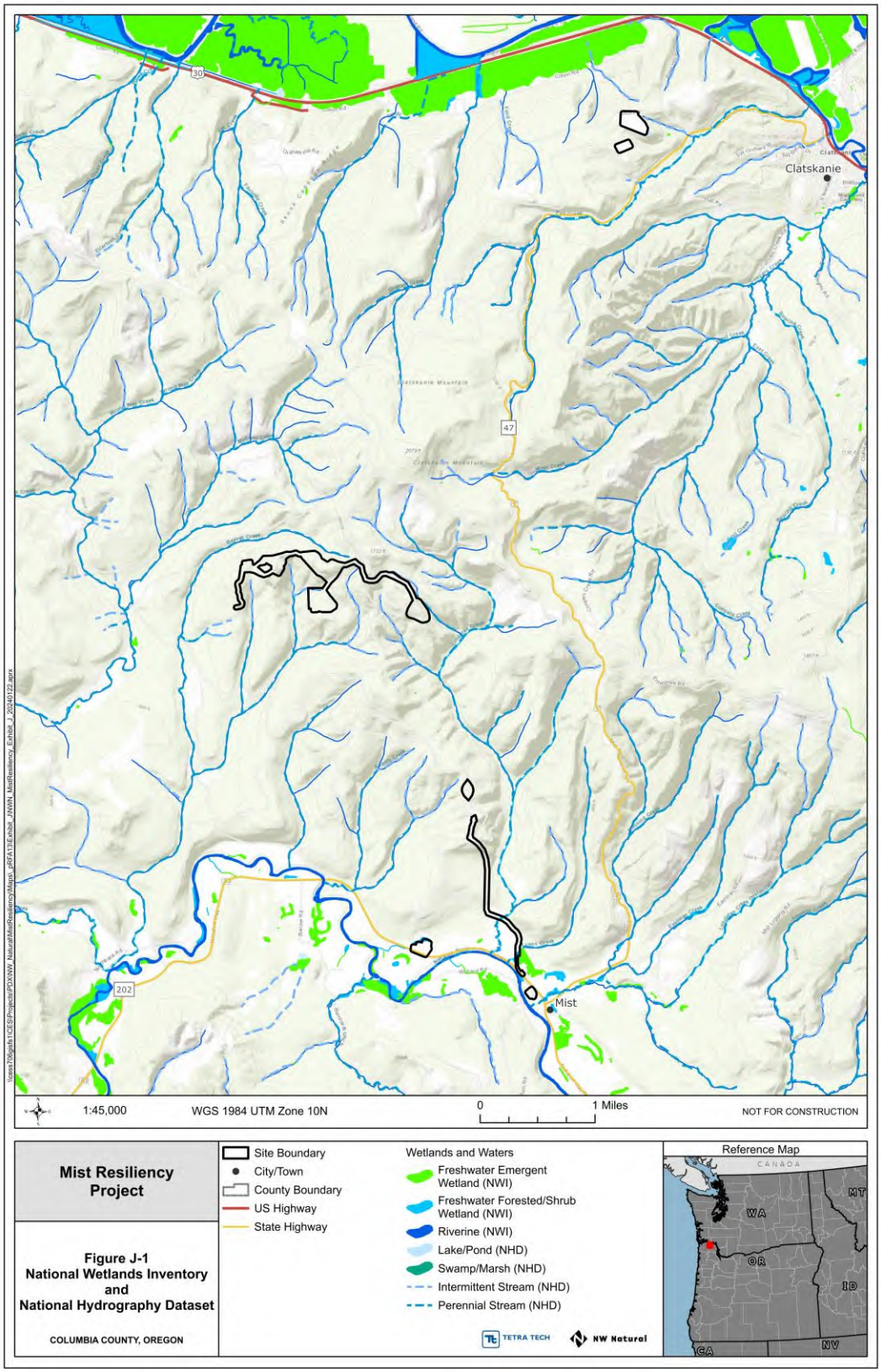
Table 23: Wetlands and Waters of the State in RFA13 Analysis Area

Feature	Number of Features	Acreage	Linear Feet
Wetlands	19	6.138	–
Other Waters (Streams)	2	0.271	609
Potentially Non-Jurisdictional Ephemeral Streams	3	–	856
Potentially Non-Jurisdictional Roadside Ditches	4	–	1022

[135] U.S. Army Corps of Engineers (USACE). Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS; 2010. Regional supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Range. Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

[136] USACE. 2020. National Wetlands Plant List, version 3.4. State of Oregon. U.S. Army Corps of Engineers, Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH

Figure 21: Wetlands and Other Waters of the State in RFA13 Analysis Area



RFA13 Potential Impacts to Wetlands and Waters of the State

RFA13 proposes activities that could impact wetlands and other waters of the state that are subject to DSL's removal fill permit requirements. The construction of pipelines and powerlines will involve subsurface installation of underground pipe or conduit that will cross some streams and creeks or encroach on some wetland areas. This will be done via excavation and trenching or using horizontal directional drilling (HDD) in select areas~~ to minimize and avoid impacts~~. Based upon the wetland delineation and the RFA13 facility design, the certificate holder estimates the potential temporary impact to wetlands to be 0.016 acres, as summarized in Table 24 and shown in Figures 22 through 25 below:

Table 24: RFA13 Impacts to Wetlands

Wetland Name	Area (acres)	Temporary Impact (acres)	Removal (cubic yards)	Fill (cubic yards)
WET-10	0.04	0.001	<1	<1
WET-11	0.30	0.005	16	16
WET-12	0.14	0.010	33	33
Total	**0.48**	**0.016**	**50**	**50**

Figure 22: Location of Potential Wetlands Impacts (1 of 2)

1

Figure 23: Location Potential Wetland Impacts (2 of 2)

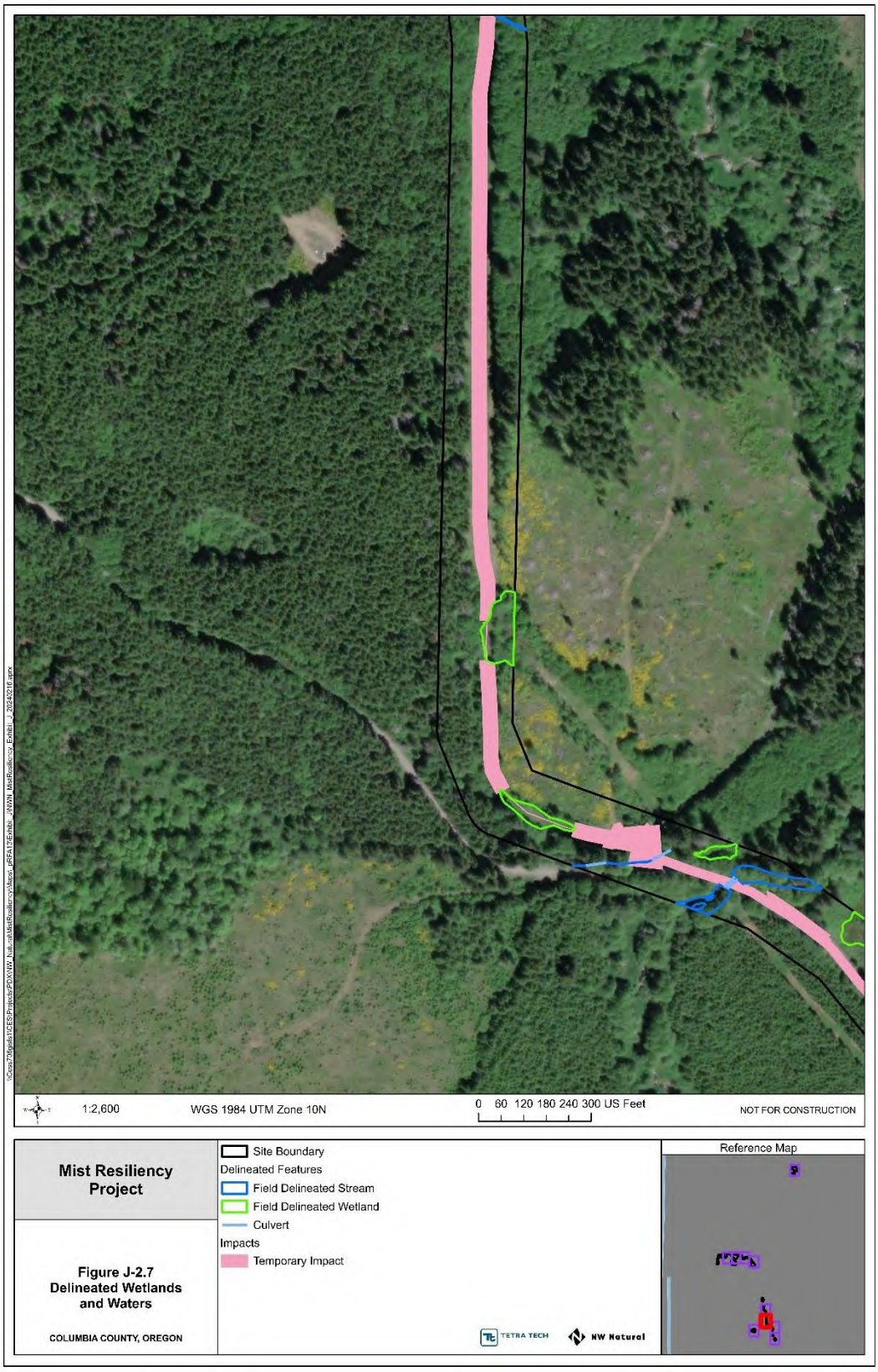


Figure 24: Potential Wetlands Impacts - WET-10

Figure 25: Potential Wetlands Impacts - WET-11 and WET-12

General Authorization for Temporary Disturbance to Non-Tidal Wetlands

Temporary impacts are defined by DSL as adverse impacts to waters of this state that are rectified within 24 months from the date of the initiation of the impact[137]. In RFA13 the certificate holder proposes implementing specific measures to ensure any impacts to wetlands are temporary by using HDD methods to install the pipeline under culverts of waterways. For locations where the pipeline would not be installed using HDD methods, certificate holder would utilize the trenching method. Trenching is expected to be a temporary impact and would consist of excavation of soils, stockpiling soils (separating topsoil and subsoil), placement of the conduit, and subsequent backfill to preconstruction contours. No other impacts to wetlands and other waters would occur within laydown areas and bore pads associated with HDD pipeline installation methods and temporary extra workspace.[138] Construction vehicles would operate on laydown areas and designated temporary extra workspace areas when soils are dry. If soil is moist, construction mats would be used to lessen impacts to soil. No impacts on wetlands and other waters will occur with use of the off-site storage yards.

The *General Authorization for Temporary Disturbance to Non-Tidal Wetlands*[139] (GA) requires that there are no permanent impacts on wetlands and no impacts on water. Temporary impacts to wetlands cannot exceed 0.2 acres. Because RFA13 has been designed to avoid permanent impacts and would only temporarily impact 0.016 acres of wetlands, the certificate holder asserts that the DEQ General Authorization (GA) is the appropriate permitting route for this amendment request[140]. Under a GA, temporary impacts cannot exceed 0.2 acres. Certificate holder proposes monitoring and minimization measures to ensure that temporary wetland impacts do not exceed 0.2 acres and that wetland impacts are avoided to the maximum extent possible.

The GA will be submitted after DSL has concurred with the wetland delineation report. OAR 141-089-0660 to 141-089-0675 set forth the conditions under which a person may, without an individual removal-fill permit, general removal-fill permit, or DEQ remedial action permit waiver from the Department, fill or remove material for a project within waters of this state designated ESH.

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[137] OAR 141-089-0705 Temporary Impacts to Wetlands and Waterways – Eligibility Requirements. Department of State Lands. Available at: https://secure.sos.state.or.us/oard/view.action?ruleNumber=141-089-0705

[138] The bore pad is the entry point where the pilot hole and pipe will be drilled underground through an excavated pit. The laydown areas extend in the opposite direction of the bore pad. Laydown areas are utilized to assemble the pipe segments prior to installing. Temporary extra workspace is needed for construction along the pipeline route in locations where the construction corridor is not wide enough to work in safely.

[139] OAR 141-089-0705 Temporary Impacts to Wetlands and Waterways – Eligibility Requirements. Department of State Lands. Available at: https://secure.sos.state.or.us/oard/view.action?ruleNumber=141-089-0705

[140] General Authorizations are valid for 3 years and can be reviewed and approved in as little as 30 days and cannot be renewed after the expiration date. The wetland delineation report must be concurred with prior to issuance of the General Authorization. A copy of the draft General Authorization form is included in Exhibit J, Attachment J-2.

Per OAR 141-089-0650, a GA approval includes an ODFW Fish Passage Requirement. The activity must meet Oregon Department of Fish and Wildlife requirements for fish passage before the project is started (ORS 509.580 (Definitions for ORS 509.580 to 509.590, 509.600 to 509.645 and 509.910) through 509.901 and OAR 635-412-0005 (Definitions) through 635-412-0040 (Mitigation Criteria)). Fill or removal activities below the Ordinary High-Water Line must be conducted when recommended by ODFW, unless otherwise coordinated with ODFW and approved in writing by DSL. Work is prohibited when fish eggs are present within the reach where activities are being conducted.

Minimization and Mitigation Measures

~~The use of HDD is intended to result in impact avoidance to wetlands or other WOS. HDD would go underneath Lindgren Creek (designated as Essential Salmonid Habitat (ESH) for state and federally T&E-listed Coho salmon). Temporary impacts are defined by DSL as adverse impacts to waters of this state that are rectified within 24 months from the date of the initiation of the impact[141]. As shown in Table 23 above, temporary wetland impacts are estimated to be 50 yards of removal/fill within jurisdictional wetlands, which is the threshold for requiring a removal-fill permit from DSL. However, the certificate holder proposes to restore temporary impacts.~~

The Department recommends Council require that the certificate holder obtain a GA from DSL, prior to construction; or demonstrate that a removal-fill permit has been obtained; and require that the certificate holder flag, monitor and avoid impacts to the maximum extent possible.

> **Recommended Removal Fill Law Condition 1 [PRE]:** Prior to ~~HDD~~ construction for the Mist Resiliency Project, the certificate holder shall utilize biologists to map and flag avoidance areas surrounding wetlands and waters of the state ~~in the areas of HDD~~.
> [PRE-RF-01; Final Order on AMD13]
>
> **Recommended Removal-Fill Condition 2 [PRE]:** Prior to construction ~~HDD~~ for the Mist Resiliency Project, the certificate holder shall provide proof to the Department that a General Authorization for Temporary Disturbance to Non-Tidal Wetlands or Removal Fill Permit has been obtained from the Department of State Lands.
> [PRE-RF-02; Final Order on AMD13]
>
> **Recommended Removal-Fill Condition 3 [GEN]:** During and post-~~HDD~~ construction for the Mist Resiliency Project, the certificate holder shall comply with all conditions of the General Authorization for Temporary Disturbance to Non-Tidal Wetlands or Removal-Fill Permit, as applicable.
> [GEN-RF-01; Final Order on AMD13]

~~[141] OAR 141-089-0705 Temporary Impacts to Wetlands and Waterways – Eligibility Requirements. Department of State Lands. Available at: https://secure.sos.state.or.us/oard/view.action?ruleNumber=141-089-0705~~

V.B.2. Conclusions of Law

Based on the above recommended findings of fact, and subject to compliance with the recommended conditions, the Department recommends that Council find that the facility, with the proposed RFA13 changes, will comply with the requirements of Oregon Removal-Fill Law (ORS 196.795 through 196.990) and DSL regulations (OAR 141-085-0500 through 141-085-0785).

V.C. Water Rights

Under ORS Chapters 537 and 540 and OAR Chapter 690, the Oregon Water Resources Department (OWRD) administers water rights for appropriation and use of the water resources of the state. Under OAR 345-022-0000(1)(b), Council must determine whether the facility, with proposed changes, would comply with the statutes and administrative rules identified in the project order. The project order identifies OAR 690, Divisions 310 and 380 (Water Resources Department permitting requirements) as the administrative rules governing use of water resources and water rights as applicable to the facility.

V.C.1. Findings of Fact

The certificate holder has not identified or requested a groundwater permit, surface water permit, or water right transfer. Therefore, Council does not need to make findings of compliance with OWRD requirements.

V.C.2. Conclusions of Law

The Department recommends Council not make findings of compliance with OWRD regulations related to a groundwater permit, surface water permit, or water right transfer.

VI. PROPOSED CONCLUSIONS AND ORDER

Based on the recommended findings of fact and conclusions of law included in this order, under OAR 345-027-0375, the Department recommends Council find that the preponderance of evidence on the record supports the following conclusions:

1. The facility, with proposed RFA13 changes, complies with the requirements of the Energy Facility Siting Council Statutes ORS 469.300 to 469.520.

2. The facility, with proposed RFA13 changes, complies with all applicable standards adopted by Council pursuant to ORS 469.501, in effect on the date Council issues its Final Order on RFA13.

Accordingly, the Department recommends Council find that the facility, with the proposed RFA13 changes, complies with the General Standard of Review OAR 345-022-0000 and OAR 345-027-0375. The Department therefore recommends that Council approve Request for Amendment 13 of the Mist Underground Natural Gas Storage Facility Site Certificate and issue the 13th Amended Site Certificate included as Attachment 1 to this order.

Issued November 21, 2024

OREGON DEPARTMENT OF ENERGY

Todd Cornett

Todd Cornett (Nov 21, 2024 13:05 PST)

Todd Cornett, Assistant Director for Siting

ATTACHMENTS

Attachment A: Draft Thirteenth First Amended Site Certificate (red-line)
Attachment B-1: Reviewing Agency Comments on preliminary RFA13
Attachment B-2: Public Comments on DPO
Attachment B-3: Certificate Holder's Responses to Comments
Attachment B-4: Department's Third-Party Consultant Review of American Aquifers DPO Comments
Attachment C: Horizontal Directional Drilling Inadvertent Return Response Plan
Attachment P-1: Draft Restoration of Temporary Impacts Plan
Attachment P-3: Draft Habitat Mitigation Plan
Attachment S: Inadvertent Discovery Plan
Attachment V-1: Construction Wildfire Mitigation Plan
Attachment V-2: Operational Wildfire Mitigation Plan with Vegetation Management Plan
Attachment W: Waste Minimization and Recycling Plan

Attachment A: Draft 13th Amended Site Certificate

Mist Underground Natural Gas Storage Facility RFA13

Red underline ~~strikethrough~~ represents changes recommended in Draft Proposed Order

Black underline ~~strikethrough~~ represents recommended changes from

Draft Proposed Order to Proposed Order

CONSOLIDATED, RESTATED, AND AMENDED
UNDERGROUND NATURAL GAS STORAGE FACILITY

AMENDED SITE CERTIFICATION AGREEMENT

for the

MIST SITE

between

The State of Oregon

acting by and through its

ENERGY FACILITY SITING COUNCIL

and

NORTHWEST NATURAL GAS COMPANY

~~September 22~~DATE, ~~2017~~2024

**Note to Reviewer: Proposed Conditions Applicable to the Mist Resiliency Project are presented in Section VII.F of this Draft Amended Site Certificate:

1. Black underline and ~~strikethrough~~ represent site certificate conditions changes as presented in the Draft Proposed Order (DPO)
2. RED underline and ~~strikethrough~~ represent recommended site certificate condition changes from DPO to Proposed Order

This Certification Agreement is made and entered into in the manner provided by ORS 469.300 through ORS 469.570 and ORS 469.992, by and between the State of Oregon (State), acting by and through its Energy Facility Siting Council (EFSC) and Oregon Natural Gas Development Corporation (ONG), a wholly owned subsidiary of Northwest Natural Gas Company (NWN). Any reference herein to ONG shall also include NWN.

I. SITE CERTIFICATION

A. This agreement certifies that, to the extent authorized by state law and those warranties and conditions set forth herein, the State approves and authorizes the construction and operation of an underground storage facility for natural gas and related or supporting facilities at the Mist Site, in the manner described in NWN's site certificate application, this agreement, and the record of the administrative hearings held pursuant to ORS 469.300 through ORS 469.570, including supporting testimony filed by ONG or NWN with EFSC. This approval by the State binds the State and all counties, cities and political subdivisions in the State as to the approval of the site and the construction and operation of the underground storage reservoir and related or supporting facilities, subject only to the conditions of this agreement. However, each agency and county that issues a permit, license or certificate shall continue to exercise enforcement authority over such permit, license or certificate.

B. This certificate requires NWN to comply with applicable state laws or EFSC rules as they exist on the date it is executed by EFSC, and with stricter state laws or EFSC rules adopted subsequent thereto if compliance with such stricter state laws or EFSC rules is necessary to avoid a clear danger to the public health and safety.

C. The Site Certificate has been amended 13~~12~~ times, as follows:

1. Amendment 1, approved October 24, 1987, amended the site map and amended certain conditions regarding monitoring for safety and vibration.

2. Amendment 2, approved August 2, 1988, amended the site map to allow the addition of a monitoring well.

3. Amendment 3, approved September 21, 1990, amended the site map to replace two poorly functioning injection/withdrawal wells and add two new wells to increase capacity during the "heating season."

4. Amendment 4, approved July 21, 1997, enlarged the site boundary and authorized NWN to develop related and supporting surface facilities associated with new underground storage reservoirs in the Calvin Creek Storage Area, and upgrade related and supporting surface facilities at NWN's Miller Station. The amendment also authorized NWN to develop and operate new pipelines connecting the storage facilities at Calvin Creek to Miller Station. It authorized the replacement of two reciprocating compressors with one turbine driven compressor with rated horse power of 5,035 BHP at Miller Station, subject to an operating limitation to 6,650 total horsepower.1 It added new conditions regarding the development of new related and supporting facilities associated with the Calvin Creek Storage area and Miller Station improvements. This amendment increased the total throughput of the facility to 145 million cubic feet per day (MMcfd).

   The Site Certificate to Amendment 4 covered the Miller Station improvements and the pipelines and other surface facilities. The underground storage reservoirs were under the Department of Geology and Mineral Industries (DOGAMI) jurisdiction.[2]
5. Amendment 5, approved March 13, 1998, replaced the Site Certificate amendment process set forth in section VII of the Site Certificate with the process set forth in Council rules at OAR 345, Division 7.

6. Amendment 6, approved March 30, 1999, authorized NWN to develop related and supporting facilities associated with new underground storage reservoirs in the Calvin Creek storage area. The amendment also removed operating restrictions at the Miller compression station (added in Amendment 4) and added new Site Certificate conditions associated with further development of the Calvin Creek storage area.

7. Amendment 7, approved November 17, 2000, authorized NWN to increase the allowed throughput at the Mist storage facility from 190 million cubic feet per day ("MMcfd") to 245 MMcfd.

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[1] The Council imposed the operating limitation in response to a request for a contested case by United Pipefitters Local 290. See Section III.A, Final Order Approving Amendment 4.

[2] State law grants DOGAMI broad authority "to regulate the underground storage of natural gas and the drilling and operation of any wells required therefor." ORS 520.095(16). DOGAMI has exercised this authority through the adoption of comprehensive rules governing underground storage facilities at OAR 632 Division 10.
When EFSC approved the Site Certificate for the Mist Site in 1981, its jurisdiction included the surface and underground components of the facility. In 1993, the siting law was amended to included within the Council's jurisdiction only the "surface facility related to an underground gas storage reservoir that, at design injection or withdrawal rates, will receive or deliver more than 50 million cubic feet of natural or synthetic gas per day, and require more than 4,000 horsepower of natural gas compression to operate ***." ORS 469.300(11)(a)(I). Underground storage reservoirs, injection, withdrawal, and monitoring wells, and individual wellhead equipment remain under DOGAMI's pervasive authority over the wells and other subsurface components. ORS 469.300(11)(a)(I)(i)-(ii).

8. Amendment 8, approved October 26, 2001, authorized NWN to increase the allowed throughput from 245 MMcfd to 317 MMcfd and to install a new 7324 BHP turbine driven compressor and a new injection/monitoring well, served by existing pipelines. The compressor authorized by Amendment 8 is subject to EFSC's carbon dioxide standards at OAR 345 Division 24.

9. Amendment 9, approved December 5, 2003, authorized NWN to increase the allowed throughput from 317 MMcfd to 515 MMcfd. It authorized the construction of improvements at Miller Station, including the installation of new dehydration facilities and gas quality and monitoring equipment. It also authorized NWN to develop related and supporting facilities associated with new underground storage reservoirs in the Calvin Creek storage area. The amendment also allowed NWN to terminate the vibration monitoring program created in Amendment 1.

10. The 1981 site certificate and first nine amendments were stand-alone documents. Amendment 10, approved May 30, 2008, consolidated these documents into a single unified site certificate. Amendment 10 made no substantive changes to the facility or the site certificate.

11. Amendment 11, approved April 21, 2016, authorized NWN to expand the site boundary to include the Adams storage reservoir, as well as the Newton, Medicine, Crater, and Stegosaur future storage areas. The amendment authorized NWN to develop only the Adams reservoir as a new underground storage area; to construct and operate a new compressor station, the North Mist Compressor Station (NMCS); and, to construct and operate an approximately 12-mile natural gas transmission pipeline, the North Mist Transmission Pipeline (NMTP), between the NMCS and Portland General Electric's Port Westward Industrial Park (PWIP). The amendment authorized NWN to increase the allowable throughput from 515 MMcfd to 635 MMcfd. New conditions were added to ensure compliance with EFSC requirements.

12. Amendment 12, approved September 22, 2017, authorized a new limited water use license for water withdrawn from a diversion point in the Beaver Slough (referred to as the Seeley Mint Farm Diversion Point, see Figure 2 in Final Order on Amendment 12) during construction of the North Mist Expansion Project from August through November 2017.

~~12.~~13. Amendment 13, approved [DATE], authorized the replacement of the Miller Station compressors and underground electric power supply line, and conversion of the construction laydown area to permanent storage space. Additionally, Amendment 13 authorized the development of the existing underground storage reservoirs, a new control and operations building, and

four temporary laydown areas, transmission pipelines, compressors, dehydration equipment systems, and other associated engineered facilities at the North Mist Compressor Station. The amendment authorized NWN to increase the allowable throughput from 635 MMcfd to 835 MMcfd.

II. SITE DESCRIPTION OF THE UNDERGROUND STORAGE RESERVOIR AND RELATED OR SUPPORTING FACILITIES

The facility consists of underground gas storage reservoirs and surface facilities. EFSC has authority over the facility as defined in ORS 469.300(11)(a)(I),[3] the surface facilit(ies) related to the underground gas storage reservoirs. For purposes of understanding operations, the underground gas storage reservoirs and surface facilities are described in the Site Certificate below.

~~The underground storage reservoir and related or supporting facilities to be constructed and operated consist of:[4]~~

A. **Original Site**: Two naturally existing underground gas reservoirs (the Flora and Bruer pools) in portions of 3 sections of land all in Township 6 North, Range 5 West of the Willamette Meridian in Columbia County, Oregon, containing 940 acres, more or less from the surface of the earth to the base of the Clark and Wilson Sands and the stratigraphic equivalent thereof, which in the case of the Bruer pool was identified at a measured depth of 3,095 feet in the REC CC#1 RD 1 well and in the case of the Flora pool was identified at measured depth of 2,760 feet in REC CC#33-3 well and are entirely within project boundaries shown in Appendix 1 attached hereto and by reference incorporated herein; and

B. **Calvin Creek**: Naturally existing underground gas reservoirs located in the Calvin Creek area, which is located on the south side of the Nehalem River approximately 2.5 miles south of Miller Station, as shown in Appendix 2. The Calvin Creek storage area is connected to the original facility by two 16-inch pipelines which cross under the Nehalem River in a corridor 200 feet wide and terminate at the Busch Valve Station, as shown in Appendix 2. The 6, 8, and 12-

[3] ORS 469.300(11)(a)(I) defines energy facility as a "surface facility related to an underground gas storage reservoir that, at design injection or withdrawal rates, will receive or deliver more than 50 million cubic feet of natural or synthetic gas per day, or require more than 4,000 horsepower of natural gas compression to operate.." Council rules at OAR 345-001-0010(38) define "surface facilities related to an underground gas storage reservoir" as structures or equipment adjacent to and associated with an underground gas storage reservoir proposed to be built in connection with an undergound gas storage reservoir.."

~~[4] NWN has adopted nomenclature for the phases of its gas storage operation at Mist. NWN refers to facilities permitted under the original 1981 permit as "phase 1." NWN refers to the development of storage pools in the Calvin Creek area permitted in 1997 under Amendment 4 as "phase 2." NWN refers to development permitted in amendment 6, coupled with the pipeline expansion authorized in amendment 2 to the South Mist Feeder Pipeline Site Certificate, as "phase 3."~~

inch pipelines begin at the Busch Valve Station and terminate at the well sites. The 6, 8, and 12-inch pipelines are each located within a 200 foot wide corridor that has been characterized in orders approving Amendments 4-9 or changes to the facility that received Department concurrence under OAR 345-027-0050(5).

C. **Miller Station**: The Miller Compression Station, shown in Appendix 1, is located contiguous to the Bruer Flora storage area. Miller Station contains two turbine-driven ~~the natural gas fired~~ compressors, a staffed operations and maintenance building, a permanent storage yard, and other ancillary process equipment. Emissions from the compressors are permitted under an air contaminant discharge permit (ACDP) issued by the Department of Environmental Quality. Miller Station contains the following compressors:

1. Two 500 HP Caterpillar reciprocating compressors removed pursuant to Amendment 4.

2. Two 1,350 HP Superior reciprocating compressors not subject to EFSC CO_2 standards.

3. One 5,035 BHP Allison KC-5 turbine driven compressor installed in 1997 pursuant to Amendment 4 and not subject to EFSC CO_2 standards.

4. One 7,324 BHP Allison KC-7 turbine driven compressor installed in 2001 pursuant to Amendment 8 and subject to EFSC CO_2 standards.

~~4.~~5. Two 7,700 BHP natural gas fired turbine driven compressors.

D. **North Mist Expansion Area**: The North Mist Expansion Area, shown in Appendix 3, includes the Adams storage area and the North Mist Transmission Pipeline corridor, as well as the Newton, Medicine, Crater, and Stegosaur ~~future~~ storage areas. The North Mist Transmission Pipeline corridor traverses a north, northeast track from the North Mist Compressor Station to the PWIP.

E. **North Mist Compressor Station:** The North Mist Compressor Station, shown in Appendix 3, is located within the North Mist Expansion Area. The North Mist Compressor Station serves ~~only~~ the Adams ~~reservoir~~, Newton, Medicine, Crater, and Stegosaur reservoirs having the capability not only to compress the gas for injection into and withdrawal from the reservoir, but also to measure and control the gas flow and dehydrate the gas as needed during withdrawal. The North Mist Compressor Station has a total installed compression of approximately ~~3,600~~13,300 BHP provided by ~~two~~ three gas-fired reciprocating natural gas fueled compressors.

III. WARRANTIES

In consideration of the execution of this Certification Agreement by the EFSC and pursuant to ORS 469.400(4) and ORS 469.470(3) the following warranties are made:

A. Financial Ability

NWN warrants that it has reasonable assurance of obtaining sufficient financial resources to construct and operate the underground storage facility and related and supporting facilities including funds necessary to cover construction costs, operating costs for the design lifetime of the underground storage facility, and the costs of permanently shutting the underground storage facility down and maintaining it in a safe condition.

B. Ability to Construct and Operate

NWN warrants that it has the ability to take those actions necessary to ensure that the underground storage facility and related and supporting facilities will be constructed and operated in a manner consistent with its representations regarding effects on the public health, safety and welfare contained in its site certificate application, and supporting testimony and the terms and conditions of this agreement including compliance with all design, quality assurance and personnel qualifications and training requirements.

C. Protection of Public health and Safety

NWN warrants that it will take those actions, including compliance with all State and Federal statutes, rules and regulations, necessary to ensure that construction and operation of the Mist underground storage facility poses no danger to the public health and safety.

IV. CONDITIONS

The following conditions are provided pursuant to the provision of ORS 469.401.

A. State and Federal Law

1. NWN and EFSC shall abide by local ordinances and state law and the rules of the Council in effect on the date of this Site Certificate, except that upon a clear showing of a significant threat to the public health, safety or the environment that requires application of later-adopted laws or rules, EFSC may, pursuant to ORS 469.401(2), require NWN to comply with such later-adopted laws or rules.

2. Nothing in this agreement shall relieve NWN from complying with requirements of Federal laws and regulations which may be applicable to construction and operation of the underground storage reservoir and

associated facilities, and with the terms and conditions of any permits and licenses which may be issued to NWN by pertinent federal agencies.

B. Control of Site

Prior to commencement of construction of the facility NWN shall present evidence satisfactory to EFSC that NWN has access to and full control over the underground reservoirs and sites for the related and supporting facilities, whether by ownership, lease or easement or otherwise as necessary to: Construct and maintain the underground reservoir, compressors, pipelines, injection withdrawal and other wells, and access roads to the facility necessary for the construction, operation, monitoring and regulation of the underground storage reservoir.

C. General Conditions

1. **Location**: Related or supporting facilities shall not be located at less than the minimum distances from any existing permanent habitable dwelling specified in OAR 345-024-0030 in effect on the date of this Certificate. [Amendment 10]

2. **Pipelines**: All pipelines in the project site shall be designed, built and operated in compliance with the requirements of the U.S. Department of Transportation set forth in Title 49, Code of Federal Regulations Part 192 subpart C in effect on the date of this Certificate, as administered by the Public Utility Commissioner of Oregon.

3. **Noise:** All compressors, pipelines, roads and related facilities shall be designed, constructed, installed and operated in such a manner so as not to violate the standards specified by the Oregon Department of Environmental Quality in OAR 340-35-35 (Noise Control Regulation) in effect on the date of this Certificate.

4. **Wells:** Operation, maintenance and abandonment of all wells on the site shall be in compliance with the applicable provision of ORS Chapter 520 and OAR Chapter 632 Division 10, in effect on the date of this Certificate, as administered by DOGAMI.

5. **Monitoring Program:** Deleted and superseded by conditions in Amendment 4. [Amendments 1,9, 10]

6. **Water Quality Protection:** NWN shall construct, build and operate surface facilities related to the underground gas storage reservoir so as to prevent emissions of pollution into ground or surface water in violation of rules at OAR Chapter 340 administered by DEQ. [Amendment 10]

7. **Fragile Soils:** Deleted and superseded by specific conditions related to soils. [Amendment 10]

8. **Socio-Economic Impacts:** Deleted and superseded by specific conditions related to public services. [Amendment 10]

9. **Water Rights:** NWN shall design, build and operate the surface facilities related to the underground gas storage reservoir in accordance with limited use licenses issued by the Department of Water Resources under Amendments 4-9. [Amendment 10]

10. **Applicants' Representations:** The facility shall be designed, built and operated in compliance with the representations made by ONG or NWN in satisfaction EFSC standards at OAR 345 Divisions 22 and 24. [Amendment 10]

11. **Gas Pressure:** NWN shall notify EFSC and Columbia County when it applies to DOGAMI for an increase in reservoir gas pressure. [Amendments 1, 10]

V. APPROVALS

The following approvals, permits, licenses, or certificates by governmental agencies are considered necessary to construct and operate the surface facilities related to the underground gas storage reservoir. Consistent with provisions of ORS 469.401 and 469.504 and any administrative rules adopted thereunder, NWN shall make application for these approvals, permits, licenses, or certificates, paying all applicable fees prior to construction of the facility or later as appropriate.

A. **Department of Geology and Mineral Industries**: Well drilling and other permits required by ORS Chapter 520 and OAR Chapter 632 Division 10.

B. **Department of Environmental Quality:** Air Contaminant Discharge Permit for the operation of the Mist underground storage facility.

C. **Public Utility Commissioner:** Compliance inspection of pipelines, pursuant to Title 49 CFR, Part 192 as necessary.

D. **Department of Consumer and Business Services:** Pressure vessel inspection, State Fire Marshall approvals and plan review of construction drawings.

E. **Department of Transportation:** Single trip permits for oversize or overweight loads.

F. **Columbia County:** Building, plumbing, electrical permits, and conditional land use permits. [Amendment 1]

VI. AMENDMENT OF SITE CERTIFICATE AGREEMENT

Amendments to this Site Certificate shall be governed by duly adopted rules of the Energy Facility Siting Council for the amendment of site certificates. As of the date of the execution of Amendment 13~~2~~, the Council rules applicable to the amendment of this Site Certificate are OAR 345-027-03~~0~~50, 0060, 03~~0~~70 and 03~~0~~80.

Changes to the facility that involve a change to the site boundary shall be reviewed as set forth in OAR 345-027-03~~0~~50(1). Changes to the facility that involve the installation of pipelines or other surface facilities on land that is within the site boundary but that has not been characterized (ground truthed) in a previous Council order can be implemented without an amendment subject to Department review described at OAR 345-027-03~~0~~53~~0~~(4~~5~~). Changes to the facility that involve the installation of pipelines or other surface facilities that have been characterized in a previous Council order or Department concurrence under section (5) may be implemented and reported under OAR 345-027-0050(4). In addition to these circumstances, pursuant to OAR 345-027-0357~~0050(5)~~, NWN may ask the Department to determine whether a proposed change requires an amendment.

VII. CONDITIONS UNDER AMENDMENTS

A. (Amendments 1 – 10) Conditions Related to EFSC Rules at OAR Chapter 345 Division 27

1. Prior to any amendment that changes the site, NWN shall submit to the Oregon Department of Energy (ODOE) a legal description of the Project site to be appended to the Site Certificate prior to construction. [Amendments 4, 8]

2. The Project shall be designed, constructed, operated and retired:

    a. Substantially as described in the amended Site Certificate;

    b. In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time the Council issues or amends the Site Certificate; and

    c. In compliance with all applicable permit requirements of other state agencies. [Amendment 4]

3. No construction, including clearing of a right of way, except for the initial survey, may commence on any part of the facility until the certificate holder has adequate control, or has the statutory authority to gain control, of the lands on which clearing or construction will occur. [Amendment 4]

4. NWN shall, to the extent practical, prevent any condition from developing on the Project site that would preclude restoration of the site to a useful condition. [Amendments 4, 10]

5. NWN shall restore vegetation to the extent practicable and shall landscape portions of the area disturbed by Project construction in a manner compatible with its surroundings and/or proposed future use. Upon completion of Project construction, NWN shall dispose of all temporary structures not required for future use and all timber, brush, refuse and flammable materials or combustible material resulting from the clearing of land or from construction of the facility. [Amendment 4]

6. NWN may operate all compressors installed as of January 11, 2008 at full rated capacity.[5] [Amendments 6, 10]

7. NWN shall notify ODOE, the State Building Codes Division and DOGAMI promptly if site investigations or trenching reveal that conditions in the foundation rocks differ significantly from those described in the Application for Amendment 6, 8, or 9. The Council may, at such time, require the certificate holder to propose additional mitigating actions in consultation with the Department of Geology and Mineral Industries and the Building Codes Division. [Amendment 6]

8. NWN shall notify ODOE, the State Building Codes Division and DOGAMI promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site. [Amendment 6]

9. NWN shall submit to ODOE copies of all incident reports involving the certified pipeline required under 49 CFR § 191.15. [Amendment 6, 11]

10. Pursuant to Amendment 11, the permitted daily throughput of the facility is 635 MMcfd. [Amendments 7, 8, 9, 11]

11. NWN shall establish, in consultation with affected state agencies and local governments, monitoring programs as required by the Site Certificate for impact on resources protected by the standards of OAR Chapter Divisions 22 and 24, and to ensure compliance with the Site Certificate. [Amendment 6]

12. If NWN becomes aware of a significant environmental change or impact attributable to the facility, NWN shall submit ODOE as soon as possible a

[5] Amendment 4, issued in 1997, contained a condition limiting total horsepower at Miller Station. The Council removed this limitation in 1999 under Amendment 6. No further operating limits apply to compression at Miller Station.

written report identifying the issue and assessing the impact on the facility and any affected Site Certificate conditions

B. (Amendment 11) Conditions Related to EFSC Rules at OAR Chapter 345 Division 27

1. The certificate holder shall begin construction of the components authorized by Amendment 11 within two years after the effective date of the amended site certificate. Under OAR 345-015-0085(8), the site certificate is effective upon execution by the Council chair and the certificate holder. [Amendment 11 General Standard Condition 1] [Mandatory Condition 345-027-0020(4)]

2. The certificate holder shall complete construction of the components authorized by Amendment 11 within four years of the effective date of the amended site certificate. [Amendment 11 General Standard Condition 2] [Mandatory Condition 345-027-0020(4)]

3. The certificate holder shall submit a legal description of the Amendment 11 site to the Oregon Department of Energy within 90 days after beginning operation of the components authorized by Amendment 11. The legal description required by this rule means a description of metes and bounds or a description of the site by reference to a map and geographic data that clearly and specifically identify the outer boundaries that contain all parts of the facility. [Amendment 11 Mandatory Condition 1] [OAR 345-027-0020(2)]

4. The certificate holder shall design, construct, operate and retire the components authorized by Amendment 11 and 13:

   a. Substantially as described in the amended Site Certificate;

   b. In compliance with the requirements of ORS Chapter 469, applicable Council rules, and applicable state and local laws, rules and ordinances in effect at the time the Site Certificate is issued; and
   c. In compliance with all applicable permit requirements of other state agencies.

   [AMD11 Mandatory Condition 2; AMD13] [OAR 345-027-0020(3)]

5. Except as necessary for the initial survey or as otherwise allowed for wind energy facilities, transmission lines or pipelines under this section, the certificate holder shall not begin construction, as defined in OAR 345-001-0010, or create a clearing on any part of the site until the certification holder has construction rights on all parts of the site. For the purpose of this rule, “construction rights” means the legal right to engage in construction

activities. For wind energy facilities, transmission lines or pipelines, if the certificate holder does not have construction rights on all or parts of the site, the certificate holder may nevertheless begin construction, as defined in OAR 345-001-001, or create a clearing on a part of the site if the certificate holder has construction rights on that part of the site and:

a. The certificate holder would construct and operate part of the facility on that part of the site even if a change in the planned route of a transmission line or pipeline occurs during the certificate holder's negotiations to acquire construction rights on another part of the site; or

b. [*relates to wind energy facilities and therefore not applicable]*

[Amendment 11 Mandatory Condition 3] [OAR 345-027-0020(5)]

6. The certificate holder shall prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non-hazardous condition to the extent that prevention of such site conditions is within the control of the certificate holder. [AMD11 Mandatory Condition 4; AMD13] [OAR 345-027-0020(7)]

7. Upon completion of construction, the certificate holder shall restore vegetation to the extent practicable and shall landscape all areas disturbed by construction in a manner compatible with the surroundings and proposed use. Upon completion of construction, the certificate holder shall remove all temporary structures not required for future operation and dispose of all timber, brush, refuse and flammable or combustible material resulting from clearing of land and construction of the facility. [AMD11 Mandatory Condition 5; AMD13] [OAR 345-027-0020(11)]

8. The certificate holder shall notify the department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if site investigations or trenching reveal that conditions in the foundation rocks differ significantly from those described in Request for Amendment No. 11. After the department receives the notice, the Council may require the certificate holder to consult with the Department of Geology and Mineral Industries and the Building Codes Division and to propose mitigation actions. [AMD11 Mandatory Condition 6; AMD13] [OAR 345-027-0020(13)]

9. The certificate holder shall notify the department, the State Building Codes Division and the Department of Geology and Mineral Industries promptly if shear zones, artesian aquifers, deformations or clastic dikes are found at or in the vicinity of the site. [AMD11 Mandatory Condition 7; AMD13] [OAR 345-027-0020(14)]

10. If the certificate holder becomes aware of a significant environmental change or impact attributable to the Amendment 11 or 13 components, the certificate holder shall, as soon as possible, submit a written report to the department describing the impact on the facility and any affected site certificate conditions. [AMD11 Mandatory Condition 8; AMD13] [OAR 345-027-0020(6)]

11. Before any transfer of ownership of the facility or ownership of the site certificate holder, the certificate holder shall inform the department of the proposed new owners. The requirements of OAR 345-027-0010 apply to any transfer of ownership that requires a transfer of the site certificate. [AMD11 Mandatory Condition 9; AMD13] [OAR 345-027-0020(15)].

12. The certificate holder shall design, construct and operate all pipelines in accordance with:

    a. The requirements of the U.S. Department of Transportation as set forth in Title 49, Code of Federal Regulations Part 192. [OAR 345-027-0023(3)(a)]

    b. The certificate holder shall develop and implement a program using the best available practicable technology to monitor the pipeline to ensure protection of public health. [AMD11 Site Specific Condition 2; AMD13] [OAR 345-027-0023(3)(b)]

13. The corridor for the North Mist Transmission Pipeline, associated with Amendment 11, shall be as shown in Request for Amendment 11, Exhibit C, Project Location and Maps. Changes in pipeline corridor shall require prior Council approval. [Amendment 11 Site Specific Condition 3] [OAR 345-027-0023(5)]

14. Pursuant to Amendment ~~11~~13, the site boundary is 5,472 acres and the permitted daily throughput of the facility is ~~635~~ 835 MMcfd. [AMD11 Site Specific Condition 4; AMD13] [OAR 345-027-0023(6)]

C. (Amendment 4 and 11) Conditions Related to EFSC Standards at OAR Chapter 345 Division 22

1. Conditions Generally Applicable to the Facility

a. Socio Economic Impact

(1) NWN shall provide the Mist Birkenfield Rural Fire Protection District with an annual tour of the Miller Station to familiarize personnel with the facility in case of an emergency. [Amendment 4]

b. Waste Minimization

(1) NWN shall transport construction waste materials to an appropriate recycling facility or to an approved sanitary landfill for nonrecyclable goods. NWN shall collect scrap steel and welding rods for transportation to a recycling facility. Silt fence and straw bales shall be transported to an approved landfill. [Amendment 4, 11]

(2) Nonhazardous wastes associated with the Project such as crankcase oil, triethylene glycol and oil/water separator oils shall be collected, transported and recycled by a vendor as bunker fuel. Oily rags and oil filters shall be incinerated off site by a permitted disposal facility. Granular activated carbon will be collected and sent to a permitted facility for regeneration. NWN may use alternate methods of disposal if approved by ODOE. [Amendment 4, 11]

(3) Water used for pressure testing shall be disposed of in a manner consistent with approved permits. [Amendment 4, 11]

c. Retirement

(1) Prior to termination of the Site Certificate, NWN shall retire the Project site sufficiently to restore it to a useful condition. Site restoration shall include, but not be limited to, steps to:

(a) Remove any hazardous material stored in buildings or located in process equipment and dispose of them following applicable state hazardous materials statutes and rules,

(b) Disassemble the buildings and steel structures, break up the concrete slabs, and dispose of these materials either as scrap or at an appropriate landfill,

(c) Remove above ground portions of all pipelines,

(d) If necessary, revegetate the area, including pipeline rights-of-ways, to prevent erosion and encourage habitat development,

(e) Inspect all pipelines and remove any hazardous materials found, and dispose of hazardous materials generated from cleaning the pipelines in accordance with applicable state hazardous materials statutes and rules. [Amendment 4, 11]

2. Conditions Applicable to Amendment 4

a. Structural and Soils

(1) The pipeline corridor shall be as shown on Figure G-1 of Exhibit 10 of the Application for Amendment 4. Changes in pipeline corridor shall require prior Council approval. [Amendment 4]

(2) NWN shall construct modifications to Miller Station substantially in accordance with the recommendations in Exhibit 11, Section 7 of the Application for Amendment 4. In the vicinity of the new compressor building, the adjacent equipment, in the dehydration area and in areas where there will be heavy loads and traffic, all fill will be classed as "structural fill." This fill will utilize imported soil and will be compacted as specified in Section 7.1.3 of Exhibit 11 of the Application for Amendment 4. For trench backfill in unimproved areas (no surface traffic), the backfill above pipe will consist of removed soil placed with nominal compaction, as specified in Section 7.1.3 of Exhibit 11 of the Application for Amendment 4. [Amendment 4]

(3) NWN shall design and construct pipelines substantially in accordance with the recommendations in Section 8 of Exhibit 11 of the Application for Amendment 4. [Amendment 4]

b. Fish and Wildlife Habitat

(1) NWN shall utilize directional drilling for the pipeline installation at the Nehalem River. Drilling shall begin at points no closer than 300 feet from the river bank and shall place the pipeline at least 20 feet below the river bed. [Amendment 4]

(2) NWN shall minimize impacts for the Category 2 wetland north of highway 202 by taking steps including but not limited to:

(a) using a single trench for dual pipelines and keeping the installation as narrow as possible while remaining consistent with safety and practical installation requirements.

(b) timing construction for the dry time of year, not to extend beyond November 15, 1997.

(c) separating and returning topsoil to the trench backfill surface for pipelines and installing clay barriers at each end of the wetland crossing.

(d) avoiding the rest of the wetland during construction by use of the existing road through the wetland for construction equipment. [Amendment 4]

(3) NWN shall restore habitat in the Category 2 wetland to the north of highway 202 to preconstruction conditions within two growing seasons. [Amendment 4]

(4) NWN shall minimize the loss of habitat in forested areas and clear cuts by allowing vegetation to grow back in the construction corridor except for the 40 foot area directly over the pipeline. NWN shall restore surface vegetation in farmed areas. [Amendment 4]

(5) NWN shall time the crossing of any small tributaries or creeks during the dry period, and shall restore the stream bed and stream banks before the rainy season, not to extend beyond November 15, 1997. [Amendment 4]

(6) NWN shall minimize impact to wetlands by separating the upper foot of topsoil from the rest of the trench spoils and replacing it on the top of the trench. [Amendment 4]

(7) NWN shall filter any water pumped from the trench during construction to remove sediments before it is returned to the wetland. [Amendment 4]

(8) NWN shall complete pipeline construction through the wetland by November 15, 1997. [Amendment 4]

c. Historic, Archeological and Cultural

(1) A qualified archeologist shall monitor all grading and excavation activities associated with boring operations. If any artifacts or other

cultural materials that might qualify as "archeological objects" as defined at ORS 358.905(1)(c) are identified, ground disturbing activities will cease until the archeologist can evaluate their potential significance. If the material is likely to be eligible for listing on the National Register of Historic Places or to qualify as archeological objects or sites, as defined at ORS 358.905(j)(c), NWN shall consult with the State Historic Preservation Office ("SHPO") and will comply with the archeological permit requirement administered by the SHPO as set forth in OAR 736 Division 51. [Amendment 4]

3. Conditions Applicable to Amendment 6

a. Structural and Soils

(1) The pipeline corridor shall be substantially as shown on Figure G-l of Exhibit 14 of the Application for Amendment 6. NWN may change the pipeline corridor by obtaining ODOE or EFSC concurrence as described in OAR 345-027-0050. [Amendments 6, 10]

(2) NWN shall design and construct the pipelines substantially in accordance with the recommendations in Sections 5.2 and 5.3 of Exhibit 14 of the Application for Amendment 6. [Amendment 6]

b. Land Use

(1) NWN shall provide Columbia County Land Development Services (LDS) with drawings showing the final locations of all wells (underground natural gas storage facilities) and pipelines as constructed. [Amendment 6]

(2) NWN shall submit to LDS a letter from the Oregon Department of Transportation that all of ODOT's permit requirements have been met. [Amendment 6]

(3) NWN shall submit to LDS a letter from the Mist-Birkenfeld & Vernonia Fire Districts stating that all fire safety concerns have been addressed. [Amendment 6]

c. Fish and Wildlife Habitat

(1) NWN shall return the construction area to approximately its original grade, and revegetate the disturbed areas using appropriate plant

species. NWN will allow and encourage natural vegetation to return in the disturbed area, except that NWN may prevent large trees from growing in the permanent maintenance right-of-way which shall be as narrow as practicable and no greater than 40 feet wide. [Amendment 6]

(2) During construction NWN shall use appropriate erosion control and sediment control measures, such as those in Washington County Erosion Control Plans Technical Guidance Book (February 1994), as necessary to prevent material from leaving the construction area or adversely affecting water quality in nearby and downslope streams. NWN shall also use best management practices (BMP) and follow Oregon Department of Forestry, Forest Practice Administrative Rules during construction. [Amendment 6]

4. Conditions Applicable to Amendments 8 and 9

a. Structural and Soils

(1) NWN shall design the modifications authorized by Amendments 8 and 9 in accordance with the seismic design factors show in Table 2 of GeoEngineers' September 18, 2001 report "EFSC Structural Standard Information, Miller Station Gas Compression Facility, Mist, Oregon." [Amendments 8, 9]

(2) NWN shall design, engineer and construct the modifications authorized by Amendments 8 and 9 substantially in accordance with the recommendations in the section entitled "Non-Seismic Design and Construction Recommendations" in GeoEngineers' September 18, 2001 report "EFSC Structural Standard Information, Miller Station Gas Compression Facility, Mist, Oregon. [Amendments 8, 9]

5. Conditions Applicable to Amendment 9

a. Structural and Soils

(1) During construction authorized by Amendment 9, NWN shall implement the recommendations in Exhibit 6, section 7 of the application for Amendment 9. [Amendment 9]

b. Fish and Wildlife Habitat

(1) During the construction under Amendment 9, NWN will minimize removal of vegetation to the extent practical. [Amendment 9]

(2) Where an Amendment 9 pipeline is installed adjacent to an existing one, the permanent easement will be only 10 feet wider than the existing one. However, where the Schlicker pool pipeline approaches the Busch valve station, the permanent easement may be 30 feet wider than the existing one to allow installation of surface equipment. [Amendment 9]

(3) NWN will use the erosion control measures required for the NPDES 1200-C (a federal permit) and Best Management Practices (BMPs) to prevent erosion of soil into the ephemeral stream channel during construction of the Amendment 9 pipelines. [Amendment 9]

(4) Following construction of the pipelines for Amendment 9, NWN will allow and encourage native vegetation to grow back in the temporary construction easement and stating areas. [Amendment 9]

(5) Where revegetation is necessary in the permanent right-of-way for the pipelines constructed under Amendment 9, NWN will plant vegetation that provides forage for big game species. [Amendment 9]

(6) During pipeline construction for Amendment 9, NWN will restore any stream channels to pre-construction conditions, including grades, contours, morphology and substrate and will take measures to prevent scouring of stream slopes. [Amendment 9]

(7) At stream crossings, crews will use hand tools to control [right-of-way] vegetation in the permanent easement for the Amendment 9 pipelines. [Amendment 9]

(8) Construction of the Busch well pipeline will follow the US Fish and Wildlife Service scheduling and distance guidelines to avoid adverse impact to the bald eagle nest. [Amendment 9]

6. Conditions Applicable to Amendment 11

a. Structural Standard

(1) The site certificate holder shall design and build the components authorized by Amendment 11 according to the Oregon Structural Specialty Code which uses the 2012 International Building Code, with current amendments by the state of Oregon and local agencies. [Amendment 11 Structural Standard Condition 1]

(2) The site certificate holder shall design, engineer, and construct the components authorized by Amendment 11 and 13 to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. Seismic hazards include ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement, and subsidence. [Amendment 11 Structural Standard Condition 2; AMD13] [OAR 345-027-0020(12)]

(3) Prior to beginning construction of Amendment 11 components, the site certificate holder shall complete the following geotechnical investigations. The final scope of the studies will be determined by NWN's geotechnical consultants and confirmed by the department in consultation with DOGAMI. The additional studies shall include:

- Civil site plans for the NMCS, the utility conduit, and NMTP alignments rights of way. Civil site plans will include:
  - Existing topography,
  - Proposed grading (cut and fill),
  - Alignment of the utility conduit and NMTP,
  - Existing utilities, culverts, and other site features within the rights of way, and
  - Final positioning of equipment within the NMCS area.
- Site-specific geotechnical studies for the proposed cut and fill slopes along the pipeline and utility conduit alignments, following the development of civil site plans and site grading delineation. Site-specific geotechnical studies will include slope stability analysis, as needed, to provide recommendations to mitigate potential adverse impacts to slope stability that may result from cutting into hillsides adjacent to existing roadways. The study will also include recommendations for restoring site grades to pre-construction conditions, and recommendations for

engineered fill slopes will include specifications for materials to be used, adequacy of native soils to be used as fill, lift thickness, and compaction criteria for wet and dry weather conditions.

- Site-specific geotechnical evaluation for the development of the NMCS, once final site grading and final facility location is determined. Additional borings will be completed to define geotechnical conditions at the proposed equipment locations at the site once final layout is determined. If cuts and fills greater than five feet are anticipated, additional borings will be completed in cut and fill slope locations to evaluate the stability of cut and fill slopes. The final geotechnical engineering report will include the information and assessment identified in Exhibit H, Section H.5.
- Evaluation of the two landslides identified along the utility conduit alignment to better define risk to adjacent logging road and utility conduit, and to evaluate potential road stabilization options to be discussed with the road owner.

[Amendment 11 Structural Standard Condition 3]

(4) The site certificate holder shall include the identified landslide hazards in its established landslide monitoring program. If future investigations identify additional landslide hazards that may adversely impact the Amendment 11 and 13 components, those landslide hazards shall also be added to the landslide monitoring program. [AMD11 Structural Standard Condition 4; AMD13]

b. Soil Protection

(1) During construction of the Amendment 11 components, the certificate holder shall conduct all construction work in compliance with a final Erosion and Sediment Control Plan that is satisfactory to the Oregon Department of Environmental Quality as required under the National Pollutant Discharge Elimination System Construction Stormwater Discharge General Permit 1200-C. [Amendment 11 Soil Protection Condition 1]

(2) During construction of Amendment 11 components occurring partially or wholly on privately-owned agricultural land, the certificate holder shall implement the Agricultural Impact Mitigation Plan, provided as Attachment D of this order. [Amendment 11 Soil Protection Condition 2]

(3) Prior to beginning construction of Amendment 11 components, the certificate holder shall prepare and submit to the department for review and approval a construction spill prevention and management plan (SPMP) for implementation during construction. The construction SPMP shall include at a minimum the following procedures and best management practices (BMPs):

- Use secondary containment around stationary equipment (including drill rigs, drilling fluid pumps, centrifugal pumps, and mobile fluid storage tanks),
- Use drip pans during equipment maintenance,
- Properly store materials on-site,
- Maintain spill kits at construction areas,
- Refuel all equipment at least 100 feet away from water bodies and delineated wetlands,
- Train employees on the BMPs and procedures included in the construction SPMP, and
- The requirements for oil and hazardous material emergency response consistent with DEQ rules at OAR 340, Division 142.

[Amendment 11 Soil Protection Condition 3]

(4) During horizontal directional drilling (HDD) associated with components authorized by Amendment 11, the certificate holder shall implement the procedures in the Inadvertent Return Response Plan (IRRP), provided as Attachment F of this order. The certificate holder shall employ a monitor during HDD to watch for surface fluid release at the entry and exit points of the HDD drill and the area within 150 feet of the entry/exit locations. The certificate holder shall add the Oregon Department of Energy to the list of agencies that will be contacted by phone within 24 hours of an inadvertent return that impacts a wetland or perennial stream. The certificate holder shall contact the department within 48 hours if there is an inadvertent return that does not impact wetlands or waterways but does require issuance of a containment installation order. [Amendment 11 Soil Protection Condition 4]

(5) Prior to operation of components authorized by Amendment 11, the certificate holder shall prepare and submit to the department for review and approval an operational Spill Prevention and Management Plan (SPMP). The operational SPMP shall contain at a

minimum the following procedures and best management practices:

- Install containment diking at the NMCS designed to hold chemical spills.
- Install curbing at the NMCS buildings to prevent spills and leaks from being released to the environment, and routing runoff to treatment or control areas.
- Install drip pans to contain very small volumes of leaks, drips, and spills.
- Maintenance of on-site absorbent socks and absorbent granules to control and clean-up a spill or release.
- Train employees on the BMPs and procedures included in the operational SPMP.
- The requirements for oil and hazardous material emergency response pursuant to DEQ rules at OAR 340, Division 142.

[Amendment 11 Soil Protection Condition 5]

c. Land Use

(1) During construction and operation, the certificate holder shall design and construct signs for the Amendment 11 components in compliance with sign requirements of Columbia County Zoning Ordinance (CCZO) 308.6. [Amendment 11 Land Use Condition 1]

(2) Prior to construction of components authorized by Amendment 11, the certificate holder shall coordinate with and provide written notification to surface property owners on timing and location of tree removal and other site preparation and ground disturbing activities associated with the NMCS and the I/W well pad sites. Copies of written notification to each affected surface property owner shall be maintained onsite and made available to the department upon request. [Amendment 11 Land Use Condition 2]

(3) Prior to construction of components authorized by Amendment 11, the certificate holder shall provide written notification to the department verifying whether the NMCS parcel and I/W well pad site would be leased or purchased from the current landowners. If one or both sites are purchased, the certificate holder shall comply with the following requirements:

(a) The certificate holder shall file a waiver of remonstrance with Columbia County certifying that the certificate holder would not

remonstrate against or begin legal action or suit proceeding to cause or persuade the owner or operator of any farm or forest lands to modify the conduct or legal and accepted farm or forest operations. A copy of the waiver of remonstrance shall be provided to the department and maintained onsite for the duration of construction and made available to the department upon request.

(b) The certificate holder shall secure a partition for the parcel in accordance with Columbia County Subdivision and Partitioning Ordinance and shall ensure that the purchased site complies with applicable parcel dimensions, County Road fire safety design standards, and setbacks. A copy of the approved partition shall be maintained onsite for the duration of construction and operation and made available to the department upon request. [Amendment 11 Land Use Condition 3]

(4) Prior to construction or placement of a utility or facilities within a public road or county right-of-way, the certificate holder shall apply for and obtain a Public Road Construction Permit from the Columbia County Road Department. A copy of the road permit shall be maintained onsite and made available to the department upon request. [Amendment 11 Land Use Condition 4]

(5) Prior to construction of Amendment 11 components, the certificate holder shall apply for and obtain a County Road access permit (part of the County Building Permit) from the Columbia County Land Development Services Department. A copy of the County Road access permit shall be maintained onsite and made available to the department upon request. [Amendment 11 Land Use Condition 5]

(6) Prior to construction of the North Mist Transmission Pipeline, associated with Amendment 11, the certificate holder shall apply for and obtain a Floodplain Development permit from Columbia County Land Development Services Department for the NMTP for areas where the pipeline corridor is located in a Flood Hazard Area. A copy of the Development Permit shall be maintained onsite and made available to the department upon request. [Amendment 11 Land Use Condition 6]

(7) Prior to construction of the North Mist Transmission Pipeline, associated with Amendment 11, the certificate holder shall apply for and obtain a Stream/Wetland Protection permit from Columbia

County Land Development Services Department for the NMTP for areas where the pipeline corridor is located in a Wetland Area overlay zone. [Amendment 11 Land Use Condition 7]

d. Retirement and Financial Assurance

(1) Before beginning construction of the components authorized by Amendment 11, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition. The certificate holder shall maintain a bond or letter of credit in effect at all times until the Amendment 11 components have been retired. The Council may specify different amounts for the bond or letter of credit during construction and during operation of the Amendment 11 components. [OAR 345-027-0020(8)] [Amendment 11 Retirement and Financial Assurance Condition 1]

(2) Prior to construction of the components authorized by Amendment 11, the certificate holder shall submit to the State of Oregon, through the Council, a bond or letter of credit naming the State of Oregon, acting by and through the Council, as beneficiary or payee. The initial bond or letter of credit amount for the Amendment 11 components is $3.030 million (in first quarter 2015 dollars), to be adjusted to the date of issuance, and adjusted on an annual basis thereafter, as described in sub-paragraph (b) of this condition:

(a) The certificate holder may adjust the amount of the initial bond or letter of credit based on the final design configuration of the Amendment 11 components. Any revision to the restoration costs should be adjusted to the date of issuance as described in (b) and subject to review and approval by the Council.

(b) The certificate holder shall adjust the amount of the bond or letter of credit using the following calculation:

(1) Adjust the amount of the bond or letter of credit (expressed in first quarter 2015 dollars) to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency and using the first quarter 2015 index value and the quarterly index value for the date

of issuance of the new bond or letter of credit. If at any time the index is no longer published, the Council shall select a comparable calculation to adjust first quarter 2015 dollars to present value.

(2) Round the result total to the nearest $1,000 to determine the financial assurance amount.

(c) The certificate holder shall use an issuer of the bond or letter of credit approved by the Council.

(d) The certificate holder shall use a form of bond or letter of credit approved by the Council. The certificate holder shall describe the status of the bond or letter of credit in the annual report submitted to the Council under OAR 345-026-0080. The bond or letter of credit shall not be subject to revocation or reduction before retirement of the facility site.

[Amendment 11 Retirement and Financial Assurance Condition 2]

(3) The certificate holder shall retire the components associated with Amendment 11 if the certificate holder permanently ceases construction or operation of the Amendment 11 components. The certificate holder shall retire the components associated with Amendment 11 according to a final retirement plan approved by the Council, as described in OAR 345-027-0110. The certificate holder shall pay the actual cost to restore the site to a useful, non-hazardous condition at the time of retirement, notwithstanding the Council's approval in the amended site certificate of an estimated amount required to restore the site. [OAR 345-027-0020(9)] [Amendment 11 Retirement and Financial Assurance Condition 3]

(4) If the Council finds that the certificate holder has permanently ceased construction or operation of the components authorized by Amendment 11 without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110, the Council shall notify the certificate holder and request that the certificate holder submit a proposed final retirement plan to the department within a reasonable time not to exceed 90 days. If the certificate holder does not submit a proposed final retirement plan by the specified date, the Council may direct the department to prepare a proposed final retirement plan for the Council's approval. Upon the Council's approval of the final retirement plan, the Council may draw on the bond or letter of credit described in

section (8) to restore the site to a useful, non-hazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR Chapter 345, Division 29. If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate holder shall pay any additional cost necessary to restore the site to a useful, non-hazardous condition. After completion of site restoration, the Council shall issue an order to terminate the site certificate if the Council finds that the facility has been retired according to the approved final retirement plan. [OAR 345-027-0020(16)] [Amendment 11 Retirement and Financial Assurance Condition 4]

e. Fish and Wildlife Habitat

(1) Prior to construction of components authorized by Amendment 11, the certificate holder shall conduct a field-based habitat, fish, and wildlife survey of the area within and extending to the site boundary of the Amendment 11 components. Following completion of the field survey, the certificate holder shall provide the department and the Oregon Department of Fish and Wildlife (ODFW) the report containing the results of the survey, including a map set of the components associated with Amendment 11, showing all project components, the habitat categories of all areas that will be affected by the project, and the locations of any sensitive resources such as active bird nests. The report shall also include an updated version of Table FW-1 *Potential Temporary and Permanent Impacts by Habitat Category and Type* of the final order, showing the acres of expected temporary and permanent impacts to each habitat category, type, and sub-type.

In classifying the affected habitat into habitat categories, the certificate holder shall consult with the department and ODFW. The certificate holder shall not begin construction of the components associated with Amendment 11 until the habitat assessment has been approved by the department, in consultation with ODFW. If the department and ODFW have not provided a response within 30 days following the site certificate holder's submission of the habitat assessment to the department and ODFW, the assessment will be considered approved. The certificate holder shall not construct any facility components within areas of Category 1 habitat and shall avoid temporary disturbance of Category 1 habitat.
[Amendment 11 Fish and Wildlife Condition 1]

(2) Prior to construction of Amendment 11 components, the certificate holder shall flag all environmentally sensitive areas as restricted work zones. Restricted work zones shall include but not be limited to areas with sensitive or protected plant species, including candidate species, wetlands and waterways that are not authorized for construction impacts, areas with seasonal restrictions, and active State sensitive species bird nests. [Amendment 11 Fish and Wildlife Condition 2]

(3) During construction, all Project personnel shall attend an environmental awareness training session conducted by an environmental professional prior to working on the Project site. The training shall include, but not be limited to, the following topics: identification of approved Project boundaries and access roads including flagged exclusion areas; identification of sensitive wetland and waterbody resources; identification of sensitive and special status plant and wildlife species found in the analysis area; techniques regarding avoidance and minimization measures the certificate holder will implement; the notification process to be followed if new sensitive resources are identified; permit requirements; buffer distances from sensitive and protected resources; work timing restrictions including seasonal restrictions; the role of the onsite environmental inspector(s) and NWN environmental personnel; and other topics as necessary. A copy of the training shall be provided to the department. Records of completed worker training shall be maintained onsite and made available to the department upon request. [Amendment 11 Fish and Wildlife Condition 3]

(4) During construction and operation of components authorized by Amendment 11, the certificate holder may use herbicides to control noxious weeds, undesirable plant species, and vegetation within the site boundary. Herbicides shall be applied by an appropriately licensed person and according to all state and federal regulations. The certificate holder shall consult with landowners prior to applying herbicides on any land not owned by the certificate holder. If requested by a landowner, the certificate holder shall not use herbicides on that landowner's property. The certificate holder shall not allow herbicides to migrate onto nearby property from herbicide use on another parcel. Herbicides shall not be used in or near sensitive environments. Herbicides shall not be used within 100 feet of any occurrence of special status or otherwise sensitive plant species. Except where the product label applies more stringent requirements, when applied from the ground, herbicides

shall not be used within 10 feet of any wetlands, stream, river, or other waterway except if specifically approved for use near aquatic environments. [Amendment 11 Fish and Wildlife Condition 4]

(5) During construction and operation of Amendment 11 components, the certificate holder shall restrict vehicle speed on roadways within the site boundary to 25 miles per hour. [Amendment 11 Fish and Wildlife Condition 5]

(6) Prior to construction of Amendment 11 components the certificate holder shall obtain an ODFW Wildlife Capture, Holding, Transport, and Relocation Permit specifically for reptiles and amphibians. The certificate holder shall implement all provisions of the permit. A copy of the permit shall be maintained on-site and shall be made available to the department upon request. [Amendment 11 Fish and Wildlife Condition 6]

(7) Prior to construction of Amendment 11 components, the certificate holder shall finalize and implement the Habitat Mitigation Plan (HMP) provided in Attachment E of the final order, as approved by ODOE in consultation with ODFW. Provision 7(f) regarding impacted acreage calculations shall be completed and submitted to the department after construction is complete as described in the condition below.

(a) The final HMP shall include an implementation schedule for all mitigation actions, including securing the conservation easement, conducting the ecological uplift actions at the compensatory mitigation parcel, revegetation and restoration of temporarily impacted areas, and monitoring. The mitigation actions shall be implemented according to the following schedule, as included in the HMP:

a. Restoration and revegetation of temporary construction-related impact area shall be conducted no later than the fall of the year of construction.

b. The habitat enhancement actions at the compensatory habitat mitigation site shall be implemented concurrent with construction. Plantings along the ditch shall occur in the fall of the year of construction.

(b) The final HMP shall include a plan to remove noxious weeds and revegetate areas that are temporarily disturbed during construction within the 80-foot construction easement in the commercial timberland portion of the Project, south of U.S. Highway 30. Revegetation shall be with seed mixes and forbs beneficial to fish and wildlife as recommended by ODOE, in

consultation with ODFW. NWN shall implement this condition regardless of whether the underlying landowner has conducted timber harvest prior to construction of Amendment 11 components.

(c) The final HMP shall include a monitoring and reporting program for evaluating the effectiveness of all mitigation actions, including restoration of temporarily impacted areas and ecological uplift actions at the compensatory mitigation parcel. Monitoring of the weed removal and revegetation per condition 7(b) shall be for one year following implementation. Monitoring of the compensatory mitigation parcel shall be during years one, three, and five following implementation.

(d) The final HMP shall be submitted and ODOE's concurrence received prior to beginning construction. ODOE shall consult with ODFW on the final HMP. If ODOE and ODFW have not provided a response within 30 days following the site certificate holder's submission of the final HMP, the HMP will be considered approved.

(e) The HMP may be amended from time to time by agreement of the certificate holder and the department. Such amendments may be made without amendment to the site certificate. The Council authorizes the department to agree to amendments of this plan and to mitigation actions that may be required under this plan; however, the Council retains the authority to approve, reject or modify any amendment of this plan agreed to by the department.

(f) Within 30 days of completion of construction, the certificate holder shall submit to the department and ODFW an updated HMP Table 1, providing the finalized acreage numbers for both temporary and permanent impacts by habitat category and type. Mitigation shall be commensurate with the final acreage numbers, the approved HMP, and the EFSC Fish and Wildlife Habitat standard.

[Amendment 11 Fish and Wildlife Condition 7]

(8) During construction of Amendment 11 components, NWN shall employ at a minimum one environmental inspector to be onsite daily. The environmental inspector shall oversee permit compliance and construction, and ensure that known sensitive environmental resources are protected. The environmental inspector shall prepare a weekly report during construction, documenting permit compliance and documenting any corrective actions taken. Reports

shall be kept on file and available for inspection by the department upon request. [Amendment 11 Fish and Wildlife Condition 8]

f. Threatened and Endangered Species

(1) To the extent practicable, the certificate holder shall conduct construction, operation, and maintenance activities of Amendment 11 components during daylight hours outside of dawn and dusk in Columbian white-tailed deer habitat. Dawn is assumed to be 30 minutes prior to sunrise and dusk is assumed to be 30 minutes after sunset. HDD boring may occur throughout a 24-hour period. [Amendment 11 Threatened and Endangered Species Condition 1]

(2) To the extent practicable, the certificate holder shall avoid construction activities within the range of the Columbian white-tailed deer during fawning season of June 1 to July 31. Except that HDD boring activities may begin or recommence on July 15 rather than August 1. [Amendment 11 Threatened and Endangered Species Condition 2]

(3) During construction of Amendment 11 components in Columbia white-tailed deer habitat, the certificate holder shall install deer escape ramps at all open trenches and to the extent practicable, minimize the time the trench is left open. [Amendment 11 Threatened and Endangered Species Condition 3]

(4) Prior to construction of Amendment 11 components, the certificate holder shall conduct a pre-construction survey for tall bugbane in the vicinity of the population identified during the 2013-2014 botanical survey. Areas with tall bugbane will be flagged and those plants that occur in the vicinity of proposed construction activities will be protected using construction safety fencing or similar visual and physical barrier to protect from construction-related impacts. Results of the pre-construction survey shall be reported to the department. [Amendment 11 Threatened and Endangered Species Condition 4]

(5) Prior to construction of amendment 11 components, if any previously unidentified state-listed threatened or endangered species (listed under ORS 564.105(2) or ORS 496.172(2)) is discovered during the pre-construction survey (see Fish and Wildlife Condition 1), the certificate holder shall consult with ODFW or ODA and the department to develop a protection plan for that species and to maintain continued compliance with the Threatened and

Endangered Species standard (OAR 345-022-0070). [Amendment 11 Threatened and Endangered Species Condition 5]

g. Historic, Cultural and Archeological Resources

(1) During construction related ground-disturbing activities of components authorized by Amendment 11, if any artifacts or other cultural materials that might qualify as "archaeological objects" as defined at ORS 358.905(1)(a) or "archaeological sites" as defined at ORS 358.905(1)(c) are identified, ground disturbing activities will cease until a professional archeologist can evaluate its potential significance. The certificate holder shall flag or mark the area and shall notify the department and the State Historic Preservation Office (SHPO) of the find immediately.

If SHPO determines that the resource is significant, the certificate holder shall make recommendations to the Council for mitigation, including avoidance, field documentation, and data recovery, in consultation with the department, SHPO, interested tribes and other impacted parties. The certificate holder shall not restart work in the affected area until the certificate holder has demonstrated to the Council that it has complied with the archaeological resource protection regulations.

In accordance with Fish and Wildlife Condition 4, the worker training shall include a section describing this permit condition, how to identify archaeological objects, and the certificate holder's requirement to avoid impacting significant historic, cultural, and archaeological resources. [Amendment 11 Historic, Cultural and Archeological Condition 1]

h. Public Services

(1) Prior to construction, the certificate holder shall develop a fire protection and safety plan for the construction and operation of the NMCS and NMTP. The fire protection and safety plans shall include personnel training requirements, training materials, and accident prevention measures and plans. The certificate holder shall consult with and shall obtain written concurrence from the Mist-Birkenfeld Fire Marshal and Clatskanie RFPD Fire Marshal to confirm construction and operational activities comply with all applicable requirements. The certificate holder shall submit a copy of the

NMCS and NMTP fire protection and safety plans to the department. [Amendment 11 Public Services Condition 1]

i. Waste Minimization

(1) Prior to construction of the North Mist Transmission Pipeline associated with Amendment 11, the certificate holder shall seek land-owner authorization for bentonite land application and shall provide to the department the following information:

(a) List of land-owners contacted for authorization of bentonite application including first and last name, address and tax lot identification number, and
(b) Written consent letters obtained from land-owners authorizing bentonite application, and
(c) Estimated quantity of bentonite to be applied to each land owner whom provided consent per (b).

In the event land-owner authorization for bentonite land application is not received for all or a portion of the quantities generated during HDD construction, the site certificate holder shall provide to the department the information requested in (a), estimated total quantity of bentonite to be transported to a disposal facility, and name of disposal facility where bentonite will be transferred. [Amendment 11 Waste Minimization Condition 1]

(2) Before beginning construction of components authorized by Amendment 11, the certificate holder shall provide confirmation in writing to the department that the third parties have obtained all necessary permits or approvals for receiving and discharging hydrostatic test water and shall provide to the department proof of agreement between the certificate holder and the third parties regarding access to the resources or services secured by the permits or approvals. [Amendment 11 Waste Minimization Condition 2]

(3) Before beginning operation of components authorized by Amendment 11, the certificate holder shall provide confirmation in writing to the department that the third parties have obtained all necessary permits or approvals for disposing of produced saline process water from the Adams reservoir and shall provide to the department proof of agreement between the certificate holder and the third parties regarding access to the resources or services

secured by the permits or approvals. [Amendment 11 Waste Minimization Condition 3]

D. Conditions Related to EFSC Standards at OAR Chapter 345 Division 24

Under ORS 469.401(2), EFSC must impose conditions in the Site Certificate for the protection of public health and safety. Throughout this Site Certificate are conditions related to other decisional criteria that are ultimately intended to protect public health and safety. The following conditions protect public health and safety specifically with regard to EFSC standards for surface facilities related to underground natural gas storage and natural gas pipelines.

1. *(Amendment 4) Conditions Applicable to this Facility*

a. NWN shall design, construct, operate and retire the Project in accordance with applicable statutes, rules and ordinances. [Amendment 4]

b. NWN shall construct all pipelines in accordance with the requirements of the U.S. Department of Transportation as set forth in Title 49, Code of Federal Regulations Part 192. [Amendment 4]

c. Isolation valves shall be located at both ends of the 16 inch pipelines connecting Miller Station and the Busch Valve Station and at both ends of the eight inch and six inch pipelines connecting the well sites with the sixteen inch pipeline at the Busch Valve Station. [Amendment 4]

d. NWN shall maintain a program to monitor the proposed pipeline to ensure protection of the public health and safety, including but not limited to:

(1) Pressure sensing devices positioned at Miller Station and near the wellheads to relay critical information to both Miller Station and, as needed, from Miller Station to the Portland gas control center,

(2) High and low pressure alarms monitored on a 24 basis to detect and locate areas where pressure variations may indicate abnormal conditions, and

(3) Emergency response personnel on duty 24 hours per day, at Miller Station or in Portland, trained to respond to situations that require immediate attention. [Amendment 4]

2. Condition Applicable to Amendment 4

a. Within two months of initial startup of the new compressor, NWN shall conduct noise surveys at the two locations previously tested on February 20 and 21, 1997 to demonstrate compliance with DEQ Noise regulations at OAR 340-35-0035. Sound measurements shall be made with all compressors running at within 5% of horsepower permitted by this Site Certificate. Measurements shall be made at each location during atmospheric conditions best for sound propagation. Sound monitoring shall not be conducted when winds are in excess of 5 mph. [Amendment 4]

3. Condition Applicable to Amendment 8

a. Within six months of initial startup of the new compressor authorized by Amendment 8, NWN shall conduct noise surveys at the locations previously tested pursuant to Amendment 4 to demonstrate compliance with DEQ Noise regulations at OAR 340-035-0035. Sound measurements shall be made with the compressor authorized by Amendment 8 running at within 5% of rated horsepower. Measurements shall be made at a time when weather and atmospheric conditions are comparable in terms of sound propagation to the conditions that existed during the measurements taken pursuant to Amendment 4. NWN shall mathematically add the sound from this compressor to the sound from compressors installed prior to Amendment 8, as measured in the tests required by Amendment 4. NWN shall add instrument error to the noise measurements and shall treat instrument errors as cumulative. NWN shall promptly notify ODOE if the total from this mathematical addition exceeds the limits in Table 8 of OAR 340-035-0035. [Amendment 8]

4. Conditions Applicable to Amendment 11

a. Prior to construction of Project components authorized by Amendment 11, the site certificate holder shall submit a written equipment design and estimated emissions report to the department, including the following information:

(1) Manufacturer specifications for the selected natural gas-fired engine-driven compressors
(2) Fuel consumption rate (Btu/HP-hr), based on higher heating value of fuel, and rated engine capacity (HP), based on manufacturer specifications

(3) Engine load factor and adjusted HP
(4) Estimated annual hours of operation (hr/yr) for both engine-driven compressors
(5) Carbon dioxide emission calculations including: gross carbon dioxide emission rate, net carbon dioxide emission rate based on Council emission rate standard equal to 0.504 lb CO_2/HP-hr, and estimated excess carbon dioxide emissions for the assumed 30-year operational lifetime. Calculations shall be based on information provide in (1)(a) – (1)(d) of this condition and consistent with OAR 345-024-0620(1).

[Amendment 11 Carbon Dioxide Emissions Condition 1]

b. Following receipt of written validation by the department of monetary path payment calculations, and before beginning construction, the site certificate holder shall remit payment to The Climate Trust in the full amount of the monetary path payment requirement as determined by the calculations set forth in Carbon Dioxide Emissions Condition 1. Monetary path payment requirements shall be calculated using an offset rate of $1.27 per ton of excess carbon dioxide emissions, adjusted from the year in which the Council issues the final order for Amendment 11, to present value dollars of the year in which payment is made to the Climate Trust. Present value shall be calculated using the US Gross Domestic Product Implicit Price Deflator, as published by the US Department of Commerce, Bureau of Economic Analysis, or any successor agency ("the index"). As part of the monetary path payment, the certificate holder shall also pay selection and contracting funds in an amount equal to 10 percent of the first $500,000 of the offset funds and 4.286 percent of any offset funds in excess of $500,000.

c. The department shall establish an "offset credit account" for Amendment 11. The initial offset credit account shall be the total carbon dioxide offsets for which the site certificate holder has provided offset funds to The Climate Trust, pursuant to Carbon Dioxide Emissions Condition 2.

d. Each year after beginning commercial operation of the North Mist Compressor Station ("annual carbon dioxide reporting period"), the site certificate holder shall report to the department the annual hours of operation (hr/yr) and annual fuel consumption (MMBtu/yr) for each of the two natural gas-fired, engine-driven compressors. The site certificate holder shall provide the annual report to the department consistent with the annual reporting date for all Mist Facility components.

(1) The department shall calculate the excess carbon dioxide emissions during each annual carbon dioxide reporting period and subtract those emissions from the offset credit account annually.

(2) The offset credit account shall maintain a minimum of 4,500 tons of carbon dioxide credits unless the department determines that based on the calculations conducted in (3)(a) that the balance in the carbon dioxide offset credit account is adequate to cover the estimated future emission of the NMCS over the expected 30-year life span of the NMCS. If the department determines that based on calculations conducted in (3)(a) that the offset credit account is unlikely to contain adequate credits to offset the NMCS carbon dioxide emissions over the estimated 30-year life of the NMCS, the site certificate holder shall replenish the offset credit account. The site certificate holder shall replenish the offset credit account equivalent to the full amount of the estimated future excess emissions. The department shall estimate excess emissions for the remaining period of the deemed 30-year life of the NMCS, based on the average annual excess carbon dioxide emissions in the prior three years. The department shall calculate the estimated future excess emissions of the new compressors and notify the site certificate holder of the amount of payment required, using the monetary path offset rate as described in (c) below.

(3) For any additional future payments related to the carbon dioxide offset credit account as described in this condition, the carbon dioxide offset rate of $1.27 shall be adjusted for inflation to present value from the date the Council issues the final order for Amendment 11, using the US Gross Domestic Product Implicit Price Deflator, as published by the US Department of Commerce, Bureau of Economic Analysis, or any successor agency.

(4) The department shall calculate and the certificate holder shall pay additional contracting and selection funds to the qualified organization pursuant to Carbon Dioxide Emissions Condition 2(1).

(5) The certificate holder shall remit payment of the additional monetary path payment requirement to replenish the offset credit account to The Climate Trust or other qualified organization (as defined in OAR 345-024-0720) within 30 days after notification by the department of the amount that the certificate holder owes.

e. The two engine-driven compressors operated at the North Mist Compressor Station shall be fueled solely with pipeline quality natural gas or with synthetic gas with a carbon content per million Btu no greater

than pipeline quality natural gas. The department shall use a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel to calculate carbon dioxide emissions.

[Amendment 11 Carbon Dioxide Emissions Conditions 2]

E. Other Amendment-Specific Conditions

1. Conditions Applicable to Amendment 4

a. Conditions for DSL Removal Fill Permit
Construction of the Project will require a Removal-Fill permit from the Department of State Lands (DSL). The Council, in consultation with DSL, approves the activities associated with the Removal-Fill permit, subject to the following conditions:

(1) NWN shall minimize impacts for the Category 2 wetland north of Highway 202 by taking steps including but not limited to:

(a) using a single trench for dual pipelines and keeping the installation as narrow as possible while remaining consistent with safety and practical installation requirements.
(b) timing construction for the dry time of year, not to extend beyond November 15.
(c) separating and returning topsoil to the trench backfill surface for pipelines and installing clay barriers at each end of the wetland crossing.
(d) avoiding the rest of the wetland crossing during construction by use of the existing road through the wetland for construction equipment. [Amendment 4]

(2) NWN shall restore habitat in the Category 2 wetland to the north of highway 202 to preconstruction conditions within two growing seasons. [Amendment 4]

(3) NWN shall minimize impact to wetlands by separating the upper foot of topsoil from the rest of the trench spoils and replacing it on the top of the trench. [Amendment 4]

(4) NWN shall filter any water pumped from the trench during construction to remove sediments before it is returned to the wetland. [Amendment 4]

(5) NWN shall complete pipeline construction through the wetland by November 15, 1997. [Amendment 4]

(6) Turbidity shall not exceed 10% above natural stream turbidities as a result of the project except that the Department of Environmental Quality allows that the 10% limit may be exceeded for a limited duration, provided all practicable erosion control measures have been implemented, including but not limited to:

(a) use of filter bags, sediment fences, catch basins or other means to prevent off site movement of soil

(b) use of impervious covers for stockpiles left unattended or during a rain event,

(c) waste materials and spoils shall be placed on uplands, such that the material cannot reenter a waterway or wetland, and

(d) all areas of soil disturbance shall be seeded or otherwise revegetated with native species upon completion of construction to prevent subsequent erosion. [Amendment 4]

b. Conditions Related to Limited Water Use Permit

(1) Construction of the Project will require a one-time use of approximately 300,000 gallons of water for pipeline testing. This use will require a Limited Water Use permit from the Water Resources Department. The water would be withdrawn from the Nehalem River. The Council approves this use, subject to the following conditions and in consultation with the Water Resources Department:

(a) The licensee shall install, maintain and operate fish screening and by-pass devices as required by the Oregon Department of Fish and Wildlife to prevent fish from entering the proposed diversion. The required screens and by-pass devices are to be in place, functional and approved by an Oregon Department of Fish and Wildlife representative prior to diversion of any water. [Amendment 4]

(b) The use shall be allowed only at times when the Watermaster has determined the flows of the source stream, namely the Nehalem River, are sufficient to satisfy instream water rights. [Amendment 4]

(c) The licensee shall give notice to the Watermaster not less than 15 days or more than 60 days in advance of using the water. The notice shall include the location of the diversion and place

of use, the quantity of water to be diverted and the intended use. [Amendment 4]

(d) The licensee shall maintain a record of use, including the total number of hours of pumping, an estimate of the total quantity pumped, and the categories of beneficial use to which the water is applied. The record of use shall be submitted to the Watermaster upon request. [Amendment 4]

(e) The limited license is effective for use between September 15, 1997 and November 15, 1997. [Amendment 4]

c. Conditions Related to DEQ WPCF permit

Construction of the Project will require a one-time discharge of the water used for pipeline testing. The water will be discharged by land application to a pasture located near the Nehalem River and in the vicinity of the directional drilling site. This discharge requires a Water Pollution Control Facilities (WPCF) permit from the Department of Environmental Quality (DEQ). The Council approves this activity, subject to the following conditions and in consultation with DEQ:

(1) No discharge to State waters is permitted. All waste water shall be distributed on land for dissipation by evapotranspiration and controlled seepage by following sound irrigation practices so as to prevent:

(a) Prolonged ponding of waste on the ground surface;

(b) Surface runoff or subsurface drainage through drainage tile;

(c) Creation of odors, fly and mosquito breeding and other nuisance conditions, and

(d) The overloading of land with nutrients or organics. [Amendment 4]

(2) NWN shall, during all times of disposal, provide personnel whose primary responsibilities are to assure the continuous performance of the disposal system within the limitations of the permit. [Amendment 4]

(3) Prior to land disposal of the waste water it shall be treated by filtering through straw bales. [Amendment 4]

(4) Unless approved by EFSC and DEQ, waste water that is disposed of on land but not used to irrigate crops shall be disposed of on a deep-rooted cover crop to ensure maximum infiltration and evapotranspiration rate. [Amendment 4]

(5) Prior to constructing or modifying any waste water control facilities, detailed plans and specifications shall be approved in writing by EFSC and DEQ. [Amendment 4]

(6) An adequate contingency plan for prevention and handling of spills and unplanned discharges shall be in force at all times. A program of employee orientation and education shall be maintained to ensure awareness of the necessity for good inplant control and proper action in the event of a spill or accident. [Amendment 4]

2. *Conditions Applicable to Amendment 8*

a. Condition under OAR 345 Division 27

(1) NWN must decommission the new equipment and portion of the facility described in Amendment 8 and restore the site to a useful and non-hazardous condition as provided in OAR 345-022-0010 and the retirement plan previously described in the Order Approving Amendment 4. In addition, immediately upon execution of Amendment 8 to the Site Certificate, NWN must provide EFSC with a surety bond or other form of financial assurance, which shall guarantee NWN's obligation and indemnify the state from any failure by NWN to decommission the new equipment and portion of the facility described in Amendment 8 and restore the site to a useful and non-hazardous condition as provided in OAR 345-022-0010 and the retirement plan previously described in the order approving Amendment 4 to the Site Certificate. The Council delegates authority for approval of the bond to the Council chair. The amount of the bond or financial assurance must be $400,000 in 2001 dollars. The calculation of 2001 dollars shall be made using the U.S. Gross Domestic Product Implicit Price Deflator, as published by the U. S. Department of Commerce, Bureau of Economic Analysis, or any successor agency (the "index"). If, at any time, the index is no

longer published, the Council will select a comparable replacement index. [Amendment 8] [OAR 345-027-0020(8)]

b. Conditions under OAR 345 Division 24

(1) Immediately upon execution of Site Certificate Amendment 8 authorizing the compressor described in NWN's Request for Amendment 8 ("new compressor"), NWN shall report to EFSC the design and operating parameters of the new compressor, as specified in subsections (a) through (c).

(a) NWN shall notify the Council in writing of its final selection of a gas turbine compressor vendor. [Amendment 8]

(b) NWN shall submit written design information sufficient to verify the new compressor's designed heat rate (higher heating value) and its nominal capacity. NWN shall include an affidavit certifying the heat rate and nominal capacity of the new compressor. [Amendment 8]

(c) NWN shall specify the estimated annual average hours that it reasonably expects to operate the new compressor. [Amendment 8]

(2) NWN shall submit all monetary path payment requirement calculations to the Department of Energy ("department") for verification in a timely manner prior to making payments to The Climate Trust. NWN shall use the contracted design parameters for nominal capacity and heat rate of the new compressor, along with the estimated annual hours of operation, that it reports pursuant to Condition (1) to calculate the estimated monetary path payment requirement. For the purposes of this Site Certificate, the "monetary path payment requirement" means the offset funds determined pursuant to OAR 345-024-0630 and the selection and contracting funds that NWN must disburse to The Climate Trust, as the qualified organization, pursuant to OAR 345-024-0710 and this Site Certificate. [Amendment 8]

(a) The net carbon dioxide emissions rate for the new compressor shall not exceed 0.522 pounds of carbon dioxide per horsepower hour. [Amendment 8]

(b) The offset fund rate for the monetary path payment requirement shall be $0.85 per ton of carbon dioxide (in 2001

dollars). For the initial monetary path payment that NWN must make prior to beginning construction, the calculation of 2001 dollars shall he made using the US Gross Domestic Product Implicit Price Deflator, as published by the US Department of Commerce, Bureau of Economic Analysis, or any successor agency ("the index"). The amount of the payment requirement shall increase annually by the percentage increase in the index and shall be pro-rated within the year to the date of disbursement to The Climate Trust from October 26, 2001. If at any time the index is no longer published, the Council shall select a comparable calculation of 2001 dollars. [Amendment 8]

(c) NWN shall offset excess carbon dioxide emissions using the monetary path as described in OAR 345-024-0710 and this Site Certificate. Contracting and selecting funds shall equal twenty (20) percent of the value of any offset funds up to the first $250,000 (in 2001 dollars) and 4.286 percent of the value of any offset funds in excess of $250,000 (in 2001 dollars). [Amendment 8]

(3) Immediately upon execution of this Site Certificate Amendment 8, NWN shall pay cash to The Climate Trust in the full amount of the monetary path payment requirement (in 2001 dollars) as determined by the calculations set forth in Condition (2). [Amendment 8]

(4) The department shall establish an "offset credit account." The initial offset credit account shall be the total carbon dioxide offsets for which NWN has provided offset funds to The Climate Trust, pursuant to Condition (3). [Amendment 8]

(5) Each year after beginning commercial operation of the new compressor ("annual carbon dioxide reporting period"), NWN shall report to the department the annual hours the new compressor operated and its fuel use in Btu. NWN shall provide the annual report to the department within 30 days of the anniversary date of beginning commercial operation of the new compressor. [Amendment 8]

(a) The department shall calculate the excess carbon dioxide emissions during each annual carbon dioxide reporting period and subtract those emissions from the offset credit account annually. [Amendment 8]

(b) If the offset credit account contains fewer than 6,000 tons of carbon dioxide offset credits, NWN shall replenish the offset credit account. NWN shall replenish the offset credit account equivalent to the full amount of the estimated future excess emissions. The department shall estimate excess emissions for the remaining period of the deemed 30-year life of the facility, based on the average annual excess carbon dioxide emissions in the prior three years. The department shall calculate the estimated future excess emissions of the new compressor and notify NWN of the amount of payment required, using the monetary path, to replenish the offset credit account. [Amendments 8, 9]

(c) Notwithstanding the index identified in Condition (2)(b), pursuant to OAR 345-024-0710(6)(a) the formula to calculate the rate for the dollar value per ton of carbon dioxide offsets by which NWN shall replenish its offset credit account through the monetary path shall be $0.85 times (1.0891 to the power "t"); where "t" is the elapsed time in years between October 26, 2001, and the date the Office notifies NWN that it must replenish its offset credit account, pursuant of OAR 345-024-0630(4). Fractional years shall be calculated by dividing the number of elapsed days in excess of a whole year by 365. [Amendment 8]

(d) The department shall calculate additional contracting and selection funds pursuant to Condition 2(c).

(e) NWN shall disburse in cash the additional monetary path payment requirement to replenish the offset credit account to The Climate Trust within 30 days after notification by the department of the amount that NWN owes. [Amendment 8]

(6) The new gas turbine compressor shall be fueled solely with pipeline quality natural gas or with synthetic gas with a carbon content per million Btu no greater than pipeline quality natural gas. The department shall use a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel to calculate carbon dioxide emissions. [Amendment 8]

3. Conditions Applicable to Amendment 9

a. Condition under OAR 345 Division 27

(1) Before beginning the construction authorized under Amendment 9, NWN shall submit to the State of Oregon, through the Council, a bond or letter of credit, satisfactory to the Council, in the amount of $500,000 in 2003 dollars. This condition may be satisfied by a new financial instrument or by updating the bond submitted pursuant to Amendment 8. [Amendment 9]

4. Conditions Applicable to Amendments 11 and 12

a. Conditions for DSL Removal Fill Permit

(1) Prior to construction of the Amendment 11 components, the certificate holder shall submit to the department and DSL the final Site Rehabilitation of Temporary Impacts Plan consistent with the draft plan provided in Attachment G of this order. The certificate holder shall obtain written concurrence from the department and DSL that the final plan demonstrates compliance with and is consistent with all applicable rules and requirements. If the department and DSL have not provided a response within 30 days following the site certificate holder's submission of the final Site Rehabilitation of Temporary Impacts Plan, the Plan will be considered approved. [Amendment 11 Removal-Fill Condition 1]

(2) During operation of the Amendment 11 components, the certificate holder shall monitor temporarily impacted and restored wetland sites for three years following the year of construction completion. Annual monitoring shall occur during the growing season and shall include visual surveys to estimate the coverage area of native versus nonnative species. The certificate holder shall provide an annual report with the methodology and results of the surveys on an annual basis to USACE, DSL, and the department. [Amendment 11 Removal-Fill Condition 2]

(3) Before beginning construction of the Amendment 11 components, the certificate holder must obtain and provide proof to the department that a removal-fill permit from DSL was obtained and that it includes the conditions recommended in Attachment H of the final order. The certificate holder must comply with all conditions of the removal-fill permit. [Amendment 11 Removal-Fill Condition 3]

b. Amendment 11 and Amendment 12 - Conditions Related to Limited Water Use Permit – (LL-1575, LL-1576 and LL-1709)

(1) The use of water under a limited license shall not have priority over any water right exercised according to a permit or certificate and shall be subordinate to all other authorized uses that rely upon the same source. (LL-1575 and LL-1576 Condition 5, LL-1709 Condition 6)

(2) The certificate holder shall give notice to the Department and the Watermaster in the district where use is to occur not less than 15 days or more than 60 days in advance of using water under the limited water use licenses. The notice shall include the location of the diversion, the quantity of water to be diverted and the intended use and place of use. (LL-1575 and LL-1576 Condition 2, LL-1709 Condition 3)

(3) Before water use may begin under LL-1575, LL-1576 and LL-1709, the certificate holder shall install a totalizing flow meter at each point of diversion. The totalizing flow meter must be installed and maintained in good working order. In addition, the certificate holder shall maintain a record of all water use, including the total number of hours of pumping, the total quantity pumped, and the categories of beneficial use to which the water is applied. During the period of the license, the record of use shall be submitted to the Department and Oregon Department of Water Resources within 90-days of completion of use from the point of diversion, and shall be supplied to the Watermaster on request. (LL-1575 and LL-1576 Condition 3, LL-1709 Condition 4)

(4) The period rate and volume of use for LL-1575 shall be from June 1, 2017, through November 30, 2018, for the use of 2,000 gallons per minute, up to 4.46 million gallons total from Beaver Slough, for the purpose of hydrostatic testing of new pipeline, and drilling fluid for horizontal direction drilling. (LL-1575 Condition 1)

(5) The period rate and volume of use for LL-1709 shall be from August 18, 2017, through November 30, 2017, for the use of 2,000 gallons per minute, up to 300,000 gallons total from Beaver Slough located at the NE ¼, NE ¼, Section 21, Township 8 North, Range 4 West, W.M., for horizontal direction drilling and dust abatement. (LL-1709 Condition 1)

(6) LL-1709 is not intended to authorize additional water withdrawal beyond that already allowed under LL-1575, and therefore contributes no additional impact to the water source. The use of water under LL-1709, or, in combination with license LL-1575, shall not exceed 2,000 gallons per minute, or up to 300,000 gallons of the total 4.46 million gallons allowed under LL-1575. (LL-1709 Condition 2)

(7) The period rate and volume of use for LL-1576 shall be from June 1, 2017, through November 30, 2018, for the use of 2,000 gallons per minute, up to 2.2 million gallons total from Bradbury Slough, for the purpose of hydrostatic testing of new pipeline, and drilling fluid for horizontal direction drilling. (LL-1576 Condition 1)

(8) For LL-1575 and LL-1576, the certificate holder shall install, use, and maintain fish screening and by-pass devices as required by the Oregon Department of Fish and Wildlife to prevent fish from entering the proposed diversion. Fish screens shall be installed consistent with the fish screening criteria provided as Attachment D to the site certificate. (LL-1575 and LL-1576 Condition 6)

(9) For LL-1709, the certificate holder shall install, use, and maintain fish screening and by-pass devices as required by the Oregon Department of Fish and Wildlife to prevent fish from entering the proposed diversion. Fish screens shall be installed consistent with the fish screening criteria provided as Attachment D to the site certificate. (LL-1709 Condition 7).

(a) The certificate holder shall consult with ODFW Fish Screens and Passage Program Manager and shall provide the Department evidence of consultation prior to use under LL-1709 to demonstrate that the fish screen installed at the diversion point meets ODFW's applicable criteria.

(10) The Council may, at the request of Oregon Department of Water Resources Director, revoke the right to use water for any reason described in ORS 537.143(2), and OAR 690-340-0030(6). Such revocation may be prompted by field regulatory activities or by any other information. (LL-1575 and LL-1576 Condition 4, LL-1709 Condition 5)

(11) Use of water under a limited license shall not have priority over any water right exercised according to a permit or certificate, and shall

be subordinate to all other authorized uses that rely upon the same source. (LL-1575 and LL-1576 Condition 5, LL-1709 Condition 6)

(12) A copy of the licenses shall be kept at the place of use, and be available for inspection by the Department, Watermaster or other state authority. (LL-1575 and LL-1576 Condition 8, LL-1709 Condition 9)

[Amendment 11 and 12 Limited Water Use License Conditions]

c. Conditions under Noise Control Regulations (OAR 340, Division 35)

(1) Prior to operation of the Amendment 11 components, the certificate holder shall submit an Operational Complaint-Based Noise Monitoring Protocol (protocol) to the department for review and approval. The protocol shall provide for testing at houses whose owners or occupants submit a complaint to EFSC or the department. The protocol shall include a schedule for completion of noise testing following complaints and when testing results will be transmitted to the department and EFSC. [Amendment 11 Noise Control Condition 1]

(2) During operation of the Amendment 11 components, public complaints received by the certificate holder of noise generated from operation of the Amendment 11 components shall be documented, responded to, and reported to the department within 72-hours of complaint receipt. NWN shall provide to the department a report summarizing the noise complaint, date complaint received, proposed noise monitoring activities, or other action deemed appropriate to respond to the noise complaint, and results (in dBA) of noise monitoring to determine compliance with the DEQ noise control regulation. [Amendment 11 Noise Control Condition 2]

F. Mist Resiliency Project- Amendment 13

Condition Format

The conditions in Sections 1.0 through 5.0 of Section F of this Site Certificate are organized and coded to indicate the phase of implementation, the standard the condition is required to satisfy, and an identification number (1, 2, 3, etc.).[6] The table below presents a "key" for phase of implementation:

Key	**Type of Conditions/Phase of Implementation**
GEN	General Conditions: Design, Construction and Operation
PRE	Pre-Construction Conditions
CON	Construction Conditions
PRO	Pre-Operational Conditions
OPR	Operational Conditions
RET	Retirement Conditions

The standards are presented using an acronym; for example, the General Standard of Review is represented in the condition numbering as "GS"; the Soil Protection standard is represented in the condition numbering as "SP" and so forth.

For example, the coding of Condition GEN-GS-01 represents that the condition is a general condition (GEN) to be implemented during multiple phases including design, preconstruction, construction and/or operation of the facility, is required to satisfy the Council's General Standard of Review, and is condition number 1. The condition language also includes in brackets [ ] for the name of the condition as imposed in the Final Order on the Request for Amendment 13 (i.e. General Standard of Review Condition 1).

[6] The identification number is not representative of an order that conditions must be implemented; it is intended only to represent a numerical value for identifying the condition.

1.0 General Conditions: Design, Construction and Operation

Condition Number	(Site certificate conditions for all standards and phases)
STANDARD: GENERAL STANDARD OF REVIEW (GS) [OAR 345-022-0000]	
GEN-GS-01	The certificate holder must begin and complete construction of the Mist Resiliency Project by the following dates: a. Construction of a phase or component of the Mist Resiliency Project must begin on or before [ENTER DATE 2 YEARS FROM ISSUE DATE]. Within 7 days of construction commencement, the certificate holder must provide the Department with written verification that it has met the deadline by satisfying applicable preconstruction conditions and completing at least $250,000 work at the site. b. All construction must be completed within 5 years after the date construction commenced under (a) of this condition. Within 7 days after completing construction, the certificate holder shall provide the Department written verification that it has met the deadline. [General Standard Condition 1; Mandatory Condition OAR 345-025-0006(4); Final Order on AMD13]
GEN-GS-02	The certificate holder is authorized to construct the underground pipelines extending from Crater, Medicine, Newton and Stegosaur reservoirs to the North Mist Compressor Station within an established 80-foot corridor. [General Standard Condition 2; Final Order on AMD13]
STANDARD: FISH AND WILDLIFE HABITAT (FW) [OAR 345-022-0060]	
GEN-FW-01	Following construction of components or phase of the Mist Resiliency Project, as applicable, and during operations, for the duration required for restoration, the certificate holder shall implement the Restoration of Temporary Impacts Plan. [Fish and Wildlife Condition 2; Final Order on AMD13]
STANDARD: WASTE MINIMIZATION (WM) OAR 345-022-0120	
GEN-WM-01	During construction and operation, the certificate holder shall adhere to the requirements of the NWN Waste Minimization and Recycling Plan, as provided in Attachment W of the Final Order on Amendment 13. [Waste Minimization Condition 1; Final Order on AMD13]
STANDARD: REMOVAL-FILL LAW (RF) [ORS CHAPTER 196 AND OAR CHAPTER 141]	
GEN-RF-01	During and post construction ~~HDD~~ for the Mist Resiliency Project, the certificate holder shall comply with all conditions of the General Authorization for Temporary Disturbance to Non-Tidal Wetlands or Removal-Fill Permit, as applicable. [Removal Fill Law Condition 3; Final Order on AMD13]

2.0 Pre-Construction Conditions

STANDARD: ORGANIZATIONAL EXPERTISE (OE) [OAR 345-022-0010]	
PRE-OE-01	Prior to construction of a phase or component of the Mist Resiliency Project, the certificate holder shall select construction contractors with a low rate of past environmental and safety compliance incidents and citations. Certificate holder shall provide the following documentation to the Department: a. Qualifications and contact information of the major design, engineering and construction contractor(s) and subcontractors, as applicable, including but not limited to the contractor(s) hired to serve as the construction manager. b. Construction contractor compliance history. c. Copy of signature page(s) and excerpt from each contract with the aforementioned contractors affirming that the contractor is required to comply with the terms and conditions of the site certificate, including selecting design layout and construction materials that minimize impacts to resources protected under Council standards. [Organizational Expertise Condition 1; Final Order on AMD13]
PRE-OE-02	Prior to construction of a facility component or phase of the Mist Resiliency Project, as applicable, the certificate holder shall: a. Provide the Department a list of federal, state and local permits, including any third-party permits for resources needed for construction and operation; and a schedule for obtaining identified permits. b. Once obtained, provide copies of all permits, including third-party permits, required for the Mist Resiliency Project to the Department. [Organizational Expertise Condition 3; Final Order on AMD13]
STANDARD: STRUCTURAL STANDARD (SS) [OAR 345-022-0020]	
PRE-SS-01	Prior to construction of a phase or component of the Mist Resiliency Project, as applicable, the certificate holder shall submit a site-specific geotechnical investigation report, consistent with the Oregon State Board of Geologist Examiners Guideline for Preparing Engineering Geologic Reports, or newer guidelines if available to the Department, for review in consultation with its third-party consultant. Certificate holder must adequately address comments provided by the Department. [Structural Standard Condition 1; Final Order on AMD13]
STANDARD: SOIL PROTECTION (SP) [OAR 345-022-0022]	
PRE-SP-01	Prior to construction of a phase or component of the Mist Resiliency Project, as applicable, the certificate holder shall obtain a NPDES 1200-C Permit from DEQ. A copy of the approved permit and attached Erosion and Sediment Control Plan (ESCP) must be submitted to the Department. [Soil Protection Condition 1; Final Order on AMD13]
PRE-SP-02	Prior to HDD for the Mist Resiliency Project, the certificate holder shall: a. Submit the HDD plan (scope and detailed maps) to ODFW and the Department for final review and comment. Comments shall be addressed in a final HDD

	Inadvertent Return Response Plan, substantially as provided in Final Order on Amendment 13 Attachment C. b. Submit a final HDD Inadvertent Return Response Plan, based on the review of (a), for review and approval by the Department, in consultation with ODFW. [Soil Protection Condition 3; Final Order on AMD13]
STANDARD: LAND USE (LU) [OAR 345-022-0030]	
PRE-LU-01	Prior to development and use of the 7.5-acre laydown area adjacent to Miller Station, the certificate holder shall demonstrate that it has legally purchased or otherwise secured access for permanent use of the laydown area based on terms agreed to by the underlying landowner. [Land Use Condition 2, Final Order on AMD13]
PRE-LU-02	Prior to construction of the Mist Resiliency Project, as applicable to the subject tax lot and construction areas, the certificate holder shall obtain approval from Columbia County of property line adjustments required to ensure lots or parcel depth is a minimum 100 feet for Tax Lot 75W000004700 and 75W000004701. [Land Use Condition 4, Final Order on AMD13]
PRE-LU-03	Prior to construction, the certificate holder shall provide a final facility design of the Mist Resiliency Project components and taxlot map that demonstrates that front, side and rear yards of all taxlots maintain a 50-foot front, side and rear yard setback. [Land Use Condition 5, Final Order on AMD13]
STANDARD: RETIREMENT AND FINANCIAL ASSURANCE (RT) [OAR 345-022-0050]	
PRE-RT-01	Prior to construction of components or phase of the Mist Resiliency Project, as applicable, the certificate holder shall submit to the State of Oregon, through Council, a bond or letter of credit naming the State of Oregon, acting by and through Council, as beneficiary or payee. The approved bond or letter of credit amount of $9,479,905 (Q4 2023 dollars) may be adjusted based on the design configuration of the facility, or phase of the facility, as provided in Sub(a) and adjusted to the year and quarter of issuance as provided under Sub(b). a. The bond or letter of credit amount may be adjusted based on actual design/number of components of the facility or phase, as applicable, and shall use the same unit costs and contingencies presented in the Final Order on the RFA13 Table 9. b. Adjust the amount of the bond or letter of credit using the U.S. Gross Domestic Product Implicit Price Deflator, Chain Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency by using the index value for the year and quarter of the nominal value and the quarterly index value for the date of issuance of the new bond or letter of credit. If at any time the index is no longer published, Council shall select a comparable calculation to adjust the amount for inflation. c. The bond or letter of credit must be issued by a financial institution that is included on Council's pre-approved financial institution list. The certificate holder may request to have a financial institution added to the list at any time.

	d. The bond or letter of credit must be prepared using the most recent Council-approved template. [Retirement and Financial Assurance Condition 1; Final Order on AMD13]
STANDARD: FISH AND WILDLIFE HABITAT (FW) [OAR 345-022-0060]	
PRE-FW-01	Prior to construction of components or phase of the Mist Resiliency Project, as applicable, the certificate holder shall finalize the Restoration of Temporary Impacts Plan similar to the draft plan provided in Attachment P-1 of this order, to be prepared in consultation with ODFW and approved by ODOE. The scope of finalization shall adhere to the requirements established in Section 1.0 of the plan. [Fish and Wildlife Condition 1; Final Order on AMD13]
PRE-FW-02	Prior to construction of components or phase of the Mist Resiliency Project, as applicable, the certificate holder shall finalize the draft Mist Resiliency Project Habitat Mitigation Plan as provided in Final Order on Amendment 13 Attachment P-3. The scope of finalization shall adhere to the requirements established in Section 1.0 of the plan. [Fish and Wildlife Condition 3; Final Order on AMD13]
STANDARD: HISTORIC, CULTURAL, AND ARCHAEOLOGICAL RESOURCES (HC) [OAR 345-022-0090]	
PRE-HC-01	Prior to construction of a facility component or phase of the Mist Resiliency Project, as applicable, the certificate holder shall update the contact information provided in the Inadvertent Discovery Plan, as provided in the Final Order on Amendment 13 Attachment S. [Historic, Cultural and Archeological Condition 1; Final Order on AMD13]
STANDARD: PUBLIC SERVICES (PS) [OAR 345-022-0110]	
PRE-PS-01	Prior to construction of a phase or component of Mist Resiliency Project, as applicable, the certificate holder shall demonstrate to the Department that it has executed agreements with the owner of the water source and obtained necessary permits or approvals from Oregon Department of Water Resources for onsite construction-related water use. [Public Services Condition 1; Final Order on AMD13]
PRE-PS-02	Prior to construction of a phase or component of the Mist Resiliency Project, as applicable, the certificate holder shall enter into an agreement with the Clatskanie Rural Fire Protection District (RFPD) and the Mist-Birkenfeld RFPD to pay the certificate holder's proportionate share of the costs necessary to upgrade the high-volume hydraulic pump system serving Flemming Pond. [Public Services Condition 2; Final Order on AMD13]
STANDARD: STANDARD FOR NONGENERATING ENERGY FACILITIES - C02 (CD) [OAR 345-024-0620] AND COMPLIANCE [OAR 345-024-0630]	
PRE-CD-01	Prior to construction of new or replacement combustions turbines of the Mist Resiliency Project, as applicable, the certificate holder shall submit a written equipment design and estimated emissions report to the Department, including the following information for the engine-driven compressors and turbines: a. Manufacturer specifications b. Fuel consumption rate (Btu/HP-hr), based on higher heating value of fuel, and

	rated engine capacity (HP), based on manufacturer specifications c. Engine load factor and adjusted HP d. Estimated annual hours of operation (hr/yr) for engine-driven compressors e. Carbon dioxide emission calculations including gross carbon dioxide emission rate, net carbon dioxide emission rate based on Council emission rate standard equal to 0.428 lb CO2/HP-hr, and estimated excess carbon dioxide emissions for the assumed 30-year operational lifetime. Calculations shall be based on information provided in (1)(a) – (1)(d) of this condition and consistent with OAR 345-024-0620(1). [Carbon Dioxide Emissions Condition 1; Final Order on AMD13]
PRE-CD-02	Following receipt of written validation by the Department of monetary path payment calculations, and before beginning construction of compressors at Miller Station or NMCS, as part of the Mist Resiliency Project, the certificate holder shall: a. Remit payment to The Climate Trust in the full amount of the monetary path payment requirement as determined by the calculations set forth in Carbon Dioxide Emissions Condition 1. 1. Monetary path payment requirements shall be calculated using an offset rate of $~~4.27~~ 6.40 per ton of excess carbon dioxide emissions, adjusted from the year in which the Council issues the Final Order on Amendment 13, to present value dollars of the year in which payment is made to the Climate Trust. 2. Present value shall be calculated using the US Gross Domestic Product Implicit Price Deflator, as published by the US Department of Commerce, Bureau of Economic Analysis, or any successor agency ("the index"). As part of the monetary path payment, the certificate holder shall also pay selection and contracting funds in an amount equal to 10 percent of the first $500,000 of the offset funds and 4.286 percent of any offset funds in excess of $500,000. b. Request that the Department establish an "offset credit account" for the Mist Resiliency Project. The initial offset credit account shall be the total carbon dioxide offsets for which the certificate holder has provided offset funds to The Climate Trust, pursuant to Carbon Dioxide Emissions Condition 1. [Carbon Dioxide Emissions Condition 2; Final Order on AMD13]
STANDARD: REMOVAL-FILL LAW (RF) [ORS CHAPTER 196 AND OAR CHAPTER 141]	
PRE-RF-01	Prior to ~~HDD~~ construction for the Mist Resiliency Project, the certificate holder shall utilize biologists to map and flag avoidance areas surrounding wetlands and waters of the state ~~in the areas of HDD~~. [Removal Fill Law Condition 1; Final Order on AMD13]
PRE-RF-02	Prior to construction ~~HDD~~ for the Mist Resiliency Project, the certificate holder shall provide proof to the Department that a General Authorization for Temporary Disturbance to Non-Tidal Wetlands or Removal Fill Permit has been obtained from the Department of State Lands. [Removal Fill Law Condition 2; Final Order on AMD13]

3.0 Construction Conditions

Condition Number	(Site certificate conditions for all standards and phases)
STANDARD: ORGANIZATIONAL EXPERTISE (OE) [OAR 345-022-0010]	
CON-OE-01	During construction, the certificate holder shall: a. Maintain an onsite construction manager. b. Require that the construction manager implement and monitor all applicable construction related site certificate conditions. c. Within six months after beginning construction, and every six months thereafter during construction, submit a semiannual construction progress report to the Department. In each construction progress report, the certificate holder shall describe any changes to major milestones for construction. The certificate holder shall report on the progress of construction and shall address the following: i. Facility Status: An overview of site conditions, the status of components under construction and a summary of the operating experience of components that are in operation. The certificate holder shall describe any events, such as earthquakes, windstorms, major accidents or the like that occurred during the year and that had an adverse impact on the facility. ii. Status of Surety Information: Documentation demonstrating that bonds or letters of credit as described in the site certificate are in full force and effect and will remain in full force and effect for the term of the next reporting period. iii. Compliance Report: A report describing the certificate holder's compliance with all site certificate conditions that are applicable during the reporting period. For ease of review, the certificate holder shall, in this section of the report, use numbered subparagraphs corresponding to the applicable sections of the site certificate. iv. Facility Modification Report: A summary of any changes to the facility that the certificate holder has made during the reporting period without an amendment of the site certificate in accordance with OAR 345-027-0050. [Organizational Expertise Condition 2; Final Order on AMD13]
STANDARD: SOIL PROTECTION (SP) [OAR 345-022-0022]	
CON-SP-01	During construction of a phase or component of the Mist Resiliency Project, the certificate holder shall conduct all construction work in compliance with a final Erosion and Sediment Control Plan (ESCP). The ESCP shall be revised if determined necessary by the certificate holder, certificate holder's contractor(s) or the Department. Any Department-required ESCP revisions shall be implemented within 14-days, unless otherwise agreed to by the Department based on a good faith effort to address erosion issues. [Soil Protection Condition 2; Final Order on AMD13]
CON-SP-02	During HDD for the Mist Resiliency Project, the certificate holder shall:

	a. Implement and adhere to the requirements of the final HDD Inadvertent Return Response Plan. b. Employ a monitor during HDD to watch for surface fluid release at the entry and exit points of the HDD drill and the area within 150 feet of the entry/exit locations; c. Add the Oregon Department of Energy to the list of agencies that will be contacted by phone within 24 hours of an inadvertent return that impacts a wetland or perennial stream; d. Contact the department within 48 hours if there is an inadvertent return that does not impact wetlands or waterways but does require issuance of a containment installation order. [Soil Protection Condition 4; Final Order on AMD13]
STANDARD: RETIREMENT AND FINANCIAL ASSURANCE (RT) [OAR 345-022-0050]	
CON-RT-01	During construction, the certificate holder shall: a. Describe the status of the bond or letter of credit in the semi-annual report submitted to the Department pursuant to OAR 345-026-0080. b. The Department and Council reserve the right to adjust the contingencies, as necessary to ensure that costs to restore the site are adequate. [Retirement and Financial Assurance Condition 2; Final Order on AMD13]
STANDARD: FISH AND WILDLIFE HABITAT (FW) [OAR 345-022-0060]	
CON-FW-01	During construction of components or phase of the Mist Resiliency Project, as applicable, certificate holder shall not remove vegetation during the nesting bird season (February 1 to September 15). a. If vegetation removal is necessary during the nesting season, a qualified biologist will conduct a preconstruction nesting bird survey on and within 500 feet of the construction area no more than 14 days prior to proposed initiation of any vegetation removal or construction activities and provide the results of the survey to the Department no less than 10 days prior to any vegetation removal. b. The certificate holder shall not begin vegetation removal until the nesting bird survey has been approved by the Department, in consultation with ODFW. If there are construction delays of greater than 14 days during the nesting season, the certificate holder shall repeat the surveys in vegetated areas and obtain Department approval of the surveys prior to restarting construction. [Fish and Wildlife Condition 5; Final Order on AMD13]
CON-FW-02	During construction of components or phase of the Mist Resiliency Project, as applicable, certificate holder shall require that all onsite workers attend an environmental awareness training session conducted by an environmental professional. a. The training shall include, but not be limited to, the following topics: identification of approved Project boundaries and access roads including flagged exclusion areas; identification of sensitive wetland and waterbody resources; identification of sensitive and special status plant and wildlife species found in the analysis area; techniques regarding avoidance and minimization measures

	the certificate holder will implement; the notification process to be followed if new sensitive resources are identified; permit requirements; buffer distances from sensitive and protected resources; work timing restrictions including seasonal restrictions; the role of the onsite environmental inspector(s) and NWN environmental personnel; 25 mph speed limit restrictions; and other topics as necessary. b. A copy of the training shall be provided to the department. c. Records of completed worker training shall be maintained onsite and made available to the department upon request. [Fish and Wildlife Condition 6; Final Order on AMD13]
STANDARD: HISTORIC, CULTURAL, AND ARCHAEOLOGICAL RESOURCES (HC) [OAR 345-022-0090]	
CON-HC-01	During construction of the Mist Resiliency Project, the certificate holder shall require all onsite employees and contractors to implement and adhere to the requirements of the Inadvertent Discovery Plan. [Historic, Cultural and Archeological Condition 2; Final Order on AMD13]
STANDARD: WILDFIRE PREVENTION AND RISK MITIGATION (WF) (OAR 345-022-0115)	
CON-WF-01	During construction of a phase or component of the Mist Resiliency Project, as applicable, the certificate holder shall implement and require all onsite contractors and employees to adhere to, the Construction Wildfire Mitigation Plan as provided in Attachment V-1 to the Final Order on RFA13. Updates to the Wildfire Mitigation Plan, including Attachment C: Oregon Department of Forestry Forest Activity Inspection Report, may be required if determined necessary by the certificate holder, certificate holder's contractor(s) or the Department to address wildfire hazard to public health and safety. Any Department required updates shall be implemented within 14 days, unless otherwise agreed to by the Department based on a good faith effort to address wildfire hazard. [Wildfire Prevention and Risk Mitigation Condition 1; Final Order on AMD13]

4.0 Pre-Operational Conditions

Condition Number	(Site certificate conditions for all standards and phases)
STANDARD: LAND USE (LU) [OAR 345-022-0030]	
PRO-LU-01	Prior to operation of the expanded NMCS, certificate holder shall provide evidence of an authorized domestic water supply serving the NMCS domestic water need. Certificate holder shall provide one of the following: a. Verification from a water purveyor that the use described in the application will be served by the purveyor under the purveyor's rights to appropriate water. b. A water use permitted issued by Oregon Water Resources Department for the use described in the application; or c. Verification from Oregon Water Resources Department that a water use permit is not required for the use described in the application. [Land Use Condition 1; Final Order on AMD13]
PRO-LU-02	Following completion of the Mist Resiliency Project's expansion at NMCS and Miller Station, as applicable, the certificate holder shall provide evidence to the Department that it has recorded a waiver of remonstrance with the Columbia County Clerk that applies to the subject and adjacent tax lots. [Land Use Condition 3; Final Order on AMD13]

5.0 Operational Conditions

Condition Number	(Site certificate conditions for all standards and phases)
STANDARD: RETIREMENT AND FINANCIAL ASSURANCE (RT) [OAR 345-022-0050]	
OPR-RT-01	During operation, the certificate holder shall: a. Annually adjust the amount of the bond or letter of credit using the U.S. Gross Domestic Product Implicit Price Deflator, Chain Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency by using the index value for the year and quarter of the nominal value and the quarterly index value for the date of issuance of the new bond or letter of credit. If at any time the index is no longer published, Council shall select a comparable calculation to adjust the amount for inflation. b. Any changes to the template made by Council must be incorporated into the bond or letter or letter of credit whenever the amount is adjusted under Sub(a). c. The Department and Council reserve the right to adjust the contingencies, as necessary to ensure that costs to restore the site are adequate. [Retirement and Financial Assurance Condition 3; Final Order on AMD13]
STANDARD: FISH AND WILDLIFE HABITAT (FW) [OAR 345-022-0060]	

OPR-FW-01	During operation, the certificate holder shall implement and adhere to the requirements of the Mist Resiliency Project Habitat Mitigation Plan. [Fish and Wildlife Condition 4; Final Order on AMD13]
STANDARD: HISTORIC, CULTURAL, AND ARCHAEOLOGICAL RESOURCES (HC) [OAR 345-022-0090]	
OPR-HC-01	During operations and maintenance activities resulting in ground disturbance, the certificate holder shall require all onsite employees and contractors to implement and adhere to the requirements of the Inadvertent Discovery Plan (IDP). The IDP shall be reviewed and updated annually for current contact information. [Historic, Cultural and Archeological Condition 3; Final Order on AMD13]
STANDARD: WILDFIRE PREVENTION AND RISK MITIGATION (WF) (OAR 345-022-0115)	
OPR-WF-01	During operation, the certificate holder shall: a. Implement the Operational Wildfire Mitigation Plan, included as Attachment V-2 to the Final Order on RFA13. b. After the first operational year, annually review and update the evaluation of wildfire risk under OAR 345-022-0115(1)(b) and submit the results in the annual report for that year, including any updates to Attachment C: Oregon Department of Forestry Forest Activity Inspection Report. c. Submit an updated Operational Wildfire Mitigation Plan to the Department if substantive changes are made to the plan because of the review under sub (b) of this condition, or at any other time substantiative revisions are made to Attachment V-2 of the Final Order on RFA13. [Wildfire Prevention and Risk Mitigation Condition 2; Final Order on AMD13]
STANDARD: STANDARD FOR NONGENERATING ENERGY FACILITIES - C02 (CD) [OAR 345-024-0620] AND COMPLIANCE [OAR 345-024-0630]	
OPS-CD-01	Each year after beginning commercial operation of the new and replacement compressors associated with the Mist Resiliency Project ("annual carbon dioxide reporting period"), as applicable, certificate holder shall report to the Department the annual hours of operation (hr/yr) and annual fuel consumption (MMBtu/yr) for the new and replacement compressors. The certificate holder shall provide the annual report to the Department consistent with the annual reporting date for all Mist Facility components. a. The Department shall calculate the excess carbon dioxide emissions during each annual carbon dioxide reporting period and subtract those emissions from the offset credit account annually. b. The offset credit account shall maintain a minimum of 4,500 tons of carbon dioxide credits unless the Department determines that based on the calculations conducted in (a) that the balance in the carbon dioxide offset credit account is adequate to cover the estimated future emission of the Mist Resiliency Project over the expected 30-year life span of the NMCS and Miller Station. If the Department determines that based on calculations conducted in (a) that the offset credit account is unlikely to contain adequate credits to offset the Mist Resiliency Project carbon dioxide emissions over the estimated 30-year life, the certificate holder shall replenish the offset credit account. The certificate holder

	shall replenish the offset credit account equivalent to the full amount of the estimated future excess emissions. The Department shall estimate excess emissions for the remaining period of the deemed 30-year life of the Mist Resiliency Project, based on the average annual excess carbon dioxide emissions in the prior three years. The Department shall calculate the estimated future excess emissions of the new compressors and notify the site certificate holder of the amount of payment required, using the monetary path offset rate as described in (c) below. c. For any additional future payments related to the carbon dioxide offset credit account as described in this condition, the carbon dioxide offset rate of $~~4.27~~ 6.40 shall be adjusted for inflation to present value from the date the Council issues the Final Order for Amendment 13, using the US Gross Domestic Product Implicit Price Deflator, as published by the US Department of Commerce, Bureau of Economic Analysis, or any successor agency. d. The Department shall calculate and the certificate holder shall pay additional contracting and selection funds to the qualified organization pursuant to Carbon Dioxide Emissions Condition 2(a). e. The certificate holder shall remit payment of the additional monetary path payment requirement to replenish the offset credit account to The Climate Trust or other qualified organization (as defined in OAR 345-024-0720) within 30 days after notification by the Department of the amount that the certificate holder owes. f. The two engine-driven compressors operated at the North Mist Compressor Station and the three compressors located at Miller Station, as part of the Mist Resiliency Project, shall be fueled solely with pipeline quality natural gas or with synthetic gas with a carbon content per million Btu no greater than pipeline quality natural gas. The department shall use a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel to calculate carbon dioxide emissions. [Carbon Dioxide Emissions Condition 3; Final Order on AMD13]

SUCCESSORS AND ASSIGNS

This agreement is binding upon NWN and any co-owners, partners or joint venturers of NWN in the construction and operation of the surface facilities, and any related or supporting facilities, to the underground storage facility ~~and related and supporting facilities~~ and upon any successors in interest to or assignees of either NWN or any co-owner, partner or joint venturer.

IN WITNESS WHEREOF, this Site Certificate Agreement has been executed by the State of Oregon, acting by and through its Energy Facility Siting Council, and Northwest Natural Gas Company as below subscribed on this ~~22nd~~ XXday of ~~September, 2017~~XX.

Energy Facility Siting Council

By: _____ Date: _____
XXXX, EFSC Chair

Northwest Natural Gas Company

By: _____ Date: _____
Northwest Natural Gas Company

APPENDIX 1: Map of Bruer-Flora Storage Area and Miller Station
APPENDIX 2: Map of Calvin Creek Storage Area
APPENDIX 3: Map of North Mist Expansion Project Area
APPENDIX 4: Oregon Department of Fish and Wildlife Fish Screen Criteria, Section 11 of "Anadromous Salmonid Passage Facility Design," NMFS July 2011.

Attachment B:

B-1: Reviewing Agency Comments on preliminary Request for Amendment 13

B-2: Public Comments Received on Request for Amendment 13 and Draft Proposed Order

B-3: Certificate Holder's Responses to Comments

B-4: Haley-Aldrich Technical Memo and Review of American Aquifers Comments

Attachment B-1: Reviewing Agency Comments on preliminary Request for Amendment 13

Comment Index: Reviewing Agency Coordination on Mist preliminary RFA13

Agency	Standard(s)	Date	Summary
Oregon Department of Geology and Mineral Industries (DOGAMI)	Structural	9/21/23	ODOE call notes from coord call with DOGAM and certificate holder on plans to submit preliminary amendment request.
Oregon Department of Environmental Quality (DEQ)	Organizational Expertise – Required permits.	3/14/2024	DEQ email comment on the Air Contaminant Discharge Permit (ACDP) modification application and approval.
Oregon Department of Fish and Wildlife (ODFW)	Fish & Wildlife Habitat	5/8/24	ODFW comment summary of coordination call on habitat categories, RFA13 impacts, and proposed avoidance and mitigation measures, HMP and eval of possible HMA.
ODFW	Fish & Wildlife Habitat	6/13/24	ODOE notes from site visit with ODFW re: wetlands avoidance measures, RFA13 potential impacts to habitat.
Columbia County/SAG	Land Use, Public Services, Permits	5/2/24, 5/10/24,	ODOE Notes from coordination with Columbia County and Email from County

NWN Mist Underground Natural Gas Storage

- Develop three existing reservoirs – I/W pipelines and well pad development – throughput will not change
- Newton wellpad – on totally undeveloped land
- Landslide and seismic hazards
    -

Seismic Hazards Assessment

- Methodology and Scope
    - Evaluating seismic hazards for wellpads, compressor station, pipelines
        - Looked at mapped faults
        - Reviewed LiDAR
        - List of recorded earthquakes within 50-miles of site
        - Evaluated contributing earthquake sources using USGS hazards mapping tool – evaluated peak ground acceleration
        - Liquefaction and lateral spreading – earthquake induced landslides
- Site specific Geotech work (RFA phase)
    - Compressor and Miller Station – most affected by seismic hazards – borings have been drilled – areas receiving special treatment for ground shaking and seismic design criteria
    - Downhole seismic testing
    - Most of pipelines – taken the mid points – ground shaking isn't much of a concern – fault rupture is more of a concern
- Site specific Geotech work (precon)
    - Doing all work during permitting

Geology Hazards Assessment

- Methodology and Scope
    - Landslides, flooding (small portion of power line), fault rupture, seismically induced landslides, liquefaction and subsidence, steep slopes, groundwater (Nehalum river valley near powerline – in shallow trenches) – DOGAMI – does seismic analysis take into account difference between local fault ruptures and Cascadia
        - Yes – Cascadia is a contributer/included in hazard tool – being considered in compressor
    - Tsunami and volcanic hazards – not applicable > but co-seismic subsidence
    - Known landslides nearby – drilled many borings – 4 borings at proposed compressor station location
    - Relic landslide near proposed compressor station – mitigated via grading
    - DOGAMI – are you looking at the area for any other slide type features- yes, we've done site specific recon/SLIDO review
    - OGDC (Pittsburgh bluff and scappoose – landslide deposits – but better, more granular mapping), SLIDO, oil and gas investigation geologic mapping, public reports and unpublished master theses, geoengineers reports in the area

    - LiDAR and slope steepness maps – reviewing topographic maps – followed up with site reconnaissance mapped all the pipeline routes
    - Landslides – desktop review, used LiDAR and completed their own mapping; Lingren creek landslide
- Site specific Geotech work (RFA phase)
    - Borings – when we drilled borings, we got through fill – didn't notice any shear zones
    - Reviewing reports for NMCS
    - Site reconnaissance – landslides and soils
        - Landslide near Newton well pad – relic landslide mapped by DOGAMI; NWN agrees with it – NWN routed away from it – routing pipeline to follow fall line of the slope – walked all the pipeline routes – pipelines will be on inside of the route – they are all cut/fill roads
        - Surface indications and localized instability – pipelines go along the head of a drainage –
        - Observed outcrops and road cuts for soils – inform soils reporting – outcrops are sparse, limited to road cuts
    -
- Site specific Geotech work (precon)
    - No borings needed to evaluate landslides
    - May need to be some Geotech work – grading for well pads – when grading plans are developed, we will do borings depending on how high cut and fill slopes need to be – provide a Geotech report for grading, cut/fill slope, gradients
    - Newton/Stegasuar – planning on putting together Geotech for pipeline on slopes – best pipeline construction – benching the slope – installing on native fill – restore slope to preexisting topographic conditions
    - Erosion control recommendations

<u>Soil-Related Hazards Assessment</u>

- Methodology and Scope
    - Based on NRCS mapping and Columbia County soil mapping – to inform run-off and erosion potential – very hazardous for erosion – wind erosion not much of a concern, but water erosion is going to be a hazard
    - Looked at land use – erosion – site specific ESCP > site specific ESCP through Geotech
    - Add waddles – seeding and mulching – ESCP and BMPs, CECIL monitor will be onsite

- Site specific Geotech work (RFA phase)
- Site specific Geotech work (precon)

Site Specific Geotech Work
- 4 borings, 2 at 100 feet, 2 at 60 fet
- Downhole seismic testing
- Eletrical resistivity testing
- Lab testing for soil classification and corrision resistant design

For HDD – 2 borings on either side of the creek – 300-500 HDD – unsure where the alluvial material is – borings are deeper than normal – but need to know if we are going into the rock

- Develop an HDD Plan and Profile – design an HDD Plan with construction notes – analyze hydraulic
- Hydraulic – frac outs – its normal to have a frac out – design profile – limit risk – situating profile – back from sensitive features – setback much more than 100 feet – monitoring downhole pressure, following the profile – do their best to minimize impacts to creeks and streams
    - 3 main contractors – NWN is pretty selective – based

- Pipelines on inboard of the road – might require cutting into cut slopes of logging road – once construction corridor is figured out – depending on slope height – may need to go back and do site specific Geotech work – develop recommendations for cut/slope – logging road – its not like it's a highway > if there is going to be significant cut and then put it back, we need to quantitative stability analysis and not cause significant impact to operations

- Increasing depth of borings in a few sections to get into rock – are you trying to go deeper into meicine sandstone or better rock – it is a function of HDD – when you are drilling HDD – your HDD profile when it curves to straighten out – if you are hitting contact where its curving, drill but bounces off – straight entry tangent – stable enough to keep the hole open

- RQD – rock quality designation

-

ESTERSON Sarah * ODOE

From: Sarah.ESTERSON@energy.oregon.gov
Subject: NW Natural - North Mist Station (ACDP No. 05-0026-ST-01)

From: WOZAB Stephen * DEQ <Stephen.WOZAB@deq.oregon.gov>
Sent: Thursday, March 14, 2024 2:27 PM
To: ESTERSON Sarah * ODOE <Sarah.ESTERSON@energy.oregon.gov>; 'Bauer, Andrew' <Andrew.Bauer@nwnatural.com>
Cc: Laurel Peterson <lpeterson@slrconsulting.com>; ALEXANDER Joshua * DEQ <Joshua.ALEXANDER@deq.oregon.gov>
Subject: NW Natural - North Mist Station (ACDP No. 05-0026-ST-01)

Hello Sarah,

I am writing to confirm that ODEQ is working with Northwest Natural Gas regarding the proposed installation of new equipment that will emit regulated air pollutants at their North Mist Station. To date, the facility has submitted a draft of their modeling protocol related to short-term NAAQS emissions, which ODEQ has returned with comment. Northwest Natural has communicated they will submit their application for permit modification once they've received final approval of their modeling protocol. If you require any further information from us, please do not hesitate to contact me.

Thanks,

Stephen Wozab (he/him/his)
Air Permit Writer | NW Region

Oregon Department of Environmental Quality
700 NE Multnomah St, Suite 600
Portland, OR 97232

Cell/Primary: (971) 303-6575

Oregon Department of Energy's Review of Mist Underground Natural Gas Storage Facility,
Preliminary Request for Amendment 13:

Consultation Summary with Columbia County Planning Department

May 15, 2024 Agenda

- Introductions
    - Spencer Parson, County Counsel, Sr Assistant Counsel
    - Jamie Viveiros
    - Suzie, Land Developments Director
    - Deb, Sr Planner

- EFSC Process Overview

- Mist Amendment 13 Details

- ODOE Review Request for Columbia County (see next page)

Regulatory Overview: The Oregon Department of Energy (Department) act as staff to the Energy Facility Siting Council (EFSC). EFSC issues and enforces site certificates for utility-scale energy facilities. EFSC has established rules and statutes which govern the permitting process for utility-scale energy facilities. EFSC has adopted OAR 345-022-0030, *Land Use*, a standard that utility-scale energy facility developers must comply with, which is designed to ensure that the design, construction, operation and retirement of an energy facility complies with the statewide planning goal adopted by the Land Conservation and Development Commission. To make this finding, the Land Use standard states, in part, the following:

> *(b) The applicant elects to obtain a Council determination under ORS 469.504(1)(b) and the Council determines that:*
>
> *(A)* ***The proposed facility complies with applicable substantive criteria as described in section (3)*** *and the facility complies with any Land Conservation and Development Commission administrative rules and goals and any land use statutes directly applicable to the facility under ORS 197.646(3);*
>
> *(B) For a proposed facility that does not comply with one or more of the applicable substantive criteria as described in section (3), the facility otherwise complies with the statewide planning goals or an exception to any applicable statewide planning goal is justified under section (4); or*
>
> *(3) As used in this rule, the* ***"applicable substantive criteria" are criteria from the affected local government's acknowledged comprehensive plan and land use ordinances that are required by the statewide planning goals and that are in effect on the date the applicant submits the application****. If the special advisory group recommends applicable substantive criteria, as described under OAR 345-021-0050, the Council shall apply them. If the special advisory group does not recommend applicable substantive criteria, the Council shall decide either to make its own determination of the applicable substantive criteria and apply them or to evaluate the proposed facility against the statewide planning goals.*

Columbia County Board of Commissioners was appointed by EFSC in March 1981 as the Special Advisory Group (SAG) for proceedings related to the Mist Underground Natural Gas Storage Facility. ODOE can accept comments from the Planning Department if BOC concurs that Planning Department can comment on their behalf. Otherwise, we can accept comments from Planning Department separately from the BOC.

Approved Facility Overview (In Operations)

- Surface facility to underground natural gas storage reservoirs (includes compressor stations, pipelines and O&M facilities).
- 5,472 acre site boundary
- 635 MMscf/day throughput max

Amendment Request (scope of review)

- Proposed Changes Are Located in Primary Forest and Resource Industrial Zones
    - And within overlay zones: Flood Hazard and Riparian Corridors, Wetlands, Water Quality and Fish and Wildlife Habitat Protection
- Construct injection/withdrawal wells
- Install 3 new natural gas fired compressors
- Install 2 replacement natural gas fired compressors
- Install underground collector line
- Construction new Control and Operations Bldg
- Prep and utilize 4 temp (1 to then be permanent) laydown areas

ODOE: Columbia County Consultation Notes/Questions

- Confirm current Zoning Ordinance
    - August 2023
- Does the County have maps available for overlay zones?
- Confirm applicable substantive criteria (see table below – seeking confirmation that these provisions are correct/apply to the changes proposed)
    - Use within Forest Zone: 505.2 (Exploring, mining and processing of oil, gas or other subsurface resources..) – agree?
- Confirm whether Columbia County has any historic or recent CUPs ODOE could rely on as examples for findings/conditions – for consistency -
- Any concerns?
    - Local criteria – acknowledged comp. plan > apply goals through the regulation
    - CUP Application; Site Design Review
    - Columbia County SW and Erosion Control Ordinance; Site Development Permit
    - Do we have an IAA with Columbia County?
    - Scion Lumber – maybe an example application/CUP -

Applicable Substantive Criteria

Columbia County Zoning Ordinance	
Article III – Resource Districts	
Section 500	Primary Forest Zone
Section 505	Conditional Uses
Section 507	Siting of Dwellings and Structures
Section 508	General Review Standards
Section 509	Standards for Development
Article IV – Rural Development Districts	
Section 680	Resource Industrial – Planned Development
Section 683	Uses Permitted Under Prescribed Conditions
Section 685	Standards
Article VI – Special Districts, Overlay Districts and Special Provisions	
Section 1100	Flood Hazard Overlay
Section 1170	Riparian Corridors, Wetlands, Water Quality, and Fish and Wildlife Habitat Protection Overlay Zone
Section 1190	Big Game Habitat Overlay
Article VII – Discretionary Permits	
Section 1503	Conditional Uses
Section 1550	Site Design Review
Columbia County Comprehensive Plan	
Part II: Citizen Involvement Part IV: Forest Lands Part V: Agriculture Part X: Economy Part XIII: Transportation Part XIV: Public Facilities and Services Part XV: Energy conservation Part XVI: Goal 5: Open Space, Scenic and Historic Areas, and Natural Areas Part XVIII: Air, Land, and Water quality	

ESTERSON Sarah * ODOE

From: Sarah.ESTERSON@energy.oregon.gov
Subject: Columbia County Evaluation of Zones within RFA13 Analysis Area
Attachments: First Round Tax Lot Research 8.9.2024.xlsx

From: Jack Niedermeyer <Jack.Niedermeyer@columbiacountyor.gov>
Sent: Friday, August 9, 2024 12:59 PM
To: ESTERSON Sarah * ODOE <Sarah.ESTERSON@energy.oregon.gov>
Cc: Planning Department.UserGroup <planning@columbiacountyor.gov>
Subject: First Round of Research - Mist Underground Natural Gas Storage Facility

Hi Sarah,

Attached is an excel file containing our research on the 116 Tax Lots you provided us with. Please let us know if this if you have any additional questions.

Have a great weekend!

Jack Niedermeyer
Assistant Planner
Phone: 503-397-7217
Web: www.columbiacountyor.gov
Email: jack.niedermeyer@columbiacountyor.gov
445 Port Avenue, St. Helens, OR 97051

Map and Taxlot	Account Number	Property Size(Acres)	Zone	Lot/Parcel Created	Use Permitted/ Conditional/ Not Permitted	Flood Hazard Overlay	Wetlands	Big Game Habitat	Review Required (Ex: CU, DR, etc.)	CCZO Sections Referenced
7406-00-01400	26920	59.62 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7407-00-01000	26928	73.09 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7407-00-01001	26929	4.20 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7407-00-01100	26930	49.36 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7407-00-01600	26936	24.23 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7407-00-01703	26940	28.91 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7501-00-02702	27313	68.44 ac	PF-80		CUP/PC	No	Yes	No	CU, Type 2 DR	500, 1100, 1170, 1503, 1550
7501-00-02700	27312	11.23 ac	PF-80		CUP/PC	No	Yes	No	CU, Type 2 DR	500, 1100, 1170, 1503, 1550
7501-00-02600	27311	1.11 ac	PF-80		CUP/PC	No	Yes	No	CU, Type 2 DR	500, 1100, 1170, 1503, 1550
7501-00-02500	27310	9.07 ac	PF-80		CUP/PC	No	Yes	No	CU, Type 2 DR	500, 1100, 1170, 1503, 1550
7501-00-02400	27309	12.78 ac	PF-80		CUP/PC	No	No	No	CU, Type 2 DR	500, 1100, 1503, 1550
7512-00-00100	27528	120.00 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7512-00-00600	26370	17.90 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7512-00-00500	27532	9.77 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7512-00-00200	27529	81.23 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7512-00-00300	27530	59.71 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7512-00-00202	441416	16.45 ac	RIPD		NOT PERMITTED	No	Yes	Yes	N/A	
7512-00-00401	27531	18.07 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
7512-00-00201	26368	66.38 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
7512-00-00400	26369	180.13 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7511-00-00600	26364	183.48 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7511-00-00601	26365	85.10 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-01500	26351	158.68 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-01300	25524	1,343.64 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-02200	25527	682.29 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-02800	25534	42.34 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-03000	25536	287.40 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-03100	25537	80.99 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-04900	25548	41.14 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-04800	25547	82.09 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-04700	25546	325.57 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-04701	437295	6.70 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
7500-00-05000	25549	290.55 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-04500	25544	629.69 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-03600	26397	11.01 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
7500-00-03500	26396	166.84 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7536-B0-00900	26415	18.45 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7536-B0-01000	26416	12.85 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
7500-00-02900	25535	83.55 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-02501	25531	39.08 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-02600	25532	10.51 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-02500	25530	439.34 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100,1170, 1190, 1503, 1550
7500-00-04600	25545	42.35 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-05100	25550	163.54 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-05300	25552	123.52 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-05200	25551	33.49 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7532-00-00100	25553	174.47 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100,1170, 1190, 1503, 1550
7532-00-01300	25564	74.53 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100,1170, 1190, 1503, 1550
7532-00-01400	25565	7.44 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7532-00-01500	25566	7.62 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-00100	25089	146.58 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-00600	25096	61.05 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-00700	25097	915.14 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-00300	25091	160.00 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-00200	25090	423.78 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-02500	25124	465.21 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-02502	25127	2.56 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
6500-00-02501	29705	12.23 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
6500-00-02700	25129	80.00 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550

Map and Taxlot	Account Number	Property Size(Acres)	Zone	Lot/Parcel Created	Use Permitted/ Conditional/ Not Permitted	Flood Hazard Overlay	Wetlands	Big Game Habitat	Review Required (Ex: CU, DR, etc.)	CCZO Sections Referenced
6500-00-02600	25128	160.00 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
6500-00-02800	25131	60.00 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100,1170, 1190, 1503, 1550
6509-00-00400	25324	117.85 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100,1170, 1190, 1503, 1550
6510-00-00100	25327	300.00 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6510-00-00200	25329	14.60 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100,1170, 1190, 1503, 1550
6510-00-00400	29720	0.53 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100,1170, 1190, 1503, 1550
6515-00-00400	25396	6.38 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6516-00-00100	25404	325.02 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6515-00-00700	25398	94.56 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100,1170, 1190, 1503, 1550
6515-00-00802	29726	17.90 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100,1170, 1190, 1503, 1550
6515-00-00803	29727	19.16 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6515-00-00801	25402	10.02 ac	PF-80		CUP/PC	Yes	No	Yes	CU, Type 2 DR, FPDP	500, 1100, 1190, 1503, 1550
6515-00-00800	25400	86.56 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6515-00-00100	25390	82.25 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6515-00-00500	25397	2.56 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6515-00-00300	25395	15.40 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6515-00-00202	25394	34.11 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6514-00-00100	25373	101.76 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6514-00-00401	25377	43.20 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6514-00-00400	25376	96.80 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6514-00-00200	25374	57.00 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
6514-00-00300	25375	4.70 ac	PA-80		CUP?PC	Yes	No	Yes	CU, Type 2 DR,FPDP	300,1100,1190, 1503,1550
6514-00-00801	25384	17.92 ac	PA-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR,FPDP	300, 1100, 1170, 1190, 1503. 1550
6514-00-00806	25388	6.97 ac	PA-80		CUP?PC	Yes	Yes	Yes	CU, TYPE 2 DR FPDP	300. 1100, 1170, 1190, 1503, 1550
6515-00-00900	25403	1.20 ac	PF-80		CUP/PC	Yes	No	Yes	CU, Type 2 DR, FPDP	500, 1100, 1190, 1503, 1550
6515-00-00201	25393	0.99 ac	PF-80		CUP/PC	Yes	No	Yes	CU, Type 2 DR, FPDP	500, 1100, 1190, 1503, 1550
6514-00-00900	25389	24.79 ac	PA-80		CUP?PC	Yes	Yes	Yes	CU, TYPE 2 DR FPDP	300, 1100, 1170,1190, 1503, 1550
6514-00-00903	434108	6.07 ac	PA-80		CUP?PC	Yes	Yes	Yes	CU,TYPR 2 DR FPDP	300. 1100,1170,1190,1503,1550
6514-00-00700	25383	83.61 ac	PA-80		CUP?PC	Yes	Yes	Yes	CU, TYPE 2 DR FPDP	30,011,001,170,119,000,000,000
6515-00-00200	25391	41.90 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6523-00-00400	25467	81.18 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6523-00-00500	25468	111.69 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6500-00-04600	25153	80.00 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
7500-00-04300	25542	120.31 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
7500-00-04400	25543	42.57 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6501-00-00200	25182	70.20 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6501-00-00700	25188	80.00 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-03100	25134	40.00 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
6500-00-03200	25135	40.00 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-03300	25136	160.00 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-03000	25133	35.00 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6500-00-02900	25132	65.00 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6513-00-00300	25336	160.00 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6513-C0-00101	25346	67.16 ac	PF-80		CUP/PC	No	No	Yes	CU, Type 2 DR	500, 1190, 1503, 1550
6513-C0-00100	25345	24.75 ac	RR-5		NOT PERMITED	Yes	Yes	Yes	N/A	
6514-00-00501	25379	19.40 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6514-00-00500	25378	15.58 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6514-00-00502	25380	10.11 ac	PF-80		CUP/PC	No	Yes	Yes	CU, Type 2 DR	500, 1170, 1190, 1503, 1550
6514-00-00503	25381	5.26 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6513-CC-01900	25362	0.03 ac	RC		CUP/PC Goal Exception OAR 660-04-022(3)(a)	Yes	Yes	Yes	CU, TPE 2 DR FPDP	650, 1100,01170,1190,1503,1550
6524-00-00302	25475	4.12 ac	RC		CUP/PC Goal Eception OAR 660-04-022(3)(a)	No	Yes	Yes	CU,, TYPE 2 DR FPDP	650, 1100, 1170, 1190, 1503, 1550
6523-00-00100	25459	1.40 ac	EC		NOT PERMITTED	Yes	Yes	Yes	N/A	
6524-00-00400	29736	1.60 ac	CS-U		NOT PERMITED	Yes	Yes	Yes	N/A	
6524-00-00300	25473	20.00 ac	RR-5		NOT PERMITTED	No	Yes	Yes	N/A	
6523-00-00202	25464	52.03 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6523-00-00200	25460	5.70 ac	PF-80		CUP/PC	Yes	Yes	Yes	CU, Type 2 DR, FPDP	500, 1100, 1170, 1190, 1503, 1550
6514-00-00803	25386	3.38 ac	PA-80		CUP/PC	Yes	Yes	Yes	CU, TYPE 2 DR, FPDP	300, 1100,1170,1190,1503,1550

Map and Taxlot	Account Number	Property Size(Acres)	Zone	Lot/Parcel Created	Use Permitted/ Conditional/ Not Permitted	Flood Hazard Overlay	Wetlands	Big Game Habitat	Review Required (Ex: CU, DR, etc.)	CCZO Sections Referenced

Note: Any lot/parcel created after 1975 may not be a legal lot of record; required for any development/building permits.

ODFW and ODOE Coordination on
Review of Mist Underground Natural Gas Storage Facility, Preliminary Request for Amendment 13

Call Summary – May 8, 2024

Facility Name: Mist Underground Natural Gas Storage Facility
Facility Location: North Columbia County, approx. 9 miles southwest of Clatskanie and 5 miles northwest of Mist
Estimated impacts from proposed changes:

Permanent: Category 3 - 26.9 acres (upland forest and woodlands)
Temporary: Category 3 - 33 acres; Category 4 - 19 acres
Temporal: Category 3 – 27.8 acres (upland forest and woodlands)

Surveys Completed: Botanical and Biological (habitat) – single olive-sided flycatcher observed; one unique feature observed (quarry with standing water) (will send you the Bio Survey Report in a separate email due to file size)

ODFW Comments

- Please describe temporary impacts to forest/woodlands. The extent of impacts will inform if these should be considered temporary/temporal (with a mitigation obligation within the HMA) or if the impacts are more appropriately considered permanent.
- Impacts to ephemeral streams and riparian areas associated with the laydown area should be avoided. Provide an explanation as to why this is or is not possible.
- ODFW agrees with the preconstruction and avoidance measures described in RFA13 Exhibit Q for Howell's montia; and recommends that sediment fencing be used with flagging to ensure protection of the plants during construction activities.
- Similar to ODFW recommendations on AMD11, it is recommended that NWN obtain a Capture, Hold and Transfer (CHTR) permit for the project.

ODOE and ODFW Comments
Habitat Mitigation Plan

- Figure of potential/proposed HMA location is attached.
    - There is nothing provided that confirms the availability of this land for mitigation. We will request a landowner letter that confirms an understanding of the project and potential use as an HMA.
    - The HMA is within the site boundary – it is not clear how many acres are available for mitigation outside of the site boundary.
- Plan describes that a desktop evaluation of the HMA was done, but the desktop evaluation did not provide any assurance on the enhancement actions as they are 100% noncommittal (noxious weed treatment if needed and may implement selective logging). ODOE and ODFW request a preliminary or actual habitat assessment to evaluate the suitability of the proposed HMA for what they have proposed and to evaluate if there are other/better actions? Does ODFW have other ideas at this time about effective enhancement that could be done at the HMA?
    - More details need to be provided on the proposed enhancement of selective logging. What does it mean?

    - At a prior meeting with ODFW, NWN/Tetra Tech described actions at the HMA that are not included in the draft HMP (reshaping quarry – re-establishing the ground > soil placement). Please include these details in the draft HMP.
    - More uplift actions
- The plan offers a promise to secure a legal mechanism prior to construction. We request that the legal mechanism be provided now in draft form so that there is no question in the future about what the legal mechanism needs to say/do
- This plan does not address the approx. 27 acres of temporal impacts for Cat 3 upland forestlands. It needs to – and may need to consider that the impacts are actually permanent and offer adequate mitigation acres and enhancement actions, based on Category 3 and 4 mitigation goals.

<u>Restoration of Temporary Impacts Plan</u>

- This plan defers restoration to the 1200-C ESCP, with 1-year of post-construction monitoring. Is this acceptable for the approx. 41 acres of Cat 3/4 upland forest/woodland? We do not agree. Please provide a revegetation plan for the temporary habitat acres that ensure habitat restoration.

<u>Noxious Weed Control</u>

- The Restoration of Temporary Impacts Plan simply states that "any noxious weed will be removed".. We will be requesting that a plan be developed that covers predisturbance treatment, and both short- and long-term monitoring and treatment.

Mist Amd 13 ODFW Recommendations

WOODS Ash * ODOE <Ash.WOODS@energy.oregon.gov>

Thu 6/13/2024 3:16 PM

To:SLOAN Kathleen * ODOE <Kathleen.SLOAN@energy.oregon.gov>
Cc:ESTERSON Sarah * ODOE <Sarah.ESTERSON@energy.oregon.gov>

Hi Kate,

I met with ODFW yesterday to finalize recommendations on the Mist Amd 13 based on our site visit. Notes are below.

- Wetland and stream in the Bark N Haul laydown yard along Hwy 202 should be flagged for avoidance during construction as they are in a high traffic area. The wetland already has a couple track marks through it. (Figure J-2.9 of Ex. J)
- During the site visit NWN confirmed wetlands mapped along the southern pipeline alignment can be avoided via boring. They said the decision of avoidance vs impact is not engineering related it's just a cost consideration. They confirmed they are prepared to bore beneath those wetlands if required by ODOE. (Figures J-2.6 and J-2.7)
    - Recommend avoidance as the alternative is excavating part of the wetland which permanently disrupts the hydrology, despite their plan to put the hydric soils back in afterward.
- Wetland mapped at the laydown yard along Hwy 202 is slightly downslope and directly adjacent to the area they plan to put geotech and gravel on during construction. They should install a silt fence around it to protect it from sedimentation, gravel, etc. during construction. (Figure J-2.10)
- NWN expects all forested temporary impact areas to be logged prior to construction, avoiding temporal habitat impacts. However, if tree clearing is required in temporary impact areas ODFW will consider temporal impacts based on stand age. If the removed trees are already at the age where they would have been logged in the next 5 years then there is no temporal impact. If trees are too young to be logged at the time of removal then a 0.5:1 mitigation ratio will be applied to compensate for the temporal loss of forest habitat.
    - NWN plans to have a pre-construction survey conducted to true-up habitat conditions as they expect logging activities to change habitat conditions at the site before construction begins.

We also discussed revisions to the Reveg plan, Noxious Weed plan, and HMP during the site visit. Let me know if you want me to review those changes in the revised versions they just sent over.

Thanks!

OREGON DEPARTMENT OF ENERGY

Ash Woods
Siting Compliance Officer
She/her
550 Capitol St. NE | Salem, OR 97301
M: 503-339-5289
P (In Oregon): 800-221-8035

Stay connected!

Attachment B-2: Public Comments Received on Request for Amendment 13 and Draft Proposed Order during Public Comment Period

B-2a: Copies of Written Public Comments Received

B-2b: Summary of Oral Comments Received at Public Hearing

Attachment B-2a: Comment Index: Written Public Comments Received on Draft Proposed Order

(August 15, 2024 – September 19, 2024)

Comment Number	Name of Commenter	Organization	Date
1	Sue Craig	Oregon UU Voices for Justice	8/15/2024
2	Audrey Leonard	Columbia Riverkeeper	8/28/2024
3	Samuel Semerjian	Public	9/16/2024
4a, 4b & 5	Maria Gibson	American Aquifers	9/19/2024
6	Dan Schatz	Public	9/19/2024
7	Liz Becker	Public	9/19/2024
8	Nickie Schatz	Public	9/19/2024
9a, 9b	Cole Souder & Others	Green Energy Institute, Columbia Riverkeeper, Sierra Club, Breach Collective, and Northwest Environmental Defense Center	9/19/2024
10	Chief Joe Kaczenski	Mist-Birkenfeld Rural Fire Protection District	9/19/2024

New Public Comment submitted for project : RFA13 and DPO for Mist Underground Natural Gas Storage Facility

ODOE ITService * ODOE <ODOE.ITService@oregon.gov>

Thu 8/15/2024 4:23 PM

To:SLOAN Kathleen * ODOE <Kathleen.SLOAN@energy.oregon.gov>

Organization: Oregon UU Voices for Justice
Submitted by: Sue Craig
Email: sueacraig@gmail.com
Zip Code: 97402

Siting Project Phase: *DPO*

Comment Summary:

We must STOP the use of this very unnatural gas. It is harming our atmosphere and our future. North West NG must go into another type of business, and stop harming us. My state, and it's agencies must help every way possible to stop the use of this gas.

Please Click on the following link to view the full Comment Details

Comment Summary

We must STOP the use of this very unnatural gas. It is harming our atmosphere and our future. North West NG must go into another type of business, and stop harming us. My state, and it's agencies must help every way possible to stop the use of this gas.

Comment Date

source

Select email portal manual

Siting Project Phase

Select EXEMPTION REQUEST NOI DPO CC FORMAL RULEMAKING INFORMAL RULEMAKING AMD-A AMD-B

Comment Details

Application for Site Certificate (ASC) Exhibit

Select Exhibit A - Applicant and Participating Persons Exhibit B - Proposed Facility Description Exhibit C - Proposed Facility Location Exhibit D - Organizational Expertise Exhibit E - Permits Required Exhibit F - Adjacent Property Owners Exhibit G - Materials Analysis Exhibit H - Geological and Soil Stability Exhibit I - Soil Conditions Exhibit J - Wetlands and other Jurisdictional Waters Exhibit K - Land Use Exhibit L - Protected Areas Exhibit M - Financial Capability Exhibit N - Non-Generating Facility Need Exhibit O - Water Use Exhibit P - Fish and Wildlife Habitat Exhibit Q - Threatened and Endangered Plant and Animal Species Exhibit R - Scenic Resources Exhibit S - Historic Cultural and Archaeological Resources Exhibit T - Recreation Opportunities Exhibit U - Public Services Exhibit V - Waste Minimization Exhibit W - Site Restoration Exhibit X - Noise Exhibit Y - Carbon Dioxide Emissions Exhibit Z - Evaporative Cooling Tower Exhibit AA - Electric Transmission Line EMFs Exhibit BB - Other Requested Information Exhibit CC - Applicable Statutes, Rules, Ordinances Exhibit DD - Specific Requirements

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Page Number(s)

Council Standards

Comment

My Organization is a Religious organization. We believe in the interconnected web of all life. So this includes soil protection, Air quality, all land use, and the problem of the use of this gas in homes for heating and cooking. It causes many folks to experiance asthma.
So any refitting, building future collection/holding of this gas for potential use in homes will cause significant problems for our planet and our people.

If your agency is not involved with decreasing our carbon output, as worked on by our Gov. and Legilature, it should be.

Thank you, Sue Craig. President, Oregon UU Voices for Justice

Attachments

No files were attached.

Mist DPO: comment period extension request

Audrey Leonard <audrey@columbiariverkeeper.org>

Wed 8/28/2024 9:54 AM

To:Energy Siting * ODOE <energy.siting@oregon.gov>;SLOAN Kathleen * ODOE <kathleen.sloan@energy.oregon.gov>

1 attachments (121 KB)

Mist Amendment, extension request.pdf;

You don't often get email from audrey@columbiariverkeeper.org. Learn why this is important

Kathleen,

Please find the attached request for a comment period extension on the Mist Amendment 13 draft proposed order, on behalf of Columbia Riverkeeper. Thank you for your consideration.

Best,
Audrey

--

Audrey Leonard *(she/her)* | Staff Attorney | Columbia Riverkeeper | 1125 SE Madison St #102, Portland, OR 97214 | 541.399.4775

New Newsletter: Read it now! Get inspired and learn how Columbia Riverkeeper is rising to the challenge with the latest issue of "Currents"

COLUMBIA RIVERKEEPER
P.O. Box 950
Hood River, OR 97031
(541) 387-3030
columbiariverkeeper.org

August 28, 2024

Oregon Department of Energy
Attn: Energy Facility Siting
550 Capitol Street NE
Salem, OR 97301

Sent via email to: energy.siting@oregon.gov; kathleen.sloan@energy.oregon.gov

Re: Request for Comment Period Extension on NWN Mist Amendment

Dear Kathleen:

Thank you for holding a public comment period on the Draft Proposed Order for the Mist Underground Natural Gas Storage Facility Request for Amendment 13 (Amendment). Columbia Riverkeeper respectfully requests a 30-day extension of the public comment period.

Columbia Riverkeeper's mission is to protect and restore the water quality of the Columbia River and all life connected to it, from the headwaters to the Pacific Ocean. Riverkeeper has over 16,000 members and supporters in Oregon and Washington and regularly comments on decisions impacting water quality, climate, and salmon habitat in the Columbia River, including near Mist, Clatskanie, and Port Westward. Columbia Riverkeeper has many members and supporters that live and work in the region affected by the Amendment.

An extension is warranted due to the length and complex nature of the draft proposed order, the site's extensive history, and the number of other permits implicated by the Amendment. Because the projects involved in this Amendment require additional permits and have various conditions that must be met before construction, allowing more time for public comment will not be burdensome for the applicant. Additionally, the current timeline falls during a season where many individuals (including agency staff) are taking much needed vacation. It is in the public interest, as well as the agency's, to provide additional time for thoughtful comments on this Amendment.

Thank you for considering Columbia Riverkeeper's request for a 30-day extension of the public comment period for the Amendment.

Sincerely,

Audrey Leonard
Staff Attorney, Columbia Riverkeeper

Outlook

FW: Amendment 13 Public Comment

From Energy Siting * ODOE <Energy.SITING@energy.oregon.gov>
Date Tue 9/17/2024 8:08 AM
To SLOAN Kathleen * ODOE <Kathleen.SLOAN@energy.oregon.gov>

1 attachments (42 KB)
ODOE Public Comment.pdf;

From: Eleonora Kostanian-Semerjian <semerjians@gmail.com>
Sent: Monday, September 16, 2024 5:40 PM
To: Energy Siting * ODOE <energy.siting@energy.oregon.gov>
Subject: Amendment 13 Public Comment

You don't often get email from semerjians@gmail.com. Learn why this is important

The attached document is our public comment submission for Amendment 13 in regards to the Mist Underground Natural Gas Storage Facility.

Samuel Semerjian

Hello, my name is Samuel Semerjian and I am a longtime resident of rural north-west Columbia County. As you know our area is the location of Oregon's one and only Mist Gas Field. For many years my family and neighbors have been increasingly concerned with the management of this gas field. Since the 1970s the gas field has been exploited by various companies, currently most active is NW Natural and Enerfin Resources.

In 2014 we were told by our neighbor that a gas well was to be drilled, by Enerfin, just upriver and adjacent to our home. The proximity of which we found to be unsettling and began extensive research on the subject. Throughout the years of attending county meetings, interactions with DOGAMI, and the EPA we are finding a disturbing volume of intimidation, irregularities, and illegal activity. When presenting our concerns during county meetings we were constantly reassured that all drilling activities were done by the book and met all environmental standards. Yet our reasonable skepticism lies in the simple fact that there is no unbiased physical oversight of these gas related projects. No less, had the drilling just been completed when we noticed that the chemically laden drilling sludge had been illegally dumped into an unlined hole in the middle of the field right next to us. Had we not reported this blatant violation we highly doubt anyone would have ever known and certainly not the agencies or local government that are required to keep said oversight. Even more disturbing was the post completion report by Columbia County which referred to the drilling as "exemplary".

The industrial operations in the Mist Gas Field are only increasing in size and volume. Again, from our research we can see that for decades not a single permit or exemption has ever been denied to any gas company by the county or the state. Which is of no surprise considering how many oil and gas professionals are tantamount working for both the agencies approving gas operations and providing so-called oversight. Most interactions with these individuals are met with passive threats where they will reiterate that those of us with mineral rights will be forced to comply. Essentially utilizing the government as leverage to get whatever they want. More and more wells are being drilled and injected and many more are on their way for approval. Yet too many questions are being actively avoided. What is the state of our soil and water, has our aquifer been compromised? A recent draft thesis by American Aquifers is asking these very questions

Currently the Amendment 13 application with DOE is using DOGAMI and Haley-Aldrich to present the environmental assessment of the application.
DOGAMI has a very biased record in this subject. Bob Houston, a previous manager of DOGAMI, now works for Knife River. He was heavily involved in getting Knife River to continue operations in Crook County despite the catastrophic water issues for the locals there. Current DOGAMI board member Tiffany Thomas is an employee of Haley-Aldrich. Previous board member Laura Maffei worked for Cable Huston law firm that also represents Enerfin Resources. Randy L. Jordan did work for DOGAMI and last year joined Haley-Aldrich. With so many DOGAMI employees essentially representing mining companies, is it even possible to get an unbiased and independent environmental assessment?

Last December, a Oregon Court of Appeals judge based on a technicality voided the state's regulation to cap emissions on gas companies. Because they have a federal permit to conduct operations (to pollute). DEQ has failed repeatedly to pursue gas company violations on existing rules. They claim to be understaffed. Why is the state allowing permits issued if DEQ is unable to monitor? The state and the county have an obligation and a requirement to protect its citizens from environmental disasters and the Mist Gas Field is long overdue for independent and fair environmental evaluation and supervision. Recently, we met with representatives of NW Natural on addressing our concerns and they said that they would get back to us — they have not done so. We and other local residents are pursuing such an evaluation on the cumulative effects of prolonged gas related activities on the environment. We simply want to know the truth and will seek it as such.

For these reasons gas related operations should not be expanded and specifically Amendment 13 should not be granted. Until there is an unbiased environmental evaluation and oversight which yields fair and proper stewardship of this land.

Sincerely,
Samuel Semerjian

Outlook

New Public Comment submitted for project : RFA13 and DPO for Mist Underground Natural Gas Storage Facility

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From ODOE ITService * ODOE <ODOE.ITService@oregon.gov>
Date Thu 9/19/2024 1:55 PM
To SLOAN Kathleen * ODOE <Kathleen.SLOAN@energy.oregon.gov>

Organization: American Aquifers
Submitted by: Maria Gibson
Email: m.daugherty@americanaquifers.org
Zip Code:

Siting Project Phase: *DPO*

Comment Summary:

Please Click on the following link to view the full Comment Details

MSTAMD13 DPO Public Comment 4a Maria Gibson 2024-09-19

Comment Summary

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Comment Date

source

Select email portal manual

Siting Project Phase

Select EXEMPTION REQUEST NOI DPO CC FORMAL RULEMAKING INFORMAL RULEMAKING AMD-A AMD-B

Comment Details

Application for Site Certificate (ASC) Exhibit

Select Exhibit A - Applicant and Participating Persons Exhibit B - Proposed Facility Description Exhibit C - Proposed Facility Location Exhibit D - Organizational Expertise Exhibit E - Permits Required Exhibit F - Adjacent Property Owners Exhibit G - Materials Analysis Exhibit H - Geological and Soil Stability Exhibit I - Soil Conditions Exhibit J - Wetlands and other Jurisdictional Waters Exhibit K - Land Use Exhibit L - Protected Areas Exhibit M - Financial Capability Exhibit N - Non-Generating Facility Need Exhibit O - Water Use Exhibit P - Fish and Wildlife Habitat Exhibit Q - Threatened and Endangered Plant and Animal Species Exhibit R - Scenic Resources Exhibit S - Historic Cultural and Archaeological Resources Exhibit T - Recreation Opportunities Exhibit U - Public Services Exhibit V - Waste Minimization Exhibit W - Site Restoration Exhibit X - Noise Exhibit Y - Carbon Dioxide Emissions Exhibit Z - Evaporative Cooling Tower Exhibit AA - Electric Transmission Line EMFs Exhibit BB - Other Requested Information Exhibit CC - Applicable Statutes, Rules, Ordinances Exhibit DD - Specific Requirements

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Page Number(s)

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Council Standards

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Comment

Please submit the public comment in the attached document for pFRA13.

Attachments

4 days ago

Microsoft CRM Portals

Public Comment Amendment 13_pFRA13_AmericanAquifers.docx (10.19 MB)

American Aquifer's Public Comment Requesting Denial of Amendment 13 (pFRA13)

American Aquifers, a 501c3 non-profit located in Oregon designed to support communities reliant upon groundwater, requests the Oregon Department of Energy (DOE) deny amendment 13 (pRFA13). Residents in Columbia County suffer from disproportionately high rates of cancer compared to other counties in the state, yet represent less than 1.3% of the state's population. Residents in Columbia County maintain cancer rates that rank #1 in uterus, lung, bronchus, and melanoma cancers, #2 in female pancreas cancer and leukemia, #4 in brain and esophagus cancer, #5 in female kidney/renal pelvis cancer, #6 in Non-Hodgkin Lymphoma, #7 in oral cavity and pharynx cancer, and #10 in male kidney/renal pelvis cancer. Additionally, a recent study of multiple myeloma shows Columbia County has staggering incidences of this rare, non-curable cancer that accounts for only 10% of all blood cancers. Of the 133 counties that make up the entire west coast, only 12 counties have significantly high rates of myeloma cancer, with Columbia County listed as one of the three in Oregon[1].

Cancer rates in Columbia County cannot be directly attributed to logging operations, which include the spraying of herbicides and are known carcinogens. A total of 47% of land in Oregon is forested. Tillamook and Washington Counties, with a combined population of 14.83%, are home to the largest forested area in the state, but according to the National Cancer Institute, cancer rates are stable in Tillamook County and falling in Washington County, suggesting that forestry practices are not the predominate cause to high rates of cancers suffered among communities in Columbia County.

According to the Safe Drinking Water Act (SDWA), all water designated for drinking use, including underground sources, are protected by federal law. Furthermore, the Oregon Groundwater Quality Protection Act of 1989 was enacted to prevent contamination of groundwater and to conserve, restore, and maintain Oregon's groundwater resources for present and future uses. The DOE is mentioned as a state agency that coordinates energy facility activities with Oregon's Department of Environmental Quality's (DEQ) to protect groundwaters of the state.

Potential cancer-causing chemicals are likely leaching into local aquifers from operations occuring at the Mist Gas Underground Natural Storage Gas Field (Mist Gas Field). A request for denial of pFRA13 is requested until environmental exposure pathways and current operation practices are properly and thoroughly investigated using the best available science, which is supported by Oregon State University's Institute for Natural Resources in accordance with OAR 629-603-0400(4) and is defined by Cornell Law as "science that is reliable and unbiased."

We find operations governing the Mist Gas Field are not meeting OAR, ORS, or EFSC Siting Standards. Our findings also show partiality toward field operators (Northwest Natural and Enerfin) by state agencies, including but not limited to DOGAMI[2] and others responsible for the safety protocols designed to protect community exposure, which are in place to limit chemical constituents not suitable for human consumption.

The following describes the OAR, ORS, or Sitting Standard (herein referred to as Guiding Policy) within the jurisdiction of the EFSC that supports our objection to amendment 13 based on the rules governing the Mist Gas Field, and includes evidence supporting our request for denial.

[1] Cheung, J.T.H., Zhang, W. and Chiu, B.C.H., 2023. Geospatial analysis of population-based incidence of multiple myeloma in the United States. Cancer epidemiology, 83, p.102343.
[2] Oregon Department of Geology and Mining Industries

Concern: Geologic Hazards Not Properly Assessed in Exhibit H: Geologic Hazard Evaluation (pFRA13)

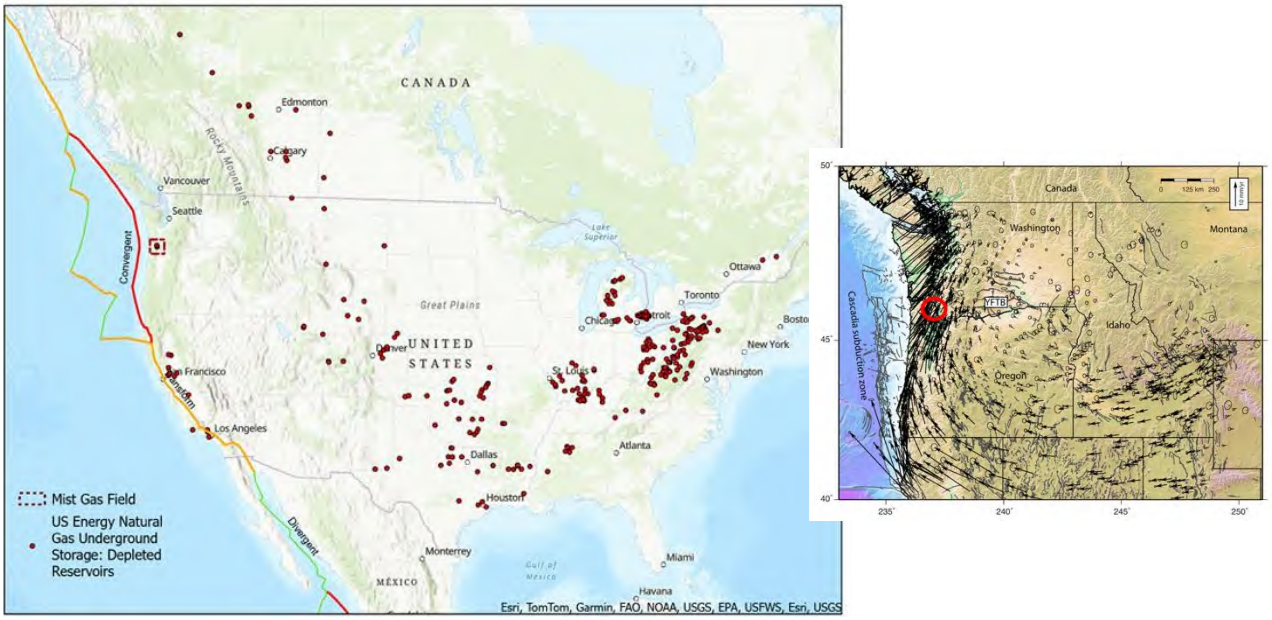
Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

OAR 345-024-0030 (2): The applicant has developed a program using technology that is both practicable and reliable to monitor the facility to ensure the public health and safety.

OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection

Statement of Opposition: The best available science has not been applied to adequately evaluate geologic hazards and risk associated with operations at the Mist Gas Field.

Supporting Evidence: The Mist Gas Field is the only depleted natural gas reservoir in the USA and Canada located adjacent to a tectonically active convergence zone as shown in the figure below. Tectonic activity is due to the Cascadia Subduction Zone, which is the collision and subduction of the Juan de Fuca Plate beneath the North American plate. The consequence of subducting plates, as is evident in Oregon and Washington landscape, include micro, local, and regional fault zones, volcanism, earthquakes, and crustal rotation. The Mist Gas Field is in an extremely active location where velocity data, obtained through high-density geodetic GPS measurements (inset map: black arrows), show significant rotation occurring beneath the gas field.



Given the uniqueness of the Mist Gas Field's location (insert map: red circle), new methods and tools are now available to enhance our current understanding of Cascadia Subduction Zone in the Pacific Northwest. Yet no indication is provided that suggests best available science is currently used to protect waters of the state from groundwater contamination due to hydrocarbons and other constituents that could potentially migrate to local aquifers from storage operations, including fracked chemicals obtained from gas purchased in Canada.

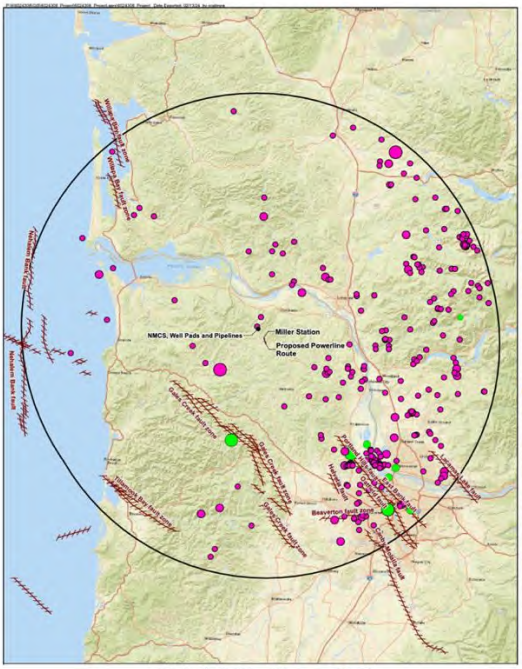
Additional Comment: In addition to the above concerns, in amendment 13 (pRFA13) Exhibit H (Geologic Hazards Evaluation), Table H-8 on page 22, discusses fault hazards and claims only 13 quaternary faults are within 50 miles of the project. According to information obtained from the USGS citation listed as the source of the fault data, it states, "For the hazard maps, both the fault surface trace and the metadata are simplified representations of the geometry and behavior of the fault, based on geologic interpretation."

In 2020, the USGS created a new geologic map[3] within the local vicinity. The map was created, "***to provide a uniform, modern geologic database for the greater Portland metro area to better understand its tectonic setting, active faults, volcanoes, landslide hazards, and distribution of geologic materials and resources. Information in this database will be used to improve seismic hazard and resource assessments in this economically important region."***

Therefore, Exhibit H in the pRFA13 should be considered outdated information, since it does not capture the true geologic landscape of the area. It's worth noting that both datasets were available at the time Exhibit H was written for pRFA13, yet Exhibit H made no mention of the updated USGS map, even though it was created in collaboration with DOGAMI. Aside from a paper written by Wells and Bemis in 2020, which focused on migration of the Oregon forearc on the Gales Creek fault, and the standard NRCS soils database, accessed in 2023, all other sources used to present the local geologic and topographic conditions of the site in Exhibit H were mostly written in the 1970s and 1980s. Although the 2020 USGS map falls outside of the Project Area, it is within the boundary of the Site Certificate.

Furthermore, the earthquake map provided in Exhibit H (Figure H-8) does not adequately represent the number of earthquakes recorded in the region. The image on the left shows earthquakes in Exhibit H: Figure H-8, with the smallest circles representing < 2 in magnitude. The image on the right, obtained from the USGS Earthquake Catalog[4], shows significantly more earthquakes than shown in Exhibit H.

[3] Wells, R., Haugerud, R.A., Niem, A.R., Niem, W.A., Ma, L., Evarts, R.C., O'Connor, J.E., Madin, I.P., Sherrod, D.R., Beeson, M.H. and Tolan, T.L., 2020. Geologic map of the greater Portland metropolitan area and surrounding region, Oregon and Washington (No. 3443). US Geological Survey.
[4] Schneider, M., Flury, H., Guttorp, P. and Wright, A., 2023. Earthquake catalog processing and swarm identification for the Pacific northwest. Seismological Research Letters, 94(5), pp.2500-2513.



Data obtained from the USGS Earthquake Catalog

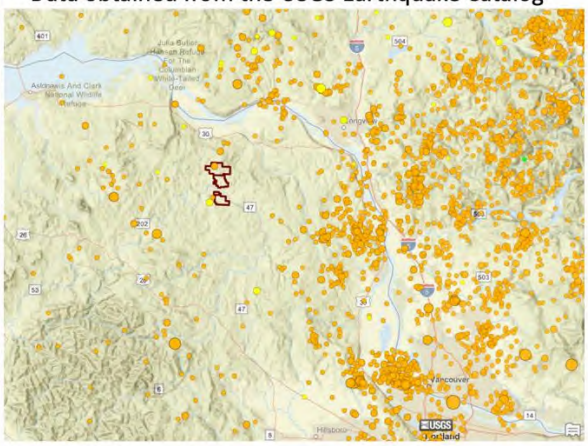
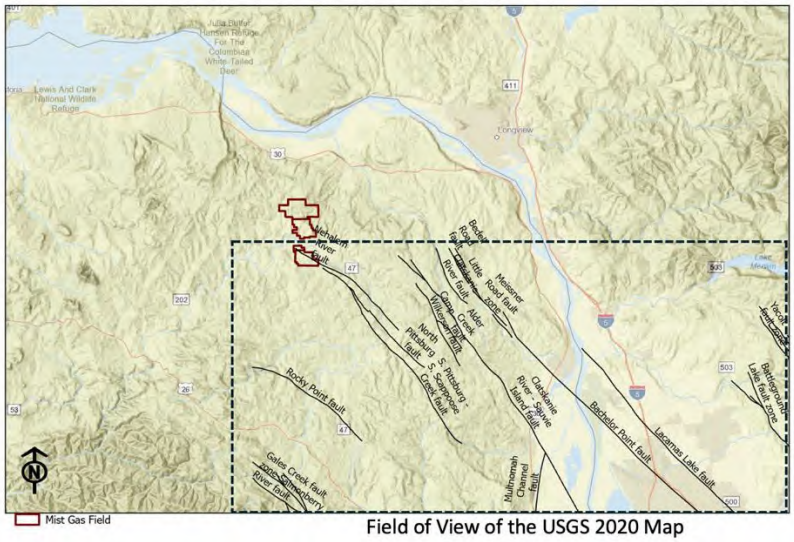


Exhibit H. Figure H-8

In addition to questionable material used in Exhibit H of the pRFA13, Table H-8 shows the nearest fault zone to the site is the Gales Creek Fault Zone located 17.6 miles away. However, only using the USGS 2020 map, 100 distinct faults were identified, representing up to 30 fault zones located approximately 50 miles from the Mist Gas Field (Figure Below. To reduce label overlap, not all fault zones are labeled in the figure). This includes new and extensive faulting within the southern boundary of the site certificate, not previously shown in any of DOGAMI's updated maps or in Exhibit H.



Field of View of the USGS 2020 Map

Concern: Surficial Geology Not Properly Assessed in Exhibit H of pFRA13

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

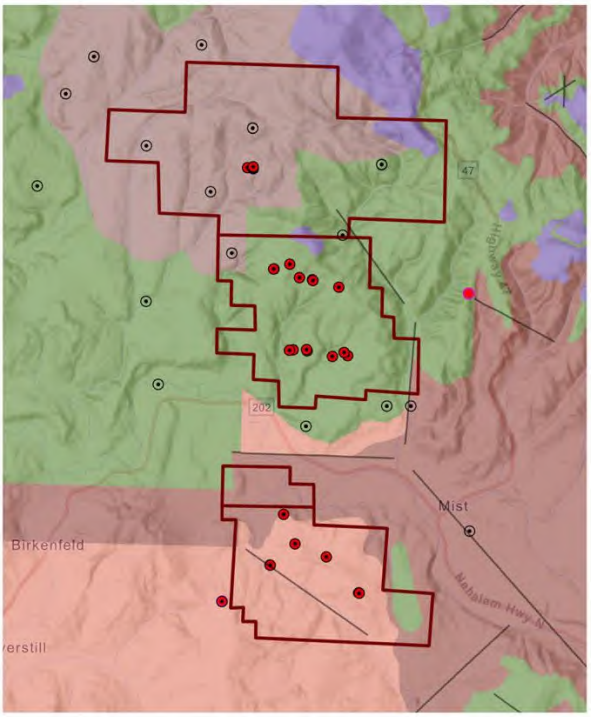
OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

Statement of Opposition: The Mist Gas Field is operated outside of conditions listed in OAR 345-022-0022(c). The potential geological hazards of the site are not properly identified. This is evident in the recent research released by the USGS in 2020. Although it was conducted in coordination with DOGAMI, no operational changes were implemented to reflect the complex geological conditions which show extensive faulting and cap rock exposure, which is now identified within the southernmost boundary of the gas field.

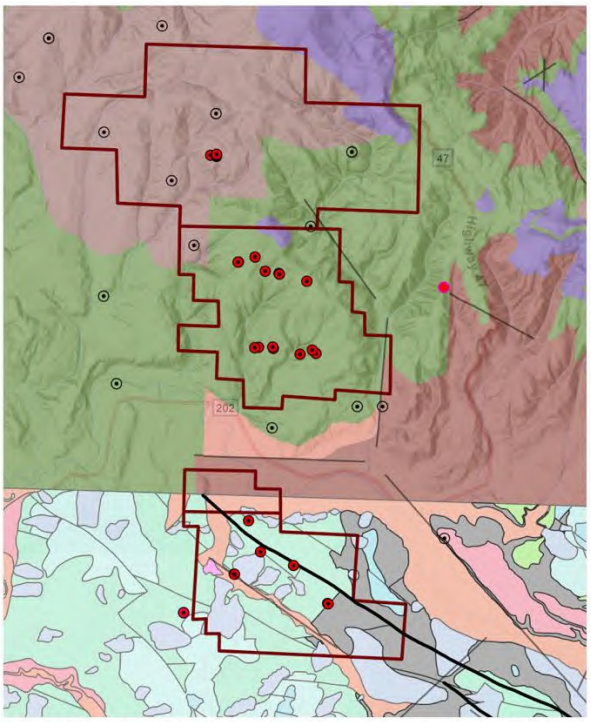
Supporting Evidence: According to DOGAMI, the best available geologic mapping for the state, combined into the Oregon Geologic Data Compilation, is provided under release 7[5]. Examination of this map shows simplified geology compared to the USGS map. This is apparent in the below figure, which shows an overlay of DOGAMI's compilation geologic map (OGDC-7) compared to the 2020 geologic map produced by the USGS.

Additional Comment: Surficial geology of the area has not been adequately assessed. This is apparent in the current DOGAMI map (left figure) compared to the updated 2020 map (right figure). The complexity of the geology and faulting is much more intricate than the OGDC-7 represents and needs throughout evaluation prior to approval of the amendment, as the surficial geology used in Exhibit B is likely extremely simplified (figure below).

[5] https://pubs.oregon.gov/dogami/dds/p-OGDC-7.htm



DOGAMI (OGDC-7) Surficial Geology



DOGAMI (OGDC-7) Surficial Geology Underlying the 2020 USGS Map

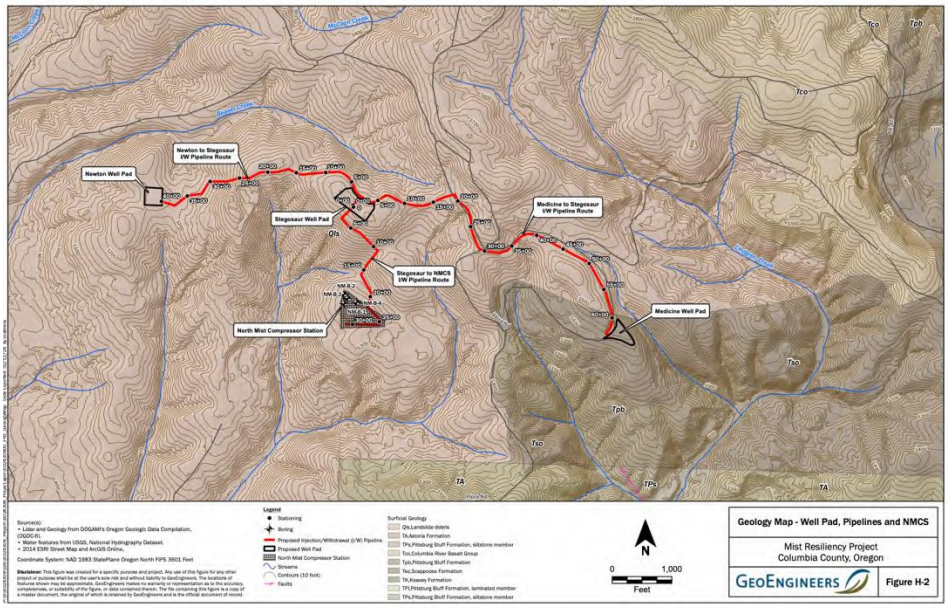


Figure H-2: Surficial Geology provided in Exhibit H

Concern: Groundwater Contamination Potential Due to Abandoned Wells

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

Statement of Opposition: Extensive exploration and operation of the Mist Gas Field has resulted in hundreds of injection, withdrawal, and abandoned wells. According to a report written by the National Energy Technology Laboratory in 2019[6], utilizing depleted reservoirs is attractive due to pre-existing infrastructure. The report also states, ***"Depleted oil and/or gas fields may pose the risk of abandoned, or orphaned, wells penetrating the storage reservoir, which can serve as a leakage conduit to neighboring formations or the atmosphere."*** Additionally, in the *Underground Gas Storage Regulatory Considerations: A Guide for State & Federal Regulatory Agencies, it* states, ***"Pre-existing or abandoned wellbores including previously pressurized or depleted areas, and previously generated hydraulic fractures should also be considered risk elements."*** DOGAMI has not properly inventoried all wells within the gas field. This decreases DOGAMI's ability to properly assess potential groundwater contamination sources.

Supporting Evidence: Email from a public records request show DOGAMI's Bob Houston stated 395 wells have been permitted at the field, yet it appears most of the locations of these wells are not identified. Furthermore, Bob notes ***"Additionally, [of the 395 wells permitted, it] does not include other "holes" (seismic holes, core holes and monitor)."*** A copy of the email is provided below. This suggests an extensive number of "holes" have likely outlived their sealing lifespan, yet most locations are unknown, thereby increasing the potential of groundwater contamination, with DOGAMI unable to execute effective measures to address this issue.

HOUSTON Robert * DGMI January 18, 2018 at 3:23 PM
RE: Mist wells Details
To: MADIN Ian * DGMI, Cc: BUCHNER Ed * DGMI, LOFTON ReNeea * DGMI

Ok,
There are currently 110 active permits in the Mist gas field

Based on the API number there has been a total of 395 "wells" permitted in Columbia since 1953. ReNeea, noted that there appears to be skips in the sequential API number. Additionally, does not include other "holes" (seismic holes, core holes and monitor).

Cheers,
Bob

Robert A. Houston, RG
Hydrocarbon & Metallic Ore Geologist
Oregon Department of Geology and Mineral Industries I Springfield Field Office I
Springfield Interagency Office|3106 Pierce Parkway Suite D I Springfield, Oregon 97477
Office: 541-225-6451; Cell: 541-619-4653
Email: robert.houston@oregon.gov I http://www.oregongeology.org

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 3:09 PM
To: BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

So it sounds like there is no easy way to get a definitive count of the number of wells drilled to develop the Mist field.

From: BUCHNER Ed * DGMI
Sent: Thursday, January 18, 2018 2:55 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

There are huge data gaps and inconsistencies in the well data and organization in the database in GIS, this was something we were actively working on in 2013 or so, but other priorities pulled us away. There may be 450 points in the Mist area, but do they fall within the geometry of the Mist Field? Additionally, for my previous query from the database, if the ResourceField did not specify "Mist" it would have not been returned.

Ed Buchner
GIS Technical Specialist
Office: (541) 967-2084
Mobile: (541) 619-3738
ed.buchner@oregon.gov

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 2:49 PM
To: HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>; BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>
Subject: RE: Mist wells

I am confused. The GIS files show almost 450 wells in the Mist field. There must be permits that include more than one well.

[6] Vikara, D., Zymroz, T., Withum, J.A., Shih, C.Y., Lin, S., Hoffman, H., Guinan, A. and Carr, T., 2019. Underground natural gas storage-analog studies to geologic storage of co2 (No. NETL-PUB-22087). National Energy Technology Lab.(NETL), Morgantown, WV (United States).

Additionally, confusion now exist between the safest method to abandon a well. On 7/18/2017 Irani Engineering requested a waiver to the well abandonment rule. According to email communication between Bob Brinkmann of DOGAMI and the Department of Justice, Bob stated, "*Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?* To provide a wavier required updating the administrative order that prohibited Irani Engineering's proposed method of abandonment.

A Temporary Administrative Order was approved by 9/8/2017 (later permanently approved). Bob Brinkman stated that the proposed method is technically sound and not granting the temporary order will place financial burden on the permittee, if it is not granted. This poses an issue, considering the field has been explored since the 1980s, a large quantity of abandoned wells, are now assumed less secure, since this rule wasn't granted until 2017. It should also be noted that best available science was not used to access the safety of the updated administrative order.

IRANI ENGINEERING, INC.
PETROLEUM ENGINEER
P.O. Box 661328
SACRAMENTO, CA 95866

07/18/2017

Mr. Ian Madin, Deputy Director
Mineral Land Regulation & Reclamation/Oregon Department of Geology & Mineral Industries
229 Broadalbin St. SW
Albany, OR 97321
Phone: (541) 967-2039
Fax: (541) 967-2075

Subject: Request for Revision of Abandon Rule for Enerfin Resources NW , "Pelee 21-31-65"

Mr. Madin,

Enerfin intends to abandon a few of their wells in Mist Gas Field, Oregon. The production casing in these wells are set couple of hundred feet above the TD of the wells. I know the rule states that we have to drill out the shoe of the production casing and set 100' of cement plug across them. I respectfully request a waiver to this rule because of the following reasons;

1. The shoe joint has a float collar on top and a float shoe on bottom, both in closed position, and 40' of cement between. Usually, there is several feet of hard production cement above the float collar too. On Pelee 21-31-65, we have another 42' of cement above the float collar for a total of 82'.
2. Usually steel perforating gun debris is on top of cement and the float collar which makes is very hard to get through and get to the float collar.
3. It is difficult to drill out the float collar and shoe. The float collar falls on the cement and starts spinning and prevents us from drilling the cement and float shoe.
4. The closed float collar and shoe and the cement between and above float collar are very strong barriers against leakage from below the shoe. Drilling out shoe and setting a 100' of cement plug in mud actually weakens this barrier (Equalized cement plugs can easily get contaminated with mud and have channeling issues). We would like to abandon the bottom of the hole by placing a 100' of cement plug on top of cement above the float collar.
5. We have to drill out cement, float and shoe of 4-1/2" casing, with 3-1/2" bit or mill (because of the drift diameter of the casing and mechanical limitation on mill size due to gun debris and float equipment milled out remnants). The hole was drilled with a 7-7/8" bit, therefore the hole size below the shoe is 7-7/8" filled with drilling mud (in Pelee 21-31-65 mud weight was 12.4 ppg). Cleaning a 7-7/8" hole with a 3-1/2" bit would be almost impossible at that point. The cement plug quality will be very much in doubt since mud contaminations will be a big factor.
6. I have worked in 8 different states in the USA and non of the other states have such a rule.

I have attached the abandoned programs and notice of abandonments for the two versions of the abandonment procedures. May I kindly ask for your office to review the rule and give us a relief from this rule in abandoning Enerfin wells in Mist Field.

Sincerely

Saeed Irani,
Registered Petroleum Engineer
President
Irani Engineering

RE: P&A of holes with rathole below casing

BRINKMANN Bob * DGMI
To MADIN Ian * DGMI
Cc LLOYD Diane; LOFTON ReNeea * DGMI

Reply | Reply All | Forward | ...
Mon 8/14/2017 3:26 PM

PELEE PA.REQ FOR REV.IRANI LTR.2017 (002).pdf
.pdf File

Attached is a letter from Irani Engineering explaining the rationale for the proposed abandonment method for Pelee which as documented below has been approved on numerous occasions by this Department and I agree with the proposed method. This issue was also discussed w/ Diane while you were out and the question posed is: Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?

From: MADIN Ian * DGMI
Sent: Monday, August 14, 2017 10:30 AM
To: BRINKMANN Bob * DGMI <bob.brinkmann@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: RE: P&A of holes with rathole below casing

Bob, can you summarize the issue for me in the form of a question I can put to Diane?

From: BRINKMANN Bob * DGMI
Sent: Thursday, August 10, 2017 2:16 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: FW: P&A of holes with rathole below casing

Ian, As you can see by the attached documentation the P&A method being proposed by Enerfin for the Pelee well has been approved numerous times in the past. Although it appears that rule does not afford flexibility for this it may be allowed by the overall authority granted DOGAMI in law. I agree w/ the method proposed which will properly seal the well versus an attempt to drill out the float collar and casing shoe and attempt to cement the rat hole below the shoe.

OFFICE OF THE SECRETARY OF STATE
DENNIS RICHARDSON
SECRETARY OF STATE

LESLIE CUMMINGS
DEPUTY SECRETARY OF STATE

ARCHIVES DIVISION
MARY BETH HERKERT
DIRECTOR

800 SUMMER STREET NE
SALEM, OR 97310
503-373-0701

TEMPORARY ADMINISTRATIVE ORDER
INCLUDING STATEMENT OF NEED & JUSTIFICATION

DGMI 1-2017
CHAPTER 632
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

FILED
10/13/2017 2:55 PM
ARCHIVES DIVISION
SECRETARY OF STATE

FILING CAPTION: Makes minor adjustment to allow well plugging/decommissioning based on current, accepted best practices.

EFFECTIVE DATE: 10/13/2017 THROUGH 03/13/2018

AGENCY APPROVED DATE: 09/18/2017

CONTACT: Robert Houston
541-225-6451
robert.houston@oregon.gov

800 NE Oregon Street, Suite 965, 9232
3106 Pierce Parkway, Suite D, 97477
Portland, OR 97232

Filed By:
robert Houston
Rules Coordinator

NEED FOR THE RULE(S):

It has been determined by department staff that a portion of the "Plugging Methods and Procedure" required by the chapter 632, division 10, administrative rules is technically incorrect in certain instances. An existing permittee has proposed a well plugging procedure that is more technically sound for the facility at issue, and prompt action by the department to approve this plan will allow the applicant to take advantage of drilling equipment that is now available in the location of the well(s) to be plugged and decommissioned. A delay in well closure would result in additional costs to the permittee. Delayed well closure also presents greater risk to public safety and the environment. This rule amendment is required to approve the plan. Absent plan approval the interests of both the public and the permittee will be prejudiced by a delay in well plugging and decommissioning.

JUSTIFICATION OF TEMPORARY FILING:

Based on the findings set out above, the Board finds that a failure to act promptly in this regard would result in prejudice to the public and permittee. The temporary rule will allow the necessary flexibility for the department to approve plans to ensure proper plugging that decommissioning of oil and gas wells based on current best practices.

DOCUMENTS RELIED UPON, AND WHERE THEY ARE AVAILABLE:

The documents relied upon include: (1) Request for Revision of Abandon Rule for Enerfin Resources 7/18/17 from Saeed Irani; (2) Plugging and Abandonment Evaluation from Bob Brinkmann 9/14/17. Both are available on the DOGAMI website.

AMEND: 632-010-0198

RULE TITLE: Abandonment, Unlawful Abandonment, Suspension, Well Plugging

RULE SUMMARY: OAR 632-010-0198 addresses how DOGAMI deals with abandonment, unlawful abandonment, suspension and well plugging. Subsection (8)(c) is modified to clarify that the plugging procedure required in that subsection only applies to any open casing

In Summary, due to uncertainty of our current geologic understanding on the northern area of the site, and covered under the site certificate, we ask the EFSC to deny Amendment 13 until additional geological investigations take place. Furthermore, since the number of wells at the Mist Gas Field were previously abandoned against the current standards, and well locations are unknown, we request DOGAMI's current administrative order for well abandonment be revised using the best available science. At the conclusion of this update, we then request all wells and "holes", as described by Bob Brinkmann, be examined for potential leakage. We believe it is the duty of the EFSC to deny the amendment request until the state has shown that the federally protected drinking water overlying the Mist Gas Field is free from contaminants and suitable for all those living within Columbia County.

Outlook

New Public Comment submitted for project : RFA13 and DPO for Mist Underground Natural Gas Storage Facility

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From ODOE ITService * ODOE <ODOE.ITService@oregon.gov>
Date Thu 9/19/2024 1:56 PM
To SLOAN Kathleen * ODOE <Kathleen.SLOAN@energy.oregon.gov>

Organization: American Aquifers
Submitted by: Maria Gibson
Email: m.daugherty@americanaquifers.org
Zip Code:

Siting Project Phase: *DPO*

Comment Summary:

Please Click on the following link to view the full Comment Details

MSTAMD13 DPO Public Comment 4b Maria Gibson 2024-09-19

Comment Summary

—

Comment Date

source

Select email portal manual

Siting Project Phase

Select EXEMPTION REQUEST NOI DPO CC FORMAL RULEMAKING INFORMAL RULEMAKING AMD-A AMD-B

Comment Details

Application for Site Certificate (ASC) Exhibit

Select Exhibit A - Applicant and Participating Persons Exhibit B - Proposed Facility Description Exhibit C - Proposed Facility Location Exhibit D - Organizational Expertise Exhibit E - Permits Required Exhibit F - Adjacent Property Owners Exhibit G - Materials Analysis Exhibit H - Geological and Soil Stability Exhibit I - Soil Conditions Exhibit J - Wetlands and other Jurisdictional Waters Exhibit K - Land Use Exhibit L - Protected Areas Exhibit M - Financial Capability Exhibit N - Non-Generating Facility Need Exhibit O - Water Use Exhibit P - Fish and Wildlife Habitat Exhibit Q - Threatened and Endangered Plant and Animal Species Exhibit R - Scenic Resources Exhibit S - Historic Cultural and Archaeological Resources Exhibit T - Recreation Opportunities Exhibit U - Public Services Exhibit V - Waste Minimization Exhibit W - Site Restoration Exhibit X - Noise Exhibit Y - Carbon Dioxide Emissions Exhibit Z - Evaporative Cooling Tower Exhibit AA - Electric Transmission Line EMFs Exhibit BB - Other Requested Information Exhibit CC - Applicable Statutes, Rules, Ordinances Exhibit DD - Specific Requirements

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Page Number(s)

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Council Standards

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Comment

Please submit the attached document for public comment of pFRA13

Attachments

4 days ago

Microsoft CRM Portals

Public Comment Amendment 13_pFRA13_AmericanAquifers.pdf (1.63 MB)

American Aquifer's Public Comment Requesting Denial of Amendment 13 (pFRA13)

American Aquifers, a 501c3 non-profit located in Oregon designed to support communities reliant upon groundwater, requests the Oregon Department of Energy (DOE) deny amendment 13 (pRFA13). Residents in Columbia County suffer from disproportionately high rates of cancer compared to other counties in the state, yet represent less than 1.3% of the state's population. Residents in Columbia County maintain cancer rates that rank #1 in uterus, lung, bronchus, and melanoma cancers, #2 in female pancreas cancer and leukemia, #4 in brain and esophagus cancer, #5 in female kidney/renal pelvis cancer, #6 in Non-Hodgkin Lymphoma, #7 in oral cavity and pharynx cancer, and #10 in male kidney/renal pelvis cancer. Additionally, a recent study of multiple myeloma shows Columbia County has staggering incidences of this rare, non-curable cancer that accounts for only 10% of all blood cancers. Of the 133 counties that make up the entire west coast, only 12 counties have significantly high rates of myeloma cancer, with Columbia County listed as one of the three in Oregon[1].

Cancer rates in Columbia County cannot be directly attributed to logging operations, which include the spraying of herbicides and are known carcinogens. A total of 47% of land in Oregon is forested. Tillamook and Washington Counties, with a combined population of 14.83%, are home to the largest forested area in the state, but according to the National Cancer Institute, cancer rates are stable in Tillamook County and falling in Washington County, suggesting that forestry practices are not the predominate cause to high rates of cancers suffered among communities in Columbia County.

According to the Safe Drinking Water Act (SDWA), all water designated for drinking use, including underground sources, are protected by federal law. Furthermore, the Oregon Groundwater Quality Protection Act of 1989 was enacted to prevent contamination of groundwater and to conserve, restore, and maintain Oregon's groundwater resources for present and future uses. The DOE is mentioned as a state agency that coordinates energy facility activities with Oregon's Department of Environmental Quality's (DEQ) to protect groundwaters of the state.

Potential cancer-causing chemicals are likely leaching into local aquifers from operations occuring at the Mist Gas Underground Natural Storage Gas Field (Mist Gas Field). A request for denial of pFRA13 is requested until environmental exposure pathways and current operation practices are properly and thoroughly investigated using the best available science, which is supported by Oregon State University's Institute for Natural Resources in accordance with OAR 629-603-0400(4) and is defined by Cornell Law as "science that is reliable and unbiased."

We find operations governing the Mist Gas Field are not meeting OAR, ORS, or EFSC Siting Standards. Our findings also show partiality toward field operators (Northwest Natural and Enerfin) by state agencies, including but not limited to DOGAMI[2] and others responsible for the safety protocols designed to protect community exposure, which are in place to limit chemical constituents not suitable for human consumption.

The following describes the OAR, ORS, or Sitting Standard (herein referred to as Guiding Policy) within the jurisdiction of the EFSC that supports our objection to amendment 13 based on the rules governing the Mist Gas Field, and includes evidence supporting our request for denial.

[1] Cheung, J.T.H., Zhang, W. and Chiu, B.C.H., 2023. Geospatial analysis of population-based incidence of multiple myeloma in the United States. Cancer epidemiology, 83, p.102343.
[2] Oregon Department of Geology and Mining Industries

Concern: Geologic Hazards Not Properly Assessed in Exhibit H: Geologic Hazard Evaluation (pFRA13)

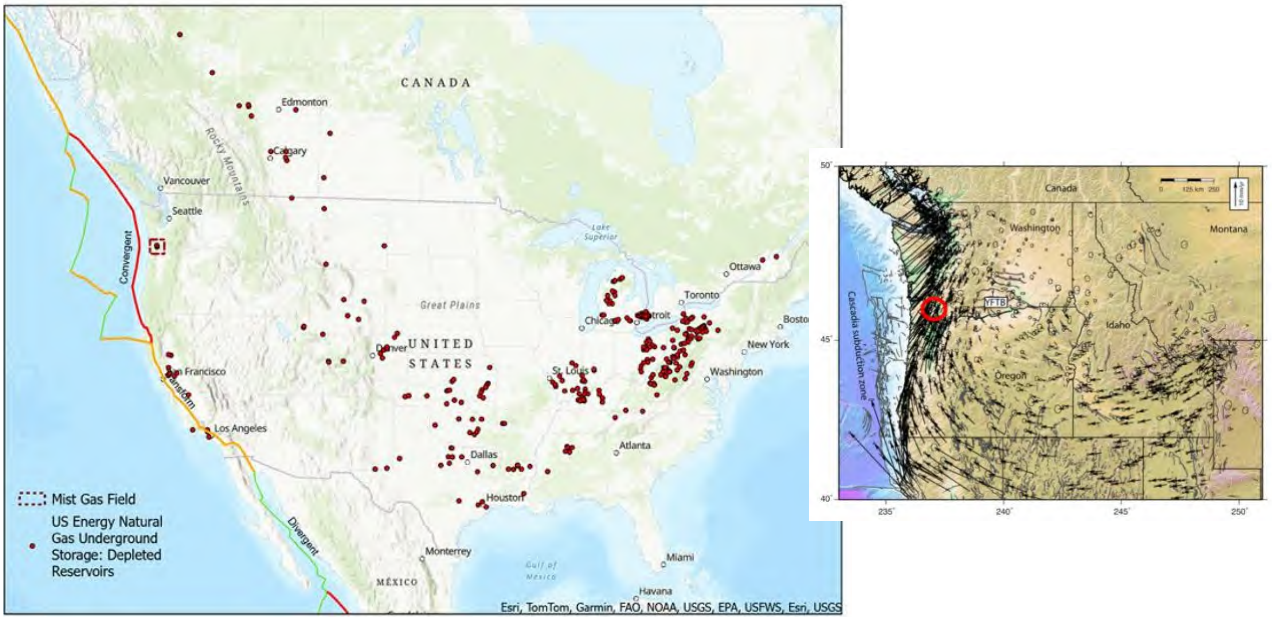
Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

OAR 345-024-0030 (2): The applicant has developed a program using technology that is both practicable and reliable to monitor the facility to ensure the public health and safety.

OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection

Statement of Opposition: The best available science has not been applied to adequately evaluate geologic hazards and risk associated with operations at the Mist Gas Field.

Supporting Evidence: The Mist Gas Field is the only depleted natural gas reservoir in the USA and Canada located adjacent to a tectonically active convergence zone as shown in the figure below. Tectonic activity is due to the Cascadia Subduction Zone, which is the collision and subduction of the Juan de Fuca Plate beneath the North American plate. The consequence of subducting plates, as is evident in Oregon and Washington landscape, include micro, local, and regional fault zones, volcanism, earthquakes, and crustal rotation. The Mist Gas Field is in an extremely active location where velocity data, obtained through high-density geodetic GPS measurements (inset map: black arrows), show significant rotation occurring beneath the gas field.



Given the uniqueness of the Mist Gas Field's location (insert map: red circle), new methods and tools are now available to enhance our current understanding of Cascadia Subduction Zone in the Pacific Northwest. Yet no indication is provided that suggests best available science is currently used to protect waters of the state from groundwater contamination due to hydrocarbons and other constituents that could potentially migrate to local aquifers from storage operations, including fracked chemicals obtained from gas purchased in Canada.

Additional Comment: In addition to the above concerns, in amendment 13 (pRFA13) Exhibit H (Geologic Hazards Evaluation), Table H-8 on page 22, discusses fault hazards and claims only 13 quaternary faults are within 50 miles of the project. According to information obtained from the USGS citation listed as the source of the fault data, it states, "For the hazard maps, both the fault surface trace and the metadata are simplified representations of the geometry and behavior of the fault, based on geologic interpretation."

In 2020, the USGS created a new geologic map[3] within the local vicinity. The map was created, "***to provide a uniform, modern geologic database for the greater Portland metro area to better understand its tectonic setting, active faults, volcanoes, landslide hazards, and distribution of geologic materials and resources. Information in this database will be used to improve seismic hazard and resource assessments in this economically important region."***

Therefore, Exhibit H in the pRFA13 should be considered outdated information, since it does not capture the true geologic landscape of the area. It's worth noting that both datasets were available at the time Exhibit H was written for pRFA13, yet Exhibit H made no mention of the updated USGS map, even though it was created in collaboration with DOGAMI. Aside from a paper written by Wells and Bemis in 2020, which focused on migration of the Oregon forearc on the Gales Creek fault, and the standard NRCS soils database, accessed in 2023, all other sources used to present the local geologic and topographic conditions of the site in Exhibit H were mostly written in the 1970s and 1980s. Although the 2020 USGS map falls outside of the Project Area, it is within the boundary of the Site Certificate.

Furthermore, the earthquake map provided in Exhibit H (Figure H-8) does not adequately represent the number of earthquakes recorded in the region. The image on the left shows earthquakes in Exhibit H: Figure H-8, with the smallest circles representing < 2 in magnitude. The image on the right, obtained from the USGS Earthquake Catalog[4], shows significantly more earthquakes than shown in Exhibit H.

[3] Wells, R., Haugerud, R.A., Niem, A.R., Niem, W.A., Ma, L., Evarts, R.C., O'Connor, J.E., Madin, I.P., Sherrod, D.R., Beeson, M.H. and Tolan, T.L., 2020. Geologic map of the greater Portland metropolitan area and surrounding region, Oregon and Washington (No. 3443). US Geological Survey.
[4] Schneider, M., Flury, H., Guttorp, P. and Wright, A., 2023. Earthquake catalog processing and swarm identification for the Pacific northwest. Seismological Research Letters, 94(5), pp.2500-2513.

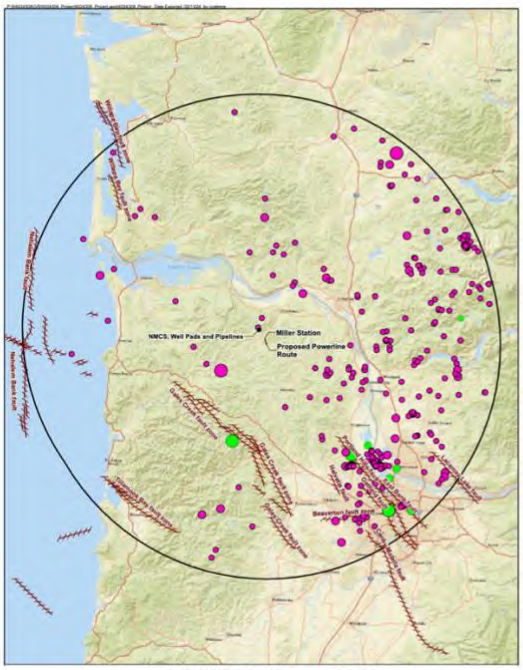
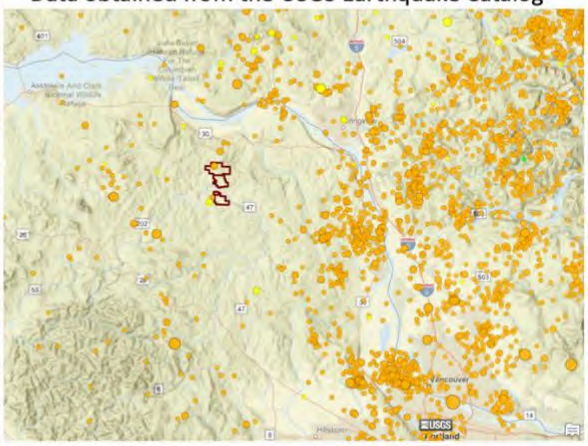
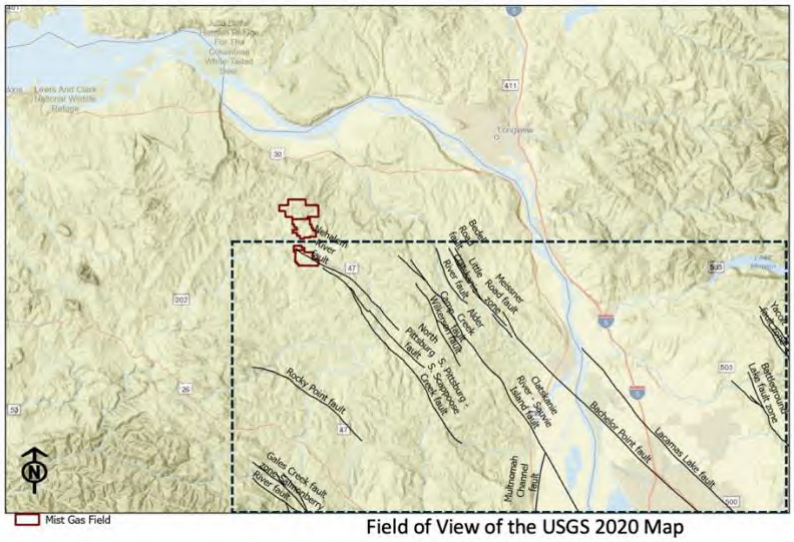


Exhibit H. Figure H-8

Data obtained from the USGS Earthquake Catalog



In addition to questionable material used in Exhibit H of the pRFA13, Table H-8 shows the nearest fault zone to the site is the Gales Creek Fault Zone located 17.6 miles away. However, only using the USGS 2020 map, 100 distinct faults were identified, representing up to 30 fault zones located approximately 50 miles from the Mist Gas Field (Figure Below. To reduce label overlap, not all fault zones are labeled in the figure). This includes new and extensive faulting within the southern boundary of the site certificate, not previously shown in any of DOGAMI's updated maps or in Exhibit H.



Field of View of the USGS 2020 Map

Concern: Surficial Geology Not Properly Assessed in Exhibit H of pFRA13

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

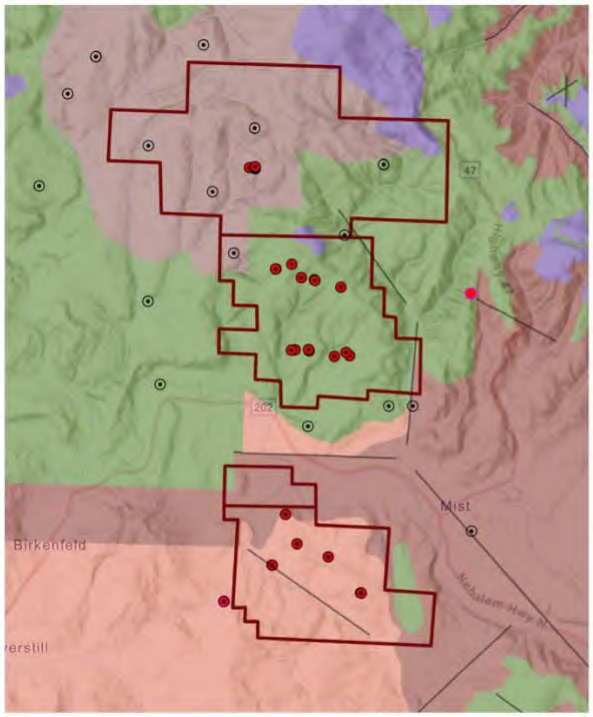
OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

Statement of Opposition: The Mist Gas Field is operated outside of conditions listed in OAR 345-022-0022(c). The potential geological hazards of the site are not properly identified. This is evident in the recent research released by the USGS in 2020. Although it was conducted in coordination with DOGAMI, no operational changes were implemented to reflect the complex geological conditions which show extensive faulting and cap rock exposure, which is now identified within the southernmost boundary of the gas field.

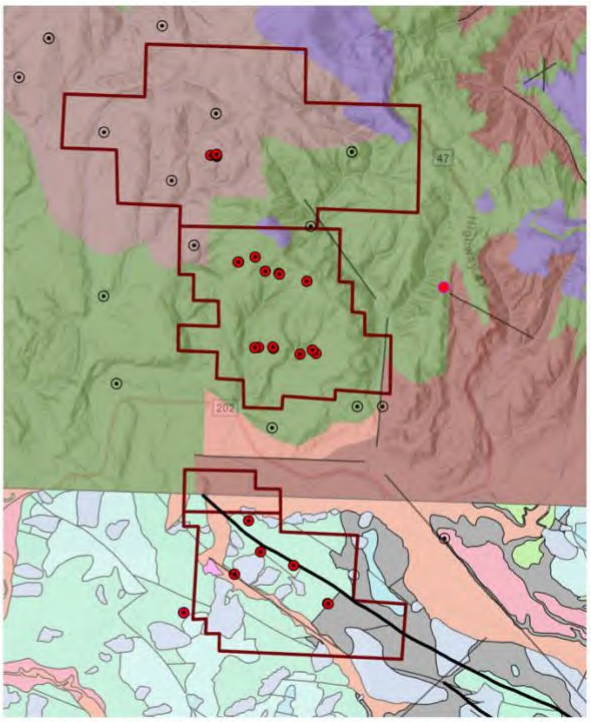
Supporting Evidence: According to DOGAMI, the best available geologic mapping for the state, combined into the Oregon Geologic Data Compilation, is provided under release 7[5]. Examination of this map shows simplified geology compared to the USGS map. This is apparent in the below figure, which shows an overlay of DOGAMI's compilation geologic map (OGDC-7) compared to the 2020 geologic map produced by the USGS.

Additional Comment: Surficial geology of the area has not been adequately assessed. This is apparent in the current DOGAMI map (left figure) compared to the updated 2020 map (right figure). The complexity of the geology and faulting is much more intricate than the OGDC-7 represents and needs throughout evaluation prior to approval of the amendment, as the surficial geology used in Exhibit B is likely extremely simplified (figure below).

[5] https://pubs.oregon.gov/dogami/dds/p-OGDC-7.htm



DOGAMI (OGDC-7) Surficial Geology



DOGAMI (OGDC-7) Surficial Geology Underlying the 2020 USGS Map

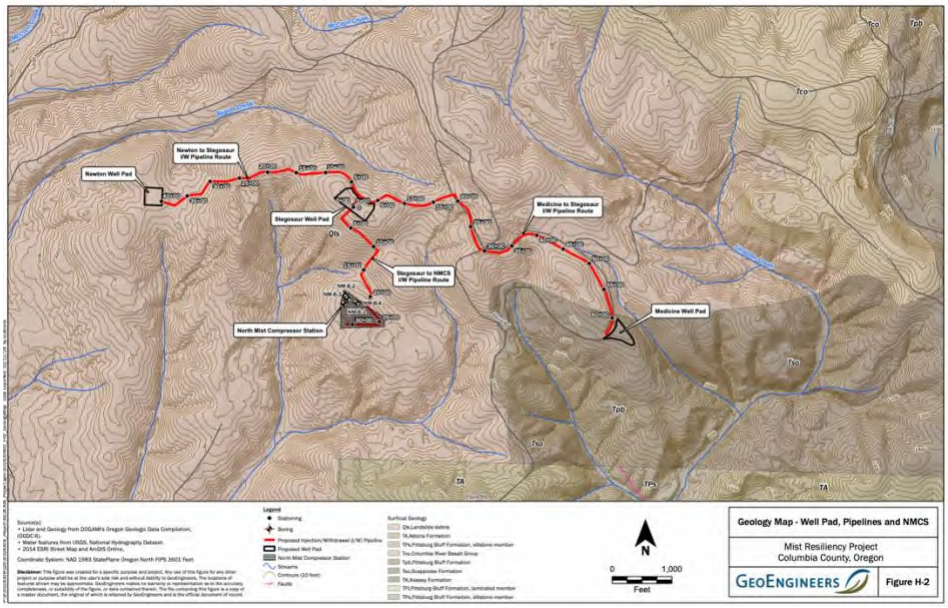


Figure H-2: Surficial Geology provided in Exhibit H

Concern: Groundwater Contamination Potential Due to Abandoned Wells

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

Statement of Opposition: Extensive exploration and operation of the Mist Gas Field has resulted in hundreds of injection, withdrawal, and abandoned wells. According to a report written by the National Energy Technology Laboratory in 2019[6], utilizing depleted reservoirs is attractive due to pre-existing infrastructure. The report also states, ***"Depleted oil and/or gas fields may pose the risk of abandoned, or orphaned, wells penetrating the storage reservoir, which can serve as a leakage conduit to neighboring formations or the atmosphere."*** Additionally, in the *Underground Gas Storage Regulatory Considerations: A Guide for State & Federal Regulatory Agencies, it* states, ***"Pre-existing or abandoned wellbores including previously pressurized or depleted areas, and previously generated hydraulic fractures should also be considered risk elements."*** DOGAMI has not properly inventoried all wells within the gas field. This decreases DOGAMI's ability to properly assess potential groundwater contamination sources.

Supporting Evidence: Email from a public records request show DOGAMI's Bob Houston stated 395 wells have been permitted at the field, yet it appears most of the locations of these wells are not identified. Furthermore, Bob notes ***"Additionally, [of the 395 wells permitted, it] does not include other "holes" (seismic holes, core holes and monitor)."*** A copy of the email is provided below. This suggests an extensive number of "holes" have likely outlived their sealing lifespan, yet most locations are unknown, thereby increasing the potential of groundwater contamination, with DOGAMI unable to execute effective measures to address this issue.

HOUSTON Robert * DGMI January 18, 2018 at 3:23 PM
RE: Mist wells Details
To: MADIN Ian * DGMI, Cc: BUCHNER Ed * DGMI, LOFTON ReNeea * DGMI

Ok,
There are currently 110 active permits in the Mist gas field

Based on the API number there has been a total of 395 "wells" permitted in Columbia since 1953. ReNeea, noted that there appears to be skips in the sequential API number. Additionally, does not include other "holes" (seismic holes, core holes and monitor).

Cheers,
Bob

Robert A. Houston, RG
Hydrocarbon & Metallic Ore Geologist
Oregon Department of Geology and Mineral Industries I Springfield Field Office I
Springfield Interagency Office|3106 Pierce Parkway Suite D I Springfield, Oregon 97477
Office: 541-225-6451; Cell: 541-619-4653
Email: robert.houston@oregon.gov I http://www.oregongeology.org

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 3:09 PM
To: BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

So it sounds like there is no easy way to get a definitive count of the number of wells drilled to develop the Mist field.

From: BUCHNER Ed * DGMI
Sent: Thursday, January 18, 2018 2:55 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

There are huge data gaps and inconsistencies in the well data and organization in the database in GIS, this was something we were actively working on in 2013 or so, but other priorities pulled us away. There may be 450 points in the Mist area, but do they fall within the geometry of the Mist Field? Additionally, for my previous query from the database, if the ResourceField did not specify "Mist" it would have not been returned.

Ed Buchner
GIS Technical Specialist
Office: (541) 967-2084
Mobile: (541) 619-3738
ed.buchner@oregon.gov

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 2:49 PM
To: HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>; BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>
Subject: RE: Mist wells

I am confused. The GIS files show almost 450 wells in the Mist field. There must be permits that include more than one well.

[6] Vikara, D., Zymroz, T., Withum, J.A., Shih, C.Y., Lin, S., Hoffman, H., Guinan, A. and Carr, T., 2019. Underground natural gas storage-analog studies to geologic storage of co2 (No. NETL-PUB-22087). National Energy Technology Lab.(NETL), Morgantown, WV (United States).

Additionally, confusion now exist between the safest method to abandon a well. On 7/18/2017 Irani Engineering requested a waiver to the well abandonment rule. According to email communication between Bob Brinkmann of DOGAMI and the Department of Justice, Bob stated, "*Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?* To provide a wavier required updating the administrative order that prohibited Irani Engineering's proposed method of abandonment.

A Temporary Administrative Order was approved by 9/8/2017 (later permanently approved). Bob Brinkman stated that the proposed method is technically sound and not granting the temporary order will place financial burden on the permittee, if it is not granted. This poses an issue, considering the field has been explored since the 1980s, a large quantity of abandoned wells, are now assumed less secure, since this rule wasn't granted until 2017. It should also be noted that best available science was not used to access the safety of the updated administrative order.

IRANI ENGINEERING, INC.
PETROLEUM ENGINEER
P.O. Box 661328
SACRAMENTO, CA 95866

07/18/2017

Mr. Ian Madin, Deputy Director
Mineral Land Regulation & Reclamation/Oregon Department of Geology & Mineral Industries
229 Broadalbin St. SW
Albany, OR 97321
Phone: (541) 967-2039
Fax: (541) 967-2075

Subject: Request for Revision of Abandon Rule for Enerfin Resources NW , "Pelee 21-31-65"

Mr. Madin,

Enerfin intends to abandon a few of their wells in Mist Gas Field, Oregon. The production casing in these wells are set couple of hundred feet above the TD of the wells. I know the rule states that we have to drill out the shoe of the production casing and set 100' of cement plug across them. I respectfully request a waiver to this rule because of the following reasons;

1. The shoe joint has a float collar on top and a float shoe on bottom, both in closed position, and 40' of cement between. Usually, there is several feet of hard production cement above the float collar too. On Pelee 21-31-65, we have another 42' of cement above the float collar for a total of 82'.
2. Usually steel perforating gun debris is on top of cement and the float collar which makes is very hard to get through and get to the float collar.
3. It is difficult to drill out the float collar and shoe. The float collar falls on the cement and starts spinning and prevents us from drilling the cement and float shoe.
4. The closed float collar and shoe and the cement between and above float collar are very strong barriers against leakage from below the shoe. Drilling out shoe and setting a 100' of cement plug in mud actually weakens this barrier (Equalized cement plugs can easily get contaminated with mud and have channeling issues). We would like to abandon the bottom of the hole by placing a 100' of cement plug on top of cement above the float collar.
5. We have to drill out cement, float and shoe of 4-1/2" casing, with 3-1/2" bit or mill (because of the drift diameter of the casing and mechanical limitation on mill size due to gun debris and float equipment milled out remnants). The hole was drilled with a 7-7/8" bit, therefore the hole size below the shoe is 7-7/8" filled with drilling mud (in Pelee 21-31-65 mud weight was 12.4 ppg). Cleaning a 7-7/8" hole with a 3-1/2" bit would be almost impossible at that point. The cement plug quality will be very much in doubt since mud contaminations will be a big factor.
6. I have worked in 8 different states in the USA and non of the other states have such a rule.

I have attached the abandoned programs and notice of abandonments for the two versions of the abandonment procedures. May I kindly ask for your office to review the rule and give us a relief from this rule in abandoning Enerfin wells in Mist Field.

Sincerely

Saeed Irani,
Registered Petroleum Engineer
President
Irani Engineering

RE: P&A of holes with rathole below casing

BRINKMANN Bob * DGMI
To MADIN Ian * DGMI
Cc LLOYD Diane; LOFTON ReNeea * DGMI

Reply | Reply All | Forward | ...
Mon 8/14/2017 3:26 PM

PELEE PA.REQ FOR REV.IRANI LTR.2017 (002).pdf
.pdf File

Attached is a letter from Irani Engineering explaining the rationale for the proposed abandonment method for Pelee which as documented below has been approved on numerous occasions by this Department and I agree with the proposed method. This issue was also discussed w/ Diane while you were out and the question posed is: Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?

From: MADIN Ian * DGMI
Sent: Monday, August 14, 2017 10:30 AM
To: BRINKMANN Bob * DGMI <bob.brinkmann@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: RE: P&A of holes with rathole below casing

Bob, can you summarize the issue for me in the form of a question I can put to Diane?

From: BRINKMANN Bob * DGMI
Sent: Thursday, August 10, 2017 2:16 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: FW: P&A of holes with rathole below casing

Ian, As you can see by the attached documentation the P&A method being proposed by Enerfin for the Pelee well has been approved numerous times in the past. Although it appears that rule does not afford flexibility for this it may be allowed by the overall authority granted DOGAMI in law. I agree w/ the method proposed which will properly seal the well versus an attempt to drill out the float collar and casing shoe and attempt to cement the rat hole below the shoe.

OFFICE OF THE SECRETARY OF STATE
DENNIS RICHARDSON
SECRETARY OF STATE

LESLIE CUMMINGS
DEPUTY SECRETARY OF STATE

ARCHIVES DIVISION
MARY BETH HERKERT
DIRECTOR

800 SUMMER STREET NE
SALEM, OR 97310
503-373-0701

TEMPORARY ADMINISTRATIVE ORDER
INCLUDING STATEMENT OF NEED & JUSTIFICATION

DGMI 1-2017
CHAPTER 632
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

FILED
10/13/2017 2:55 PM
ARCHIVES DIVISION
SECRETARY OF STATE

FILING CAPTION: Makes minor adjustment to allow well plugging/decommissioning based on current, accepted best practices.

EFFECTIVE DATE: 10/13/2017 THROUGH 03/13/2018

AGENCY APPROVED DATE: 09/18/2017

CONTACT: Robert Houston
541-225-6451
robert.houston@oregon.gov

800 NE Oregon Street, Suite 965, 9232
3106 Pierce Parkway, Suite D, 97477
Portland, OR 97232

Filed By:
robert Houston
Rules Coordinator

NEED FOR THE RULE(S):

It has been determined by department staff that a portion of the "Plugging Methods and Procedure" required by the chapter 632, division 10, administrative rules is technically incorrect in certain instances. An existing permittee has proposed a well plugging procedure that is more technically sound for the facility at issue, and prompt action by the department to approve this plan will allow the applicant to take advantage of drilling equipment that is now available in the location of the well(s) to be plugged and decommissioned. A delay in well closure would result in additional costs to the permittee. Delayed well closure also presents greater risk to public safety and the environment. This rule amendment is required to approve the plan. Absent plan approval the interests of both the public and the permittee will be prejudiced by a delay in well plugging and decommissioning.

JUSTIFICATION OF TEMPORARY FILING:

Based on the findings set out above, the Board finds that a failure to act promptly in this regard would result in prejudice to the public and permittee. The temporary rule will allow the necessary flexibility for the department to approve plans to ensure proper plugging that decommissioning of oil and gas wells based on current best practices.

DOCUMENTS RELIED UPON, AND WHERE THEY ARE AVAILABLE:

The documents relied upon include: (1) Request for Revision of Abandon Rule for Enerfin Resources 7/18/17 from Saeed Irani; (2) Plugging and Abandonment Evaluation from Bob Brinkmann 9/14/17. Both are available on the DOGAMI website.

AMEND: 632-010-0198

RULE TITLE: Abandonment, Unlawful Abandonment, Suspension, Well Plugging

RULE SUMMARY: OAR 632-010-0198 addresses how DOGAMI deals with abandonment, unlawful abandonment, suspension and well plugging. Subsection (8)(c) is modified to clarify that the plugging procedure required in that subsection only applies to any open casing

In Summary, due to uncertainty of our current geologic understanding on the northern area of the site, and covered under the site certificate, we ask the EFSC to deny Amendment 13 until additional geological investigations take place. Furthermore, since the number of wells at the Mist Gas Field were previously abandoned against the current standards, and well locations are unknown, we request DOGAMI's current administrative order for well abandonment be revised using the best available science. At the conclusion of this update, we then request all wells and "holes", as described by Bob Brinkmann, be examined for potential leakage. We believe it is the duty of the EFSC to deny the amendment request until the state has shown that the federally protected drinking water overlying the Mist Gas Field is free from contaminants and suitable for all those living within Columbia County.

Outlook

New Public Comment submitted for project : RFA13 and DPO for Mist Underground Natural Gas Storage Facility

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From ODOE ITService * ODOE <ODOE.ITService@oregon.gov>
Date Thu 9/19/2024 2:01 PM
To SLOAN Kathleen * ODOE <Kathleen.SLOAN@energy.oregon.gov>

Organization: American Aquifers
Submitted by: Maria Gibson
Email: m.daugherty@americanaquifers.org
Zip Code:

Siting Project Phase: *DPO*

Comment Summary:

Please Click on the following link to view the full Comment Details

MSTAMD13 DPO Public Comment 5 Maria Gibson 2024-09-19

Comment Summary

—

Comment Date

source

Select email portal manual

Siting Project Phase

Select EXEMPTION REQUEST NOI DPO CC FORMAL RULEMAKING INFORMAL RULEMAKING AMD-A AMD-B

Comment Details

Application for Site Certificate (ASC) Exhibit

Select Exhibit A - Applicant and Participating Persons Exhibit B - Proposed Facility Description Exhibit C - Proposed Facility Location Exhibit D - Organizational Expertise Exhibit E - Permits Required Exhibit F - Adjacent Property Owners Exhibit G - Materials Analysis Exhibit H - Geological and Soil Stability Exhibit I - Soil Conditions Exhibit J - Wetlands and other Jurisdictional Waters Exhibit K - Land Use Exhibit L - Protected Areas Exhibit M - Financial Capability Exhibit N - Non-Generating Facility Need Exhibit O - Water Use Exhibit P - Fish and Wildlife Habitat Exhibit Q - Threatened and Endangered Plant and Animal Species Exhibit R - Scenic Resources Exhibit S - Historic Cultural and Archaeological Resources Exhibit T - Recreation Opportunities Exhibit U - Public Services Exhibit V - Waste Minimization Exhibit W - Site Restoration Exhibit X - Noise Exhibit Y - Carbon Dioxide Emissions Exhibit Z - Evaporative Cooling Tower Exhibit AA - Electric Transmission Line EMFs Exhibit BB - Other Requested Information Exhibit CC - Applicable Statutes, Rules, Ordinances Exhibit DD - Specific Requirements

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Page Number(s)

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Council Standards

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Comment

Please submit the attached document for public comment of RFA13

Attachments

4 days ago

Microsoft CRM Portals

Public Comment Amendment 13_pFRA13_AmericanAquifers.pdf (1.63 MB)

American Aquifer's Public Comment Requesting Denial of Amendment 13 (pFRA13)

American Aquifers, a 501c3 non-profit located in Oregon designed to support communities reliant upon groundwater, requests the Oregon Department of Energy (DOE) deny amendment 13 (pRFA13). Residents in Columbia County suffer from disproportionately high rates of cancer compared to other counties in the state, yet represent less than 1.3% of the state's population. Residents in Columbia County maintain cancer rates that rank #1 in uterus, lung, bronchus, and melanoma cancers, #2 in female pancreas cancer and leukemia, #4 in brain and esophagus cancer, #5 in female kidney/renal pelvis cancer, #6 in Non-Hodgkin Lymphoma, #7 in oral cavity and pharynx cancer, and #10 in male kidney/renal pelvis cancer. Additionally, a recent study of multiple myeloma shows Columbia County has staggering incidences of this rare, non-curable cancer that accounts for only 10% of all blood cancers. Of the 133 counties that make up the entire west coast, only 12 counties have significantly high rates of myeloma cancer, with Columbia County listed as one of the three in Oregon[1].

Cancer rates in Columbia County cannot be directly attributed to logging operations, which include the spraying of herbicides and are known carcinogens. A total of 47% of land in Oregon is forested. Tillamook and Washington Counties, with a combined population of 14.83%, are home to the largest forested area in the state, but according to the National Cancer Institute, cancer rates are stable in Tillamook County and falling in Washington County, suggesting that forestry practices are not the predominate cause to high rates of cancers suffered among communities in Columbia County.

According to the Safe Drinking Water Act (SDWA), all water designated for drinking use, including underground sources, are protected by federal law. Furthermore, the Oregon Groundwater Quality Protection Act of 1989 was enacted to prevent contamination of groundwater and to conserve, restore, and maintain Oregon's groundwater resources for present and future uses. The DOE is mentioned as a state agency that coordinates energy facility activities with Oregon's Department of Environmental Quality's (DEQ) to protect groundwaters of the state.

Potential cancer-causing chemicals are likely leaching into local aquifers from operations occuring at the Mist Gas Underground Natural Storage Gas Field (Mist Gas Field). A request for denial of pFRA13 is requested until environmental exposure pathways and current operation practices are properly and thoroughly investigated using the best available science, which is supported by Oregon State University's Institute for Natural Resources in accordance with OAR 629-603-0400(4) and is defined by Cornell Law as "science that is reliable and unbiased."

We find operations governing the Mist Gas Field are not meeting OAR, ORS, or EFSC Siting Standards. Our findings also show partiality toward field operators (Northwest Natural and Enerfin) by state agencies, including but not limited to DOGAMI[2] and others responsible for the safety protocols designed to protect community exposure, which are in place to limit chemical constituents not suitable for human consumption.

The following describes the OAR, ORS, or Sitting Standard (herein referred to as Guiding Policy) within the jurisdiction of the EFSC that supports our objection to amendment 13 based on the rules governing the Mist Gas Field, and includes evidence supporting our request for denial.

[1] Cheung, J.T.H., Zhang, W. and Chiu, B.C.H., 2023. Geospatial analysis of population-based incidence of multiple myeloma in the United States. Cancer epidemiology, 83, p.102343.
[2] Oregon Department of Geology and Mining Industries

Concern: Geologic Hazards Not Properly Assessed in Exhibit H: Geologic Hazard Evaluation (pFRA13)

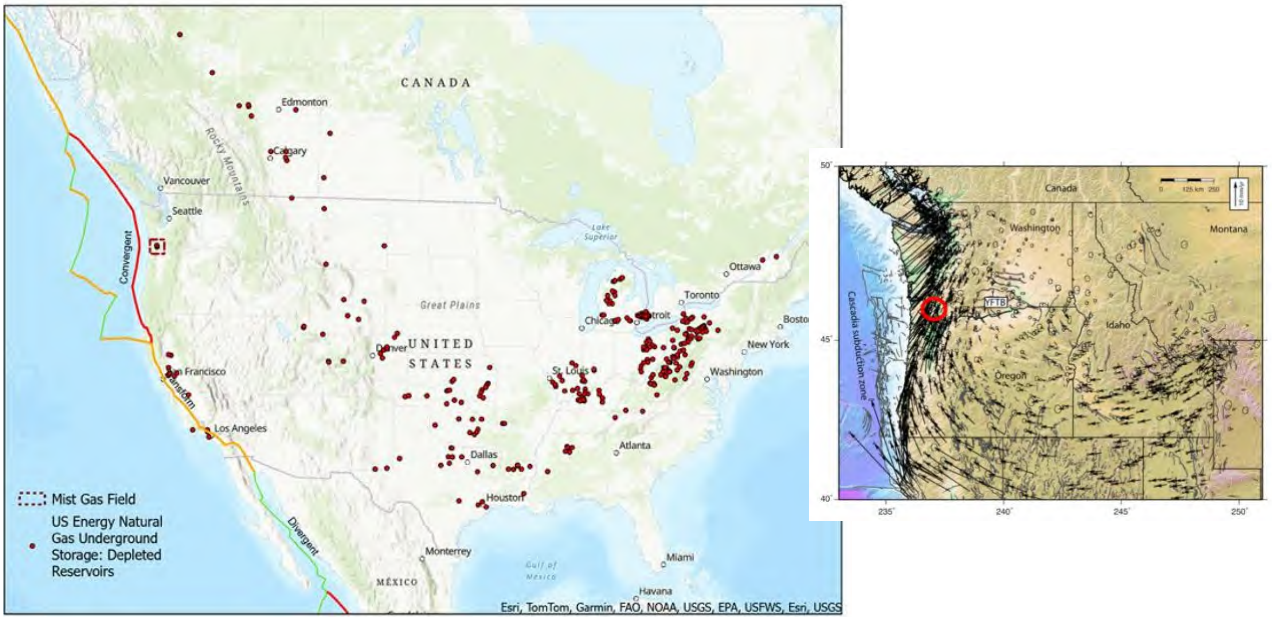
Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

OAR 345-024-0030 (2): The applicant has developed a program using technology that is both practicable and reliable to monitor the facility to ensure the public health and safety.

OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection

Statement of Opposition: The best available science has not been applied to adequately evaluate geologic hazards and risk associated with operations at the Mist Gas Field.

Supporting Evidence: The Mist Gas Field is the only depleted natural gas reservoir in the USA and Canada located adjacent to a tectonically active convergence zone as shown in the figure below. Tectonic activity is due to the Cascadia Subduction Zone, which is the collision and subduction of the Juan de Fuca Plate beneath the North American plate. The consequence of subducting plates, as is evident in Oregon and Washington landscape, include micro, local, and regional fault zones, volcanism, earthquakes, and crustal rotation. The Mist Gas Field is in an extremely active location where velocity data, obtained through high-density geodetic GPS measurements (inset map: black arrows), show significant rotation occurring beneath the gas field.



Given the uniqueness of the Mist Gas Field's location (insert map: red circle), new methods and tools are now available to enhance our current understanding of Cascadia Subduction Zone in the Pacific Northwest. Yet no indication is provided that suggests best available science is currently used to protect waters of the state from groundwater contamination due to hydrocarbons and other constituents that could potentially migrate to local aquifers from storage operations, including fracked chemicals obtained from gas purchased in Canada.

Additional Comment: In addition to the above concerns, in amendment 13 (pRFA13) Exhibit H (Geologic Hazards Evaluation), Table H-8 on page 22, discusses fault hazards and claims only 13 quaternary faults are within 50 miles of the project. According to information obtained from the USGS citation listed as the source of the fault data, it states, "For the hazard maps, both the fault surface trace and the metadata are simplified representations of the geometry and behavior of the fault, based on geologic interpretation."

In 2020, the USGS created a new geologic map[3] within the local vicinity. The map was created, "***to provide a uniform, modern geologic database for the greater Portland metro area to better understand its tectonic setting, active faults, volcanoes, landslide hazards, and distribution of geologic materials and resources. Information in this database will be used to improve seismic hazard and resource assessments in this economically important region."***

Therefore, Exhibit H in the pRFA13 should be considered outdated information, since it does not capture the true geologic landscape of the area. It's worth noting that both datasets were available at the time Exhibit H was written for pRFA13, yet Exhibit H made no mention of the updated USGS map, even though it was created in collaboration with DOGAMI. Aside from a paper written by Wells and Bemis in 2020, which focused on migration of the Oregon forearc on the Gales Creek fault, and the standard NRCS soils database, accessed in 2023, all other sources used to present the local geologic and topographic conditions of the site in Exhibit H were mostly written in the 1970s and 1980s. Although the 2020 USGS map falls outside of the Project Area, it is within the boundary of the Site Certificate.

Furthermore, the earthquake map provided in Exhibit H (Figure H-8) does not adequately represent the number of earthquakes recorded in the region. The image on the left shows earthquakes in Exhibit H: Figure H-8, with the smallest circles representing < 2 in magnitude. The image on the right, obtained from the USGS Earthquake Catalog[4], shows significantly more earthquakes than shown in Exhibit H.

[3] Wells, R., Haugerud, R.A., Niem, A.R., Niem, W.A., Ma, L., Evarts, R.C., O'Connor, J.E., Madin, I.P., Sherrod, D.R., Beeson, M.H. and Tolan, T.L., 2020. Geologic map of the greater Portland metropolitan area and surrounding region, Oregon and Washington (No. 3443). US Geological Survey.
[4] Schneider, M., Flury, H., Guttorp, P. and Wright, A., 2023. Earthquake catalog processing and swarm identification for the Pacific northwest. Seismological Research Letters, 94(5), pp.2500-2513.

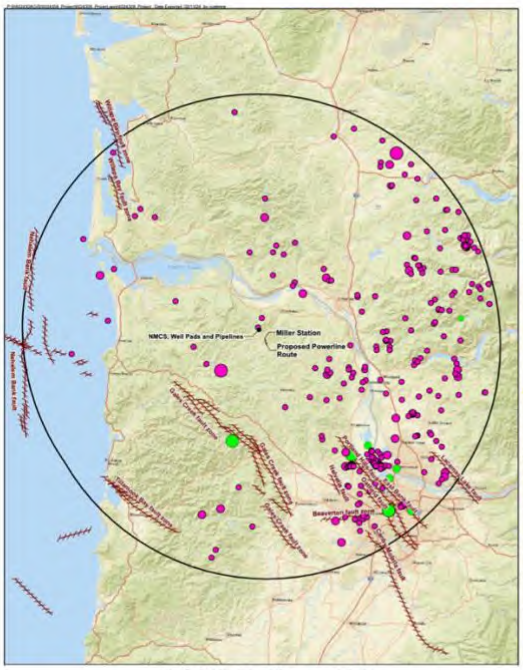
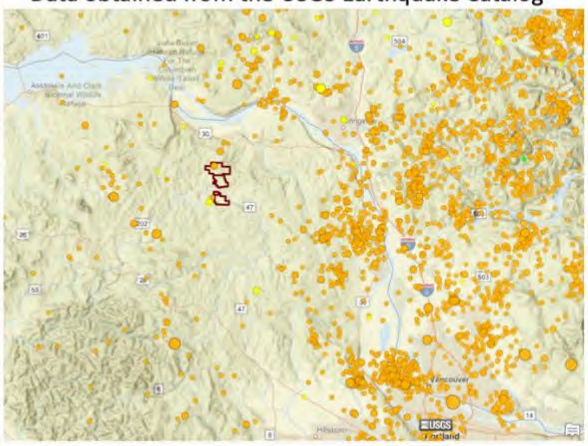
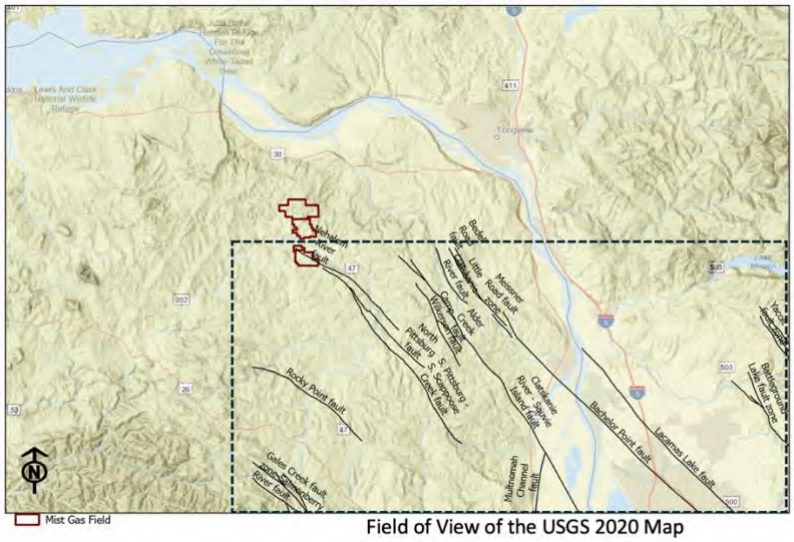


Exhibit H. Figure H-8

Data obtained from the USGS Earthquake Catalog



In addition to questionable material used in Exhibit H of the pRFA13, Table H-8 shows the nearest fault zone to the site is the Gales Creek Fault Zone located 17.6 miles away. However, only using the USGS 2020 map, 100 distinct faults were identified, representing up to 30 fault zones located approximately 50 miles from the Mist Gas Field (Figure Below. To reduce label overlap, not all fault zones are labeled in the figure). This includes new and extensive faulting within the southern boundary of the site certificate, not previously shown in any of DOGAMI's updated maps or in Exhibit H.



Field of View of the USGS 2020 Map

Concern: Surficial Geology Not Properly Assessed in Exhibit H of pFRA13

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

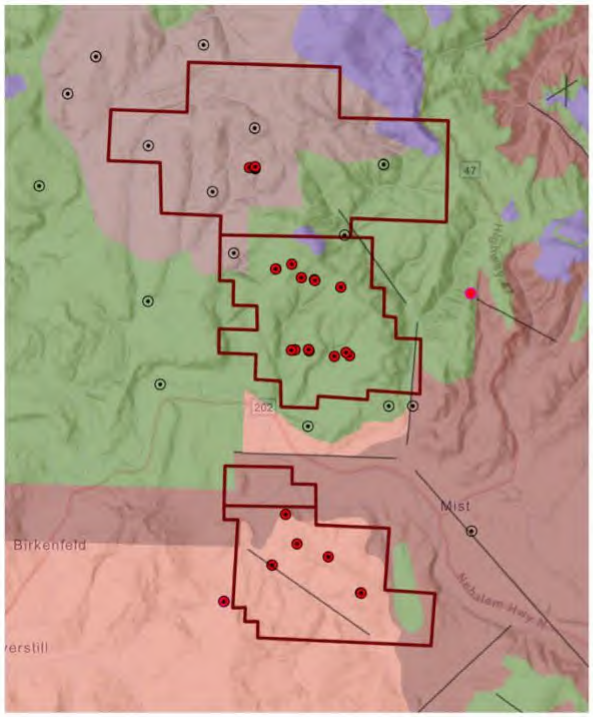
OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

Statement of Opposition: The Mist Gas Field is operated outside of conditions listed in OAR 345-022-0022(c). The potential geological hazards of the site are not properly identified. This is evident in the recent research released by the USGS in 2020. Although it was conducted in coordination with DOGAMI, no operational changes were implemented to reflect the complex geological conditions which show extensive faulting and cap rock exposure, which is now identified within the southernmost boundary of the gas field.

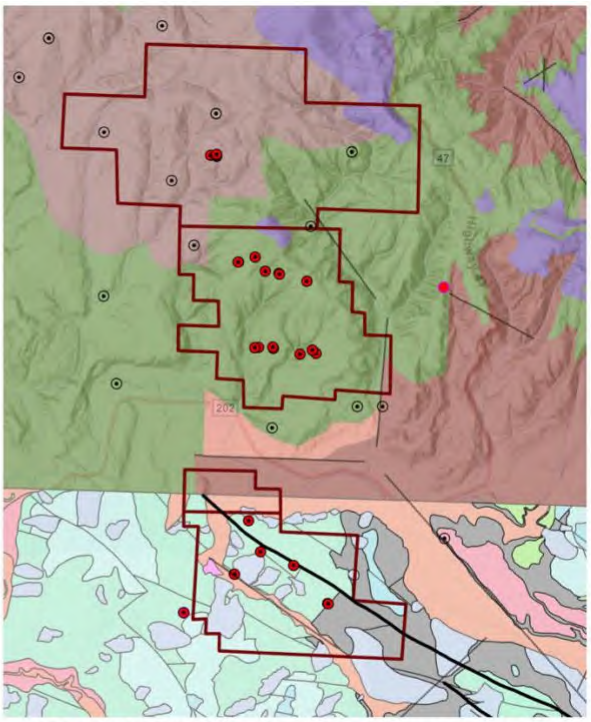
Supporting Evidence: According to DOGAMI, the best available geologic mapping for the state, combined into the Oregon Geologic Data Compilation, is provided under release 7[5]. Examination of this map shows simplified geology compared to the USGS map. This is apparent in the below figure, which shows an overlay of DOGAMI's compilation geologic map (OGDC-7) compared to the 2020 geologic map produced by the USGS.

Additional Comment: Surficial geology of the area has not been adequately assessed. This is apparent in the current DOGAMI map (left figure) compared to the updated 2020 map (right figure). The complexity of the geology and faulting is much more intricate than the OGDC-7 represents and needs throughout evaluation prior to approval of the amendment, as the surficial geology used in Exhibit B is likely extremely simplified (figure below).

[5] https://pubs.oregon.gov/dogami/dds/p-OGDC-7.htm



DOGAMI (OGDC-7) Surficial Geology



DOGAMI (OGDC-7) Surficial Geology Underlying the 2020 USGS Map

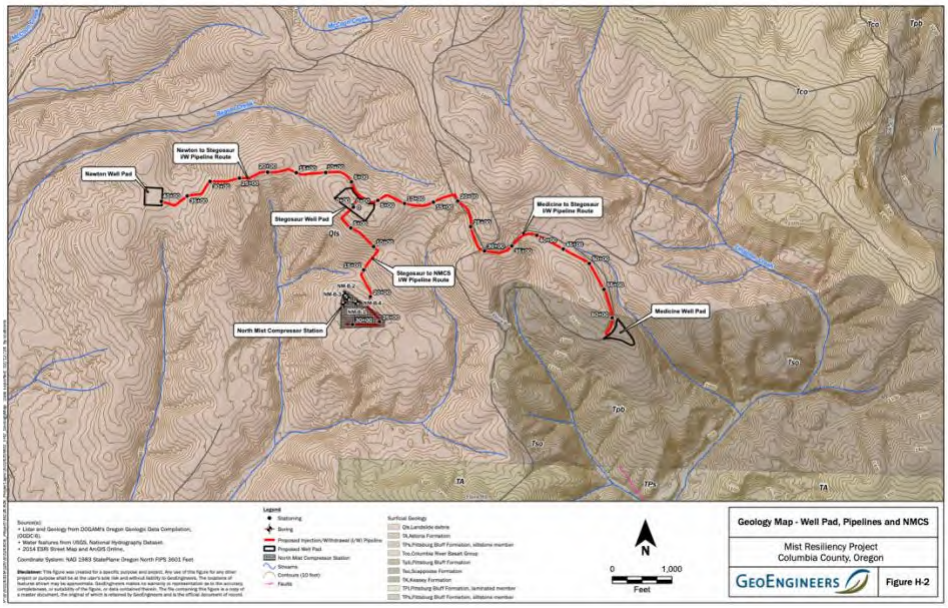


Figure H-2: Surficial Geology provided in Exhibit H

Concern: Groundwater Contamination Potential Due to Abandoned Wells

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

Statement of Opposition: Extensive exploration and operation of the Mist Gas Field has resulted in hundreds of injection, withdrawal, and abandoned wells. According to a report written by the National Energy Technology Laboratory in 2019[6], utilizing depleted reservoirs is attractive due to pre-existing infrastructure. The report also states, ***"Depleted oil and/or gas fields may pose the risk of abandoned, or orphaned, wells penetrating the storage reservoir, which can serve as a leakage conduit to neighboring formations or the atmosphere."*** Additionally, in the *Underground Gas Storage Regulatory Considerations: A Guide for State & Federal Regulatory Agencies, it* states, ***"Pre-existing or abandoned wellbores including previously pressurized or depleted areas, and previously generated hydraulic fractures should also be considered risk elements."*** DOGAMI has not properly inventoried all wells within the gas field. This decreases DOGAMI's ability to properly assess potential groundwater contamination sources.

Supporting Evidence: Email from a public records request show DOGAMI's Bob Houston stated 395 wells have been permitted at the field, yet it appears most of the locations of these wells are not identified. Furthermore, Bob notes ***"Additionally, [of the 395 wells permitted, it] does not include other "holes" (seismic holes, core holes and monitor)."*** A copy of the email is provided below. This suggests an extensive number of "holes" have likely outlived their sealing lifespan, yet most locations are unknown, thereby increasing the potential of groundwater contamination, with DOGAMI unable to execute effective measures to address this issue.

HOUSTON Robert * DGMI January 18, 2018 at 3:23 PM
RE: Mist wells Details
To: MADIN Ian * DGMI, Cc: BUCHNER Ed * DGMI, LOFTON ReNeea * DGMI

Ok,
There are currently 110 active permits in the Mist gas field

Based on the API number there has been a total of 395 "wells" permitted in Columbia since 1953. ReNeea, noted that there appears to be skips in the sequential API number. Additionally, does not include other "holes" (seismic holes, core holes and monitor).

Cheers,
Bob

Robert A. Houston, RG
Hydrocarbon & Metallic Ore Geologist
Oregon Department of Geology and Mineral Industries I Springfield Field Office I
Springfield Interagency Office|3106 Pierce Parkway Suite D I Springfield, Oregon 97477
Office: 541-225-6451; Cell: 541-619-4653
Email: robert.houston@oregon.gov I http://www.oregongeology.org

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 3:09 PM
To: BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

So it sounds like there is no easy way to get a definitive count of the number of wells drilled to develop the Mist field.

From: BUCHNER Ed * DGMI
Sent: Thursday, January 18, 2018 2:55 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

There are huge data gaps and inconsistencies in the well data and organization in the database in GIS, this was something we were actively working on in 2013 or so, but other priorities pulled us away. There may be 450 points in the Mist area, but do they fall within the geometry of the Mist Field? Additionally, for my previous query from the database, if the ResourceField did not specify "Mist" it would have not been returned.

Ed Buchner
GIS Technical Specialist
Office: (541) 967-2084
Mobile: (541) 619-3738
ed.buchner@oregon.gov

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 2:49 PM
To: HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>; BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>
Subject: RE: Mist wells

I am confused. The GIS files show almost 450 wells in the Mist field. There must be permits that include more than one well.

[6] Vikara, D., Zymroz, T., Withum, J.A., Shih, C.Y., Lin, S., Hoffman, H., Guinan, A. and Carr, T., 2019. Underground natural gas storage-analog studies to geologic storage of co2 (No. NETL-PUB-22087). National Energy Technology Lab.(NETL), Morgantown, WV (United States).

Additionally, confusion now exist between the safest method to abandon a well. On 7/18/2017 Irani Engineering requested a waiver to the well abandonment rule. According to email communication between Bob Brinkmann of DOGAMI and the Department of Justice, Bob stated, "*Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?* To provide a wavier required updating the administrative order that prohibited Irani Engineering's proposed method of abandonment.

A Temporary Administrative Order was approved by 9/8/2017 (later permanently approved). Bob Brinkman stated that the proposed method is technically sound and not granting the temporary order will place financial burden on the permittee, if it is not granted. This poses an issue, considering the field has been explored since the 1980s, a large quantity of abandoned wells, are now assumed less secure, since this rule wasn't granted until 2017. It should also be noted that best available science was not used to access the safety of the updated administrative order.

IRANI ENGINEERING, INC.
PETROLEUM ENGINEER
P.O. Box 661328
SACRAMENTO, CA 95866

07/18/2017

Mr. Ian Madin, Deputy Director
Mineral Land Regulation & Reclamation/Oregon Department of Geology & Mineral Industries
229 Broadalbin St. SW
Albany, OR 97321
Phone: (541) 967-2039
Fax: (541) 967-2075

Subject: Request for Revision of Abandon Rule for Enerfin Resources NW , "Pelee 21-31-65"

Mr. Madin,

Enerfin intends to abandon a few of their wells in Mist Gas Field, Oregon. The production casing in these wells are set couple of hundred feet above the TD of the wells. I know the rule states that we have to drill out the shoe of the production casing and set 100' of cement plug across them. I respectfully request a waiver to this rule because of the following reasons;

1. The shoe joint has a float collar on top and a float shoe on bottom, both in closed position, and 40' of cement between. Usually, there is several feet of hard production cement above the float collar too. On Pelee 21-31-65, we have another 42' of cement above the float collar for a total of 82'.
2. Usually steel perforating gun debris is on top of cement and the float collar which makes is very hard to get through and get to the float collar.
3. It is difficult to drill out the float collar and shoe. The float collar falls on the cement and starts spinning and prevents us from drilling the cement and float shoe.
4. The closed float collar and shoe and the cement between and above float collar are very strong barriers against leakage from below the shoe. Drilling out shoe and setting a 100' of cement plug in mud actually weakens this barrier (Equalized cement plugs can easily get contaminated with mud and have channeling issues). We would like to abandon the bottom of the hole by placing a 100' of cement plug on top of cement above the float collar.
5. We have to drill out cement, float and shoe of 4-1/2" casing, with 3-1/2" bit or mill (because of the drift diameter of the casing and mechanical limitation on mill size due to gun debris and float equipment milled out remnants). The hole was drilled with a 7-7/8" bit, therefore the hole size below the shoe is 7-7/8" filled with drilling mud (in Pelee 21-31-65 mud weight was 12.4 ppg). Cleaning a 7-7/8" hole with a 3-1/2" bit would be almost impossible at that point. The cement plug quality will be very much in doubt since mud contaminations will be a big factor.
6. I have worked in 8 different states in the USA and non of the other states have such a rule.

I have attached the abandoned programs and notice of abandonments for the two versions of the abandonment procedures. May I kindly ask for your office to review the rule and give us a relief from this rule in abandoning Enerfin wells in Mist Field.

Sincerely

Saeed Irani,
Registered Petroleum Engineer
President
Irani Engineering

RE: P&A of holes with rathole below casing

BRINKMANN Bob * DGMI
To MADIN Ian * DGMI
Cc LLOYD Diane; LOFTON ReNeea * DGMI

Reply | Reply All | Forward | ...
Mon 8/14/2017 3:26 PM

PELEE PA.REQ FOR REV.IRANI LTR.2017 (002).pdf
.pdf File

Attached is a letter from Irani Engineering explaining the rationale for the proposed abandonment method for Pelee which as documented below has been approved on numerous occasions by this Department and I agree with the proposed method. This issue was also discussed w/ Diane while you were out and the question posed is: Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?

From: MADIN Ian * DGMI
Sent: Monday, August 14, 2017 10:30 AM
To: BRINKMANN Bob * DGMI <bob.brinkmann@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: RE: P&A of holes with rathole below casing

Bob, can you summarize the issue for me in the form of a question I can put to Diane?

From: BRINKMANN Bob * DGMI
Sent: Thursday, August 10, 2017 2:16 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: FW: P&A of holes with rathole below casing

Ian, As you can see by the attached documentation the P&A method being proposed by Enerfin for the Pelee well has been approved numerous times in the past. Although it appears that rule does not afford flexibility for this it may be allowed by the overall authority granted DOGAMI in law. I agree w/ the method proposed which will properly seal the well versus an attempt to drill out the float collar and casing shoe and attempt to cement the rat hole below the shoe.

OFFICE OF THE SECRETARY OF STATE
DENNIS RICHARDSON
SECRETARY OF STATE

LESLIE CUMMINGS
DEPUTY SECRETARY OF STATE

ARCHIVES DIVISION
MARY BETH HERKERT
DIRECTOR

800 SUMMER STREET NE
SALEM, OR 97310
503-373-0701

TEMPORARY ADMINISTRATIVE ORDER
INCLUDING STATEMENT OF NEED & JUSTIFICATION

DGMI 1-2017
CHAPTER 632
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

FILED
10/13/2017 2:55 PM
ARCHIVES DIVISION
SECRETARY OF STATE

FILING CAPTION: Makes minor adjustment to allow well plugging/decommissioning based on current, accepted best practices.

EFFECTIVE DATE: 10/13/2017 THROUGH 03/13/2018

AGENCY APPROVED DATE: 09/18/2017

CONTACT: Robert Houston
541-225-6451
robert.houston@oregon.gov

800 NE Oregon Street, Suite 965, 9232
3106 Pierce Parkway, Suite D, 97477
Portland, OR 97232

Filed By:
robert Houston
Rules Coordinator

NEED FOR THE RULE(S):

It has been determined by department staff that a portion of the "Plugging Methods and Procedure" required by the chapter 632, division 10, administrative rules is technically incorrect in certain instances. An existing permittee has proposed a well plugging procedure that is more technically sound for the facility at issue, and prompt action by the department to approve this plan will allow the applicant to take advantage of drilling equipment that is now available in the location of the well(s) to be plugged and decommissioned. A delay in well closure would result in additional costs to the permittee. Delayed well closure also presents greater risk to public safety and the environment. This rule amendment is required to approve the plan. Absent plan approval the interests of both the public and the permittee will be prejudiced by a delay in well plugging and decommissioning.

JUSTIFICATION OF TEMPORARY FILING:

Based on the findings set out above, the Board finds that a failure to act promptly in this regard would result in prejudice to the public and permittee. The temporary rule will allow the necessary flexibility for the department to approve plans to ensure proper plugging that decommissioning of oil and gas wells based on current best practices.

DOCUMENTS RELIED UPON, AND WHERE THEY ARE AVAILABLE:

The documents relied upon include: (1) Request for Revision of Abandon Rule for Enerfin Resources 7/18/17 from Saeed Irani; (2) Plugging and Abandonment Evaluation from Bob Brinkmann 9/14/17. Both are available on the DOGAMI website.

AMEND: 632-010-0198

RULE TITLE: Abandonment, Unlawful Abandonment, Suspension, Well Plugging

RULE SUMMARY: OAR 632-010-0198 addresses how DOGAMI deals with abandonment, unlawful abandonment, suspension and well plugging. Subsection (8)(c) is modified to clarify that the plugging procedure required in that subsection only applies to any open casing

In Summary, due to uncertainty of our current geologic understanding on the northern area of the site, and covered under the site certificate, we ask the EFSC to deny Amendment 13 until additional geological investigations take place. Furthermore, since the number of wells at the Mist Gas Field were previously abandoned against the current standards, and well locations are unknown, we request DOGAMI's current administrative order for well abandonment be revised using the best available science. At the conclusion of this update, we then request all wells and "holes", as described by Bob Brinkmann, be examined for potential leakage. We believe it is the duty of the EFSC to deny the amendment request until the state has shown that the federally protected drinking water overlying the Mist Gas Field is free from contaminants and suitable for all those living within Columbia County.

SLOAN Kathleen * ODOE

From: ODOE ITService * ODOE
Sent: Thursday, September 19, 2024 2:12 PM
To: SLOAN Kathleen * ODOE
Subject: New Public Comment submitted for project : RFA13 and DPO for Mist Underground Natural Gas Storage Facility

Organization:
Submitted by: Daniel Schatz
Email: Danschatz@live.com
Zip Code: 97048

Siting Project Phase: *DPO*

Comment Summary:
I am commenting and asking the EFSC for a contested case. I am asking for the denial of NW Natural's Amendment 13.

Please Click on the following link to view the full Comment Details

MSTAMD13 DPO Public Comment 6 Dan Schatz 2024-09-19

Comment Summary

I am submitting written comments and asking the EFSC for a contested case. I am asking for the denial of NW Natural's Amendment 13.

Comment Date

source

Select email portal manual

Siting Project Phase

Select EXEMPTION REQUEST NOI DPO CC FORMAL RULEMAKING INFORMAL RULEMAKING AMD-A AMD-B

Comment Details

Application for Site Certificate (ASC) Exhibit

Select Exhibit A - Applicant and Participating Persons Exhibit B - Proposed Facility Description Exhibit C - Proposed Facility Location Exhibit D - Organizational Expertise Exhibit E - Permits Required Exhibit F - Adjacent Property Owners Exhibit G - Materials Analysis Exhibit H - Geological and Soil Stability Exhibit I - Soil Conditions Exhibit J - Wetlands and other Jurisdictional Waters Exhibit K - Land Use Exhibit L - Protected Areas Exhibit M - Financial Capability Exhibit N - Non-Generating Facility Need Exhibit O - Water Use Exhibit P - Fish and Wildlife Habitat Exhibit Q - Threatened and Endangered Plant and Animal Species Exhibit R - Scenic Resources Exhibit S - Historic Cultural and Archaeological Resources Exhibit T - Recreation Opportunities Exhibit U - Public Services Exhibit V - Waste Minimization Exhibit W - Site Restoration Exhibit X - Noise Exhibit Y - Carbon Dioxide Emissions Exhibit Z - Evaporative Cooling Tower Exhibit AA - Electric Transmission Line EMFs Exhibit BB - Other Requested Information Exhibit CC - Applicable Statutes, Rules, Ordinances Exhibit DD - Specific Requirements

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Page Number(s)

—

Council Standards

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Comment

Attachments

4 days ago

Microsoft CRM Portals

Public Comment Amendment 13_v2.pdf (1.63 MB)

American Aquifer's Public Comment Requesting Denial of Amendment 13 (pFRA13)

American Aquifers, a 501c3 non-profit located in Oregon designed to support communities reliant upon groundwater, requests the Oregon Department of Energy (DOE) deny amendment 13 (pRFA13). Residents in Columbia County suffer from disproportionately high rates of cancer compared to other counties in the state, yet represent less than 1.3% of the state's population. Residents in Columbia County maintain cancer rates that rank #1 in uterus, lung, bronchus, and melanoma cancers, #2 in female pancreas cancer and leukemia, #4 in brain and esophagus cancer, #5 in female kidney/renal pelvis cancer, #6 in Non-Hodgkin Lymphoma, #7 in oral cavity and pharynx cancer, and #10 in male kidney/renal pelvis cancer. Additionally, a recent study of multiple myeloma shows Columbia County has staggering incidences of this rare, non-curable cancer that accounts for only 10% of all blood cancers. Of the 133 counties that make up the entire west coast, only 12 counties have significantly high rates of myeloma cancer, with Columbia County listed as one of the three in Oregon[1].

Cancer rates in Columbia County cannot be directly attributed to logging operations, which include the spraying of herbicides and are known carcinogens. A total of 47% of land in Oregon is forested. Tillamook and Washington Counties, with a combined population of 14.83%, are home to the largest forested area in the state, but according to the National Cancer Institute, cancer rates are stable in Tillamook County and falling in Washington County, suggesting that forestry practices are not the predominate cause to high rates of cancers suffered among communities in Columbia County.

According to the Safe Drinking Water Act (SDWA), all water designated for drinking use, including underground sources, are protected by federal law. Furthermore, the Oregon Groundwater Quality Protection Act of 1989 was enacted to prevent contamination of groundwater and to conserve, restore, and maintain Oregon's groundwater resources for present and future uses. The DOE is mentioned as a state agency that coordinates energy facility activities with Oregon's Department of Environmental Quality's (DEQ) to protect groundwaters of the state.

Potential cancer-causing chemicals are likely leaching into local aquifers from operations occuring at the Mist Gas Underground Natural Storage Gas Field (Mist Gas Field). A request for denial of pFRA13 is requested until environmental exposure pathways and current operation practices are properly and thoroughly investigated using the best available science, which is supported by Oregon State University's Institute for Natural Resources in accordance with OAR 629-603-0400(4) and is defined by Cornell Law as "science that is reliable and unbiased."

We find operations governing the Mist Gas Field are not meeting OAR, ORS, or EFSC Siting Standards. Our findings also show partiality toward field operators (Northwest Natural and Enerfin) by state agencies, including but not limited to DOGAMI[2] and others responsible for the safety protocols designed to protect community exposure, which are in place to limit chemical constituents not suitable for human consumption.

The following describes the OAR, ORS, or Sitting Standard (herein referred to as Guiding Policy) within the jurisdiction of the EFSC that supports our objection to amendment 13 based on the rules governing the Mist Gas Field, and includes evidence supporting our request for denial.

[1] Cheung, J.T.H., Zhang, W. and Chiu, B.C.H., 2023. Geospatial analysis of population-based incidence of multiple myeloma in the United States. Cancer epidemiology, 83, p.102343.
[2] Oregon Department of Geology and Mining Industries

Concern: Geologic Hazards Not Properly Assessed in Exhibit H: Geologic Hazard Evaluation (pFRA13)

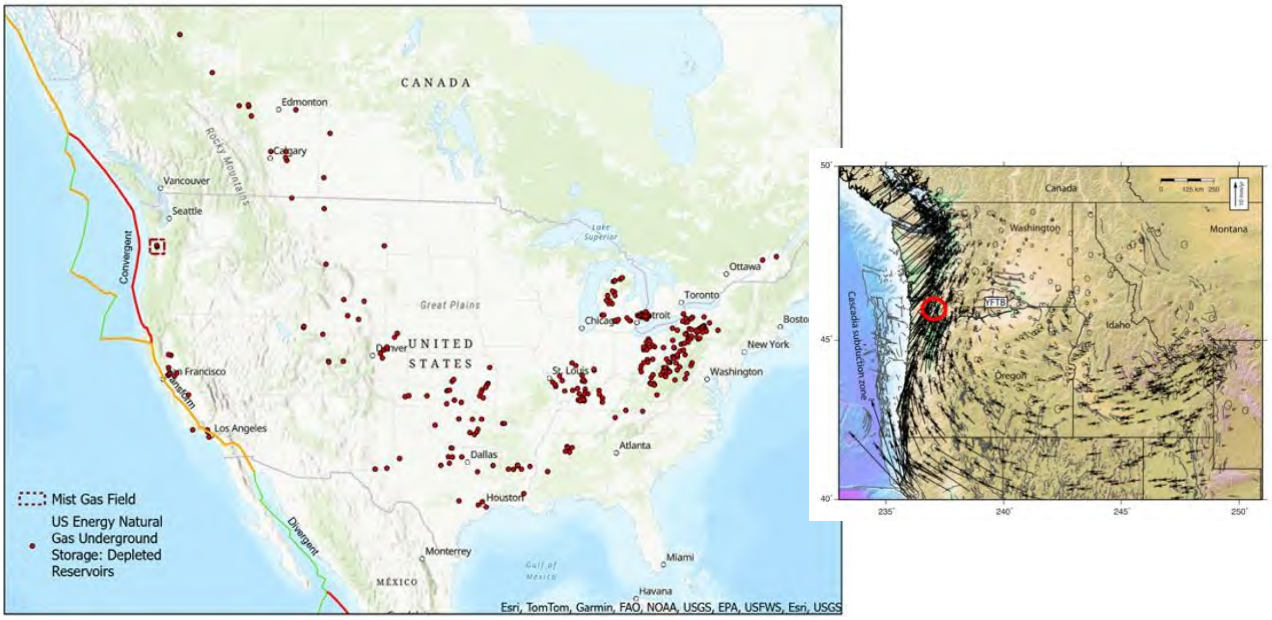
Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

OAR 345-024-0030 (2): The applicant has developed a program using technology that is both practicable and reliable to monitor the facility to ensure the public health and safety.

OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection

Statement of Opposition: The best available science has not been applied to adequately evaluate geologic hazards and risk associated with operations at the Mist Gas Field.

Supporting Evidence: The Mist Gas Field is the only depleted natural gas reservoir in the USA and Canada located adjacent to a tectonically active convergence zone as shown in the figure below. Tectonic activity is due to the Cascadia Subduction Zone, which is the collision and subduction of the Juan de Fuca Plate beneath the North American plate. The consequence of subducting plates, as is evident in Oregon and Washington landscape, include micro, local, and regional fault zones, volcanism, earthquakes, and crustal rotation. The Mist Gas Field is in an extremely active location where velocity data, obtained through high-density geodetic GPS measurements (inset map: black arrows), show significant rotation occurring beneath the gas field.



Given the uniqueness of the Mist Gas Field's location (insert map: red circle), new methods and tools are now available to enhance our current understanding of Cascadia Subduction Zone in the Pacific Northwest. Yet no indication is provided that suggests best available science is currently used to protect waters of the state from groundwater contamination due to hydrocarbons and other constituents that could potentially migrate to local aquifers from storage operations, including fracked chemicals obtained from gas purchased in Canada.

Additional Comment: In addition to the above concerns, in amendment 13 (pRFA13) Exhibit H (Geologic Hazards Evaluation), Table H-8 on page 22, discusses fault hazards and claims only 13 quaternary faults are within 50 miles of the project. According to information obtained from the USGS citation listed as the source of the fault data, it states, "For the hazard maps, both the fault surface trace and the metadata are simplified representations of the geometry and behavior of the fault, based on geologic interpretation."

In 2020, the USGS created a new geologic map[3] within the local vicinity. The map was created, "***to provide a uniform, modern geologic database for the greater Portland metro area to better understand its tectonic setting, active faults, volcanoes, landslide hazards, and distribution of geologic materials and resources. Information in this database will be used to improve seismic hazard and resource assessments in this economically important region."***

Therefore, Exhibit H in the pRFA13 should be considered outdated information, since it does not capture the true geologic landscape of the area. It's worth noting that both datasets were available at the time Exhibit H was written for pRFA13, yet Exhibit H made no mention of the updated USGS map, even though it was created in collaboration with DOGAMI. Aside from a paper written by Wells and Bemis in 2020, which focused on migration of the Oregon forearc on the Gales Creek fault, and the standard NRCS soils database, accessed in 2023, all other sources used to present the local geologic and topographic conditions of the site in Exhibit H were mostly written in the 1970s and 1980s. Although the 2020 USGS map falls outside of the Project Area, it is within the boundary of the Site Certificate.

Furthermore, the earthquake map provided in Exhibit H (Figure H-8) does not adequately represent the number of earthquakes recorded in the region. The image on the left shows earthquakes in Exhibit H: Figure H-8, with the smallest circles representing < 2 in magnitude. The image on the right, obtained from the USGS Earthquake Catalog[4], shows significantly more earthquakes than shown in Exhibit H.

[3] Wells, R., Haugerud, R.A., Niem, A.R., Niem, W.A., Ma, L., Evarts, R.C., O'Connor, J.E., Madin, I.P., Sherrod, D.R., Beeson, M.H. and Tolan, T.L., 2020. Geologic map of the greater Portland metropolitan area and surrounding region, Oregon and Washington (No. 3443). US Geological Survey.
[4] Schneider, M., Flury, H., Guttorp, P. and Wright, A., 2023. Earthquake catalog processing and swarm identification for the Pacific northwest. Seismological Research Letters, 94(5), pp.2500-2513.

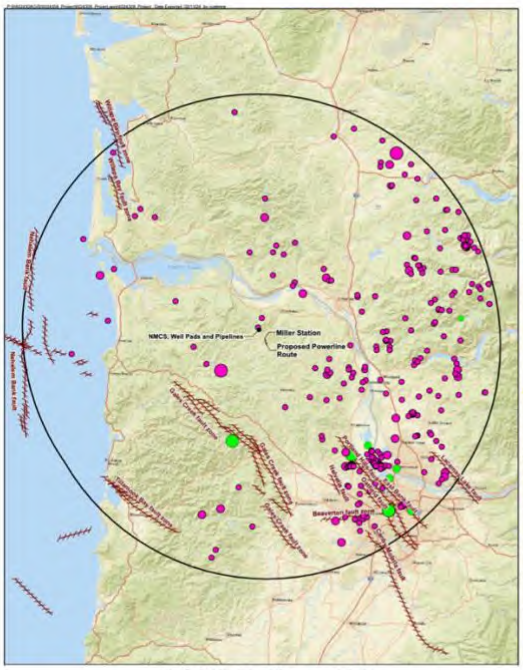
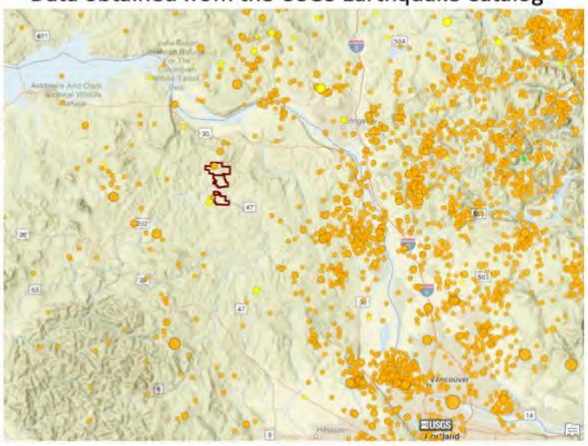
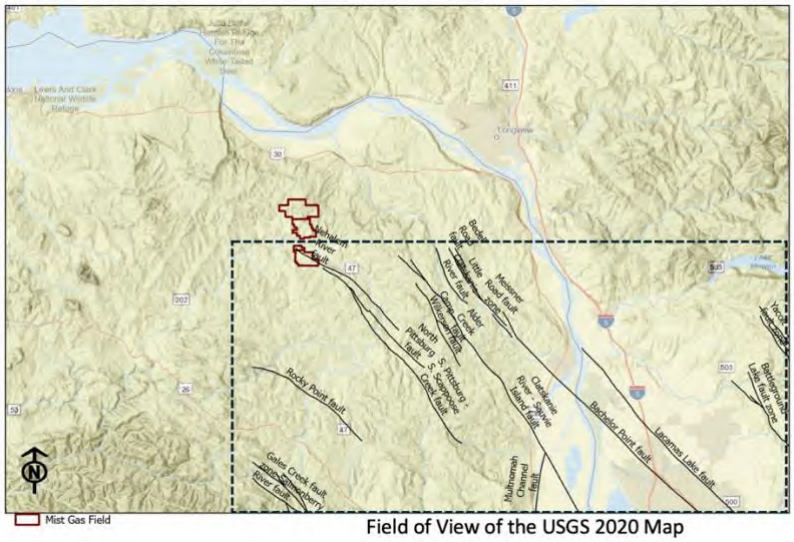


Exhibit H. Figure H-8

Data obtained from the USGS Earthquake Catalog



In addition to questionable material used in Exhibit H of the pRFA13, Table H-8 shows the nearest fault zone to the site is the Gales Creek Fault Zone located 17.6 miles away. However, only using the USGS 2020 map, 100 distinct faults were identified, representing up to 30 fault zones located approximately 50 miles from the Mist Gas Field (Figure Below. To reduce label overlap, not all fault zones are labeled in the figure). This includes new and extensive faulting within the southern boundary of the site certificate, not previously shown in any of DOGAMI's updated maps or in Exhibit H.



Field of View of the USGS 2020 Map

Concern: Surficial Geology Not Properly Assessed in Exhibit H of pFRA13

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

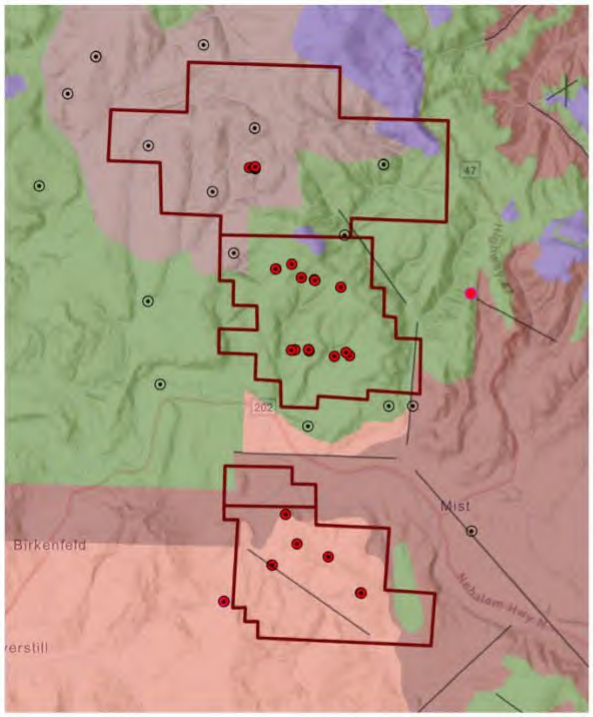
OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

Statement of Opposition: The Mist Gas Field is operated outside of conditions listed in OAR 345-022-0022(c). The potential geological hazards of the site are not properly identified. This is evident in the recent research released by the USGS in 2020. Although it was conducted in coordination with DOGAMI, no operational changes were implemented to reflect the complex geological conditions which show extensive faulting and cap rock exposure, which is now identified within the southernmost boundary of the gas field.

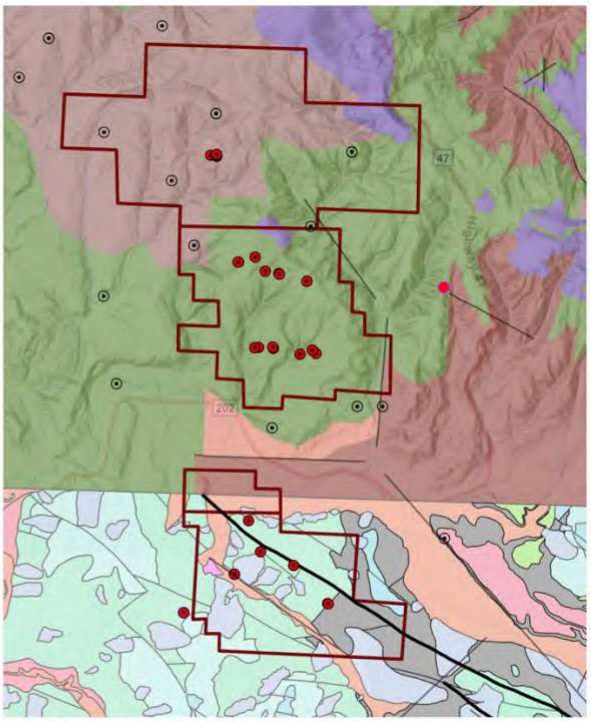
Supporting Evidence: According to DOGAMI, the best available geologic mapping for the state, combined into the Oregon Geologic Data Compilation, is provided under release 7[5]. Examination of this map shows simplified geology compared to the USGS map. This is apparent in the below figure, which shows an overlay of DOGAMI's compilation geologic map (OGDC-7) compared to the 2020 geologic map produced by the USGS.

Additional Comment: Surficial geology of the area has not been adequately assessed. This is apparent in the current DOGAMI map (left figure) compared to the updated 2020 map (right figure). The complexity of the geology and faulting is much more intricate than the OGDC-7 represents and needs throughout evaluation prior to approval of the amendment, as the surficial geology used in Exhibit B is likely extremely simplified (figure below).

[5] https://pubs.oregon.gov/dogami/dds/p-OGDC-7.htm



DOGAMI (OGDC-7) Surficial Geology



DOGAMI (OGDC-7) Surficial Geology Underlying the 2020 USGS Map

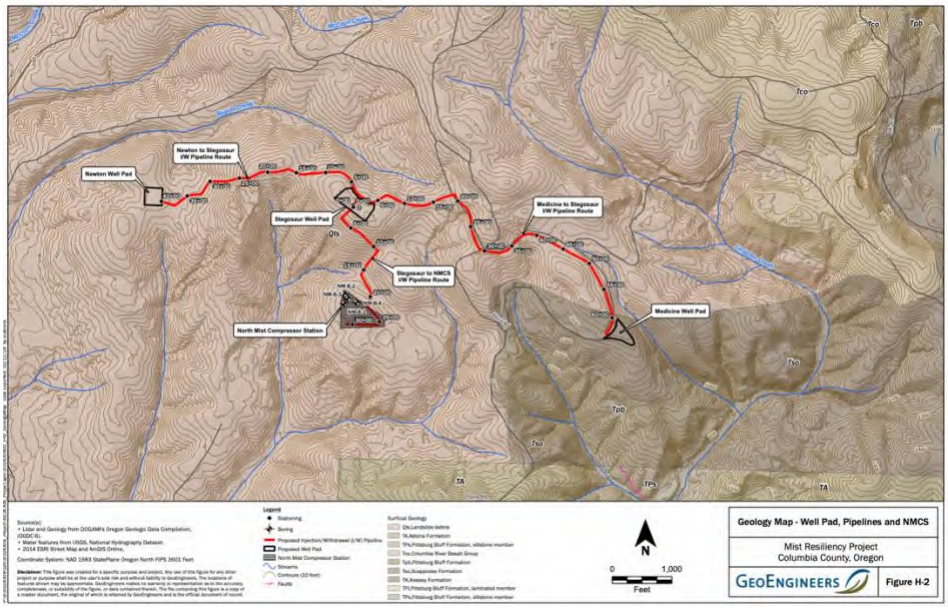


Figure H-2: Surficial Geology provided in Exhibit H

Concern: Groundwater Contamination Potential Due to Abandoned Wells

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

Statement of Opposition: Extensive exploration and operation of the Mist Gas Field has resulted in hundreds of injection, withdrawal, and abandoned wells. According to a report written by the National Energy Technology Laboratory in 2019[6], utilizing depleted reservoirs is attractive due to pre-existing infrastructure. The report also states, ***"Depleted oil and/or gas fields may pose the risk of abandoned, or orphaned, wells penetrating the storage reservoir, which can serve as a leakage conduit to neighboring formations or the atmosphere."*** Additionally, in the *Underground Gas Storage Regulatory Considerations: A Guide for State & Federal Regulatory Agencies, it* states, ***"Pre-existing or abandoned wellbores including previously pressurized or depleted areas, and previously generated hydraulic fractures should also be considered risk elements."*** DOGAMI has not properly inventoried all wells within the gas field. This decreases DOGAMI's ability to properly assess potential groundwater contamination sources.

Supporting Evidence: Email from a public records request show DOGAMI's Bob Houston stated 395 wells have been permitted at the field, yet it appears most of the locations of these wells are not identified. Furthermore, Bob notes ***"Additionally, [of the 395 wells permitted, it] does not include other "holes" (seismic holes, core holes and monitor)."*** A copy of the email is provided below. This suggests an extensive number of "holes" have likely outlived their sealing lifespan, yet most locations are unknown, thereby increasing the potential of groundwater contamination, with DOGAMI unable to execute effective measures to address this issue.

HOUSTON Robert * DGMI January 18, 2018 at 3:23 PM
RE: Mist wells Details
To: MADIN Ian * DGMI, Cc: BUCHNER Ed * DGMI, LOFTON ReNeea * DGMI

Ok,
There are currently 110 active permits in the Mist gas field

Based on the API number there has been a total of 395 "wells" permitted in Columbia since 1953. ReNeea, noted that there appears to be skips in the sequential API number. Additionally, does not include other "holes" (seismic holes, core holes and monitor).

Cheers,
Bob

Robert A. Houston, RG
Hydrocarbon & Metallic Ore Geologist
Oregon Department of Geology and Mineral Industries I Springfield Field Office I
Springfield Interagency Office|3106 Pierce Parkway Suite D I Springfield, Oregon 97477
Office: 541-225-6451; Cell: 541-619-4653
Email: robert.houston@oregon.gov I http://www.oregongeology.org

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 3:09 PM
To: BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

So it sounds like there is no easy way to get a definitive count of the number of wells drilled to develop the Mist field.

From: BUCHNER Ed * DGMI
Sent: Thursday, January 18, 2018 2:55 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

There are huge data gaps and inconsistencies in the well data and organization in the database in GIS, this was something we were actively working on in 2013 or so, but other priorities pulled us away. There may be 450 points in the Mist area, but do they fall within the geometry of the Mist Field? Additionally, for my previous query from the database, if the ResourceField did not specify "Mist" it would have not been returned.

Ed Buchner
GIS Technical Specialist
Office: (541) 967-2084
Mobile: (541) 619-3738
ed.buchner@oregon.gov

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 2:49 PM
To: HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>; BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>
Subject: RE: Mist wells

I am confused. The GIS files show almost 450 wells in the Mist field. There must be permits that include more than one well.

[6] Vikara, D., Zymroz, T., Withum, J.A., Shih, C.Y., Lin, S., Hoffman, H., Guinan, A. and Carr, T., 2019. Underground natural gas storage-analog studies to geologic storage of co2 (No. NETL-PUB-22087). National Energy Technology Lab.(NETL), Morgantown, WV (United States).

Additionally, confusion now exist between the safest method to abandon a well. On 7/18/2017 Irani Engineering requested a waiver to the well abandonment rule. According to email communication between Bob Brinkmann of DOGAMI and the Department of Justice, Bob stated, "*Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?* To provide a wavier required updating the administrative order that prohibited Irani Engineering's proposed method of abandonment.

A Temporary Administrative Order was approved by 9/8/2017 (later permanently approved). Bob Brinkman stated that the proposed method is technically sound and not granting the temporary order will place financial burden on the permittee, if it is not granted. This poses an issue, considering the field has been explored since the 1980s, a large quantity of abandoned wells, are now assumed less secure, since this rule wasn't granted until 2017. It should also be noted that best available science was not used to access the safety of the updated administrative order.

IRANI ENGINEERING, INC.
PETROLEUM ENGINEER
P.O. Box 661328
SACRAMENTO, CA 95866

07/18/2017

Mr. Ian Madin, Deputy Director
Mineral Land Regulation & Reclamation/Oregon Department of Geology & Mineral Industries
229 Broadalbin St. SW
Albany, OR 97321
Phone: (541) 967-2039
Fax: (541) 967-2075

Subject: Request for Revision of Abandon Rule for Enerfin Resources NW , "Pelee 21-31-65"

Mr. Madin,

Enerfin intends to abandon a few of their wells in Mist Gas Field, Oregon. The production casing in these wells are set couple of hundred feet above the TD of the wells. I know the rule states that we have to drill out the shoe of the production casing and set 100' of cement plug across them. I respectfully request a waiver to this rule because of the following reasons;

1. The shoe joint has a float collar on top and a float shoe on bottom, both in closed position, and 40' of cement between. Usually, there is several feet of hard production cement above the float collar too. On Pelee 21-31-65, we have another 42' of cement above the float collar for a total of 82'.
2. Usually steel perforating gun debris is on top of cement and the float collar which makes is very hard to get through and get to the float collar.
3. It is difficult to drill out the float collar and shoe. The float collar falls on the cement and starts spinning and prevents us from drilling the cement and float shoe.
4. The closed float collar and shoe and the cement between and above float collar are very strong barriers against leakage from below the shoe. Drilling out shoe and setting a 100' of cement plug in mud actually weakens this barrier (Equalized cement plugs can easily get contaminated with mud and have channeling issues). We would like to abandon the bottom of the hole by placing a 100' of cement plug on top of cement above the float collar.
5. We have to drill out cement, float and shoe of 4-1/2" casing, with 3-1/2" bit or mill (because of the drift diameter of the casing and mechanical limitation on mill size due to gun debris and float equipment milled out remnants). The hole was drilled with a 7-7/8" bit, therefore the hole size below the shoe is 7-7/8" filled with drilling mud (in Pelee 21-31-65 mud weight was 12.4 ppg). Cleaning a 7-7/8" hole with a 3-1/2" bit would be almost impossible at that point. The cement plug quality will be very much in doubt since mud contaminations will be a big factor.
6. I have worked in 8 different states in the USA and non of the other states have such a rule.

I have attached the abandoned programs and notice of abandonments for the two versions of the abandonment procedures. May I kindly ask for your office to review the rule and give us a relief from this rule in abandoning Enerfin wells in Mist Field.

Sincerely

Saeed Irani,
Registered Petroleum Engineer
President
Irani Engineering

RE: P&A of holes with rathole below casing

BRINKMANN Bob * DGMI
To MADIN Ian * DGMI
Cc LLOYD Diane; LOFTON ReNeea * DGMI

Reply | Reply All | Forward | ...
Mon 8/14/2017 3:26 PM

PELEE PA.REQ FOR REV.IRANI LTR.2017 (002).pdf
.pdf File

Attached is a letter from Irani Engineering explaining the rationale for the proposed abandonment method for Pelee which as documented below has been approved on numerous occasions by this Department and I agree with the proposed method. This issue was also discussed w/ Diane while you were out and the question posed is: Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?

From: MADIN Ian * DGMI
Sent: Monday, August 14, 2017 10:30 AM
To: BRINKMANN Bob * DGMI <bob.brinkmann@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: RE: P&A of holes with rathole below casing

Bob, can you summarize the issue for me in the form of a question I can put to Diane?

From: BRINKMANN Bob * DGMI
Sent: Thursday, August 10, 2017 2:16 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: FW: P&A of holes with rathole below casing

Ian, As you can see by the attached documentation the P&A method being proposed by Enerfin for the Pelee well has been approved numerous times in the past. Although it appears that rule does not afford flexibility for this it may be allowed by the overall authority granted DOGAMI in law. I agree w/ the method proposed which will properly seal the well versus an attempt to drill out the float collar and casing shoe and attempt to cement the rat hole below the shoe.

OFFICE OF THE SECRETARY OF STATE
DENNIS RICHARDSON
SECRETARY OF STATE

LESLIE CUMMINGS
DEPUTY SECRETARY OF STATE

ARCHIVES DIVISION
MARY BETH HERKERT
DIRECTOR

800 SUMMER STREET NE
SALEM, OR 97310
503-373-0701

TEMPORARY ADMINISTRATIVE ORDER
INCLUDING STATEMENT OF NEED & JUSTIFICATION

DGMI 1-2017
CHAPTER 632
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

FILED
10/13/2017 2:55 PM
ARCHIVES DIVISION
SECRETARY OF STATE

FILING CAPTION: Makes minor adjustment to allow well plugging/decommissioning based on current, accepted best practices.

EFFECTIVE DATE: 10/13/2017 THROUGH 03/13/2018

AGENCY APPROVED DATE: 09/18/2017

CONTACT: Robert Houston
541-225-6451
robert.houston@oregon.gov

800 NE Oregon Street, Suite 965, 9232
3106 Pierce Parkway, Suite D, 97477
Portland, OR 97232

Filed By:
robert Houston
Rules Coordinator

NEED FOR THE RULE(S):

It has been determined by department staff that a portion of the "Plugging Methods and Procedure" required by the chapter 632, division 10, administrative rules is technically incorrect in certain instances. An existing permittee has proposed a well plugging procedure that is more technically sound for the facility at issue, and prompt action by the department to approve this plan will allow the applicant to take advantage of drilling equipment that is now available in the location of the well(s) to be plugged and decommissioned. A delay in well closure would result in additional costs to the permittee. Delayed well closure also presents greater risk to public safety and the environment. This rule amendment is required to approve the plan. Absent plan approval the interests of both the public and the permittee will be prejudiced by a delay in well plugging and decommissioning.

JUSTIFICATION OF TEMPORARY FILING:

Based on the findings set out above, the Board finds that a failure to act promptly in this regard would result in prejudice to the public and permittee. The temporary rule will allow the necessary flexibility for the department to approve plans to ensure proper plugging that decommissioning of oil and gas wells based on current best practices.

DOCUMENTS RELIED UPON, AND WHERE THEY ARE AVAILABLE:

The documents relied upon include: (1) Request for Revision of Abandon Rule for Enerfin Resources 7/18/17 from Saeed Irani; (2) Plugging and Abandonment Evaluation from Bob Brinkmann 9/14/17. Both are available on the DOGAMI website.

AMEND: 632-010-0198

RULE TITLE: Abandonment, Unlawful Abandonment, Suspension, Well Plugging

RULE SUMMARY: OAR 632-010-0198 addresses how DOGAMI deals with abandonment, unlawful abandonment, suspension and well plugging. Subsection (8)(c) is modified to clarify that the plugging procedure required in that subsection only applies to any open casing

In Summary, due to uncertainty of our current geologic understanding on the northern area of the site, and covered under the site certificate, we ask the EFSC to deny Amendment 13 until additional geological investigations take place. Furthermore, since the number of wells at the Mist Gas Field were previously abandoned against the current standards, and well locations are unknown, we request DOGAMI's current administrative order for well abandonment be revised using the best available science. At the conclusion of this update, we then request all wells and "holes", as described by Bob Brinkmann, be examined for potential leakage. We believe it is the duty of the EFSC to deny the amendment request until the state has shown that the federally protected drinking water overlying the Mist Gas Field is free from contaminants and suitable for all those living within Columbia County.

SLOAN Kathleen * ODOE

From: ODOE ITService * ODOE
Sent: Thursday, September 19, 2024 2:44 PM
To: SLOAN Kathleen * ODOE
Subject: New Public Comment submitted for project : RFA13 and DPO for Mist Underground Natural Gas Storage Facility

Organization:
Submitted by: Liz BECKER
Email: lizbecker503@gmail.com
Zip Code: 97206

Siting Project Phase: *DPO*

Comment Summary:
I want to contest the amendment

I appreciate your thoughtful review

Please Click on the following link to view the full Comment Details

MSTAMD13 DPO Public Comment 7 Liz Becker 2024-09-19

Comment Summary

I want to contest the amendment

I appreciate your thoughtful review

Comment Date

source

Select email portal manual

Siting Project Phase

Select EXEMPTION REQUEST NOI DPO CC FORMAL RULEMAKING INFORMAL RULEMAKING AMD-A AMD-B

Comment Details

Application for Site Certificate (ASC) Exhibit

Select Exhibit A - Applicant and Participating Persons Exhibit B - Proposed Facility Description Exhibit C - Proposed Facility Location Exhibit D - Organizational Expertise Exhibit E - Permits Required Exhibit F - Adjacent Property Owners Exhibit G - Materials Analysis Exhibit H - Geological and Soil Stability Exhibit I - Soil Conditions Exhibit J - Wetlands and other Jurisdictional Waters Exhibit K - Land Use Exhibit L - Protected Areas Exhibit M - Financial Capability Exhibit N - Non-Generating Facility Need Exhibit O - Water Use Exhibit P - Fish and Wildlife Habitat Exhibit Q - Threatened and Endangered Plant and Animal Species Exhibit R - Scenic Resources Exhibit S - Historic Cultural and Archaeological Resources Exhibit T - Recreation Opportunities Exhibit U - Public Services Exhibit V - Waste Minimization Exhibit W - Site Restoration Exhibit X - Noise Exhibit Y - Carbon Dioxide Emissions Exhibit Z - Evaporative Cooling Tower Exhibit AA - Electric Transmission Line EMFs Exhibit BB - Other Requested Information Exhibit CC - Applicable Statutes, Rules, Ordinances Exhibit DD - Specific Requirements

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Page Number(s)

—

Council Standards

—

Comment

Attachments

4 days ago

Microsoft CRM Portals

Public Comment Amendment 13_v2 (1).pdf (1.63 MB)

American Aquifer's Public Comment Requesting Denial of Amendment 13 (pFRA13)

American Aquifers, a 501c3 non-profit located in Oregon designed to support communities reliant upon groundwater, requests the Oregon Department of Energy (DOE) deny amendment 13 (pRFA13). Residents in Columbia County suffer from disproportionately high rates of cancer compared to other counties in the state, yet represent less than 1.3% of the state's population. Residents in Columbia County maintain cancer rates that rank #1 in uterus, lung, bronchus, and melanoma cancers, #2 in female pancreas cancer and leukemia, #4 in brain and esophagus cancer, #5 in female kidney/renal pelvis cancer, #6 in Non-Hodgkin Lymphoma, #7 in oral cavity and pharynx cancer, and #10 in male kidney/renal pelvis cancer. Additionally, a recent study of multiple myeloma shows Columbia County has staggering incidences of this rare, non-curable cancer that accounts for only 10% of all blood cancers. Of the 133 counties that make up the entire west coast, only 12 counties have significantly high rates of myeloma cancer, with Columbia County listed as one of the three in Oregon[1].

Cancer rates in Columbia County cannot be directly attributed to logging operations, which include the spraying of herbicides and are known carcinogens. A total of 47% of land in Oregon is forested. Tillamook and Washington Counties, with a combined population of 14.83%, are home to the largest forested area in the state, but according to the National Cancer Institute, cancer rates are stable in Tillamook County and falling in Washington County, suggesting that forestry practices are not the predominate cause to high rates of cancers suffered among communities in Columbia County.

According to the Safe Drinking Water Act (SDWA), all water designated for drinking use, including underground sources, are protected by federal law. Furthermore, the Oregon Groundwater Quality Protection Act of 1989 was enacted to prevent contamination of groundwater and to conserve, restore, and maintain Oregon's groundwater resources for present and future uses. The DOE is mentioned as a state agency that coordinates energy facility activities with Oregon's Department of Environmental Quality's (DEQ) to protect groundwaters of the state.

Potential cancer-causing chemicals are likely leaching into local aquifers from operations occuring at the Mist Gas Underground Natural Storage Gas Field (Mist Gas Field). A request for denial of pFRA13 is requested until environmental exposure pathways and current operation practices are properly and thoroughly investigated using the best available science, which is supported by Oregon State University's Institute for Natural Resources in accordance with OAR 629-603-0400(4) and is defined by Cornell Law as "science that is reliable and unbiased."

We find operations governing the Mist Gas Field are not meeting OAR, ORS, or EFSC Siting Standards. Our findings also show partiality toward field operators (Northwest Natural and Enerfin) by state agencies, including but not limited to DOGAMI[2] and others responsible for the safety protocols designed to protect community exposure, which are in place to limit chemical constituents not suitable for human consumption.

The following describes the OAR, ORS, or Sitting Standard (herein referred to as Guiding Policy) within the jurisdiction of the EFSC that supports our objection to amendment 13 based on the rules governing the Mist Gas Field, and includes evidence supporting our request for denial.

[1] Cheung, J.T.H., Zhang, W. and Chiu, B.C.H., 2023. Geospatial analysis of population-based incidence of multiple myeloma in the United States. Cancer epidemiology, 83, p.102343.
[2] Oregon Department of Geology and Mining Industries

Concern: Geologic Hazards Not Properly Assessed in Exhibit H: Geologic Hazard Evaluation (pFRA13)

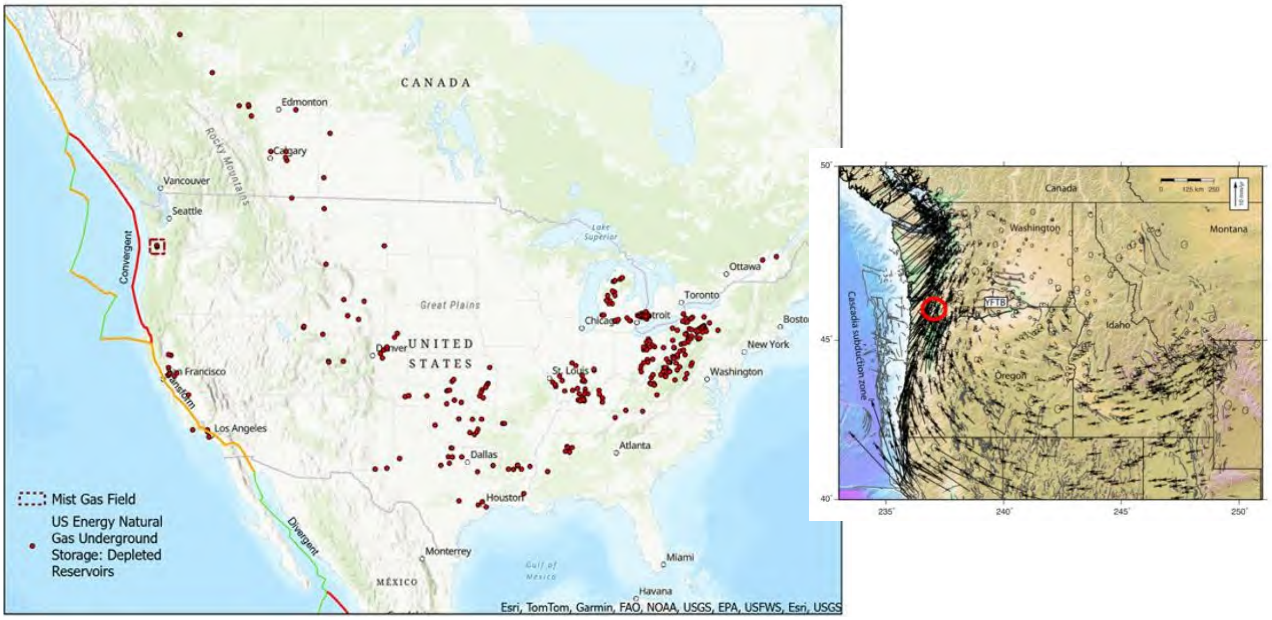
Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

OAR 345-024-0030 (2): The applicant has developed a program using technology that is both practicable and reliable to monitor the facility to ensure the public health and safety.

OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection

Statement of Opposition: The best available science has not been applied to adequately evaluate geologic hazards and risk associated with operations at the Mist Gas Field.

Supporting Evidence: The Mist Gas Field is the only depleted natural gas reservoir in the USA and Canada located adjacent to a tectonically active convergence zone as shown in the figure below. Tectonic activity is due to the Cascadia Subduction Zone, which is the collision and subduction of the Juan de Fuca Plate beneath the North American plate. The consequence of subducting plates, as is evident in Oregon and Washington landscape, include micro, local, and regional fault zones, volcanism, earthquakes, and crustal rotation. The Mist Gas Field is in an extremely active location where velocity data, obtained through high-density geodetic GPS measurements (inset map: black arrows), show significant rotation occurring beneath the gas field.



Given the uniqueness of the Mist Gas Field's location (insert map: red circle), new methods and tools are now available to enhance our current understanding of Cascadia Subduction Zone in the Pacific Northwest. Yet no indication is provided that suggests best available science is currently used to protect waters of the state from groundwater contamination due to hydrocarbons and other constituents that could potentially migrate to local aquifers from storage operations, including fracked chemicals obtained from gas purchased in Canada.

Additional Comment: In addition to the above concerns, in amendment 13 (pRFA13) Exhibit H (Geologic Hazards Evaluation), Table H-8 on page 22, discusses fault hazards and claims only 13 quaternary faults are within 50 miles of the project. According to information obtained from the USGS citation listed as the source of the fault data, it states, "For the hazard maps, both the fault surface trace and the metadata are simplified representations of the geometry and behavior of the fault, based on geologic interpretation."

In 2020, the USGS created a new geologic map[3] within the local vicinity. The map was created, "***to provide a uniform, modern geologic database for the greater Portland metro area to better understand its tectonic setting, active faults, volcanoes, landslide hazards, and distribution of geologic materials and resources. Information in this database will be used to improve seismic hazard and resource assessments in this economically important region."***

Therefore, Exhibit H in the pRFA13 should be considered outdated information, since it does not capture the true geologic landscape of the area. It's worth noting that both datasets were available at the time Exhibit H was written for pRFA13, yet Exhibit H made no mention of the updated USGS map, even though it was created in collaboration with DOGAMI. Aside from a paper written by Wells and Bemis in 2020, which focused on migration of the Oregon forearc on the Gales Creek fault, and the standard NRCS soils database, accessed in 2023, all other sources used to present the local geologic and topographic conditions of the site in Exhibit H were mostly written in the 1970s and 1980s. Although the 2020 USGS map falls outside of the Project Area, it is within the boundary of the Site Certificate.

Furthermore, the earthquake map provided in Exhibit H (Figure H-8) does not adequately represent the number of earthquakes recorded in the region. The image on the left shows earthquakes in Exhibit H: Figure H-8, with the smallest circles representing < 2 in magnitude. The image on the right, obtained from the USGS Earthquake Catalog[4], shows significantly more earthquakes than shown in Exhibit H.

[3] Wells, R., Haugerud, R.A., Niem, A.R., Niem, W.A., Ma, L., Evarts, R.C., O'Connor, J.E., Madin, I.P., Sherrod, D.R., Beeson, M.H. and Tolan, T.L., 2020. Geologic map of the greater Portland metropolitan area and surrounding region, Oregon and Washington (No. 3443). US Geological Survey.
[4] Schneider, M., Flury, H., Guttorp, P. and Wright, A., 2023. Earthquake catalog processing and swarm identification for the Pacific northwest. Seismological Research Letters, 94(5), pp.2500-2513.

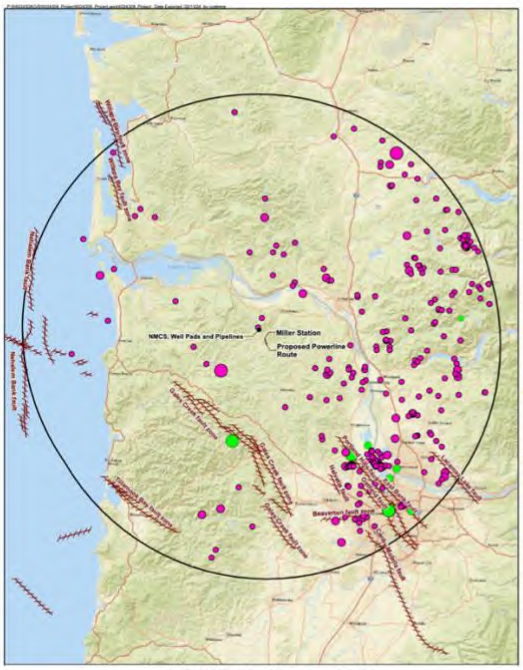
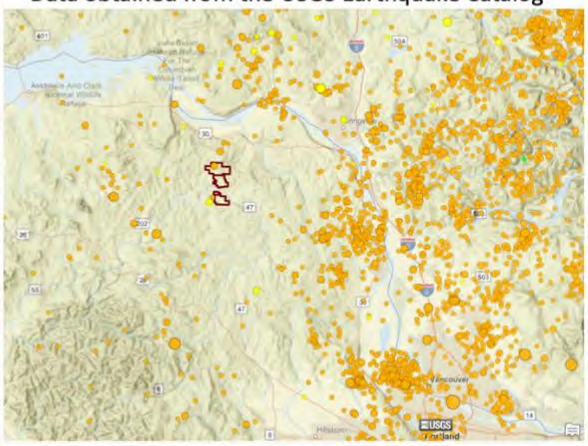
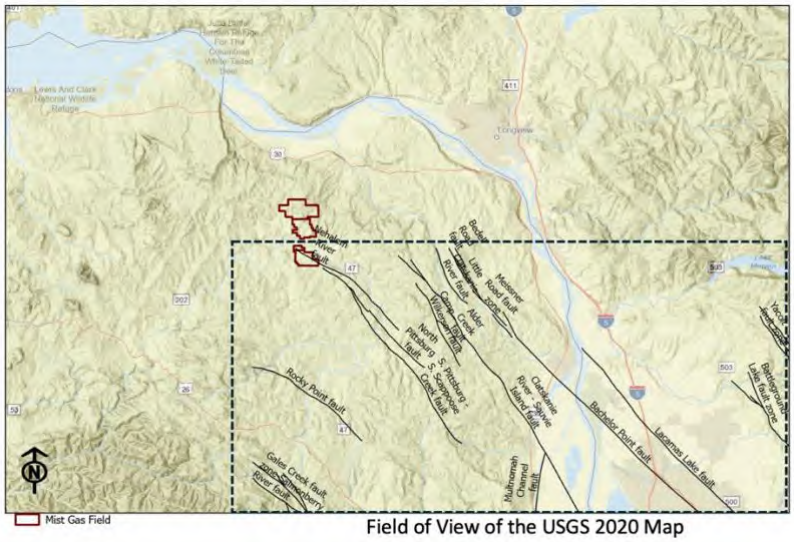


Exhibit H. Figure H-8

Data obtained from the USGS Earthquake Catalog



In addition to questionable material used in Exhibit H of the pRFA13, Table H-8 shows the nearest fault zone to the site is the Gales Creek Fault Zone located 17.6 miles away. However, only using the USGS 2020 map, 100 distinct faults were identified, representing up to 30 fault zones located approximately 50 miles from the Mist Gas Field (Figure Below. To reduce label overlap, not all fault zones are labeled in the figure). This includes new and extensive faulting within the southern boundary of the site certificate, not previously shown in any of DOGAMI's updated maps or in Exhibit H.



Field of View of the USGS 2020 Map

Concern: Surficial Geology Not Properly Assessed in Exhibit H of pFRA13

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

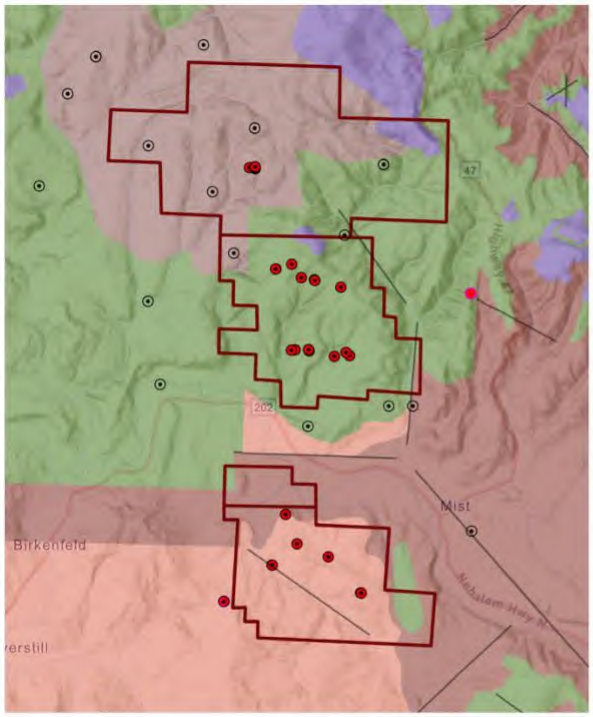
OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

Statement of Opposition: The Mist Gas Field is operated outside of conditions listed in OAR 345-022-0022(c). The potential geological hazards of the site are not properly identified. This is evident in the recent research released by the USGS in 2020. Although it was conducted in coordination with DOGAMI, no operational changes were implemented to reflect the complex geological conditions which show extensive faulting and cap rock exposure, which is now identified within the southernmost boundary of the gas field.

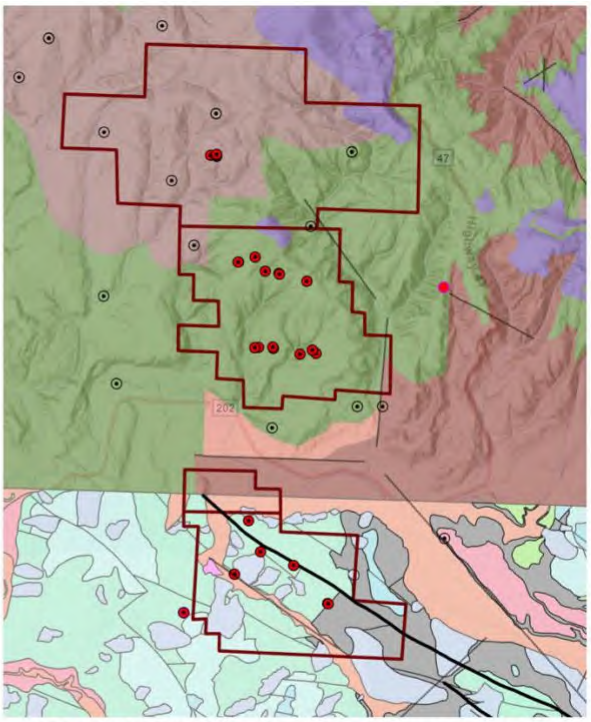
Supporting Evidence: According to DOGAMI, the best available geologic mapping for the state, combined into the Oregon Geologic Data Compilation, is provided under release 7[5]. Examination of this map shows simplified geology compared to the USGS map. This is apparent in the below figure, which shows an overlay of DOGAMI's compilation geologic map (OGDC-7) compared to the 2020 geologic map produced by the USGS.

Additional Comment: Surficial geology of the area has not been adequately assessed. This is apparent in the current DOGAMI map (left figure) compared to the updated 2020 map (right figure). The complexity of the geology and faulting is much more intricate than the OGDC-7 represents and needs throughout evaluation prior to approval of the amendment, as the surficial geology used in Exhibit B is likely extremely simplified (figure below).

[5] https://pubs.oregon.gov/dogami/dds/p-OGDC-7.htm



DOGAMI (OGDC-7) Surficial Geology



DOGAMI (OGDC-7) Surficial Geology Underlying the 2020 USGS Map

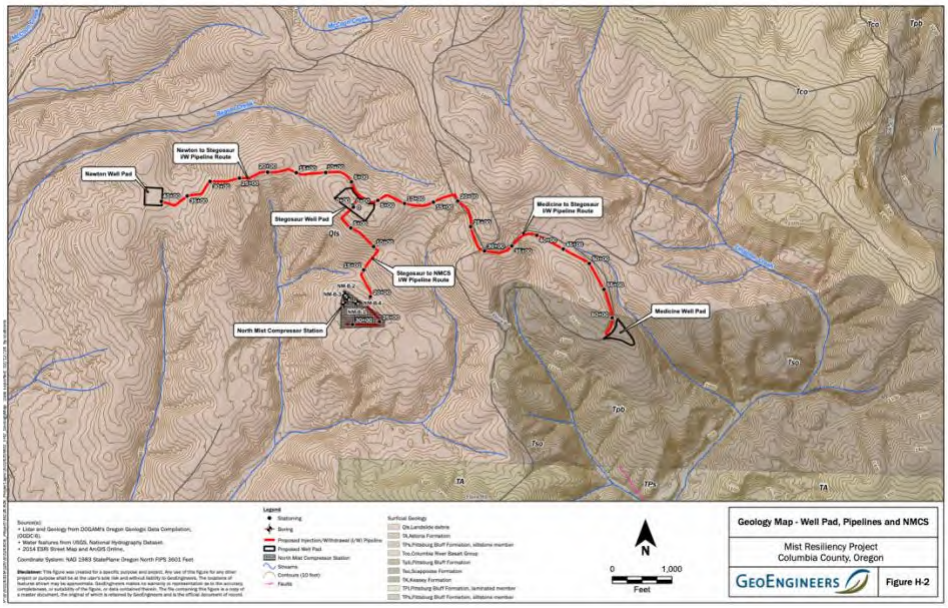


Figure H-2: Surficial Geology provided in Exhibit H

Concern: Groundwater Contamination Potential Due to Abandoned Wells

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

Statement of Opposition: Extensive exploration and operation of the Mist Gas Field has resulted in hundreds of injection, withdrawal, and abandoned wells. According to a report written by the National Energy Technology Laboratory in 2019[6], utilizing depleted reservoirs is attractive due to pre-existing infrastructure. The report also states, ***"Depleted oil and/or gas fields may pose the risk of abandoned, or orphaned, wells penetrating the storage reservoir, which can serve as a leakage conduit to neighboring formations or the atmosphere."*** Additionally, in the *Underground Gas Storage Regulatory Considerations: A Guide for State & Federal Regulatory Agencies, it* states, ***"Pre-existing or abandoned wellbores including previously pressurized or depleted areas, and previously generated hydraulic fractures should also be considered risk elements."*** DOGAMI has not properly inventoried all wells within the gas field. This decreases DOGAMI's ability to properly assess potential groundwater contamination sources.

Supporting Evidence: Email from a public records request show DOGAMI's Bob Houston stated 395 wells have been permitted at the field, yet it appears most of the locations of these wells are not identified. Furthermore, Bob notes ***"Additionally, [of the 395 wells permitted, it] does not include other "holes" (seismic holes, core holes and monitor)."*** A copy of the email is provided below. This suggests an extensive number of "holes" have likely outlived their sealing lifespan, yet most locations are unknown, thereby increasing the potential of groundwater contamination, with DOGAMI unable to execute effective measures to address this issue.

HOUSTON Robert * DGMI January 18, 2018 at 3:23 PM
RE: Mist wells Details
To: MADIN Ian * DGMI, Cc: BUCHNER Ed * DGMI, LOFTON ReNeea * DGMI

Ok,
There are currently 110 active permits in the Mist gas field

Based on the API number there has been a total of 395 "wells" permitted in Columbia since 1953. ReNeea, noted that there appears to be skips in the sequential API number. Additionally, does not include other "holes" (seismic holes, core holes and monitor).

Cheers,
Bob

Robert A. Houston, RG
Hydrocarbon & Metallic Ore Geologist
Oregon Department of Geology and Mineral Industries I Springfield Field Office I
Springfield Interagency Office|3106 Pierce Parkway Suite D I Springfield, Oregon 97477
Office: 541-225-6451; Cell: 541-619-4653
Email: robert.houston@oregon.gov I http://www.oregongeology.org

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 3:09 PM
To: BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

So it sounds like there is no easy way to get a definitive count of the number of wells drilled to develop the Mist field.

From: BUCHNER Ed * DGMI
Sent: Thursday, January 18, 2018 2:55 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

There are huge data gaps and inconsistencies in the well data and organization in the database in GIS, this was something we were actively working on in 2013 or so, but other priorities pulled us away. There may be 450 points in the Mist area, but do they fall within the geometry of the Mist Field? Additionally, for my previous query from the database, if the ResourceField did not specify "Mist" it would have not been returned.

Ed Buchner
GIS Technical Specialist
Office: (541) 967-2084
Mobile: (541) 619-3738
ed.buchner@oregon.gov

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 2:49 PM
To: HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>; BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>
Subject: RE: Mist wells

I am confused. The GIS files show almost 450 wells in the Mist field. There must be permits that include more than one well.

[6] Vikara, D., Zymroz, T., Withum, J.A., Shih, C.Y., Lin, S., Hoffman, H., Guinan, A. and Carr, T., 2019. Underground natural gas storage-analog studies to geologic storage of co2 (No. NETL-PUB-22087). National Energy Technology Lab.(NETL), Morgantown, WV (United States).

Additionally, confusion now exist between the safest method to abandon a well. On 7/18/2017 Irani Engineering requested a waiver to the well abandonment rule. According to email communication between Bob Brinkmann of DOGAMI and the Department of Justice, Bob stated, "*Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?* To provide a wavier required updating the administrative order that prohibited Irani Engineering's proposed method of abandonment.

A Temporary Administrative Order was approved by 9/8/2017 (later permanently approved). Bob Brinkman stated that the proposed method is technically sound and not granting the temporary order will place financial burden on the permittee, if it is not granted. This poses an issue, considering the field has been explored since the 1980s, a large quantity of abandoned wells, are now assumed less secure, since this rule wasn't granted until 2017. It should also be noted that best available science was not used to access the safety of the updated administrative order.

IRANI ENGINEERING, INC.
PETROLEUM ENGINEER
P.O. Box 661328
SACRAMENTO, CA 95866

07/18/2017

Mr. Ian Madin, Deputy Director
Mineral Land Regulation & Reclamation/Oregon Department of Geology & Mineral Industries
229 Broadalbin St. SW
Albany, OR 97321
Phone: (541) 967-2039
Fax: (541) 967-2075

Subject: Request for Revision of Abandon Rule for Enerfin Resources NW , "Pelee 21-31-65"

Mr. Madin,

Enerfin intends to abandon a few of their wells in Mist Gas Field, Oregon. The production casing in these wells are set couple of hundred feet above the TD of the wells. I know the rule states that we have to drill out the shoe of the production casing and set 100' of cement plug across them. I respectfully request a waiver to this rule because of the following reasons;

1. The shoe joint has a float collar on top and a float shoe on bottom, both in closed position, and 40' of cement between. Usually, there is several feet of hard production cement above the float collar too. On Pelee 21-31-65, we have another 42' of cement above the float collar for a total of 82'.
2. Usually steel perforating gun debris is on top of cement and the float collar which makes is very hard to get through and get to the float collar.
3. It is difficult to drill out the float collar and shoe. The float collar falls on the cement and starts spinning and prevents us from drilling the cement and float shoe.
4. The closed float collar and shoe and the cement between and above float collar are very strong barriers against leakage from below the shoe. Drilling out shoe and setting a 100' of cement plug in mud actually weakens this barrier (Equalized cement plugs can easily get contaminated with mud and have channeling issues). We would like to abandon the bottom of the hole by placing a 100' of cement plug on top of cement above the float collar.
5. We have to drill out cement, float and shoe of 4-1/2" casing, with 3-1/2" bit or mill (because of the drift diameter of the casing and mechanical limitation on mill size due to gun debris and float equipment milled out remnants). The hole was drilled with a 7-7/8" bit, therefore the hole size below the shoe is 7-7/8" filled with drilling mud (in Pelee 21-31-65 mud weight was 12.4 ppg). Cleaning a 7-7/8" hole with a 3-1/2" bit would be almost impossible at that point. The cement plug quality will be very much in doubt since mud contaminations will be a big factor.
6. I have worked in 8 different states in the USA and non of the other states have such a rule.

I have attached the abandoned programs and notice of abandonments for the two versions of the abandonment procedures. May I kindly ask for your office to review the rule and give us a relief from this rule in abandoning Enerfin wells in Mist Field.

Sincerely

Saeed Irani,
Registered Petroleum Engineer
President
Irani Engineering

RE: P&A of holes with rathole below casing

BRINKMANN Bob * DGMI
To MADIN Ian * DGMI
Cc LLOYD Diane; LOFTON ReNeea * DGMI

Reply | Reply All | Forward | ...
Mon 8/14/2017 3:26 PM

PELEE PA.REQ FOR REV.IRANI LTR.2017 (002).pdf
.pdf File

Attached is a letter from Irani Engineering explaining the rationale for the proposed abandonment method for Pelee which as documented below has been approved on numerous occasions by this Department and I agree with the proposed method. This issue was also discussed w/ Diane while you were out and the question posed is: Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?

From: MADIN Ian * DGMI
Sent: Monday, August 14, 2017 10:30 AM
To: BRINKMANN Bob * DGMI <bob.brinkmann@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: RE: P&A of holes with rathole below casing

Bob, can you summarize the issue for me in the form of a question I can put to Diane?

From: BRINKMANN Bob * DGMI
Sent: Thursday, August 10, 2017 2:16 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: FW: P&A of holes with rathole below casing

Ian, As you can see by the attached documentation the P&A method being proposed by Enerfin for the Pelee well has been approved numerous times in the past. Although it appears that rule does not afford flexibility for this it may be allowed by the overall authority granted DOGAMI in law. I agree w/ the method proposed which will properly seal the well versus an attempt to drill out the float collar and casing shoe and attempt to cement the rat hole below the shoe.

OFFICE OF THE SECRETARY OF STATE
DENNIS RICHARDSON
SECRETARY OF STATE

LESLIE CUMMINGS
DEPUTY SECRETARY OF STATE

ARCHIVES DIVISION
MARY BETH HERKERT
DIRECTOR

800 SUMMER STREET NE
SALEM, OR 97310
503-373-0701

TEMPORARY ADMINISTRATIVE ORDER
INCLUDING STATEMENT OF NEED & JUSTIFICATION

DGMI 1-2017
CHAPTER 632
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

FILED
10/13/2017 2:55 PM
ARCHIVES DIVISION
SECRETARY OF STATE

FILING CAPTION: Makes minor adjustment to allow well plugging/decommissioning based on current, accepted best practices.

EFFECTIVE DATE: 10/13/2017 THROUGH 03/13/2018

AGENCY APPROVED DATE: 09/18/2017

CONTACT: Robert Houston
541-225-6451
robert.houston@oregon.gov

800 NE Oregon Street, Suite 965, 9232
3106 Pierce Parkway, Suite D, 97477
Portland, OR 97232

Filed By:
robert Houston
Rules Coordinator

NEED FOR THE RULE(S):

It has been determined by department staff that a portion of the "Plugging Methods and Procedure" required by the chapter 632, division 10, administrative rules is technically incorrect in certain instances. An existing permittee has proposed a well plugging procedure that is more technically sound for the facility at issue, and prompt action by the department to approve this plan will allow the applicant to take advantage of drilling equipment that is now available in the location of the well(s) to be plugged and decommissioned. A delay in well closure would result in additional costs to the permittee. Delayed well closure also presents greater risk to public safety and the environment. This rule amendment is required to approve the plan. Absent plan approval the interests of both the public and the permittee will be prejudiced by a delay in well plugging and decommissioning.

JUSTIFICATION OF TEMPORARY FILING:

Based on the findings set out above, the Board finds that a failure to act promptly in this regard would result in prejudice to the public and permittee. The temporary rule will allow the necessary flexibility for the department to approve plans to ensure proper plugging that decommissioning of oil and gas wells based on current best practices.

DOCUMENTS RELIED UPON, AND WHERE THEY ARE AVAILABLE:

The documents relied upon include: (1) Request for Revision of Abandon Rule for Enerfin Resources 7/18/17 from Saeed Irani; (2) Plugging and Abandonment Evaluation from Bob Brinkmann 9/14/17. Both are available on the DOGAMI website.

AMEND: 632-010-0198

RULE TITLE: Abandonment, Unlawful Abandonment, Suspension, Well Plugging

RULE SUMMARY: OAR 632-010-0198 addresses how DOGAMI deals with abandonment, unlawful abandonment, suspension and well plugging. Subsection (8)(c) is modified to clarify that the plugging procedure required in that subsection only applies to any open casing

In Summary, due to uncertainty of our current geologic understanding on the northern area of the site, and covered under the site certificate, we ask the EFSC to deny Amendment 13 until additional geological investigations take place. Furthermore, since the number of wells at the Mist Gas Field were previously abandoned against the current standards, and well locations are unknown, we request DOGAMI's current administrative order for well abandonment be revised using the best available science. At the conclusion of this update, we then request all wells and "holes", as described by Bob Brinkmann, be examined for potential leakage. We believe it is the duty of the EFSC to deny the amendment request until the state has shown that the federally protected drinking water overlying the Mist Gas Field is free from contaminants and suitable for all those living within Columbia County.

SLOAN Kathleen * ODOE

From: ODOE ITService * ODOE
Sent: Thursday, September 19, 2024 2:44 PM
To: SLOAN Kathleen * ODOE
Subject: New Public Comment submitted for project : RFA13 and DPO for Mist Underground Natural Gas Storage Facility

Organization:
Submitted by: Nickie Schatz
Email: nickie-hart@hotmail.com
Zip Code: 97048

Siting Project Phase: *DPO*

Comment Summary:
I am submitting this document to contest Amendment 13.

Please Click on the following link to view the full Comment Details

MSTAMD13 DPO Public Comment 8 Nickie Schatz 2024-09-19

Comment Summary

I am submitting this document to contest Amendment 13.

Comment Date

source

Select email portal manual

Siting Project Phase

Select EXEMPTION REQUEST NOI DPO CC FORMAL RULEMAKING INFORMAL RULEMAKING AMD-A AMD-B

Comment Details

Application for Site Certificate (ASC) Exhibit

Select Exhibit A - Applicant and Participating Persons Exhibit B - Proposed Facility Description Exhibit C - Proposed Facility Location Exhibit D - Organizational Expertise Exhibit E - Permits Required Exhibit F - Adjacent Property Owners Exhibit G - Materials Analysis Exhibit H - Geological and Soil Stability Exhibit I - Soil Conditions Exhibit J - Wetlands and other Jurisdictional Waters Exhibit K - Land Use Exhibit L - Protected Areas Exhibit M - Financial Capability Exhibit N - Non-Generating Facility Need Exhibit O - Water Use Exhibit P - Fish and Wildlife Habitat Exhibit Q - Threatened and Endangered Plant and Animal Species Exhibit R - Scenic Resources Exhibit S - Historic Cultural and Archaeological Resources Exhibit T - Recreation Opportunities Exhibit U - Public Services Exhibit V - Waste Minimization Exhibit W - Site Restoration Exhibit X - Noise Exhibit Y - Carbon Dioxide Emissions Exhibit Z - Evaporative Cooling Tower Exhibit AA - Electric Transmission Line EMFs Exhibit BB - Other Requested Information Exhibit CC - Applicable Statutes, Rules, Ordinances Exhibit DD - Specific Requirements

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Page Number(s)

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Council Standards

—

Comment

Attachments

4 days ago

Microsoft CRM Portals

Public Comment Amendment 13_v2.pdf (1.63 MB)

American Aquifer's Public Comment Requesting Denial of Amendment 13 (pFRA13)

American Aquifers, a 501c3 non-profit located in Oregon designed to support communities reliant upon groundwater, requests the Oregon Department of Energy (DOE) deny amendment 13 (pRFA13). Residents in Columbia County suffer from disproportionately high rates of cancer compared to other counties in the state, yet represent less than 1.3% of the state's population. Residents in Columbia County maintain cancer rates that rank #1 in uterus, lung, bronchus, and melanoma cancers, #2 in female pancreas cancer and leukemia, #4 in brain and esophagus cancer, #5 in female kidney/renal pelvis cancer, #6 in Non-Hodgkin Lymphoma, #7 in oral cavity and pharynx cancer, and #10 in male kidney/renal pelvis cancer. Additionally, a recent study of multiple myeloma shows Columbia County has staggering incidences of this rare, non-curable cancer that accounts for only 10% of all blood cancers. Of the 133 counties that make up the entire west coast, only 12 counties have significantly high rates of myeloma cancer, with Columbia County listed as one of the three in Oregon[1].

Cancer rates in Columbia County cannot be directly attributed to logging operations, which include the spraying of herbicides and are known carcinogens. A total of 47% of land in Oregon is forested. Tillamook and Washington Counties, with a combined population of 14.83%, are home to the largest forested area in the state, but according to the National Cancer Institute, cancer rates are stable in Tillamook County and falling in Washington County, suggesting that forestry practices are not the predominate cause to high rates of cancers suffered among communities in Columbia County.

According to the Safe Drinking Water Act (SDWA), all water designated for drinking use, including underground sources, are protected by federal law. Furthermore, the Oregon Groundwater Quality Protection Act of 1989 was enacted to prevent contamination of groundwater and to conserve, restore, and maintain Oregon's groundwater resources for present and future uses. The DOE is mentioned as a state agency that coordinates energy facility activities with Oregon's Department of Environmental Quality's (DEQ) to protect groundwaters of the state.

Potential cancer-causing chemicals are likely leaching into local aquifers from operations occuring at the Mist Gas Underground Natural Storage Gas Field (Mist Gas Field). A request for denial of pFRA13 is requested until environmental exposure pathways and current operation practices are properly and thoroughly investigated using the best available science, which is supported by Oregon State University's Institute for Natural Resources in accordance with OAR 629-603-0400(4) and is defined by Cornell Law as "science that is reliable and unbiased."

We find operations governing the Mist Gas Field are not meeting OAR, ORS, or EFSC Siting Standards. Our findings also show partiality toward field operators (Northwest Natural and Enerfin) by state agencies, including but not limited to DOGAMI[2] and others responsible for the safety protocols designed to protect community exposure, which are in place to limit chemical constituents not suitable for human consumption.

The following describes the OAR, ORS, or Sitting Standard (herein referred to as Guiding Policy) within the jurisdiction of the EFSC that supports our objection to amendment 13 based on the rules governing the Mist Gas Field, and includes evidence supporting our request for denial.

[1] Cheung, J.T.H., Zhang, W. and Chiu, B.C.H., 2023. Geospatial analysis of population-based incidence of multiple myeloma in the United States. Cancer epidemiology, 83, p.102343.
[2] Oregon Department of Geology and Mining Industries

Concern: Geologic Hazards Not Properly Assessed in Exhibit H: Geologic Hazard Evaluation (pFRA13)

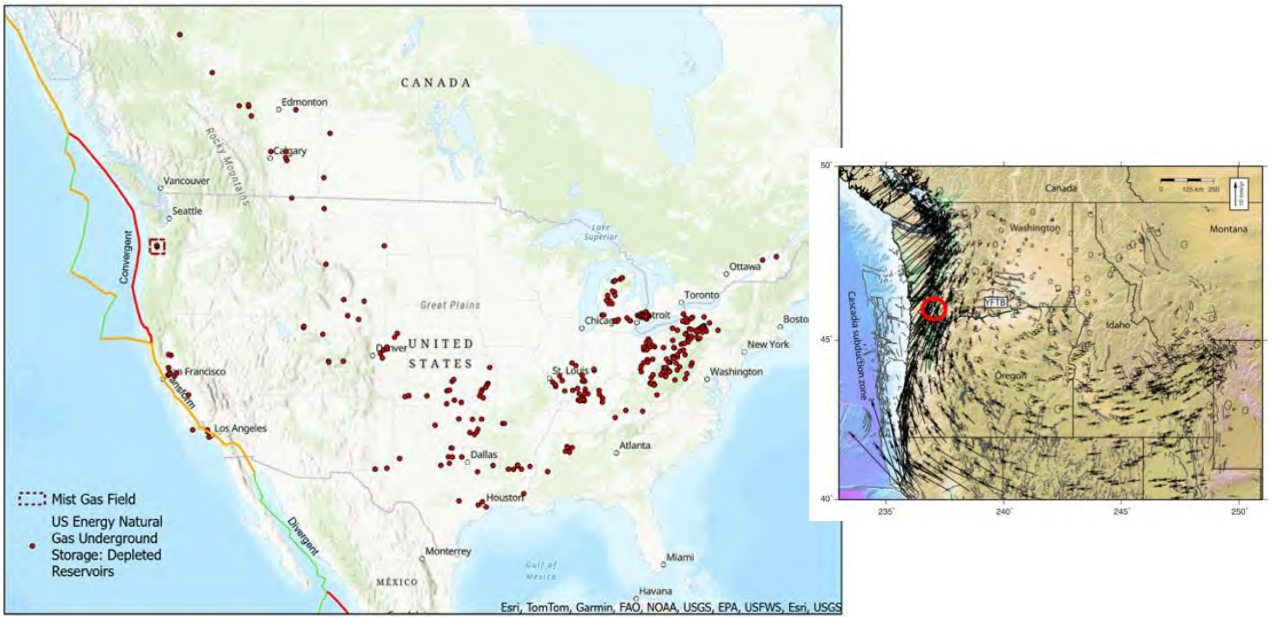
Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

OAR 345-024-0030 (2): The applicant has developed a program using technology that is both practicable and reliable to monitor the facility to ensure the public health and safety.

OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection

Statement of Opposition: The best available science has not been applied to adequately evaluate geologic hazards and risk associated with operations at the Mist Gas Field.

Supporting Evidence: The Mist Gas Field is the only depleted natural gas reservoir in the USA and Canada located adjacent to a tectonically active convergence zone as shown in the figure below. Tectonic activity is due to the Cascadia Subduction Zone, which is the collision and subduction of the Juan de Fuca Plate beneath the North American plate. The consequence of subducting plates, as is evident in Oregon and Washington landscape, include micro, local, and regional fault zones, volcanism, earthquakes, and crustal rotation. The Mist Gas Field is in an extremely active location where velocity data, obtained through high-density geodetic GPS measurements (inset map: black arrows), show significant rotation occurring beneath the gas field.



Given the uniqueness of the Mist Gas Field's location (insert map: red circle), new methods and tools are now available to enhance our current understanding of Cascadia Subduction Zone in the Pacific Northwest. Yet no indication is provided that suggests best available science is currently used to protect waters of the state from groundwater contamination due to hydrocarbons and other constituents that could potentially migrate to local aquifers from storage operations, including fracked chemicals obtained from gas purchased in Canada.

Additional Comment: In addition to the above concerns, in amendment 13 (pRFA13) Exhibit H (Geologic Hazards Evaluation), Table H-8 on page 22, discusses fault hazards and claims only 13 quaternary faults are within 50 miles of the project. According to information obtained from the USGS citation listed as the source of the fault data, it states, "For the hazard maps, both the fault surface trace and the metadata are simplified representations of the geometry and behavior of the fault, based on geologic interpretation."

In 2020, the USGS created a new geologic map[3] within the local vicinity. The map was created, "***to provide a uniform, modern geologic database for the greater Portland metro area to better understand its tectonic setting, active faults, volcanoes, landslide hazards, and distribution of geologic materials and resources. Information in this database will be used to improve seismic hazard and resource assessments in this economically important region."***

Therefore, Exhibit H in the pRFA13 should be considered outdated information, since it does not capture the true geologic landscape of the area. It's worth noting that both datasets were available at the time Exhibit H was written for pRFA13, yet Exhibit H made no mention of the updated USGS map, even though it was created in collaboration with DOGAMI. Aside from a paper written by Wells and Bemis in 2020, which focused on migration of the Oregon forearc on the Gales Creek fault, and the standard NRCS soils database, accessed in 2023, all other sources used to present the local geologic and topographic conditions of the site in Exhibit H were mostly written in the 1970s and 1980s. Although the 2020 USGS map falls outside of the Project Area, it is within the boundary of the Site Certificate.

Furthermore, the earthquake map provided in Exhibit H (Figure H-8) does not adequately represent the number of earthquakes recorded in the region. The image on the left shows earthquakes in Exhibit H: Figure H-8, with the smallest circles representing < 2 in magnitude. The image on the right, obtained from the USGS Earthquake Catalog[4], shows significantly more earthquakes than shown in Exhibit H.

[3] Wells, R., Haugerud, R.A., Niem, A.R., Niem, W.A., Ma, L., Evarts, R.C., O'Connor, J.E., Madin, I.P., Sherrod, D.R., Beeson, M.H. and Tolan, T.L., 2020. Geologic map of the greater Portland metropolitan area and surrounding region, Oregon and Washington (No. 3443). US Geological Survey.
[4] Schneider, M., Flury, H., Guttorp, P. and Wright, A., 2023. Earthquake catalog processing and swarm identification for the Pacific northwest. Seismological Research Letters, 94(5), pp.2500-2513.

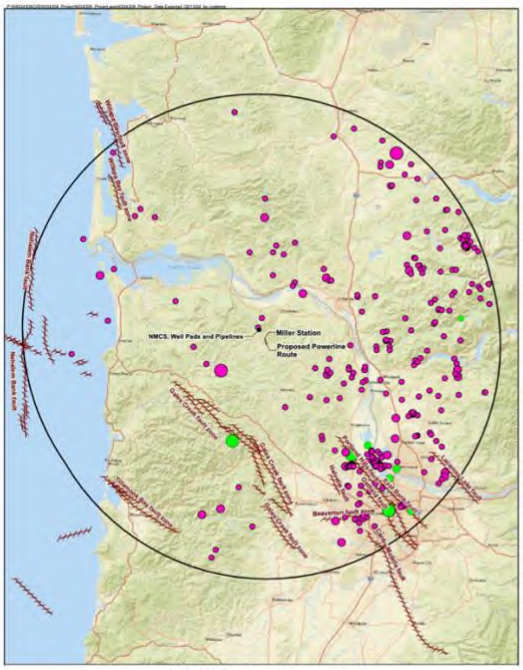
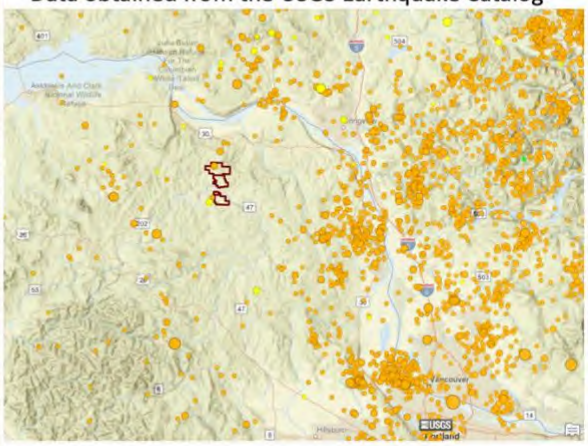
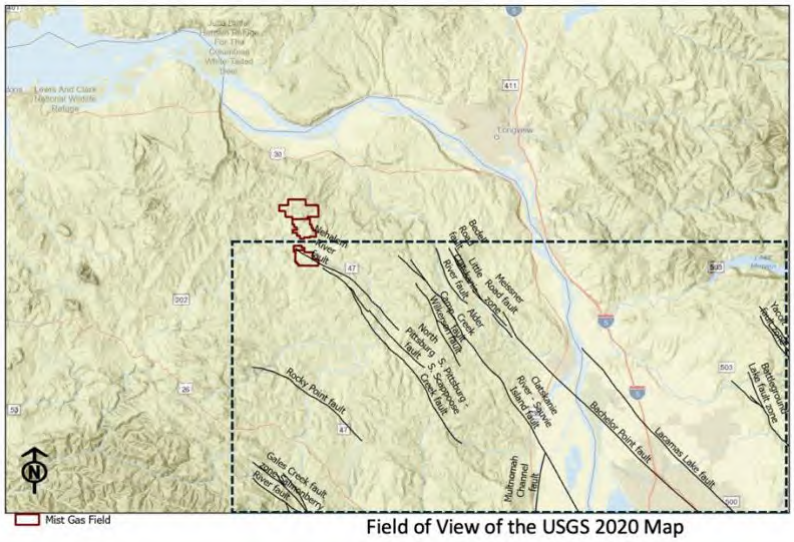


Exhibit H. Figure H-8

Data obtained from the USGS Earthquake Catalog



In addition to questionable material used in Exhibit H of the pRFA13, Table H-8 shows the nearest fault zone to the site is the Gales Creek Fault Zone located 17.6 miles away. However, only using the USGS 2020 map, 100 distinct faults were identified, representing up to 30 fault zones located approximately 50 miles from the Mist Gas Field (Figure Below. To reduce label overlap, not all fault zones are labeled in the figure). This includes new and extensive faulting within the southern boundary of the site certificate, not previously shown in any of DOGAMI's updated maps or in Exhibit H.



Field of View of the USGS 2020 Map

Concern: Surficial Geology Not Properly Assessed in Exhibit H of pFRA13

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

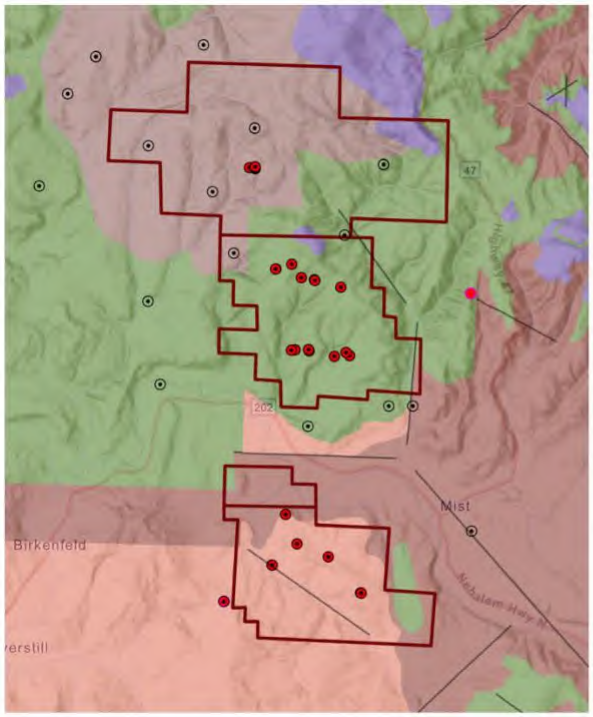
OAR 345-022-0020(c): (c) The applicant, through appropriate site-specific study, has adequately characterized the potential geological and soils hazards of the site and its vicinity that could, in the absence of a seismic event, adversely affect, or be aggravated by, the construction and operation of the proposed facility; and (d) The applicant can design, engineer and construct the facility to avoid dangers to human safety and the environment presented by the hazards identified in subsection (c).

Statement of Opposition: The Mist Gas Field is operated outside of conditions listed in OAR 345-022-0022(c). The potential geological hazards of the site are not properly identified. This is evident in the recent research released by the USGS in 2020. Although it was conducted in coordination with DOGAMI, no operational changes were implemented to reflect the complex geological conditions which show extensive faulting and cap rock exposure, which is now identified within the southernmost boundary of the gas field.

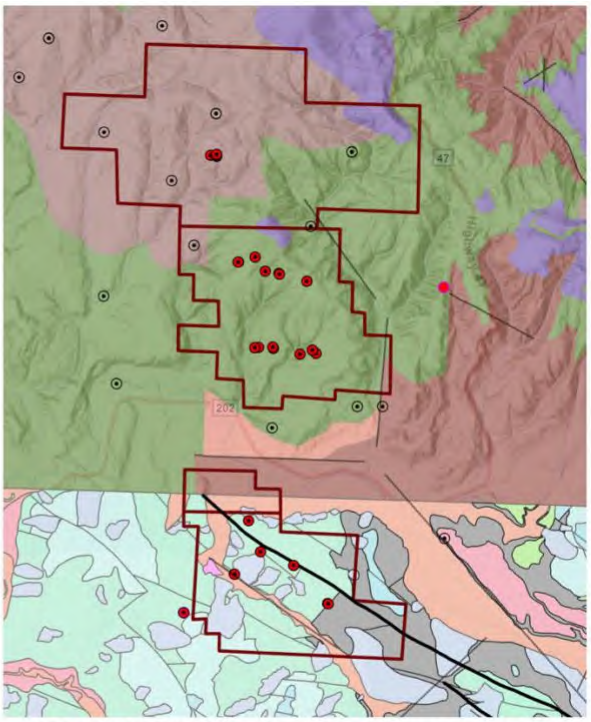
Supporting Evidence: According to DOGAMI, the best available geologic mapping for the state, combined into the Oregon Geologic Data Compilation, is provided under release 7[5]. Examination of this map shows simplified geology compared to the USGS map. This is apparent in the below figure, which shows an overlay of DOGAMI's compilation geologic map (OGDC-7) compared to the 2020 geologic map produced by the USGS.

Additional Comment: Surficial geology of the area has not been adequately assessed. This is apparent in the current DOGAMI map (left figure) compared to the updated 2020 map (right figure). The complexity of the geology and faulting is much more intricate than the OGDC-7 represents and needs throughout evaluation prior to approval of the amendment, as the surficial geology used in Exhibit B is likely extremely simplified (figure below).

[5] https://pubs.oregon.gov/dogami/dds/p-OGDC-7.htm



DOGAMI (OGDC-7) Surficial Geology



DOGAMI (OGDC-7) Surficial Geology Underlying the 2020 USGS Map

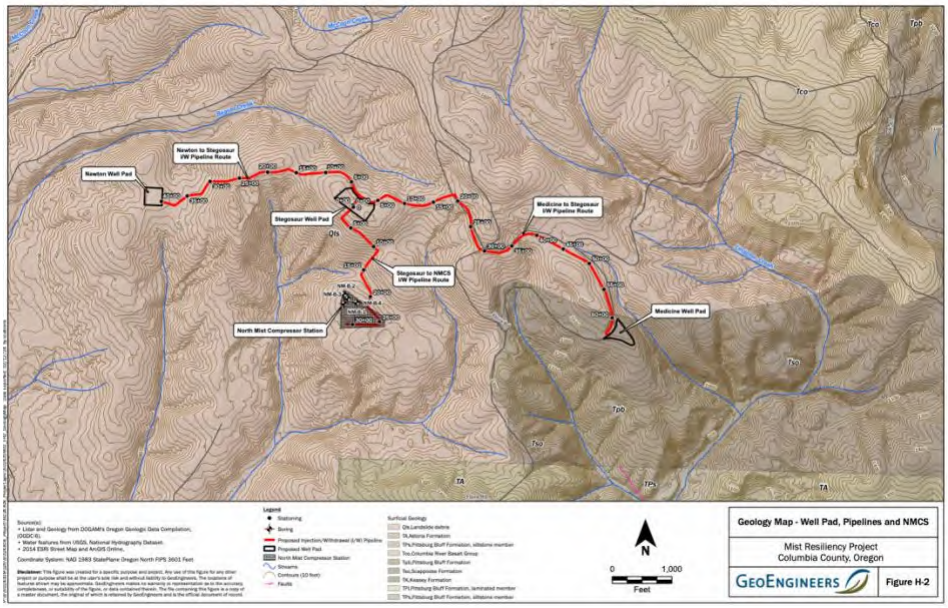


Figure H-2: Surficial Geology provided in Exhibit H

Concern: Groundwater Contamination Potential Due to Abandoned Wells

Guiding Policy: OAR 345-022-000 (2)(b)(A): (2) The Council shall weigh overall public benefits and any adverse effects on a resource or interest as follows: (b) The Council shall evaluate overall public benefits by considering factors including, but not limited to, the following: (A) The overall environmental effects of the facility, considering both beneficial and adverse environmental effect.

Statement of Opposition: Extensive exploration and operation of the Mist Gas Field has resulted in hundreds of injection, withdrawal, and abandoned wells. According to a report written by the National Energy Technology Laboratory in 2019[6], utilizing depleted reservoirs is attractive due to pre-existing infrastructure. The report also states, ***"Depleted oil and/or gas fields may pose the risk of abandoned, or orphaned, wells penetrating the storage reservoir, which can serve as a leakage conduit to neighboring formations or the atmosphere."*** Additionally, in the *Underground Gas Storage Regulatory Considerations: A Guide for State & Federal Regulatory Agencies, it* states, ***"Pre-existing or abandoned wellbores including previously pressurized or depleted areas, and previously generated hydraulic fractures should also be considered risk elements."*** DOGAMI has not properly inventoried all wells within the gas field. This decreases DOGAMI's ability to properly assess potential groundwater contamination sources.

Supporting Evidence: Email from a public records request show DOGAMI's Bob Houston stated 395 wells have been permitted at the field, yet it appears most of the locations of these wells are not identified. Furthermore, Bob notes ***"Additionally, [of the 395 wells permitted, it] does not include other "holes" (seismic holes, core holes and monitor)."*** A copy of the email is provided below. This suggests an extensive number of "holes" have likely outlived their sealing lifespan, yet most locations are unknown, thereby increasing the potential of groundwater contamination, with DOGAMI unable to execute effective measures to address this issue.

HOUSTON Robert * DGMI January 18, 2018 at 3:23 PM
RE: Mist wells Details
To: MADIN Ian * DGMI, Cc: BUCHNER Ed * DGMI, LOFTON ReNeea * DGMI

Ok,
There are currently 110 active permits in the Mist gas field

Based on the API number there has been a total of 395 "wells" permitted in Columbia since 1953. ReNeea, noted that there appears to be skips in the sequential API number. Additionally, does not include other "holes" (seismic holes, core holes and monitor).

Cheers,
Bob

Robert A. Houston, RG
Hydrocarbon & Metallic Ore Geologist
Oregon Department of Geology and Mineral Industries I Springfield Field Office I
Springfield Interagency Office|3106 Pierce Parkway Suite D I Springfield, Oregon 97477
Office: 541-225-6451; Cell: 541-619-4653
Email: robert.houston@oregon.gov I http://www.oregongeology.org

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 3:09 PM
To: BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

So it sounds like there is no easy way to get a definitive count of the number of wells drilled to develop the Mist field.

From: BUCHNER Ed * DGMI
Sent: Thursday, January 18, 2018 2:55 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>; HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>
Subject: RE: Mist wells

There are huge data gaps and inconsistencies in the well data and organization in the database in GIS, this was something we were actively working on in 2013 or so, but other priorities pulled us away. There may be 450 points in the Mist area, but do they fall within the geometry of the Mist Field? Additionally, for my previous query from the database, if the ResourceField did not specify "Mist" it would have not been returned.

Ed Buchner
GIS Technical Specialist
Office: (541) 967-2084
Mobile: (541) 619-3738
ed.buchner@oregon.gov

From: MADIN Ian * DGMI
Sent: Thursday, January 18, 2018 2:49 PM
To: HOUSTON Robert * DGMI <Robert.HOUSTON@oregon.gov>; BUCHNER Ed * DGMI <Ed.BUCHNER@oregon.gov>
Subject: RE: Mist wells

I am confused. The GIS files show almost 450 wells in the Mist field. There must be permits that include more than one well.

[6] Vikara, D., Zymroz, T., Withum, J.A., Shih, C.Y., Lin, S., Hoffman, H., Guinan, A. and Carr, T., 2019. Underground natural gas storage-analog studies to geologic storage of co2 (No. NETL-PUB-22087). National Energy Technology Lab.(NETL), Morgantown, WV (United States).

Additionally, confusion now exist between the safest method to abandon a well. On 7/18/2017 Irani Engineering requested a waiver to the well abandonment rule. According to email communication between Bob Brinkmann of DOGAMI and the Department of Justice, Bob stated, "*Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?* To provide a wavier required updating the administrative order that prohibited Irani Engineering's proposed method of abandonment.

A Temporary Administrative Order was approved by 9/8/2017 (later permanently approved). Bob Brinkman stated that the proposed method is technically sound and not granting the temporary order will place financial burden on the permittee, if it is not granted. This poses an issue, considering the field has been explored since the 1980s, a large quantity of abandoned wells, are now assumed less secure, since this rule wasn't granted until 2017. It should also be noted that best available science was not used to access the safety of the updated administrative order.

IRANI ENGINEERING, INC.
PETROLEUM ENGINEER
P.O. Box 661328
SACRAMENTO, CA 95866

07/18/2017

Mr. Ian Madin, Deputy Director
Mineral Land Regulation & Reclamation/Oregon Department of Geology & Mineral Industries
229 Broadalbin St. SW
Albany, OR 97321
Phone: (541) 967-2039
Fax: (541) 967-2075

Subject: Request for Revision of Abandon Rule for Enerfin Resources NW , "Pelee 21-31-65"

Mr. Madin,

Enerfin intends to abandon a few of their wells in Mist Gas Field, Oregon. The production casing in these wells are set couple of hundred feet above the TD of the wells. I know the rule states that we have to drill out the shoe of the production casing and set 100' of cement plug across them. I respectfully request a waiver to this rule because of the following reasons;

1. The shoe joint has a float collar on top and a float shoe on bottom, both in closed position, and 40' of cement between. Usually, there is several feet of hard production cement above the float collar too. On Pelee 21-31-65, we have another 42' of cement above the float collar for a total of 82'.
2. Usually steel perforating gun debris is on top of cement and the float collar which makes is very hard to get through and get to the float collar.
3. It is difficult to drill out the float collar and shoe. The float collar falls on the cement and starts spinning and prevents us from drilling the cement and float shoe.
4. The closed float collar and shoe and the cement between and above float collar are very strong barriers against leakage from below the shoe. Drilling out shoe and setting a 100' of cement plug in mud actually weakens this barrier (Equalized cement plugs can easily get contaminated with mud and have channeling issues). We would like to abandon the bottom of the hole by placing a 100' of cement plug on top of cement above the float collar.
5. We have to drill out cement, float and shoe of 4-1/2" casing, with 3-1/2" bit or mill (because of the drift diameter of the casing and mechanical limitation on mill size due to gun debris and float equipment milled out remnants). The hole was drilled with a 7-7/8" bit, therefore the hole size below the shoe is 7-7/8" filled with drilling mud (in Pelee 21-31-65 mud weight was 12.4 ppg). Cleaning a 7-7/8" hole with a 3-1/2" bit would be almost impossible at that point. The cement plug quality will be very much in doubt since mud contaminations will be a big factor.
6. I have worked in 8 different states in the USA and non of the other states have such a rule.

I have attached the abandoned programs and notice of abandonments for the two versions of the abandonment procedures. May I kindly ask for your office to review the rule and give us a relief from this rule in abandoning Enerfin wells in Mist Field.

Sincerely

Saeed Irani,
Registered Petroleum Engineer
President
Irani Engineering

RE: P&A of holes with rathole below casing

BRINKMANN Bob * DGMI
To MADIN Ian * DGMI
Cc LLOYD Diane; LOFTON ReNeea * DGMI

Reply | Reply All | Forward | ...
Mon 8/14/2017 3:26 PM

PELEE PA.REQ FOR REV.IRANI LTR.2017 (002).pdf
.pdf File

Attached is a letter from Irani Engineering explaining the rationale for the proposed abandonment method for Pelee which as documented below has been approved on numerous occasions by this Department and I agree with the proposed method. This issue was also discussed w/ Diane while you were out and the question posed is: Do we have the authority to approve this method that apparently is not allowed in rule even though it will provide a more secure abandonment of the well versus the method prescribed in rule?

From: MADIN Ian * DGMI
Sent: Monday, August 14, 2017 10:30 AM
To: BRINKMANN Bob * DGMI <bob.brinkmann@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: RE: P&A of holes with rathole below casing

Bob, can you summarize the issue for me in the form of a question I can put to Diane?

From: BRINKMANN Bob * DGMI
Sent: Thursday, August 10, 2017 2:16 PM
To: MADIN Ian * DGMI <Ian.MADIN@oregon.gov>
Cc: LLOYD Diane <Diane.LLOYD@state.or.us>; LOFTON ReNeea * DGMI <Reneea.LOFTON@oregon.gov>
Subject: FW: P&A of holes with rathole below casing

Ian, As you can see by the attached documentation the P&A method being proposed by Enerfin for the Pelee well has been approved numerous times in the past. Although it appears that rule does not afford flexibility for this it may be allowed by the overall authority granted DOGAMI in law. I agree w/ the method proposed which will properly seal the well versus an attempt to drill out the float collar and casing shoe and attempt to cement the rat hole below the shoe.

OFFICE OF THE SECRETARY OF STATE
DENNIS RICHARDSON
SECRETARY OF STATE

LESLIE CUMMINGS
DEPUTY SECRETARY OF STATE

ARCHIVES DIVISION
MARY BETH HERKERT
DIRECTOR

800 SUMMER STREET NE
SALEM, OR 97310
503-373-0701

TEMPORARY ADMINISTRATIVE ORDER
INCLUDING STATEMENT OF NEED & JUSTIFICATION

DGMI 1-2017
CHAPTER 632
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

FILED
10/13/2017 2:55 PM
ARCHIVES DIVISION
SECRETARY OF STATE

FILING CAPTION: Makes minor adjustment to allow well plugging/decommissioning based on current, accepted best practices.

EFFECTIVE DATE: 10/13/2017 THROUGH 03/13/2018

AGENCY APPROVED DATE: 09/18/2017

CONTACT: Robert Houston
541-225-6451
robert.houston@oregon.gov

800 NE Oregon Street, Suite 965, 9232
3106 Pierce Parkway, Suite D, 97477
Portland, OR 97232

Filed By:
robert Houston
Rules Coordinator

NEED FOR THE RULE(S):

It has been determined by department staff that a portion of the "Plugging Methods and Procedure" required by the chapter 632, division 10, administrative rules is technically incorrect in certain instances. An existing permittee has proposed a well plugging procedure that is more technically sound for the facility at issue, and prompt action by the department to approve this plan will allow the applicant to take advantage of drilling equipment that is now available in the location of the well(s) to be plugged and decommissioned. A delay in well closure would result in additional costs to the permittee. Delayed well closure also presents greater risk to public safety and the environment. This rule amendment is required to approve the plan. Absent plan approval the interests of both the public and the permittee will be prejudiced by a delay in well plugging and decommissioning.

JUSTIFICATION OF TEMPORARY FILING:

Based on the findings set out above, the Board finds that a failure to act promptly in this regard would result in prejudice to the public and permittee. The temporary rule will allow the necessary flexibility for the department to approve plans to ensure proper plugging that decommissioning of oil and gas wells based on current best practices.

DOCUMENTS RELIED UPON, AND WHERE THEY ARE AVAILABLE:

The documents relied upon include: (1) Request for Revision of Abandon Rule for Enerfin Resources 7/18/17 from Saeed Irani; (2) Plugging and Abandonment Evaluation from Bob Brinkmann 9/14/17. Both are available on the DOGAMI website.

AMEND: 632-010-0198

RULE TITLE: Abandonment, Unlawful Abandonment, Suspension, Well Plugging

RULE SUMMARY: OAR 632-010-0198 addresses how DOGAMI deals with abandonment, unlawful abandonment, suspension and well plugging. Subsection (8)(c) is modified to clarify that the plugging procedure required in that subsection only applies to any open casing

In Summary, due to uncertainty of our current geologic understanding on the northern area of the site, and covered under the site certificate, we ask the EFSC to deny Amendment 13 until additional geological investigations take place. Furthermore, since the number of wells at the Mist Gas Field were previously abandoned against the current standards, and well locations are unknown, we request DOGAMI's current administrative order for well abandonment be revised using the best available science. At the conclusion of this update, we then request all wells and "holes", as described by Bob Brinkmann, be examined for potential leakage. We believe it is the duty of the EFSC to deny the amendment request until the state has shown that the federally protected drinking water overlying the Mist Gas Field is free from contaminants and suitable for all those living within Columbia County.

September 19, 2024

The Green Energy Institute at Lewis & Clark Law School is a non-profit energy and climate law and policy institute within Lewis & Clark Law School's top-ranked environmental, natural resources, and energy law program. Northwest Environmental Defense Center is a non-profit environmental organization established by professors, law students, and attorneys in 1969 at Lewis & Clark Law School. NEDC's mission is to protect and preserve the environment and natural resources of the Pacific Northwest by engaging in legal advocacy, education, and litigation independently and in conjunction with environmental groups on issues affecting climate change and resiliency, water quality, and air quality. Columbia Riverkeeper is a non-profit organization that works to protect the water quality of the Columbia River basin and all life connected to it. Breach Collective builds power within the climate and labor movements through organizing, legal advocacy, education, and storytelling. The Oregon Chapter of the Sierra Club is a non-profit member-supported, public interest organization that promotes conservation of the Oregon natural environment by influencing public policy decisions—legislative, administrative, legal, and electoral. We appreciate the opportunity to provide the following comments to the Energy Facility Siting Council (the "Council") on the Draft Proposed Order on Request for Amendment 13 ("Draft Proposed Order").

The Draft Proposed Order recommends that "the Council continue to find that the Division 23 Need Standard does not apply" to the Mist Underground Natural Gas Storage Facility ("Mist Facility").[1] It does so for two reasons. First, it states that "the rule does not include a need standard for surface facilities related to an underground natural gas storage reservoir."[2] Second, it notes that the regulation "does not apply to 'nongenerating facilities that are related or supporting facilities.'"[3] To this second point, the Draft Proposed Order points out that the Council evaluated the applicability of the "related or supporting facilities" exception in its Final Order for Amendment 11 and found that the changes in Amendment 11 fell under the exception. It then asserts that the changes in Amendment 13 also fall under the exception. For the reasons below, the Council should 1) establish a need standard for surface facilities related to underground gas reservoirs and apply that standard to NW Natural's Request for Amendment 13 ("Amendment 13"), 2) clarify which aspects of Amendment 13 pertain to the "surface facility" and which aspects are "related or supporting facilities, and 3) begin to eliminate the exception from the need standard for facilities related to or supporting fossil fuel-based energy facilities.

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[1] "Mist Underground Natural Gas Storage Facility - Draft Proposed Order on Request for Amendment 13," Energy Facility Siting Council, 177 (Aug. 15, 2024), (hereinafter "Draft Proposed Order") available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2024-08-15-MSTAMD13-DPO-w-Attachments-signed.pdf.

[2] *Id.*

[3] *Id.*

1. Background on Need Standards in the Council's Review of Certificate Applications

ORS 469.501(1)(L) directs the Council, as a part of its review of applications for and amendments to site certificates, to establish need standards for nongenerating facilities "consistent with the state energy policy set forth in ORS 469.010 and 469.310."

The state's energy policy discourages the growth of facilities related to fossil fuels like the Mist Facility. ORS 469.010 states that "continued growth in demand for nonrenewable energy forms poses a serious and immediate, as well as future, problem."[4] The law continues that it is the policy of Oregon that "cost effectiveness be considered in all agency decision-making relating to energy facilities."[5] ORS 469.310 declares that the siting, construction, and operation of energy facilities "shall be accomplished in a manner consistent with the protection of public health and safety and in compliance with the energy policy and . . . other environmental protection policies of this state."[6]

State energy and environmental policies highlight the urgency for EFSC to begin assessing the need, or lack-thereof, for natural gas-related energy facilities under its jurisdiction. HB 2021 requires Portland General Electric ("PGE") and Pacific Power to reduce the greenhouse gas emissions associated with serving Oregon load 80, 90, and 100 percent by 2030, 2035, and 2040, respectively.[7] HB 2021 also has functionally stopped the expansion of natural gas generation, stating that the Council 1) cannot approve new generating facilities that will produce emissions and 2) cannot approve a site certificate amendment to an emitting generating facility if the proposed changes will significantly increase the gross carbon dioxide emissions that are reasonably likely to result from the operation of the facility.[8] Executive Order 20-04 sets greenhouse gas emissions reduction goals of 45 percent and 80 percent below 1990 levels by 2035 and 2050, respectively.[9] To be most consistent with achieving a science-based target for carbon reductions, the Oregon Department of Environmental Quality ("DEQ") went further in its Climate Protection Program, requiring reductions in greenhouse gas emissions from covered fuel suppliers of 90 percent by 2050. Although invalidated in the Oregon Court of Appeals, DEQ has prepared draft rules, comparable to the original version of the rule, to comply with the Court's order while retaining the same emissions reductions goals, further illustrating commitments to decarbonizing direct use fuels in Oregon.[10] Importantly, the newest version of the Climate Protection Program applies to NW Natural.[11]

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[4] ORS 469.010(1).
[5] *Id.*
[6] ORS 469.031.
[7] ORS 469A.410(1).
[8] ORS 469.413.
[9] E.O. 20-04(2), Oregon, (Mar. 16, 2020), available at https://www.oregon.gov/gov/eo/eo_20-04.pdf.
[10] "Climate Protection Program 2024: Fact Sheet," Oregon Dept. of Environ. Quality, available at https://www.oregon.gov/deq/ghgp/Documents/CPP2024ChangesFactSheet.pdf; Monica Samayoa, "Oregon prepares to reboot an effort to cut greenhouse gas emissions," Oregon Public Broadcasting, (Apr. 1, 2024), available at https://www.opb.org/article/2024/04/01/oregon-greenhouse-gas-climate-change-legislation-protection-program/.
[11] *See e.g.,* Oregon Department of Environmental Quality, *Draft Rules—Division 273: Climate Protection Program 2024 Rulemaking*, OAR 340-0273-0010—340-027-0150.

Additionally, in only about one year—earlier than when NW Natural would even need to begin its construction related to Amendment 13[12]—the Oregon Department of Energy ("ODOE") will release the Oregon Energy Strategy. House Bill 3630 directs ODOE to develop an "energy strategy" for the state that "identifies pathways to achieving the state's energy policy objectives."[13] The Energy Strategy will be a comprehensive plan that analyzes a variety of approaches to meet the state's greenhouse gas reduction targets on an economy-wide basis.[14] ODOE's most recent Biennial Report noted the importance of Executive Order 20-04, the DEQ's Climate Protection Plan, and HB 2021 in its underlying assumptions about Oregon energy pathways.[15] The assumptions going into ODOE's modeling anticipate substantially reduced demand for natural gas substantially. These assumptions include: heat pumps making up 95% of residential and small commercial and 75% of large commercial space heating purchases by 2040; electrification of half of all household and commercial appliances by 2050; electrification of 95% of all household and small commercial water heaters; and no new gas pipeline infrastructure.[16]

Although the Biennial Report pointed to the Mist Facility as a location where renewable resources like clean hydrogen *could* be stored in the future, it also pointed out that "the development of renewable biofuels and hydrogen at-scale is not yet commercially viable."[17] The Oregon Global Warming Commission came to a similar conclusion in its "Roadmap to 2030" Report, which modeled strategies to achieve statewide greenhouse gas reductions by 2030 instead of 2035, stating that there was "insufficient renewable natural gas and renewable hydrogen" to meet the 2030 goal.[18]

Oregon energy and environmental policy is moving towards renewable and electrical energy and away from fossil fuels like natural gas. The Council should, therefore, only approve facilities related to natural gas that are *needed*. Otherwise, the Council risks approving expensive expansions to the gas system that are contrary to Oregon policy, saddling Oregon consumers with the associated costs for decades. The Council is the only agency positioned to thoroughly test whether the development at issue here is consistent with Oregon's energy policy and is *needed*. The only other agencies which might have jurisdiction over NW Natural's activities at the Mist Facility is the Oregon Public Utility Commission ("PUC") and DOGAMI. As to the latter, DOGAMI's regulations in OAR 632, Div. 10 never ask for an assessment of need. And to our knowledge NW Natural has not described its activities in an Integrated Resource Plan nor received acknowledgement for its planned investments here from PUC.

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[12] Draft Proposed Order, at 26.
[13] ORS 469.062(3).
[14] *Id.*
[15] Department of Energy, 2022 Biennial Energy Report, at 377–80, available at https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-Biennial-Energy-Report.pdf.
[16] "Oregon Energy Strategy: Draft Reference Scenario – Key Data and Assumptions," Oregon Dept. of Energy, (Aug. 27, 2024), available at https://www.oregon.gov/energy/Data-and-Reports/Documents/2024-Draft-Reference-Scenario.pdf.
[17] *Id.* at 384.
[18] "Oregon Climate Action Roadmap to 2030," Oregon Global Warming Commission (Mar. 2023), available at https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/64275befc3f5d82a60b981b2/1680301043241/2023-Climate-Action-Roadmap.pdf.

2. The Council should establish a need standard for surface facilities related to an underground gas storage reservoir and apply that standard to Amendment 13.

The Council has adopted a Need Standard in OAR 345-023-0005, which states in full:

> "This division applies to nongenerating facilities as defined in ORS 469.503(2)(e)[19], except nongenerating facilities that are related or supporting facilities. To issue a site certificate for a facility described in sections (1) through (3), the Council must find that the applicant has demonstrated the need for the facility. The Council may adopt need standards for other nongenerating facilities. This division describes the methods the applicant shall use to demonstrate need. In accordance with ORS 469.501(1)(L), the Council has no standard requiring a showing of need or cost-effectiveness for generating facilities. The applicant shall demonstrate need:
>
> (1) For electric transmission lines under the least-cost plan rule, OAR 345-023-0020(1), or the system reliability rule for transmission lines, OAR 345-023-0030, or by demonstrating that the transmission line is proposed to be located within a "National Interest Electric Transmission Corridor" designated by the U.S. Department of Energy under Section 216 of the Federal Power Act;
>
> (2) For natural gas pipelines under the least-cost plan rule, OAR 345-023-0020(1), or the economically reasonable rule for natural gas pipelines, OAR 345-023-0040;
>
> (3) For storage facilities for liquefied natural gas with storage capacity of three million gallons or greater under the least-cost plan rule, OAR 345-023-0020(1), or the economically reasonable rule for liquefied natural gas storage facilities, OAR 345-023-0040."[20]

The definition of "nongenerating facilities" in ORS 469.503 itself refers to a subset of the definition of "energy facilities" in ORS 469.300. To paraphrase, that subset includes 1) certain high voltage transmission lines, 2) certain pipelines, 3) synthetic fuel plants, 4) plants that covert biomass to gas, liquid or solid, 5) storage facilities for liquified natural gas ("LNG") and 6) surface facilities of sufficient size related an underground gas storage reservoir.[21]

To pause for a moment, the significance of this string of definitions is to show that "nongenerating facilities" as used in OAR 345-023-0005 is essentially interchangeable with "energy facilities" as used in ORS 469.300. More specifically, nongenerating facilities are a subset of energy facilities, meaning, not all energy facilities are nongenerating facilities, but all nongenerating facilities *are* energy facilities.

In ORS 469.300, "energy facilities" are different from "relating or supporting facilities," which include certain pipelines, transmission lines, and other structures but does not include

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[19] The citation to ORS 469.503(2)(e) should read ORS 469.503(2)(f), which houses the definitions for ORS 469.503.
[20] OAR 345-023-0005.
[21] ORS 469.300(12).

underground gas storage reservoirs, production, injection or monitoring wells, or wellhead equipment or pumps, which fall under DOGAMI's jurisdiction.[22] A more thorough discussion on the two definitions is contained in Section 3 below.

Under OAR 345-023-0005, the Council currently requires a finding of need for three specific types of nongenerating facilities: high voltage transmission lines, natural gas pipelines, and storage facilities for LNG. And although the Council exempts "nongenerating facilities that are related or supporting facilities" from the regulation, it retains the right to "adopt needs standards for other nongenerating facilities."[23]

The Draft Proposed Order's short discussion of the applicability of OAR 345-023-0005 stated:

> "The rule does not include a need standard for surface facilities related to an underground natural gas storage reservoir. NW [Natural] was not required to demonstrate need for the surface facilities . . . proposed through the previous amendment requests; nor was the Council required to make a finding of need in order to grant the requested amended site certificate."[24]

In essence, the Draft Proposed Order asserts that because NW Natural has not previously been required to demonstrate need, it does not need to do so here. That line of reasoning is insufficient given the changes in Oregon's energy and environmental policies—which the Council's need standard must be consistent with—that have occurred in the last five years. The Council should not adopt a "business as usual" approach to Amendment 13, because the business of energy regulation in Oregon is no longer operating under usual conditions.

The Council must adapt its Need Standard to be consistent with Oregon's current energy and environmental policy. The reservation in OAR 345-023-0005(1) that "the Council may adopt needs standards for other nongenerating facilities" provides the Council the ability to adopt a standard for surface facilities related to underground gas reservoirs and apply that new standard to Amendment 13.[25] The "may adopt" language should be interpreted as putting applicants on notice that additional standards beyond the three specific standards articulated in the regulation could be applied at any time. To interpret it otherwise would render the sentence meaningless; certainly the Council has the authority to amend the regulation and add standards for other nongenerating facilities in the future. The regulation is best understood to state that, while the Council *must* apply the articulated standards for high voltage transmission, natural gas pipelines, and LNG storage facilities, it *may*, at its discretion, apply a standard to other nongenerating facilities. The Council should apply a need standard to Amendment 13 because the failure to do so conflicts with Oregon's energy and environmental policy.

Oregon's energy policy makes suspect the need for NW Natural to spend millions of dollars updating and expanding the Mist Facility. Often, the Mist Facility provides storage space for natural gas destined for use at gas-powered generating facilities. But, as pointed out above, HB

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[22] ORS 469.300(25).
[23] OAR 345-023-0005.
[24] Draft Proposed Approval, at 177.
[25] OAR 345-023-0005(1).

2021 has frozen the growth of gas-powered generating facilities: the Council cannot approve new emitting generating facilities, nor can it approve amendments to existing facilities that will significantly increase a facility's emissions, i.e. that will increase the use of natural gas at the facility. By 2040 PGE and Pacific Power will need to have reduced the emissions associated with delivering load to their customers by 100%, which will require the transition away from even existing natural gas plants. Reducing emissions to zero will necessity removing most, if not all, natural gas generation, functionally eliminating a main customer base for the Mist Facility.

Moreover, electrification of buildings, both residential and commercial, in NW Natural's service area will lessen its own need to store larger quantities of natural gas. Finally, although ODOE believes that renewable natural gas or green hydrogen will play some role in the decarbonization of Oregon's economy, the extent of that role is uncertain given that those alternative fuels are not currently commercially viable. Thus, it is unclear if, let alone when, the Mist Facility will be needed to store quantities of renewable natural gas that exceed the facility's current storage capacity.

We understand that the Council's jurisdiction over the Mist Facility is limited. But that does not mean that the Council should not align its standards with Oregon policy to the fullest extent of that limited jurisdictional sphere. Currently, the scope of the Council's need standard is not consistent with either Oregon's general energy policy of discouraging the "continued growth in demand for nonrenewable energy" or its specific policies mandating emissions reductions and electrification because it allows for emitting energy facilities to expand without any determination of need. Contrary to the language of the Draft Proposed Order, the Council is required to make a finding of need to grant the requested amended site certificate so that its Need Standard remains consistent with Oregon energy and environmental policy. Accordingly, this action is premature and should be curtailed until, at a minimum, the Council has established a need standard for surface facilities related to underground gas storage reservoirs. That standard may need to take into account the aforementioned DEQ rulemakings and ODOE's Energy Strategy. Therefore, to ensure that the Council's decision is not contrary to Oregon law and policy, it should deny Amendment 13 until a need standard for surface facilities related to an underground gas storage reservoir is created. The Council should then apply that standard to Amendment 13.

3. The "related or supporting facilities" exception does not apply to Amendment 13.

The Draft Proposed Order continues:

> "OAR 345-023-0005 further states that the division does not apply to "nongenerating facilities that are related or supporting facilities.
>
> Council previously evaluated the applicability of this standard on the facility in the Final Order on [Amendment 11] and found that this requirement does not apply to any related or supporting facilities. This fact would not change as a result

> of [Amendment 13] requested changes, which continue to be nongenerating facilities that are related or supporting facilities."[26]

We have multiple concerns with this language. First, the language mischaracterizes the discussion from the Final Order on Amendment 11. Second, the language wrongly implies that the entirety of the facilities at issue in Amendment 13 are "related or supporting facilities". Finally, the blanket exception for all related or supporting facilities is in need of reevaluation.

a. The Council should clarify the Draft Proposed Order's language regarding the "related or supporting facilities" discussion in Amendment 11 and its applicability to Amendment 13.

"Related or supporting facilities" can only be understood in the context of the definition of "energy facilities" in ORS 469.300.[27] Without reproducing the full definition here energy facilities cover ten types of facilities. Each type of facility has certain requirements to qualify it as an "energy facility," and then often has certain exemptions from that definition. For example, a "pipeline" is an "energy facility" if it is 1) at least six inches in diameter, five or more miles in length, and used to transport crude petroleum, LNG, or liquid geothermal energy, 2) at least 16 inches in diameter, five or more miles in length, and used to transport natural gas, or 3) at least 16 inches in diameter, five or more miles in length, and used to transport gaseous geothermal energy.[28] An otherwise qualifying natural gas pipeline is not an energy facility, though, if less than five miles of its length are more than 50 feet from a public road, or if it is a certain type of upgrade to an existing natural gas pipeline.[29] A similar structure exists for the definition of high voltage transmission lines as energy facilities, which must be more than 10 miles and have a capacity of at least 230,000 volts, but excludes lines within existing corridors, certain line upgrades, and "associated transmission lines."[30] The definition of "surface facility related to an underground gas storage reservoir" requires the facility to be designed to receive or deliver more than 50 million cubic feet of gas per day or require more than 4000 horsepower of compression to operate, but excludes underground storage gas reservoirs and injection, withdrawal, or monitoring wells.[31] The list goes on.

ORS 469.300's definition of "related or supporting facilities" is worth quoting in full:

> "'Related or supporting facilities' means any structure, proposed by the applicant, to be constructed or substantially modified in connection with the construction of an energy facility, including associated transmission lines, reservoirs, storage facilities, intake structures, road and rail access, pipelines, barge basins, office or public buildings, and commercial and industrial structures. 'Related or supporting

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[26] Draft Proposed Order, at 177.
[27] It is crucial to reiterate that ORS 469.300 is relevant as a tertiary reference point from OAR 345-023-0005. The Need Standard defines nongenerating facility by reference to ORS 469.503. ORS 469.503 defines nongenerating facility by reference to the definition of "energy facility" in ORS 469.300. Therefore, the term "nongenerating facility" is functionally interchangeable with the term "energy facility."
[28] ORS 469.300(12)(a)(E).
[29] ORS 469.300(12)(a)(E)(ii)(I)–(II).
[30] ORS 469.300(12)(a)(C).
[31] ORS 469.300(12)(a)(I).

> facilities' does not include geothermal or underground gas storage reservoirs, production, injection or monitoring wells or wellhead equipment or pumps."[32]

The term "related or supporting facilities" only applies to certain types of facilities that don't themselves qualify as an "energy facility." For example, "pipeline" should only mean pipelines that don't meet the criteria for a pipeline to qualify as an energy facility.[33] "Associated transmission lines," having been excepted from the definition of "energy facility," is then defined as a "related or supporting facility."[34] For each of the listed items under the definition of "related or supporting facility," there is a corresponding specific or general exception to the definition of an energy facility. Indeed, the definition goes so far as to note that the listed exceptions in the definition of "surface facility to an underground gas storage reservoir" are *not* "related or supporting facilities," presumably to avoid any ambiguity over whether they are covered as well, given that they are not under Council jurisdiction.

Put simply, "related or supporting facilities" has a narrow, limited scope. Rather than being broadly applicable to large swaths of facilities, it merely offers a unifying term for a series of specific exceptions to the definition of "energy facility." The Council applied this narrow understanding of "related or supporting facilities" in its review of Amendment 11. In the Final Order on Amendment 11, the Council did not state that the entirety of the Mist surface facilities were "related or supporting" but rather that one specific aspect of Amendment 11, a transmission pipeline,[35] fell under the exception.[36] The Draft Proposed Order, however, extends the reasoning in the Final Order of Amendment 11, which was limited to the one component of Amendment 11, to the entire Mist Facility for Amendment 13 without a basis for doing so.[37]

The Council has had too broad an approach to "related or supporting facilities" in the past and now seeks to broaden the definition even further, apparently to the point where it entirely subsumes the definition of a surface facility. The Council should, at a minimum, clarify in its Final Order that "related or supporting facilities" are only those facilities not encompassed by the

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[32] ORS 469.300(25).

[33] The main takeaway from this example is that not all pipelines are "related or supporting facilities," but rather some are "energy facilities." For example, a new natural gas pipeline that is 24 inches in diameter, 12 miles long, and 5 or more of those miles are more than 50 feet from a public road, is an "energy facility" because it meets the criteria of ORS 469.300(12)(a)(E)(ii). Therefore, it is not a "pipeline" but an "energy facility," and, accordingly, it would not be captured by the use of the term "pipeline" in the definition of "related or supporting facilities."

[34] Compare ORS 469.300(12)(a)(C)(iii) *with* ORS 469.300(25).

[35] We do note, however, that the Council wrongly interpreted the definition of "related or supporting facility" in Amendment 11. The transmission pipeline in Amendment 11 should have fallen under the definition of "energy facility" because it was more 16 inches, more than 5 miles long, and did not qualify for one of the exceptions to the definition of "pipeline" as an energy facility. The transmission line in question was a new natural gas pipeline, 24 inches in diameter and 12 miles long. Final Order on Amendment 11, at 5. The Council conflated the definition of a pipeline that is an energy facility with the use of the term "pipeline" in the definition for related or supporting facilities.

[36] Final Order on Request for Contested Case and Mist Facility Amendment No. 11, Energy Facility Siting Council, 150 (Apr. 2016), (hereinafter "Final Order on Amendment 11"), available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/FINAL%20ORDER%20MIST%20FACILITY%20RFA%2011_2016-4-21.pdf.

[37] Draft Proposed Order, at 177 (stating that the Council previously found the need standard does not apply to any "related or supporting facilities" and that "this fact would not change as a result of [Amendment 13] requested changes, *which continued to be nongenerating facilities that are related or supporting facilities*.")

definition of energy facility and therefore do not apply to facilities that qualify as surface facilities related to underground gas storage reservoirs.

This distinction is important because Amendment 13 makes changes to the surface facility that are not related or supporting facilities. For example, Amendment 13 calls for a series of upgrades to several compressor stations at both the North Mist Compression Station and the Miller Station locations.[38] Those are modifications to the surface facility, which is an energy facility and therefore a "nongenerating facility," not to a "related or supporting facility." The Council should perform a similar analysis for each proposed action to determine which actions are a part of the nongenerating facility, i.e., a surface facility, and which are "related or supporting facilities." The Council should not, however, adopt the language from the Draft Proposed Order that implies the entire Mist Facility is a related or supporting facility.

b. There is no exception for "related or supporting facilities" in OAR 345-023-0005, and if there is, the exception is not consistent with Oregon policy.

We would also like to point out two issues related to the exception for "related or supporting facilities." For clarity, the first sentence of OAR 345-023-0005 states "This division applies to nongenerating facilities as defined in ORS 469.503(2)(e), *except nongenerating facilities that are related or supporting facilities*."[39]

The exception as written covers nothing because there is no such thing as "nongenerating facilities that are related or supporting facilities." The regulatory and statutory definitions of the terms necessitate this interpretation.

The Need Standard defines "nongenerating facilities" by reference to ORS 469.503, which itself defines "nongenerating facilities" as "those *energy facilities* that are defined in ORS 469.300(12)(a)(C) and (E) to (I)."[40] Therefore, "nongenerating facilities," as used in OAR 345-023-0005 are simply six of the ten types of "energy facilities" as defined in 469.300(12)(a). For the purposes of this comment, the two terms—nongenerating facility and energy facility—are essentially interchangeable.

The Council's regulations also define "related or supporting facilities" by reference to ORS 469.300.[41] Because both "nongenerating facilities" and "related or supporting facilities" receive their definition from ORS 469.300, the terms should be read together in the context of that statute's scheme. To reiterate the point made earlier in this comment, ORS 469.300 completely separates energy facilities (which, again, are the same as "nongenerating facilities") from related or supporting facilities. Each type of potential energy facility has certain qualifications that must be met. Transmission lines must have a particular length and voltage, stand-alone pipelines must be a particular width and length, etc. If the given type of facility meets those qualifications, it stops being a "transmission line" or a "pipeline" or a "synthetic fuel plant" or a "surface facility related to an underground storage reservoir" and becomes an "energy

[38] Draft Proposed Order, at 1.
[39] OAR 345-023-0005 (emphasis added).
[40] *Id.*; ORS 469.503(2)(f) (emphasis added).
[41] OAR 345-001-0010(27).

facility." The statute differentiates these "energy facilities" from "related or supporting facilities," which are made of up structures that, definitionally, are not energy facilities. For example, the only type of transmission line that is a "related or supporting facility" is an "associated transmission line,"[42] which are specifically exempted from being an energy facility.[43]

To summarize, OAR 345-023-0005 defines "nongenerating facilities" by reference to ORS 469.503. ORS 469.503 defines "nongenerating facilities" as a subset of "energy facilities" defined in ORS 469.300; therefore, nongenerating facilities are energy facilities.[44] According to the language of ORS. 469.300, energy facilities cannot be "related or supporting facilities;" they are two distinct types of facilities with no overlap. Because nongenerating facilities are energy facilities, by the transitive property, nongenerating facilities *cannot be* "related or supporting facilities." Therefore, excepting "nongenerating facilities that are related or supporting facilities" excepts nothing, because there is no such thing as a nongenerating facility that is a related or supporting facility.[45]

Second, assuming the language of the regulation validly excepts related or supporting facilities, that exception is contrary to the language of ORS 469.501(2), which states: "The council may adopt exemptions from any need standard . . . if the exemption is consistent with the state's energy policy set forth in ORS 469.010 and 469.310."[46] Here, the Council has adopted an exception to its need standard: the categorical exception for related or supporting facilities. Because the Council has adopted an exception, that exception must be consistent with the same policies described in Part 1 of this comment. To summarize that section, ORS 469.010 states that the "continued growth in demand for nonrenewable energy forms poses a serious *and immediate*, as well as future, problem."[47] ORS 469.310 states that siting, construction, and operation of energy facilities should be done in a manner consistent with, among other things, the state's energy and environmental protection policies.[48] Those policies call for the rapid and wide-scale decarbonization of the Oregon economy writ large, and in particular the full decarbonization of Oregon's two largest investor-owned utilities, who, notably, are users of the storage capacity at the Mist Facility. And while ODOE has noted that renewable natural gas may help reduce emissions in sectors that are hard to electrify, it also repeatedly states that renewable fuels are not a viable option under current market conditions.

If approved, NW Natural will have seven years to complete the construction proposed in Amendment 13. By that time, PGE and Pacific Power will need to have reduced their emissions by 80 percent, and will have to eliminate the remaining emission less than a decade later Oregon will likely have reduced its greenhouse gas emissions from a 1990 baseline by 45 percent, with the goal to reduce them by anywhere from 80 to 95 percent by 2050. Allowing facilities related to or supporting fossil fuel-based energy facilities to be approved without first determining need

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[42] ORS 469.300(25).
[43] ORS 469.300(12)(a)(C)(iii)
[44] ORS 469.503(2)(f) ("'Nongenerating facility' means those energy facilities that are defined in ORS 469.300(12)(a)(C) and (E) to (I).")
[45] Imagine a city ordinance regulating pet ownership in city limits. The ordinance says: "This ordinance applies to all four-legged mammals, except cats that are dogs." The exception would
[46] ORS 469.501(2).
[47] ORS 469.010(1).
[48] ORS 469.310.

guarantees that NW Natural and others will get approval to construct pipelines and other structures that will be rendered useless before they are even complete. Sooner or later, the Council will need to bring its need standards in line with Oregon policy—it should choose to do so now.

4. Conclusion

We urge the Council not to accept the Draft Proposal approving Amendment 13. We ask that the Council: 1) assess which components of Amendment 13 are a part of the surface facility related to an underground gas storage reservoir under the definitions found in ORS 469.300 and OAR 345-001-0010; 2) use its authority under OAR 345-023-0005 to establish a need standard for surface facilities; 3) apply that need standard to Amendment 13. We also ask that the Council interpret OAR 345-023-0005 in the manner suggested in Section 3 of this comment so that it brings its interpretation in line with the text of the Council's governing statutes.

Respectfully submitted,

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Breach Collective

/s/ Dylan Plummer
Dylan Plummer, Campaign Advisor
Oregon Chapter of the Sierra Club

Outlook

New Public Comment submitted for project : RFA13 and DPO for Mist Underground Natural Gas Storage Facility

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From ODOE ITService * ODOE <ODOE.ITService@oregon.gov>
Date Thu 9/19/2024 5:02 PM
To SLOAN Kathleen * ODOE <Kathleen.SLOAN@energy.oregon.gov>

Organization: Green Energy Institute
Submitted by: Cole Souder Souder
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Siting Project Phase: *DPO*

Comment Summary:
see attachment

Please Click on the following link to view the full Comment Details

MSTAMD13 DPO Public Comment 9a Cole Souder Green Energy Institute 2024-09-19

Comment Summary

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Application for Site Certificate (ASC) Exhibit

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GEI-NEDC-CRK-Breach-Sierra Comments on Draft Proposal for Amendment 13 to Mist Facility.pdf (315.70 KB)

September 19, 2024

The Green Energy Institute at Lewis & Clark Law School is a non-profit energy and climate law and policy institute within Lewis & Clark Law School's top-ranked environmental, natural resources, and energy law program. Northwest Environmental Defense Center is a non-profit environmental organization established by professors, law students, and attorneys in 1969 at Lewis & Clark Law School. NEDC's mission is to protect and preserve the environment and natural resources of the Pacific Northwest by engaging in legal advocacy, education, and litigation independently and in conjunction with environmental groups on issues affecting climate change and resiliency, water quality, and air quality. Columbia Riverkeeper is a non-profit organization that works to protect the water quality of the Columbia River basin and all life connected to it. Breach Collective builds power within the climate and labor movements through organizing, legal advocacy, education, and storytelling. The Oregon Chapter of the Sierra Club is a non-profit member-supported, public interest organization that promotes conservation of the Oregon natural environment by influencing public policy decisions—legislative, administrative, legal, and electoral. We appreciate the opportunity to provide the following comments to the Energy Facility Siting Council (the "Council") on the Draft Proposed Order on Request for Amendment 13 ("Draft Proposed Order").

The Draft Proposed Order recommends that "the Council continue to find that the Division 23 Need Standard does not apply" to the Mist Underground Natural Gas Storage Facility ("Mist Facility").[1] It does so for two reasons. First, it states that "the rule does not include a need standard for surface facilities related to an underground natural gas storage reservoir."[2] Second, it notes that the regulation "does not apply to 'nongenerating facilities that are related or supporting facilities.'"[3] To this second point, the Draft Proposed Order points out that the Council evaluated the applicability of the "related or supporting facilities" exception in its Final Order for Amendment 11 and found that the changes in Amendment 11 fell under the exception. It then asserts that the changes in Amendment 13 also fall under the exception. For the reasons below, the Council should 1) establish a need standard for surface facilities related to underground gas reservoirs and apply that standard to NW Natural's Request for Amendment 13 ("Amendment 13"), 2) clarify which aspects of Amendment 13 pertain to the "surface facility" and which aspects are "related or supporting facilities, and 3) begin to eliminate the exception from the need standard for facilities related to or supporting fossil fuel-based energy facilities.

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[1] "Mist Underground Natural Gas Storage Facility - Draft Proposed Order on Request for Amendment 13," Energy Facility Siting Council, 177 (Aug. 15, 2024), (hereinafter "Draft Proposed Order") available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2024-08-15-MSTAMD13-DPO-w-Attachments-signed.pdf.

[2] *Id.*

[3] *Id.*

1. Background on Need Standards in the Council's Review of Certificate Applications

ORS 469.501(1)(L) directs the Council, as a part of its review of applications for and amendments to site certificates, to establish need standards for nongenerating facilities "consistent with the state energy policy set forth in ORS 469.010 and 469.310."

The state's energy policy discourages the growth of facilities related to fossil fuels like the Mist Facility. ORS 469.010 states that "continued growth in demand for nonrenewable energy forms poses a serious and immediate, as well as future, problem."[4] The law continues that it is the policy of Oregon that "cost effectiveness be considered in all agency decision-making relating to energy facilities."[5] ORS 469.310 declares that the siting, construction, and operation of energy facilities "shall be accomplished in a manner consistent with the protection of public health and safety and in compliance with the energy policy and . . . other environmental protection policies of this state."[6]

State energy and environmental policies highlight the urgency for EFSC to begin assessing the need, or lack-thereof, for natural gas-related energy facilities under its jurisdiction. HB 2021 requires Portland General Electric ("PGE") and Pacific Power to reduce the greenhouse gas emissions associated with serving Oregon load 80, 90, and 100 percent by 2030, 2035, and 2040, respectively.[7] HB 2021 also has functionally stopped the expansion of natural gas generation, stating that the Council 1) cannot approve new generating facilities that will produce emissions and 2) cannot approve a site certificate amendment to an emitting generating facility if the proposed changes will significantly increase the gross carbon dioxide emissions that are reasonably likely to result from the operation of the facility.[8] Executive Order 20-04 sets greenhouse gas emissions reduction goals of 45 percent and 80 percent below 1990 levels by 2035 and 2050, respectively.[9] To be most consistent with achieving a science-based target for carbon reductions, the Oregon Department of Environmental Quality ("DEQ") went further in its Climate Protection Program, requiring reductions in greenhouse gas emissions from covered fuel suppliers of 90 percent by 2050. Although invalidated in the Oregon Court of Appeals, DEQ has prepared draft rules, comparable to the original version of the rule, to comply with the Court's order while retaining the same emissions reductions goals, further illustrating commitments to decarbonizing direct use fuels in Oregon.[10] Importantly, the newest version of the Climate Protection Program applies to NW Natural.[11]

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[4] ORS 469.010(1).
[5] *Id.*
[6] ORS 469.031.
[7] ORS 469A.410(1).
[8] ORS 469.413.
[9] E.O. 20-04(2), Oregon, (Mar. 16, 2020), available at https://www.oregon.gov/gov/eo/eo_20-04.pdf.
[10] "Climate Protection Program 2024: Fact Sheet," Oregon Dept. of Environ. Quality, available at https://www.oregon.gov/deq/ghgp/Documents/CPP2024ChangesFactSheet.pdf; Monica Samayoa, "Oregon prepares to reboot an effort to cut greenhouse gas emissions," Oregon Public Broadcasting, (Apr. 1, 2024), available at https://www.opb.org/article/2024/04/01/oregon-greenhouse-gas-climate-change-legislation-protection-program/.
[11] *See e.g.,* Oregon Department of Environmental Quality, *Draft Rules—Division 273: Climate Protection Program 2024 Rulemaking*, OAR 340-0273-0010—340-027-0150.

Additionally, in only about one year—earlier than when NW Natural would even need to begin its construction related to Amendment 13[12]—the Oregon Department of Energy ("ODOE") will release the Oregon Energy Strategy. House Bill 3630 directs ODOE to develop an "energy strategy" for the state that "identifies pathways to achieving the state's energy policy objectives."[13] The Energy Strategy will be a comprehensive plan that analyzes a variety of approaches to meet the state's greenhouse gas reduction targets on an economy-wide basis.[14] ODOE's most recent Biennial Report noted the importance of Executive Order 20-04, the DEQ's Climate Protection Plan, and HB 2021 in its underlying assumptions about Oregon energy pathways.[15] The assumptions going into ODOE's modeling anticipate substantially reduced demand for natural gas substantially. These assumptions include: heat pumps making up 95% of residential and small commercial and 75% of large commercial space heating purchases by 2040; electrification of half of all household and commercial appliances by 2050; electrification of 95% of all household and small commercial water heaters; and no new gas pipeline infrastructure.[16]

Although the Biennial Report pointed to the Mist Facility as a location where renewable resources like clean hydrogen *could* be stored in the future, it also pointed out that "the development of renewable biofuels and hydrogen at-scale is not yet commercially viable."[17] The Oregon Global Warming Commission came to a similar conclusion in its "Roadmap to 2030" Report, which modeled strategies to achieve statewide greenhouse gas reductions by 2030 instead of 2035, stating that there was "insufficient renewable natural gas and renewable hydrogen" to meet the 2030 goal.[18]

Oregon energy and environmental policy is moving towards renewable and electrical energy and away from fossil fuels like natural gas. The Council should, therefore, only approve facilities related to natural gas that are *needed*. Otherwise, the Council risks approving expensive expansions to the gas system that are contrary to Oregon policy, saddling Oregon consumers with the associated costs for decades. The Council is the only agency positioned to thoroughly test whether the development at issue here is consistent with Oregon's energy policy and is *needed*. The only other agencies which might have jurisdiction over NW Natural's activities at the Mist Facility is the Oregon Public Utility Commission ("PUC") and DOGAMI. As to the latter, DOGAMI's regulations in OAR 632, Div. 10 never ask for an assessment of need. And to our knowledge NW Natural has not described its activities in an Integrated Resource Plan nor received acknowledgement for its planned investments here from PUC.

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[12] Draft Proposed Order, at 26.
[13] ORS 469.062(3).
[14] *Id.*
[15] Department of Energy, 2022 Biennial Energy Report, at 377–80, available at https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-Biennial-Energy-Report.pdf.
[16] "Oregon Energy Strategy: Draft Reference Scenario – Key Data and Assumptions," Oregon Dept. of Energy, (Aug. 27, 2024), available at https://www.oregon.gov/energy/Data-and-Reports/Documents/2024-Draft-Reference-Scenario.pdf.
[17] *Id.* at 384.
[18] "Oregon Climate Action Roadmap to 2030," Oregon Global Warming Commission (Mar. 2023), available at https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/64275befc3f5d82a60b981b2/1680301043241/2023-Climate-Action-Roadmap.pdf.

2. The Council should establish a need standard for surface facilities related to an underground gas storage reservoir and apply that standard to Amendment 13.

The Council has adopted a Need Standard in OAR 345-023-0005, which states in full:

> "This division applies to nongenerating facilities as defined in ORS 469.503(2)(e)[19], except nongenerating facilities that are related or supporting facilities. To issue a site certificate for a facility described in sections (1) through (3), the Council must find that the applicant has demonstrated the need for the facility. The Council may adopt need standards for other nongenerating facilities. This division describes the methods the applicant shall use to demonstrate need. In accordance with ORS 469.501(1)(L), the Council has no standard requiring a showing of need or cost-effectiveness for generating facilities. The applicant shall demonstrate need:
>
> (1) For electric transmission lines under the least-cost plan rule, OAR 345-023-0020(1), or the system reliability rule for transmission lines, OAR 345-023-0030, or by demonstrating that the transmission line is proposed to be located within a "National Interest Electric Transmission Corridor" designated by the U.S. Department of Energy under Section 216 of the Federal Power Act;
>
> (2) For natural gas pipelines under the least-cost plan rule, OAR 345-023-0020(1), or the economically reasonable rule for natural gas pipelines, OAR 345-023-0040;
>
> (3) For storage facilities for liquefied natural gas with storage capacity of three million gallons or greater under the least-cost plan rule, OAR 345-023-0020(1), or the economically reasonable rule for liquefied natural gas storage facilities, OAR 345-023-0040."[20]

The definition of "nongenerating facilities" in ORS 469.503 itself refers to a subset of the definition of "energy facilities" in ORS 469.300. To paraphrase, that subset includes 1) certain high voltage transmission lines, 2) certain pipelines, 3) synthetic fuel plants, 4) plants that covert biomass to gas, liquid or solid, 5) storage facilities for liquified natural gas ("LNG") and 6) surface facilities of sufficient size related an underground gas storage reservoir.[21]

To pause for a moment, the significance of this string of definitions is to show that "nongenerating facilities" as used in OAR 345-023-0005 is essentially interchangeable with "energy facilities" as used in ORS 469.300. More specifically, nongenerating facilities are a subset of energy facilities, meaning, not all energy facilities are nongenerating facilities, but all nongenerating facilities *are* energy facilities.

In ORS 469.300, "energy facilities" are different from "relating or supporting facilities," which include certain pipelines, transmission lines, and other structures but does not include

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[19] The citation to ORS 469.503(2)(e) should read ORS 469.503(2)(f), which houses the definitions for ORS 469.503.
[20] OAR 345-023-0005.
[21] ORS 469.300(12).

underground gas storage reservoirs, production, injection or monitoring wells, or wellhead equipment or pumps, which fall under DOGAMI's jurisdiction.[22] A more thorough discussion on the two definitions is contained in Section 3 below.

Under OAR 345-023-0005, the Council currently requires a finding of need for three specific types of nongenerating facilities: high voltage transmission lines, natural gas pipelines, and storage facilities for LNG. And although the Council exempts "nongenerating facilities that are related or supporting facilities" from the regulation, it retains the right to "adopt needs standards for other nongenerating facilities."[23]

The Draft Proposed Order's short discussion of the applicability of OAR 345-023-0005 stated:

> "The rule does not include a need standard for surface facilities related to an underground natural gas storage reservoir. NW [Natural] was not required to demonstrate need for the surface facilities . . . proposed through the previous amendment requests; nor was the Council required to make a finding of need in order to grant the requested amended site certificate."[24]

In essence, the Draft Proposed Order asserts that because NW Natural has not previously been required to demonstrate need, it does not need to do so here. That line of reasoning is insufficient given the changes in Oregon's energy and environmental policies—which the Council's need standard must be consistent with—that have occurred in the last five years. The Council should not adopt a "business as usual" approach to Amendment 13, because the business of energy regulation in Oregon is no longer operating under usual conditions.

The Council must adapt its Need Standard to be consistent with Oregon's current energy and environmental policy. The reservation in OAR 345-023-0005(1) that "the Council may adopt needs standards for other nongenerating facilities" provides the Council the ability to adopt a standard for surface facilities related to underground gas reservoirs and apply that new standard to Amendment 13.[25] The "may adopt" language should be interpreted as putting applicants on notice that additional standards beyond the three specific standards articulated in the regulation could be applied at any time. To interpret it otherwise would render the sentence meaningless; certainly the Council has the authority to amend the regulation and add standards for other nongenerating facilities in the future. The regulation is best understood to state that, while the Council *must* apply the articulated standards for high voltage transmission, natural gas pipelines, and LNG storage facilities, it *may*, at its discretion, apply a standard to other nongenerating facilities. The Council should apply a need standard to Amendment 13 because the failure to do so conflicts with Oregon's energy and environmental policy.

Oregon's energy policy makes suspect the need for NW Natural to spend millions of dollars updating and expanding the Mist Facility. Often, the Mist Facility provides storage space for natural gas destined for use at gas-powered generating facilities. But, as pointed out above, HB

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[22] ORS 469.300(25).
[23] OAR 345-023-0005.
[24] Draft Proposed Approval, at 177.
[25] OAR 345-023-0005(1).

2021 has frozen the growth of gas-powered generating facilities: the Council cannot approve new emitting generating facilities, nor can it approve amendments to existing facilities that will significantly increase a facility's emissions, i.e. that will increase the use of natural gas at the facility. By 2040 PGE and Pacific Power will need to have reduced the emissions associated with delivering load to their customers by 100%, which will require the transition away from even existing natural gas plants. Reducing emissions to zero will necessity removing most, if not all, natural gas generation, functionally eliminating a main customer base for the Mist Facility.

Moreover, electrification of buildings, both residential and commercial, in NW Natural's service area will lessen its own need to store larger quantities of natural gas. Finally, although ODOE believes that renewable natural gas or green hydrogen will play some role in the decarbonization of Oregon's economy, the extent of that role is uncertain given that those alternative fuels are not currently commercially viable. Thus, it is unclear if, let alone when, the Mist Facility will be needed to store quantities of renewable natural gas that exceed the facility's current storage capacity.

We understand that the Council's jurisdiction over the Mist Facility is limited. But that does not mean that the Council should not align its standards with Oregon policy to the fullest extent of that limited jurisdictional sphere. Currently, the scope of the Council's need standard is not consistent with either Oregon's general energy policy of discouraging the "continued growth in demand for nonrenewable energy" or its specific policies mandating emissions reductions and electrification because it allows for emitting energy facilities to expand without any determination of need. Contrary to the language of the Draft Proposed Order, the Council is required to make a finding of need to grant the requested amended site certificate so that its Need Standard remains consistent with Oregon energy and environmental policy. Accordingly, this action is premature and should be curtailed until, at a minimum, the Council has established a need standard for surface facilities related to underground gas storage reservoirs. That standard may need to take into account the aforementioned DEQ rulemakings and ODOE's Energy Strategy. Therefore, to ensure that the Council's decision is not contrary to Oregon law and policy, it should deny Amendment 13 until a need standard for surface facilities related to an underground gas storage reservoir is created. The Council should then apply that standard to Amendment 13.

3. The "related or supporting facilities" exception does not apply to Amendment 13.

The Draft Proposed Order continues:

> "OAR 345-023-0005 further states that the division does not apply to "nongenerating facilities that are related or supporting facilities.
>
> Council previously evaluated the applicability of this standard on the facility in the Final Order on [Amendment 11] and found that this requirement does not apply to any related or supporting facilities. This fact would not change as a result

> of [Amendment 13] requested changes, which continue to be nongenerating facilities that are related or supporting facilities."[26]

We have multiple concerns with this language. First, the language mischaracterizes the discussion from the Final Order on Amendment 11. Second, the language wrongly implies that the entirety of the facilities at issue in Amendment 13 are "related or supporting facilities". Finally, the blanket exception for all related or supporting facilities is in need of reevaluation.

a. The Council should clarify the Draft Proposed Order's language regarding the "related or supporting facilities" discussion in Amendment 11 and its applicability to Amendment 13.

"Related or supporting facilities" can only be understood in the context of the definition of "energy facilities" in ORS 469.300.[27] Without reproducing the full definition here energy facilities cover ten types of facilities. Each type of facility has certain requirements to qualify it as an "energy facility," and then often has certain exemptions from that definition. For example, a "pipeline" is an "energy facility" if it is 1) at least six inches in diameter, five or more miles in length, and used to transport crude petroleum, LNG, or liquid geothermal energy, 2) at least 16 inches in diameter, five or more miles in length, and used to transport natural gas, or 3) at least 16 inches in diameter, five or more miles in length, and used to transport gaseous geothermal energy.[28] An otherwise qualifying natural gas pipeline is not an energy facility, though, if less than five miles of its length are more than 50 feet from a public road, or if it is a certain type of upgrade to an existing natural gas pipeline.[29] A similar structure exists for the definition of high voltage transmission lines as energy facilities, which must be more than 10 miles and have a capacity of at least 230,000 volts, but excludes lines within existing corridors, certain line upgrades, and "associated transmission lines."[30] The definition of "surface facility related to an underground gas storage reservoir" requires the facility to be designed to receive or deliver more than 50 million cubic feet of gas per day or require more than 4000 horsepower of compression to operate, but excludes underground storage gas reservoirs and injection, withdrawal, or monitoring wells.[31] The list goes on.

ORS 469.300's definition of "related or supporting facilities" is worth quoting in full:

> "'Related or supporting facilities' means any structure, proposed by the applicant, to be constructed or substantially modified in connection with the construction of an energy facility, including associated transmission lines, reservoirs, storage facilities, intake structures, road and rail access, pipelines, barge basins, office or public buildings, and commercial and industrial structures. 'Related or supporting

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[26] Draft Proposed Order, at 177.
[27] It is crucial to reiterate that ORS 469.300 is relevant as a tertiary reference point from OAR 345-023-0005. The Need Standard defines nongenerating facility by reference to ORS 469.503. ORS 469.503 defines nongenerating facility by reference to the definition of "energy facility" in ORS 469.300. Therefore, the term "nongenerating facility" is functionally interchangeable with the term "energy facility."
[28] ORS 469.300(12)(a)(E).
[29] ORS 469.300(12)(a)(E)(ii)(I)–(II).
[30] ORS 469.300(12)(a)(C).
[31] ORS 469.300(12)(a)(I).

> facilities' does not include geothermal or underground gas storage reservoirs, production, injection or monitoring wells or wellhead equipment or pumps."[32]

The term "related or supporting facilities" only applies to certain types of facilities that don't themselves qualify as an "energy facility." For example, "pipeline" should only mean pipelines that don't meet the criteria for a pipeline to qualify as an energy facility.[33] "Associated transmission lines," having been excepted from the definition of "energy facility," is then defined as a "related or supporting facility."[34] For each of the listed items under the definition of "related or supporting facility," there is a corresponding specific or general exception to the definition of an energy facility. Indeed, the definition goes so far as to note that the listed exceptions in the definition of "surface facility to an underground gas storage reservoir" are *not* "related or supporting facilities," presumably to avoid any ambiguity over whether they are covered as well, given that they are not under Council jurisdiction.

Put simply, "related or supporting facilities" has a narrow, limited scope. Rather than being broadly applicable to large swaths of facilities, it merely offers a unifying term for a series of specific exceptions to the definition of "energy facility." The Council applied this narrow understanding of "related or supporting facilities" in its review of Amendment 11. In the Final Order on Amendment 11, the Council did not state that the entirety of the Mist surface facilities were "related or supporting" but rather that one specific aspect of Amendment 11, a transmission pipeline,[35] fell under the exception.[36] The Draft Proposed Order, however, extends the reasoning in the Final Order of Amendment 11, which was limited to the one component of Amendment 11, to the entire Mist Facility for Amendment 13 without a basis for doing so.[37]

The Council has had too broad an approach to "related or supporting facilities" in the past and now seeks to broaden the definition even further, apparently to the point where it entirely subsumes the definition of a surface facility. The Council should, at a minimum, clarify in its Final Order that "related or supporting facilities" are only those facilities not encompassed by the

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[32] ORS 469.300(25).

[33] The main takeaway from this example is that not all pipelines are "related or supporting facilities," but rather some are "energy facilities." For example, a new natural gas pipeline that is 24 inches in diameter, 12 miles long, and 5 or more of those miles are more than 50 feet from a public road, is an "energy facility" because it meets the criteria of ORS 469.300(12)(a)(E)(ii). Therefore, it is not a "pipeline" but an "energy facility," and, accordingly, it would not be captured by the use of the term "pipeline" in the definition of "related or supporting facilities."

[34] Compare ORS 469.300(12)(a)(C)(iii) *with* ORS 469.300(25).

[35] We do note, however, that the Council wrongly interpreted the definition of "related or supporting facility" in Amendment 11. The transmission pipeline in Amendment 11 should have fallen under the definition of "energy facility" because it was more 16 inches, more than 5 miles long, and did not qualify for one of the exceptions to the definition of "pipeline" as an energy facility. The transmission line in question was a new natural gas pipeline, 24 inches in diameter and 12 miles long. Final Order on Amendment 11, at 5. The Council conflated the definition of a pipeline that is an energy facility with the use of the term "pipeline" in the definition for related or supporting facilities.

[36] Final Order on Request for Contested Case and Mist Facility Amendment No. 11, Energy Facility Siting Council, 150 (Apr. 2016), (hereinafter "Final Order on Amendment 11"), available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/FINAL%20ORDER%20MIST%20FACILITY%20RFA%2011_2016-4-21.pdf.

[37] Draft Proposed Order, at 177 (stating that the Council previously found the need standard does not apply to any "related or supporting facilities" and that "this fact would not change as a result of [Amendment 13] requested changes, *which continued to be nongenerating facilities that are related or supporting facilities*.")

definition of energy facility and therefore do not apply to facilities that qualify as surface facilities related to underground gas storage reservoirs.

This distinction is important because Amendment 13 makes changes to the surface facility that are not related or supporting facilities. For example, Amendment 13 calls for a series of upgrades to several compressor stations at both the North Mist Compression Station and the Miller Station locations.[38] Those are modifications to the surface facility, which is an energy facility and therefore a "nongenerating facility," not to a "related or supporting facility." The Council should perform a similar analysis for each proposed action to determine which actions are a part of the nongenerating facility, i.e., a surface facility, and which are "related or supporting facilities." The Council should not, however, adopt the language from the Draft Proposed Order that implies the entire Mist Facility is a related or supporting facility.

b. There is no exception for "related or supporting facilities" in OAR 345-023-0005, and if there is, the exception is not consistent with Oregon policy.

We would also like to point out two issues related to the exception for "related or supporting facilities." For clarity, the first sentence of OAR 345-023-0005 states "This division applies to nongenerating facilities as defined in ORS 469.503(2)(e), *except nongenerating facilities that are related or supporting facilities*."[39]

The exception as written covers nothing because there is no such thing as "nongenerating facilities that are related or supporting facilities." The regulatory and statutory definitions of the terms necessitate this interpretation.

The Need Standard defines "nongenerating facilities" by reference to ORS 469.503, which itself defines "nongenerating facilities" as "those *energy facilities* that are defined in ORS 469.300(12)(a)(C) and (E) to (I)."[40] Therefore, "nongenerating facilities," as used in OAR 345-023-0005 are simply six of the ten types of "energy facilities" as defined in 469.300(12)(a). For the purposes of this comment, the two terms—nongenerating facility and energy facility—are essentially interchangeable.

The Council's regulations also define "related or supporting facilities" by reference to ORS 469.300.[41] Because both "nongenerating facilities" and "related or supporting facilities" receive their definition from ORS 469.300, the terms should be read together in the context of that statute's scheme. To reiterate the point made earlier in this comment, ORS 469.300 completely separates energy facilities (which, again, are the same as "nongenerating facilities") from related or supporting facilities. Each type of potential energy facility has certain qualifications that must be met. Transmission lines must have a particular length and voltage, stand-alone pipelines must be a particular width and length, etc. If the given type of facility meets those qualifications, it stops being a "transmission line" or a "pipeline" or a "synthetic fuel plant" or a "surface facility related to an underground storage reservoir" and becomes an "energy

[38] Draft Proposed Order, at 1.
[39] OAR 345-023-0005 (emphasis added).
[40] *Id.*; ORS 469.503(2)(f) (emphasis added).
[41] OAR 345-001-0010(27).

facility." The statute differentiates these "energy facilities" from "related or supporting facilities," which are made of up structures that, definitionally, are not energy facilities. For example, the only type of transmission line that is a "related or supporting facility" is an "associated transmission line,"[42] which are specifically exempted from being an energy facility.[43]

To summarize, OAR 345-023-0005 defines "nongenerating facilities" by reference to ORS 469.503. ORS 469.503 defines "nongenerating facilities" as a subset of "energy facilities" defined in ORS 469.300; therefore, nongenerating facilities are energy facilities.[44] According to the language of ORS. 469.300, energy facilities cannot be "related or supporting facilities;" they are two distinct types of facilities with no overlap. Because nongenerating facilities are energy facilities, by the transitive property, nongenerating facilities *cannot be* "related or supporting facilities." Therefore, excepting "nongenerating facilities that are related or supporting facilities" excepts nothing, because there is no such thing as a nongenerating facility that is a related or supporting facility.[45]

Second, assuming the language of the regulation validly excepts related or supporting facilities, that exception is contrary to the language of ORS 469.501(2), which states: "The council may adopt exemptions from any need standard . . . if the exemption is consistent with the state's energy policy set forth in ORS 469.010 and 469.310."[46] Here, the Council has adopted an exception to its need standard: the categorical exception for related or supporting facilities. Because the Council has adopted an exception, that exception must be consistent with the same policies described in Part 1 of this comment. To summarize that section, ORS 469.010 states that the "continued growth in demand for nonrenewable energy forms poses a serious *and immediate*, as well as future, problem."[47] ORS 469.310 states that siting, construction, and operation of energy facilities should be done in a manner consistent with, among other things, the state's energy and environmental protection policies.[48] Those policies call for the rapid and wide-scale decarbonization of the Oregon economy writ large, and in particular the full decarbonization of Oregon's two largest investor-owned utilities, who, notably, are users of the storage capacity at the Mist Facility. And while ODOE has noted that renewable natural gas may help reduce emissions in sectors that are hard to electrify, it also repeatedly states that renewable fuels are not a viable option under current market conditions.

If approved, NW Natural will have seven years to complete the construction proposed in Amendment 13. By that time, PGE and Pacific Power will need to have reduced their emissions by 80 percent, and will have to eliminate the remaining emission less than a decade later Oregon will likely have reduced its greenhouse gas emissions from a 1990 baseline by 45 percent, with the goal to reduce them by anywhere from 80 to 95 percent by 2050. Allowing facilities related to or supporting fossil fuel-based energy facilities to be approved without first determining need

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[42] ORS 469.300(25).
[43] ORS 469.300(12)(a)(C)(iii)
[44] ORS 469.503(2)(f) ("'Nongenerating facility' means those energy facilities that are defined in ORS 469.300(12)(a)(C) and (E) to (I).")
[45] Imagine a city ordinance regulating pet ownership in city limits. The ordinance says: "This ordinance applies to all four-legged mammals, except cats that are dogs." The exception would
[46] ORS 469.501(2).
[47] ORS 469.010(1).
[48] ORS 469.310.

guarantees that NW Natural and others will get approval to construct pipelines and other structures that will be rendered useless before they are even complete. Sooner or later, the Council will need to bring its need standards in line with Oregon policy—it should choose to do so now.

4. Conclusion

We urge the Council not to accept the Draft Proposal approving Amendment 13. We ask that the Council: 1) assess which components of Amendment 13 are a part of the surface facility related to an underground gas storage reservoir under the definitions found in ORS 469.300 and OAR 345-001-0010; 2) use its authority under OAR 345-023-0005 to establish a need standard for surface facilities; 3) apply that need standard to Amendment 13. We also ask that the Council interpret OAR 345-023-0005 in the manner suggested in Section 3 of this comment so that it brings its interpretation in line with the text of the Council's governing statutes.

Respectfully submitted,

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Green Energy Institute at Lewis & Clark Law School

/s/ Mary Stites
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/s/ Danny Noonan
Danny Noonan, Climate and Energy Strategist
Breach Collective

/s/ Dylan Plummer
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Oregon Chapter of the Sierra Club

Outlook

Comments on Amendment 13 for Mist facility

From Cole T. Souder <csouder@lclark.edu>
Date Thu 9/19/2024 6:35 PM
To SLOAN Kathleen * ODOE <kathleen.sloan@energy.oregon.gov>

1 attachments (316 KB)
GEI-NEDC-CRK-Breach-Sierra Comments on Draft Proposal for Amendment 13 to Mist Facility.pdf;

You don't often get email from csouder@lclark.edu. Learn why this is important

Hello Ms Sloan,

I submitted these comments on the online portal, but just wanted to send them to you as well to be sure they were submitted.

Best,
--
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September 19, 2024

The Green Energy Institute at Lewis & Clark Law School is a non-profit energy and climate law and policy institute within Lewis & Clark Law School's top-ranked environmental, natural resources, and energy law program. Northwest Environmental Defense Center is a non-profit environmental organization established by professors, law students, and attorneys in 1969 at Lewis & Clark Law School. NEDC's mission is to protect and preserve the environment and natural resources of the Pacific Northwest by engaging in legal advocacy, education, and litigation independently and in conjunction with environmental groups on issues affecting climate change and resiliency, water quality, and air quality. Columbia Riverkeeper is a non-profit organization that works to protect the water quality of the Columbia River basin and all life connected to it. Breach Collective builds power within the climate and labor movements through organizing, legal advocacy, education, and storytelling. The Oregon Chapter of the Sierra Club is a non-profit member-supported, public interest organization that promotes conservation of the Oregon natural environment by influencing public policy decisions—legislative, administrative, legal, and electoral. We appreciate the opportunity to provide the following comments to the Energy Facility Siting Council (the "Council") on the Draft Proposed Order on Request for Amendment 13 ("Draft Proposed Order").

The Draft Proposed Order recommends that "the Council continue to find that the Division 23 Need Standard does not apply" to the Mist Underground Natural Gas Storage Facility ("Mist Facility").[1] It does so for two reasons. First, it states that "the rule does not include a need standard for surface facilities related to an underground natural gas storage reservoir."[2] Second, it notes that the regulation "does not apply to 'nongenerating facilities that are related or supporting facilities.'"[3] To this second point, the Draft Proposed Order points out that the Council evaluated the applicability of the "related or supporting facilities" exception in its Final Order for Amendment 11 and found that the changes in Amendment 11 fell under the exception. It then asserts that the changes in Amendment 13 also fall under the exception. For the reasons below, the Council should 1) establish a need standard for surface facilities related to underground gas reservoirs and apply that standard to NW Natural's Request for Amendment 13 ("Amendment 13"), 2) clarify which aspects of Amendment 13 pertain to the "surface facility" and which aspects are "related or supporting facilities, and 3) begin to eliminate the exception from the need standard for facilities related to or supporting fossil fuel-based energy facilities.

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[1] "Mist Underground Natural Gas Storage Facility - Draft Proposed Order on Request for Amendment 13," Energy Facility Siting Council, 177 (Aug. 15, 2024), (hereinafter "Draft Proposed Order") available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/2024-08-15-MSTAMD13-DPO-w-Attachments-signed.pdf.

[2] *Id.*

[3] *Id.*

1. Background on Need Standards in the Council's Review of Certificate Applications

ORS 469.501(1)(L) directs the Council, as a part of its review of applications for and amendments to site certificates, to establish need standards for nongenerating facilities "consistent with the state energy policy set forth in ORS 469.010 and 469.310."

The state's energy policy discourages the growth of facilities related to fossil fuels like the Mist Facility. ORS 469.010 states that "continued growth in demand for nonrenewable energy forms poses a serious and immediate, as well as future, problem."[4] The law continues that it is the policy of Oregon that "cost effectiveness be considered in all agency decision-making relating to energy facilities."[5] ORS 469.310 declares that the siting, construction, and operation of energy facilities "shall be accomplished in a manner consistent with the protection of public health and safety and in compliance with the energy policy and . . . other environmental protection policies of this state."[6]

State energy and environmental policies highlight the urgency for EFSC to begin assessing the need, or lack-thereof, for natural gas-related energy facilities under its jurisdiction. HB 2021 requires Portland General Electric ("PGE") and Pacific Power to reduce the greenhouse gas emissions associated with serving Oregon load 80, 90, and 100 percent by 2030, 2035, and 2040, respectively.[7] HB 2021 also has functionally stopped the expansion of natural gas generation, stating that the Council 1) cannot approve new generating facilities that will produce emissions and 2) cannot approve a site certificate amendment to an emitting generating facility if the proposed changes will significantly increase the gross carbon dioxide emissions that are reasonably likely to result from the operation of the facility.[8] Executive Order 20-04 sets greenhouse gas emissions reduction goals of 45 percent and 80 percent below 1990 levels by 2035 and 2050, respectively.[9] To be most consistent with achieving a science-based target for carbon reductions, the Oregon Department of Environmental Quality ("DEQ") went further in its Climate Protection Program, requiring reductions in greenhouse gas emissions from covered fuel suppliers of 90 percent by 2050. Although invalidated in the Oregon Court of Appeals, DEQ has prepared draft rules, comparable to the original version of the rule, to comply with the Court's order while retaining the same emissions reductions goals, further illustrating commitments to decarbonizing direct use fuels in Oregon.[10] Importantly, the newest version of the Climate Protection Program applies to NW Natural.[11]

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[4] ORS 469.010(1).
[5] *Id.*
[6] ORS 469.031.
[7] ORS 469A.410(1).
[8] ORS 469.413.
[9] E.O. 20-04(2), Oregon, (Mar. 16, 2020), available at https://www.oregon.gov/gov/eo/eo_20-04.pdf.
[10] "Climate Protection Program 2024: Fact Sheet," Oregon Dept. of Environ. Quality, available at https://www.oregon.gov/deq/ghgp/Documents/CPP2024ChangesFactSheet.pdf; Monica Samayoa, "Oregon prepares to reboot an effort to cut greenhouse gas emissions," Oregon Public Broadcasting, (Apr. 1, 2024), available at https://www.opb.org/article/2024/04/01/oregon-greenhouse-gas-climate-change-legislation-protection-program/.
[11] *See e.g.,* Oregon Department of Environmental Quality, *Draft Rules—Division 273: Climate Protection Program 2024 Rulemaking*, OAR 340-0273-0010—340-027-0150.

Additionally, in only about one year—earlier than when NW Natural would even need to begin its construction related to Amendment 13[12]—the Oregon Department of Energy ("ODOE") will release the Oregon Energy Strategy. House Bill 3630 directs ODOE to develop an "energy strategy" for the state that "identifies pathways to achieving the state's energy policy objectives."[13] The Energy Strategy will be a comprehensive plan that analyzes a variety of approaches to meet the state's greenhouse gas reduction targets on an economy-wide basis.[14] ODOE's most recent Biennial Report noted the importance of Executive Order 20-04, the DEQ's Climate Protection Plan, and HB 2021 in its underlying assumptions about Oregon energy pathways.[15] The assumptions going into ODOE's modeling anticipate substantially reduced demand for natural gas substantially. These assumptions include: heat pumps making up 95% of residential and small commercial and 75% of large commercial space heating purchases by 2040; electrification of half of all household and commercial appliances by 2050; electrification of 95% of all household and small commercial water heaters; and no new gas pipeline infrastructure.[16]

Although the Biennial Report pointed to the Mist Facility as a location where renewable resources like clean hydrogen *could* be stored in the future, it also pointed out that "the development of renewable biofuels and hydrogen at-scale is not yet commercially viable."[17] The Oregon Global Warming Commission came to a similar conclusion in its "Roadmap to 2030" Report, which modeled strategies to achieve statewide greenhouse gas reductions by 2030 instead of 2035, stating that there was "insufficient renewable natural gas and renewable hydrogen" to meet the 2030 goal.[18]

Oregon energy and environmental policy is moving towards renewable and electrical energy and away from fossil fuels like natural gas. The Council should, therefore, only approve facilities related to natural gas that are *needed*. Otherwise, the Council risks approving expensive expansions to the gas system that are contrary to Oregon policy, saddling Oregon consumers with the associated costs for decades. The Council is the only agency positioned to thoroughly test whether the development at issue here is consistent with Oregon's energy policy and is *needed*. The only other agencies which might have jurisdiction over NW Natural's activities at the Mist Facility is the Oregon Public Utility Commission ("PUC") and DOGAMI. As to the latter, DOGAMI's regulations in OAR 632, Div. 10 never ask for an assessment of need. And to our knowledge NW Natural has not described its activities in an Integrated Resource Plan nor received acknowledgement for its planned investments here from PUC.

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[12] Draft Proposed Order, at 26.
[13] ORS 469.062(3).
[14] *Id.*
[15] Department of Energy, 2022 Biennial Energy Report, at 377–80, available at https://www.oregon.gov/energy/Data-and-Reports/Documents/2022-Biennial-Energy-Report.pdf.
[16] "Oregon Energy Strategy: Draft Reference Scenario – Key Data and Assumptions," Oregon Dept. of Energy, (Aug. 27, 2024), available at https://www.oregon.gov/energy/Data-and-Reports/Documents/2024-Draft-Reference-Scenario.pdf.
[17] *Id.* at 384.
[18] "Oregon Climate Action Roadmap to 2030," Oregon Global Warming Commission (Mar. 2023), available at https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/64275befc3f5d82a60b981b2/1680301043241/2023-Climate-Action-Roadmap.pdf.

2. The Council should establish a need standard for surface facilities related to an underground gas storage reservoir and apply that standard to Amendment 13.

The Council has adopted a Need Standard in OAR 345-023-0005, which states in full:

> "This division applies to nongenerating facilities as defined in ORS 469.503(2)(e)[19], except nongenerating facilities that are related or supporting facilities. To issue a site certificate for a facility described in sections (1) through (3), the Council must find that the applicant has demonstrated the need for the facility. The Council may adopt need standards for other nongenerating facilities. This division describes the methods the applicant shall use to demonstrate need. In accordance with ORS 469.501(1)(L), the Council has no standard requiring a showing of need or cost-effectiveness for generating facilities. The applicant shall demonstrate need:
>
> (1) For electric transmission lines under the least-cost plan rule, OAR 345-023-0020(1), or the system reliability rule for transmission lines, OAR 345-023-0030, or by demonstrating that the transmission line is proposed to be located within a "National Interest Electric Transmission Corridor" designated by the U.S. Department of Energy under Section 216 of the Federal Power Act;
>
> (2) For natural gas pipelines under the least-cost plan rule, OAR 345-023-0020(1), or the economically reasonable rule for natural gas pipelines, OAR 345-023-0040;
>
> (3) For storage facilities for liquefied natural gas with storage capacity of three million gallons or greater under the least-cost plan rule, OAR 345-023-0020(1), or the economically reasonable rule for liquefied natural gas storage facilities, OAR 345-023-0040."[20]

The definition of "nongenerating facilities" in ORS 469.503 itself refers to a subset of the definition of "energy facilities" in ORS 469.300. To paraphrase, that subset includes 1) certain high voltage transmission lines, 2) certain pipelines, 3) synthetic fuel plants, 4) plants that covert biomass to gas, liquid or solid, 5) storage facilities for liquified natural gas ("LNG") and 6) surface facilities of sufficient size related an underground gas storage reservoir.[21]

To pause for a moment, the significance of this string of definitions is to show that "nongenerating facilities" as used in OAR 345-023-0005 is essentially interchangeable with "energy facilities" as used in ORS 469.300. More specifically, nongenerating facilities are a subset of energy facilities, meaning, not all energy facilities are nongenerating facilities, but all nongenerating facilities *are* energy facilities.

In ORS 469.300, "energy facilities" are different from "relating or supporting facilities," which include certain pipelines, transmission lines, and other structures but does not include

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[19] The citation to ORS 469.503(2)(e) should read ORS 469.503(2)(f), which houses the definitions for ORS 469.503.
[20] OAR 345-023-0005.
[21] ORS 469.300(12).

underground gas storage reservoirs, production, injection or monitoring wells, or wellhead equipment or pumps, which fall under DOGAMI's jurisdiction.[22] A more thorough discussion on the two definitions is contained in Section 3 below.

Under OAR 345-023-0005, the Council currently requires a finding of need for three specific types of nongenerating facilities: high voltage transmission lines, natural gas pipelines, and storage facilities for LNG. And although the Council exempts "nongenerating facilities that are related or supporting facilities" from the regulation, it retains the right to "adopt needs standards for other nongenerating facilities."[23]

The Draft Proposed Order's short discussion of the applicability of OAR 345-023-0005 stated:

> "The rule does not include a need standard for surface facilities related to an underground natural gas storage reservoir. NW [Natural] was not required to demonstrate need for the surface facilities . . . proposed through the previous amendment requests; nor was the Council required to make a finding of need in order to grant the requested amended site certificate."[24]

In essence, the Draft Proposed Order asserts that because NW Natural has not previously been required to demonstrate need, it does not need to do so here. That line of reasoning is insufficient given the changes in Oregon's energy and environmental policies—which the Council's need standard must be consistent with—that have occurred in the last five years. The Council should not adopt a "business as usual" approach to Amendment 13, because the business of energy regulation in Oregon is no longer operating under usual conditions.

The Council must adapt its Need Standard to be consistent with Oregon's current energy and environmental policy. The reservation in OAR 345-023-0005(1) that "the Council may adopt needs standards for other nongenerating facilities" provides the Council the ability to adopt a standard for surface facilities related to underground gas reservoirs and apply that new standard to Amendment 13.[25] The "may adopt" language should be interpreted as putting applicants on notice that additional standards beyond the three specific standards articulated in the regulation could be applied at any time. To interpret it otherwise would render the sentence meaningless; certainly the Council has the authority to amend the regulation and add standards for other nongenerating facilities in the future. The regulation is best understood to state that, while the Council *must* apply the articulated standards for high voltage transmission, natural gas pipelines, and LNG storage facilities, it *may*, at its discretion, apply a standard to other nongenerating facilities. The Council should apply a need standard to Amendment 13 because the failure to do so conflicts with Oregon's energy and environmental policy.

Oregon's energy policy makes suspect the need for NW Natural to spend millions of dollars updating and expanding the Mist Facility. Often, the Mist Facility provides storage space for natural gas destined for use at gas-powered generating facilities. But, as pointed out above, HB

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[22] ORS 469.300(25).
[23] OAR 345-023-0005.
[24] Draft Proposed Approval, at 177.
[25] OAR 345-023-0005(1).

2021 has frozen the growth of gas-powered generating facilities: the Council cannot approve new emitting generating facilities, nor can it approve amendments to existing facilities that will significantly increase a facility's emissions, i.e. that will increase the use of natural gas at the facility. By 2040 PGE and Pacific Power will need to have reduced the emissions associated with delivering load to their customers by 100%, which will require the transition away from even existing natural gas plants. Reducing emissions to zero will necessity removing most, if not all, natural gas generation, functionally eliminating a main customer base for the Mist Facility.

Moreover, electrification of buildings, both residential and commercial, in NW Natural's service area will lessen its own need to store larger quantities of natural gas. Finally, although ODOE believes that renewable natural gas or green hydrogen will play some role in the decarbonization of Oregon's economy, the extent of that role is uncertain given that those alternative fuels are not currently commercially viable. Thus, it is unclear if, let alone when, the Mist Facility will be needed to store quantities of renewable natural gas that exceed the facility's current storage capacity.

We understand that the Council's jurisdiction over the Mist Facility is limited. But that does not mean that the Council should not align its standards with Oregon policy to the fullest extent of that limited jurisdictional sphere. Currently, the scope of the Council's need standard is not consistent with either Oregon's general energy policy of discouraging the "continued growth in demand for nonrenewable energy" or its specific policies mandating emissions reductions and electrification because it allows for emitting energy facilities to expand without any determination of need. Contrary to the language of the Draft Proposed Order, the Council is required to make a finding of need to grant the requested amended site certificate so that its Need Standard remains consistent with Oregon energy and environmental policy. Accordingly, this action is premature and should be curtailed until, at a minimum, the Council has established a need standard for surface facilities related to underground gas storage reservoirs. That standard may need to take into account the aforementioned DEQ rulemakings and ODOE's Energy Strategy. Therefore, to ensure that the Council's decision is not contrary to Oregon law and policy, it should deny Amendment 13 until a need standard for surface facilities related to an underground gas storage reservoir is created. The Council should then apply that standard to Amendment 13.

3. The "related or supporting facilities" exception does not apply to Amendment 13.

The Draft Proposed Order continues:

> "OAR 345-023-0005 further states that the division does not apply to "nongenerating facilities that are related or supporting facilities.
>
> Council previously evaluated the applicability of this standard on the facility in the Final Order on [Amendment 11] and found that this requirement does not apply to any related or supporting facilities. This fact would not change as a result

> of [Amendment 13] requested changes, which continue to be nongenerating facilities that are related or supporting facilities."[26]

We have multiple concerns with this language. First, the language mischaracterizes the discussion from the Final Order on Amendment 11. Second, the language wrongly implies that the entirety of the facilities at issue in Amendment 13 are "related or supporting facilities". Finally, the blanket exception for all related or supporting facilities is in need of reevaluation.

a. The Council should clarify the Draft Proposed Order's language regarding the "related or supporting facilities" discussion in Amendment 11 and its applicability to Amendment 13.

"Related or supporting facilities" can only be understood in the context of the definition of "energy facilities" in ORS 469.300.[27] Without reproducing the full definition here energy facilities cover ten types of facilities. Each type of facility has certain requirements to qualify it as an "energy facility," and then often has certain exemptions from that definition. For example, a "pipeline" is an "energy facility" if it is 1) at least six inches in diameter, five or more miles in length, and used to transport crude petroleum, LNG, or liquid geothermal energy, 2) at least 16 inches in diameter, five or more miles in length, and used to transport natural gas, or 3) at least 16 inches in diameter, five or more miles in length, and used to transport gaseous geothermal energy.[28] An otherwise qualifying natural gas pipeline is not an energy facility, though, if less than five miles of its length are more than 50 feet from a public road, or if it is a certain type of upgrade to an existing natural gas pipeline.[29] A similar structure exists for the definition of high voltage transmission lines as energy facilities, which must be more than 10 miles and have a capacity of at least 230,000 volts, but excludes lines within existing corridors, certain line upgrades, and "associated transmission lines."[30] The definition of "surface facility related to an underground gas storage reservoir" requires the facility to be designed to receive or deliver more than 50 million cubic feet of gas per day or require more than 4000 horsepower of compression to operate, but excludes underground storage gas reservoirs and injection, withdrawal, or monitoring wells.[31] The list goes on.

ORS 469.300's definition of "related or supporting facilities" is worth quoting in full:

> "'Related or supporting facilities' means any structure, proposed by the applicant, to be constructed or substantially modified in connection with the construction of an energy facility, including associated transmission lines, reservoirs, storage facilities, intake structures, road and rail access, pipelines, barge basins, office or public buildings, and commercial and industrial structures. 'Related or supporting

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[26] Draft Proposed Order, at 177.
[27] It is crucial to reiterate that ORS 469.300 is relevant as a tertiary reference point from OAR 345-023-0005. The Need Standard defines nongenerating facility by reference to ORS 469.503. ORS 469.503 defines nongenerating facility by reference to the definition of "energy facility" in ORS 469.300. Therefore, the term "nongenerating facility" is functionally interchangeable with the term "energy facility."
[28] ORS 469.300(12)(a)(E).
[29] ORS 469.300(12)(a)(E)(ii)(I)–(II).
[30] ORS 469.300(12)(a)(C).
[31] ORS 469.300(12)(a)(I).

> facilities' does not include geothermal or underground gas storage reservoirs, production, injection or monitoring wells or wellhead equipment or pumps."[32]

The term "related or supporting facilities" only applies to certain types of facilities that don't themselves qualify as an "energy facility." For example, "pipeline" should only mean pipelines that don't meet the criteria for a pipeline to qualify as an energy facility.[33] "Associated transmission lines," having been excepted from the definition of "energy facility," is then defined as a "related or supporting facility."[34] For each of the listed items under the definition of "related or supporting facility," there is a corresponding specific or general exception to the definition of an energy facility. Indeed, the definition goes so far as to note that the listed exceptions in the definition of "surface facility to an underground gas storage reservoir" are *not* "related or supporting facilities," presumably to avoid any ambiguity over whether they are covered as well, given that they are not under Council jurisdiction.

Put simply, "related or supporting facilities" has a narrow, limited scope. Rather than being broadly applicable to large swaths of facilities, it merely offers a unifying term for a series of specific exceptions to the definition of "energy facility." The Council applied this narrow understanding of "related or supporting facilities" in its review of Amendment 11. In the Final Order on Amendment 11, the Council did not state that the entirety of the Mist surface facilities were "related or supporting" but rather that one specific aspect of Amendment 11, a transmission pipeline,[35] fell under the exception.[36] The Draft Proposed Order, however, extends the reasoning in the Final Order of Amendment 11, which was limited to the one component of Amendment 11, to the entire Mist Facility for Amendment 13 without a basis for doing so.[37]

The Council has had too broad an approach to "related or supporting facilities" in the past and now seeks to broaden the definition even further, apparently to the point where it entirely subsumes the definition of a surface facility. The Council should, at a minimum, clarify in its Final Order that "related or supporting facilities" are only those facilities not encompassed by the

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[32] ORS 469.300(25).

[33] The main takeaway from this example is that not all pipelines are "related or supporting facilities," but rather some are "energy facilities." For example, a new natural gas pipeline that is 24 inches in diameter, 12 miles long, and 5 or more of those miles are more than 50 feet from a public road, is an "energy facility" because it meets the criteria of ORS 469.300(12)(a)(E)(ii). Therefore, it is not a "pipeline" but an "energy facility," and, accordingly, it would not be captured by the use of the term "pipeline" in the definition of "related or supporting facilities."

[34] Compare ORS 469.300(12)(a)(C)(iii) *with* ORS 469.300(25).

[35] We do note, however, that the Council wrongly interpreted the definition of "related or supporting facility" in Amendment 11. The transmission pipeline in Amendment 11 should have fallen under the definition of "energy facility" because it was more 16 inches, more than 5 miles long, and did not qualify for one of the exceptions to the definition of "pipeline" as an energy facility. The transmission line in question was a new natural gas pipeline, 24 inches in diameter and 12 miles long. Final Order on Amendment 11, at 5. The Council conflated the definition of a pipeline that is an energy facility with the use of the term "pipeline" in the definition for related or supporting facilities.

[36] Final Order on Request for Contested Case and Mist Facility Amendment No. 11, Energy Facility Siting Council, 150 (Apr. 2016), (hereinafter "Final Order on Amendment 11"), available at https://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/FINAL%20ORDER%20MIST%20FACILITY%20RFA%2011_2016-4-21.pdf.

[37] Draft Proposed Order, at 177 (stating that the Council previously found the need standard does not apply to any "related or supporting facilities" and that "this fact would not change as a result of [Amendment 13] requested changes, *which continued to be nongenerating facilities that are related or supporting facilities*.")

definition of energy facility and therefore do not apply to facilities that qualify as surface facilities related to underground gas storage reservoirs.

This distinction is important because Amendment 13 makes changes to the surface facility that are not related or supporting facilities. For example, Amendment 13 calls for a series of upgrades to several compressor stations at both the North Mist Compression Station and the Miller Station locations.[38] Those are modifications to the surface facility, which is an energy facility and therefore a "nongenerating facility," not to a "related or supporting facility." The Council should perform a similar analysis for each proposed action to determine which actions are a part of the nongenerating facility, i.e., a surface facility, and which are "related or supporting facilities." The Council should not, however, adopt the language from the Draft Proposed Order that implies the entire Mist Facility is a related or supporting facility.

b. There is no exception for "related or supporting facilities" in OAR 345-023-0005, and if there is, the exception is not consistent with Oregon policy.

We would also like to point out two issues related to the exception for "related or supporting facilities." For clarity, the first sentence of OAR 345-023-0005 states "This division applies to nongenerating facilities as defined in ORS 469.503(2)(e), *except nongenerating facilities that are related or supporting facilities*."[39]

The exception as written covers nothing because there is no such thing as "nongenerating facilities that are related or supporting facilities." The regulatory and statutory definitions of the terms necessitate this interpretation.

The Need Standard defines "nongenerating facilities" by reference to ORS 469.503, which itself defines "nongenerating facilities" as "those *energy facilities* that are defined in ORS 469.300(12)(a)(C) and (E) to (I)."[40] Therefore, "nongenerating facilities," as used in OAR 345-023-0005 are simply six of the ten types of "energy facilities" as defined in 469.300(12)(a). For the purposes of this comment, the two terms—nongenerating facility and energy facility—are essentially interchangeable.

The Council's regulations also define "related or supporting facilities" by reference to ORS 469.300.[41] Because both "nongenerating facilities" and "related or supporting facilities" receive their definition from ORS 469.300, the terms should be read together in the context of that statute's scheme. To reiterate the point made earlier in this comment, ORS 469.300 completely separates energy facilities (which, again, are the same as "nongenerating facilities") from related or supporting facilities. Each type of potential energy facility has certain qualifications that must be met. Transmission lines must have a particular length and voltage, stand-alone pipelines must be a particular width and length, etc. If the given type of facility meets those qualifications, it stops being a "transmission line" or a "pipeline" or a "synthetic fuel plant" or a "surface facility related to an underground storage reservoir" and becomes an "energy

[38] Draft Proposed Order, at 1.
[39] OAR 345-023-0005 (emphasis added).
[40] *Id.*; ORS 469.503(2)(f) (emphasis added).
[41] OAR 345-001-0010(27).

facility." The statute differentiates these "energy facilities" from "related or supporting facilities," which are made of up structures that, definitionally, are not energy facilities. For example, the only type of transmission line that is a "related or supporting facility" is an "associated transmission line,"[42] which are specifically exempted from being an energy facility.[43]

To summarize, OAR 345-023-0005 defines "nongenerating facilities" by reference to ORS 469.503. ORS 469.503 defines "nongenerating facilities" as a subset of "energy facilities" defined in ORS 469.300; therefore, nongenerating facilities are energy facilities.[44] According to the language of ORS. 469.300, energy facilities cannot be "related or supporting facilities;" they are two distinct types of facilities with no overlap. Because nongenerating facilities are energy facilities, by the transitive property, nongenerating facilities *cannot be* "related or supporting facilities." Therefore, excepting "nongenerating facilities that are related or supporting facilities" excepts nothing, because there is no such thing as a nongenerating facility that is a related or supporting facility.[45]

Second, assuming the language of the regulation validly excepts related or supporting facilities, that exception is contrary to the language of ORS 469.501(2), which states: "The council may adopt exemptions from any need standard . . . if the exemption is consistent with the state's energy policy set forth in ORS 469.010 and 469.310."[46] Here, the Council has adopted an exception to its need standard: the categorical exception for related or supporting facilities. Because the Council has adopted an exception, that exception must be consistent with the same policies described in Part 1 of this comment. To summarize that section, ORS 469.010 states that the "continued growth in demand for nonrenewable energy forms poses a serious *and immediate*, as well as future, problem."[47] ORS 469.310 states that siting, construction, and operation of energy facilities should be done in a manner consistent with, among other things, the state's energy and environmental protection policies.[48] Those policies call for the rapid and wide-scale decarbonization of the Oregon economy writ large, and in particular the full decarbonization of Oregon's two largest investor-owned utilities, who, notably, are users of the storage capacity at the Mist Facility. And while ODOE has noted that renewable natural gas may help reduce emissions in sectors that are hard to electrify, it also repeatedly states that renewable fuels are not a viable option under current market conditions.

If approved, NW Natural will have seven years to complete the construction proposed in Amendment 13. By that time, PGE and Pacific Power will need to have reduced their emissions by 80 percent, and will have to eliminate the remaining emission less than a decade later Oregon will likely have reduced its greenhouse gas emissions from a 1990 baseline by 45 percent, with the goal to reduce them by anywhere from 80 to 95 percent by 2050. Allowing facilities related to or supporting fossil fuel-based energy facilities to be approved without first determining need

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[42] ORS 469.300(25).
[43] ORS 469.300(12)(a)(C)(iii)
[44] ORS 469.503(2)(f) ("'Nongenerating facility' means those energy facilities that are defined in ORS 469.300(12)(a)(C) and (E) to (I).")
[45] Imagine a city ordinance regulating pet ownership in city limits. The ordinance says: "This ordinance applies to all four-legged mammals, except cats that are dogs." The exception would
[46] ORS 469.501(2).
[47] ORS 469.010(1).
[48] ORS 469.310.

guarantees that NW Natural and others will get approval to construct pipelines and other structures that will be rendered useless before they are even complete. Sooner or later, the Council will need to bring its need standards in line with Oregon policy—it should choose to do so now.

4. Conclusion

We urge the Council not to accept the Draft Proposal approving Amendment 13. We ask that the Council: 1) assess which components of Amendment 13 are a part of the surface facility related to an underground gas storage reservoir under the definitions found in ORS 469.300 and OAR 345-001-0010; 2) use its authority under OAR 345-023-0005 to establish a need standard for surface facilities; 3) apply that need standard to Amendment 13. We also ask that the Council interpret OAR 345-023-0005 in the manner suggested in Section 3 of this comment so that it brings its interpretation in line with the text of the Council's governing statutes.

Respectfully submitted,

/s/ Cole Souder
Cole Souder, Staff Attorney
Green Energy Institute at Lewis & Clark Law School

/s/ Mary Stites
Mary Stites, Staff Attorney
Northwest Environmental Defense Council

/s/ Lauren Goldberg
Lauren Goldberg, Executive Director
Columbia Riverkeeper

/s/ Danny Noonan
Danny Noonan, Climate and Energy Strategist
Breach Collective

/s/ Dylan Plummer
Dylan Plummer, Campaign Advisor
Oregon Chapter of the Sierra Club

Mist-Birkenfeld Rural Fire Protection District
12525 Highway 202, Mist, OR 97016
Office- 503-755-2710 Fax- 503-755-2556

September 19, 2024

To: Kathleen Sloan, Senior Siting Analyst
Oregon Department of Energy
550 capitol St. NE, 1st Floor
Salem, OR 97301

Re: **Public Comment, NW Natural Mist Resiliency Project (RFA-13)**

Dear Ms. Sloan,

On behalf of Mist-Birkenfeld Rural Fire Protection District (RFPD), I am writing to comment on NW Natural's proposed Request for Amendment 13 (RFA-13) to the Site Certificate for the Mist Underground Natural Gas Storage Facility.

Mist-Birkenfeld RFPD serves as the primary fire protection agency responsible for the Mist Storage Facility sites. Throughout NW Natural's operations at their sites, we have maintained close communication and collaboration with the company. They have demonstrated a clear commitment to the safe operation of their facilities and have a long history of providing support for the Mist-Birkenfeld RFPD.

We appreciate the opportunity NW Natural provided to review and consult on RFA-13. The proposed construction and new operations outlined in the RFA-13 would not result in substantial impacts to Mist-Birkenfeld RFPD's ability to provide fire protection and emergency services. Our agency is prepared to respond appropriately and as necessary to any issue that could arise with respect to construction and operation of the proposed project.

Mist-Birkenfeld RFPD looks forward to continued cooperation with NW Natural to ensure the safety of the Mist Storage Facility site and our Fire District.

Sincerely,

Joe Kaczenski
Fire Chief
Mist-Birkenfeld RFPD
503-755-2710
joek@mistbirkenfeldrfpd.org

Attachment B-2b: Comment Index: Summaries of Oral Comments Received at Public Hearing
(September 19, 2024)

In Person/Remote	Name of Commenter	Organization
In Person	David Webber	Northwest Natural Gas Company, Certificate Holder
In Person	Joe Kaczenski	Mist-Birkenfeld RFPD
Webex/Remote	Daniel Schatz	Public
In Person/Remote	Councilmembers	EFSC

Mist Request for Amendment 13 Public Hearing on Draft Proposed Order
Oral Comment - Public Commenter 1: David Weber, Northwest Natural Gas Company (Certificate Holder)
Summary Transcript from Audio Recording (with spellcheck corrections -checked)
Clatskanie People's Utility District
Clatskanie Oregon
September 19, 2024 EFSC Meeting

On Video Recording Starts Counter: 1:22 Ends Counter: 1:30

Commenter 1: David Weber - Northwest Natural Gas Company (Certificate Holder)

My name is David Webber D A V I D WEBBER. I am Vice President Gas Supplying Utility Support Services for Northwest Natural Gas Company, the certificate holder. I'm going to go through very quickly a presentation which the Council's had an opportunity to see some of the slides and staff has done an excellent job of describing the project. So Northwest Natural has been the business in the Northwest and serving this area for a hundred and sixty five years. We served two million people in Oregon and Southwest Washington with twelve hundred employees. We are regulated by the Oregon public utility Commission in Oregon, and by the Washington Utilities Transportation Commission in Washington State.

Next. Next slide.

So, it's been mentioned here we store the natural gas in existing sandstone formations that have been sealed by cap rock over millions of years ago that sandstone is porous, it's like beach sand that is packed if you were able to grab a hold of a piece of this and a core and you squeezed it hard, it would crush. So, it's, it's fairly delicate, but that makes it very porous so that the natural gas can be stored in between these resource held natural gas when, when it was discovered that gas was produced. So these are depleted natural gas reservoirs. These are not new ones we've developed. We follow the regulations of DOGAMI which for the forty years we've been there have, what I would argue are some of the most stringent standards in the industry. [unintelligible- to being a packer?], which is a very popular term. We've been using [to being a packer?] in these facilities for about forty years. So these are built to current standards and maintained and we also follow up Pipeline Hazardous Materials Safety Administration, PHMSA's, regulations, and they come out in additions on a regular basis, and we're required to submit information to them. So, we have three types of wells observation wells, which are there to see of gas appears in that location, Injection withdrawal wells which put the gas into the ground and take it out and we also have what we call observation wells for spill point to see if gas is leaked into another area. So, we're very careful about the gas we put into the ground and how it's maintained within the ground. I know that's out of your scope, but I just thought for a lot of people you don't see what's going on underneath.

So next slide, underground natural gas storage facility you've heard quite a bit about already. We have eight storage reservoirs. We store twenty one point six billion cubic feet of natural gas

at missed in two different facilities, one you've heard about Miller Station and the other at North Mist.

And one of those facilities moving on to the next slide. North Mist was approved in Amendment number eleven or RFA eleven and commenced service in May of twenty nineteen. It has a single pipeline that was put in place using a lot of horizontal directional drilling techniques to avoid some of the potential wetland issues or digging concerns we might have had down out here actually not far from here in Clatskanie out across the flood plain. And that serves Port Westward's facility. So, Port Westward One, Port Westward Two, and Beaver. So they're, they have the ability to withdraw a gas when they need it, as opposed to taking it from a pipeline to serve those two facilities. Poor Westward Two was built to follow wind, so when the wind is blowing too hard or not hard enough, Port Westward Two can come online and back up the wind and provide electricity services. So, they - It balances out the wind portfolio. That's why Port Westward Two was built.

Next slide, two compressor stations, just some pictures as opposed to just looking at them as a cartoons from the top. On the left is Miller Station. It's our oldest facility. It's the one that started back in nineteen eighty, fairly landlocked. It's run out of space, which is why we'd like to have the space north of it to have some space to park and store equipment. The facility on the right, North Mist is, was built with a lot more room there on the upper right hand corner is where the wellpad is, so the well pad and the station are right next to each other. So there's less transmission pipeline between the wellpad and the facility itself. Seventeen billion, seventeen and a half billion cubic feet at Miller Station, four billion cubic feet at North Mist. And you've already heard quite a bit about the compressors.

This permit is really to address three different things which you've already heard about. The first for us is these two compressors. They're urban compressors that are twenty years old and have reached their metallurgical end of life and it's doing very difficult to find parts for them to repair them, and Northwest Natural depends on this storage resource in the winter for fifty percent of its fuel supply for our customers, so when these equipment goes down, it's a big problem for our customers. So, it's very important that we are able to replace these machines and we want to replace them with equipment that has lots of machines in service so that we'll have more reliable service. That's why we call it the resiliency program. We want Miller Station to be more resilient.

Next slide. So, we looked at two different, we had two different studies to look at details here to determine what the right approach to take was. So, a lot of analysis has gone into this to determine that what equipment to replace it with.

Last, I think this, last slide, I mean I'm trying to go through quickly because you do have a lot of knowledge already. The North Mist resiliency part of this will add additional reservoirs as you've heard, and additional compression. That natural gas will go through the existing pipeline, other than those pipelines that are required to gather or flow the gas to and from the actual reservoirs themselves, we use the existing pipeline down to Port Westward and connect

with a pipeline to give it gas access both directions, beyond just Port Westward. So, it will increase that.

So, there was one question asked about what happens if PGE stops needing natural gas, that natural gas would then have access to the interstate pipeline system, so it could serve other customers with other needs, and in other locations.

That's all we have to say. Hopefully I stayed within my time.

(Chair Howe):
Thank you Mister Webber…are there any clarifying questions?

Councilmember Grail?

(Councilmember Grail):
Thank you. Hi, thank you for your comments and presentation. I just wondered, how do you define your core customers? You had a slide that said core customers versus…

(David Webber):
So, we have residential customers, so, I would say core customers are residential commercial customers and we have industrial customers. So, we have about a hundred and probably close to two hundred industrial customers, so they're very large, but the, the residential customers, the… over I think we're over eight hundred thousand residential customers are total customers now. So those would be who I would consider core customers. Those are the rate payers to Northwest Natural.

(Councilmember Grail):
Thank you.

(Chair Howe):
Any other questions from Council?
OK
Thank you, Mister Webber. That was an excellent presentation.

Video recording Counter end: 1:30

Mist Request for Amendment 13 Public Hearing on Draft Proposed Order
Oral Comment - Public Commenter 2: Joe Kaczenski – Fire Chief, Mist-Birkenfeld Rural Fire Protection District
Summary Transcript from Audio Recording (with spellcheck corrections)
Clatskanie People's Utility District
Clatskanie Oregon
September 19, 2024

Video Recording Start Counter: 1:32 End Counter: 1:34

Commenter 2: Joe Kaczenski – Fire Chief, Mist-Birkenfeld Rural Fire Protection District:

Thank you.
My name is Joe Kaczenski, J O E - K A C Z E N S K I.

I have a letter that I wrote to Ms. Sloan, but I'd like to put it into the record to the Council. I'm representing Mist-Birkenfeld Rural Fire Protection District. So, on behalf of Mist-Birkenfeld Rural Fire Protection District., I'm writing this letter of comment on Northwest Natural's proposed request for amendment thirteen, RFA13, to the site certificate for the Mist Underground Natural Gas Storage Facility.

Mist-Birkenfeld Rural Fire Protection District serves as a primary fire protection agency responsible for the Mist Storage Facility sites. Throughout Northwest Natural's operation at their sites, we have maintained close communication and collaboration with the company. They have demonstrated commitment to the safe operation of their facilities and have a long history of providing support for the Mist-Birkenfeld Rural Fire Protection District. We appreciate the opportunity Northwest Natural provided to review and consult on RFA thirteen. The proposed construction and new operations outlined in the RFA thirteen would not result in substantial impacts to Mist-Birkenfeld RFPD's ability to provide fire protection and emergency services. Our agency is prepared to respond appropriately and as necessary to any issue that could arise with respect to construction and operation of the proposed project. Mist-Birkenfeld Rural Fire Protection District looks forward to continued cooperation with Northwest Natural to ensure the safety of the Mist Storage Facility site and our fire district.
Sincerely Joe Kaczenski, Fire Chief, Mist-Birkenfeld Rural Fire Protection District.
Thank you very much.

(Chair Howe):
Any questions? Okay, thank you.

(Joe Kaczenski):
Thank you.

Video Recording End Counter: 1:34

Mist Request for Amendment 13 Public Hearing on Draft Proposed Order
Oral Comment - Public Commenter 3: Daniel Schatz via Webex/Phone
Summary Transcript from Audio Recording (with spellcheck corrections- significant audio feedback)
Clatskanie People's Utility District
Clatskanie Oregon
September 19, 2024, EFSC Meeting

Video Recording Counter Start: 1:34 Counter End:

Oral Commenter 3: Daniel Schatz via Webex/Phone:

(Chair Howe):
We have the person that had raised a hand. Daniel Schatz
Can you hear me, Daniel?
There you go. We - we can hear you.

(Daniel Schatz):
Excellent I can hear you now. All right, is it alright if I start?

(Chair Howe):
Yes.

(Daniel Schatz):
Alright,
My name is Daniel Schatz. It's D A N I E L
My last name is S C H A T Z.

My address is: 29071 Zimmerman Road in Rainier, Oregon.

And I am here to comment against Northwest Natural's Amendment thirteen by the Energy Facility Siting Council. I am asking the EFSC for a contested case.

I submitted a formal document that outlines the reasons I'm requesting a contested case. I was told by Kathleen Sloan that I could give additional testimony that would not invalidate or impact my written document and I would like to do so now. At the end I, I will relate it back to the relevant OARs for the EFC, or for the EFSC.

My family suspects that the Mist Gas Field Underground Facility has contaminated the state's groundwater, which in turn has affected our domestic well and others' domestic wells. We have gases including methane, carbon monoxide, and hydrogen sulfide to name a few exulting out of our tap water. We've identified chemicals and with natural gas, and that have no other point of origin.

My family almost died from our exposure to these gases and chemicals. Our lives will never be the same. Our two daughters will never get the chance to live in normal life.

I would like to discuss what the failures of the Oregon government and Northwest Natural and Enerfin Resources Northwest, who works closely with Northwest Natural. I will start with the state.

The Oregon Secretary of State recently audited the state and released a report that documents the state's fail- failures to protect the state's water resources. There are two glaring examples of that: Morrow and Umatilla County. The state has been aware for over thirty years of the groundwater contamination plaguing the residents that it's still plaguing them to this day.

Crook County: This county recently had their groundwater contaminated, they suspect from mining operations from Knife River Mining Corporation with Columbia County, Clatsop County, we suspect from the Mist Gas Field and Underground Storage Facility.

Next I want to touch on a few of the state's departments and their employees. I'm going to start with DOGAMI.

[NAME redacted] from DOGAMI who was involved in the Mist Gas Field during his time there recently left his state job to work for Knife River Mining Corporation that same corporation suspected of toxic ground water contamination in Crook County.

[NAME redacted] from DOGAMI. He was awful to my family. Yelling in line to my wife. He has a history of rubber-stamping permits for Northwest Natural and Enerfin Resources, and guess what? He comes from the oil and gas industry from Chevron.

[NAME redacted] Head of DOGAMI recently left his job as Shell as the senior specialist geoscience researcher to come work for our state of Oregon. When dealing with Cook County, he requested closed door meetings with Knife River citizen's geologists. Where is the transparency?
Where is the citizen engagement?

Let's talk about the DEQ.

[NAME redacted] from the DEQ lied to my wife about illegal activity happening at the Mist Gas Field and Underground Storage Facility. At the same time, it was as he was writing a notice of civil penalty for illegal waste fluid injections that occurred for almost a whole twenty twenty one year. And guess what? [NAME redacted] - He also comes from oil and gas. Exxon Mobile, Marathon Oil, Oxy Oil.

[NAME redacted] with the Oregon State Police. He failed to take our allegations seriously when we presented them to him, including the possibility of a murder of an Oregon citizen by gas asphyxiation.

I'm going to move on to the federal agencies. We have enough evidence that the site assessment is warranted and after the ODEQ declined, the EPA stepped into lead it. Several issues and inconsistencies with the EPA employees and third-party contractors I'm going to touch on two of those.

[NAME redacted] of the EPA will led the site assessment at our property witnessed carbon monoxide exulting out of our tap water at sixty parts per million, but refuses to acknowledge it. We have proof that this from a site assessment logbook where he noted the carbon monoxide exulting, but he refuses to acknowledge it to this day. The EPA also identified an actionable level of lead in the state's groundwater, but [NAME redacted] is manipulating the lab data to hide those results, and guess what? He also has ties to the oil and gas industry. He received the Chevron Reach Scholarship because one of his parents was a Chevron employee.

[NAME redacted] of EPA was there to witness carbon monoxide exulting out of our home's tap water.

Lastly, I would like to move on to Northwest Natural and Enerfin Resources Northwest. The only other company that works at the field and has a close relationship with Northwest Natural.

To start, Northwest Natural has a greenwashing campaign over methane.

They have sued Oregon DEQ over the decarbonization environmental program and according to the latest news report from ProPublica, they've only accumulated one percent of the five percent of the renewable energy that they're supposed to have by twenty twenty five. Is this just more lies again to the public?

They are also grossly incapable of running their own equipment. a two thousand seventeen EN engineering study showed that they had failed systems with [unintelligible- evidence?]. Some of the equipment was so fouled that it could not be properly inspected.

Enerfin Resources Northwest, who works closely with Northwest Natural the field, was illegally injecting waste fluids for almost entire twenty twenty one calendar year.

Enerfin Resources has also committed other illegal activities such as the dumping of drilling mud in unlined pits. The month that they injected the most, the most illegal injecting the same month that my family was melting - losing weight. My wife was going to the emergency room for a heart failure concerns. My daughters were two and four years old at the time of their exposure, the most sensitive times in their lives. They deserved better from our state and government. The children and people still living in those communities, they deserve better. For these reasons and the reasons stated in the submitted document, we ask that the EFFSC to deny amendment thirteen.

And I'm going to cite OAR 345-022-002 three four five dash zero two two dash zero zero two B A E - the Council shall weigh overall public benefits in any adverse effects on a resource or interest as follows. The council shall evaluate overall public benefits by considering factors including but not limited to the following: the overall environmental effects of the facility considering both beneficial and adverse environmental effect and I'm also going to point you to the EFCS standard [unintelligible] will the facility have an adverse impact on the environment and the community?

At time.

(Chair Howe)
Thank you, Mister Schatz.

End Counter: 1:41

Mist Request for Amendment 13 Public Hearing on Draft Proposed Order
Council Comments & Discussion
Summary Transcript from Video Recording (spellchecked)
Clatskanie People's Utility District
Clatskanie Oregon
September 19, 2024 EFSC Meeting

Council Comments and Discussion at Public Hearing
(Note: Council discussion on audio quality on webex issues is not included in this summary)

Video Recording Counter Starts: 1:44 Counter Ends: 2:09

(Chair Howe):
So, we have done the individuals in the room, unless there is anybody else?
Okay, and then we've done the person online.
And there's nobody on the Webex or phone.

(Nancy Hatch):
Yeah, that would be it.

(Chair Howe):
Okay, so, the Council has received a thirty-day extension request for the public comment period from Colombia River Keeper. The Council will have to determine if there's good cause in justifying an extension to the public comment time frame.

Council has two options:
Either determine there is good cause to justify an extension of the public comment time frame and approve the request with additional time as determined to be appropriate or,

Determine there is not good cause to justify an extension of the public comment time frame and deny the request.

So, Counselor Rowe.

(Patrick Rowe - DOJ):

I'll just refresh your recollection about when you've had similar requests in the past and talk briefly about a good cause when Council has received these requests to extended deadlines, it's assessed whether there is quote unquote good cause for the extension. Council itself doesn't have a rule that defines "good cause". I will briefly talk to you about two other governmental entities in Oregon that do define good cause and then refresh your recollection about what you've done with a couple of these requests in the past and see that the way that you've handled them has been consistent with how other agencies define good cause.

The Office of Administrative Hearings defines “good cause” for the purposes of when someone requests an extension, for example, in the contested case. They state good cause exists when an action, delay or failure to act arises from an excusable mistake, surprise, excusable neglect, reasonable reliance on the statement of a party or agency relating to procedural requirements, or from fraud, misrepresentation, or other misconduct of party for agency participating in the proceeding.

The Oregon Employment Department defines “good cause” similarly but a little bit more succinctly, it says, good cause exists when an action, delay or failure to act arises from an excusable mistake or from factors beyond an applicant's reasonable control.

A “good cause” does not include one of their examples: not understanding the implications of the decision for a notice when it's received.

Examples of recent instances in which council has received requests for extension, and considered whether there was good cost or the request. Most recently at your May meeting this year, you will recall that new council was considering the DPO on B2H [Boardman to Hemingway] Request for Amendment Two. Received a request to extend the time period for that and the Council did grant a twenty four hour extension for comments and DPO on RFA 2 and B2H. The rationale there was we had a fair amount of people that wanted to comment at the hearing, the notice of the DPO had stated that you would accept comments at the hearing of that notice, unlike the notice for example for this hearing, did not state that verbal comments at the hearing might be time limited. So, recognizing that people did not realize that they maybe time limited at the hearing, you granted a twenty four hour extension to provide comments for folks, in particular for people who may have to one needed wanted more time for their verbal times but ran out of time at the hearing. That's consistent with the definition that I just described to you OAH definition that says good cause exists if, if this is something that the agency did stated with regard to a procedure might not have been clear or might have led someone to have a misunderstanding.

Other instances, in which you've received similar requests going back to June of twenty twenty two in the Nolan Hills case, a gentleman asked for an extension at this hearing, the DPO hearing, and mark, this is my recollection, is he stated you know acknowledged he had received the notice in a timely fashion, but hadn't really given it, it hadn't given it its proper attention until shortly before the hearing, and asked for more time so that he could provide additional comments. And you found that that did not constitute good cause. There was nothing that was, you know, beyond his control that that required the/an extension of time.

In another instance in which you denied the request for an extension- B2H request for amendment one, this was in summer of twenty three. The commenter stated that she did not understand based on the notice that she could comment on changes in conditions and you did not find that that was good cause. That's consistent with the Employment Department definition of good cause which as I mentioned states that not understanding a notice when it's received does not constitute good cause.

So that's just kind of a primer, you're not bound by these other agencies definitions, but as you've seen through the examples that I've provided, you have, the decisions that you made are, are pretty consistent or in line with those definitions.

(Chair Howe):
Thank you, Counselor Rowe:

(Sec. Todd Cornett):
Mister Chair?
Thank you.
A bit more context about this particular request.

So, the notice for this public hearing and review of the DPO was August fifteenth. We received the request by Columbia Riverkeeper on August twenty second that they requested more time. They cited, and this is, we attached the comment to the staff report, and the staff report summarizes the points that they make and requesting the time extension, which are summarized as the length and complex nature of the draft proposed order, the site's extensive history, the number of other permits implicated by the amendment, and that the current timeline falls during the season where many individuals, including agency staff, are taking much needed vacation. So, those were basically the reasons or justifications that they provided for requests for thirty additional days. We just received an eleven page comment from the Columbian Keeper that came in an hour or two ago.

(Kathleen Sloan):
They're signing on to a larger letter that was submitted.

(Sec. Todd Cornett):
So, several environmental agencies combined on a letter, a comment letter. Now, I'm not saying that they had enough time, you know, but a comment was submitted. So, I just want to make sure you had all of the current information in determining whether you believe there's good cause or not consistent with Patrick's evaluation or description of what you were discussing.

(Chair Howe):
Could you restate what the third point was that you were making? The first thing was a complex DPO, second one was the site’s extensive history.

(Sec. Todd Cornett):
The third was the number of other permits implicated by the amendment.

(Chair Howe):
Okay.
And then the vacation

(Councilmember Devlin):
Mr. Chairman?

(Chair Howe):
Councilmember Devlin.

(Councilmember Devlin):
A few questions, actually.

I take by this, as you, as staff has indicated, that they received the original notice about August fifteenth.

Did most of the organizations that have now come in on this sort of composite letter also receive notice?

(Kathleen Sloan):
As far as being noticed?

(Councilmember Devlin):
Well, I guess the Columbia Riverkeeper did receive notice of this Draft Proposed order, correct? On August, I think. August fifteenth.

(Sec. Cornett):
For the record Todd Cornett. I believe so. So, we did not send it to them directly. I mean we, we did if they signed up on this stuff email notification system. So, whether or not the other environmental groups received it at the same time, it depends on if they, and we'd have to go back and see who's signed up to receive notices, either of Council meetings or of, you know, that particular project. So, without looking at that email list I couldn't be sure, or whether it was a Columbia River Keeper received it and then forwarded it to those environmental groups, so I, I have no way of knowing at this point in time.

(Councilmember Devlin):
A follow up question Mr. Chairman?

(Chair Howe):
Councilmember Devlin?

(Councilmember Devlin):
In this new letter that has arrived that I believe you indicated it was eleven pages long.
Are there specific cited in terms of substantive issues, I mean, on account Council doesn't have this letter in their possession. I mean staff may have it, but I don't have it.

(Sec Cornett):

Correct, Councilmember Devlin, you don't have it. We just received it and haven't had a chance to send it out to Council members, so ultimately, you know, you will get a chance to review all of the comments and the Draft Proposed Order, likely at the next Council meeting, but, you know, because the public comment time frame, you know, could conclude at the end of, you know, today's hearing, people could be submitting comments right up until that point in time. So, So no, you don't have it. We will get it to you as soon as we can, but which could be today, but you won't have time to review it like prior to the conclusion I think of this Council meeting.

(Councilmember Devlin):
I'm not favoring or opposing their position. If the letter states something substantive under our rules and specifics, there might be a chance for them to have a contested case, but if it's just a general, like this first letter, there probably isn't a basis.

(Sec. Cornett):
Yes, Councilmember Devlin, we also have not had a chance to review it since it just came in. And neither has the certificate holder. So, you know, we will also send it to the certificate holder. They will have to make a determination of whether they want to hold over their opportunity to respond to comments, you know, to a future date or if they want the record to close today as well. So, that's the choice that they're going to have to make, you know, next, after the you make this vote, go over the council's comments on the draft proposed order, not necessarily comments, but the draft proposed order, and then again, at the next council meeting after the close of the record, you will have an opportunity to review all of the comments, the draft proposed order, and provide your own comments to staff for any changes you would like to see in the proposed order.

(Councilmember Devlin):
Mister Chairman?

(Chair Howe:)
Councilmember Devlin.

(Councilmember Devlin):
I could see an extension considerably less than a month.
I'd like to hear what the positions of the other Councilmembers present.

(Patrick Rowe – DOJ):
This is Patrick Rowe, with the Department of Justice. To the extent that you decide that there is good cause or there is not, that you could please articulate why you believe there is good cause for the extension.

(Councilmember Devlin):
Mister Chairman to legal counsel, I guess my concern is, and I don't know if this qualifies as good cause.

I don't know anything in terms of the substance of this eleven-page letter.

(Patrick Rowe- DOJ):
Councilmember Devlin, I don't believe that the eleven-page letter is relevant to the decision that's before you. The focus, the letter that you should be focusing on is the, is the letter that The Columbia Riverkeeper provided and the rationale that they provided for the extension, so you should look at the reasons that they have suggested that justify the extension and assess whether or not you believe that that qualifies as good cause.

(Chair Howe):
Chair Grail.

(Councilmember Marcy Grail):
Thank you, Chair Howe. For the record, this is Marcy Grail.

In the spirit of what Counselor Rowe asked, I don't believe it meets the threshold. I personally feel like, you know, we're here for a public hearing. Thank you, Keeper for commenting. I don't think yes, I understand there's complexity. I think everything we do at EFSC is complex.
I also believe that while I'm all for vacation and things, we are never going to have everyone completely lined out how the world works to meet all the needs and my, from observing, since I don't get to participate and B2H, we know that when we push things out, then the next issue will come, so we'll run into hunting season, and then we will run into the holidays, and so I personally am I'm not believing that it meets the threshold based off of what we have said and have done previously.

(Chair Howe):
Thank you. Councilmember Grail.

I also, based upon the four items of their letter: that it is a complex Draft proposed order, that it - the site's been - has- an extensive history, the number of other permits that are going to be required with the amendment, and the timeline for vacations - just don't seem substantive enough to me to warrant an extension.

Councilmember Condon.

(Councilmember Condon):
Thank you.

Generally, I'd like to extend time, but I- I just don't see it here, but, yeah, I it just doesn't meet the threshold for me either, so.

Thank you.

Councilmember Imes:
Chair Howe?

Yes, I think after Counsel - Patrick- had explained, you know, our history and giving extensions and how, as far as good cause, and I don't see anything within public comment period time where there was any confusion in the communication, or any errors on the part of the Department, to give good cause at this time. So, I would agree with and say, do not grant an extension.

(Councilmember Devlin):
Mr. Chair?

(Chair Howe):
Councilmember Devlin.

(Councilmember Devlin):
I want to state for the record that I don't put any weight at all in terms of good cause on the comment about vacations, because that's always going to be an issue and I think Councilmember Grail is absolutely right. If you try to start making exceptions for certain things, like that, you're going to end up doing it all the time and it's going to be very problematic in a public process. Also, the fact that they cite that this is a time when people are going on vacations. I don't really think that the next month's, going towards Thanksgiving and then the Christmas season, are going to be any better for many of these organizations. I just hope at this point that the counsel for the Columbia Riverkeeper, if they do have any substantive comments, have included those. That would be the appropriate thing for them to do because they know if it's not extended, their deadline is today. And so hopefully, if they do have arguments that they seriously want to make, hopefully that eleven-page letter includes some of these. And I will go along with the Council's wishes, in terms of not making the extension.

(Chair Howe):
I think we've heard from everybody.

Do we have a motion?

(Councilmember Condon):
Is Columbia Riverkeeper on the call?

(Kathleen Sloan):
I think they were? They were on

(Councilmember Condon):
I'm just wondering if we're not going to… but they were on, if we're going to deny, they might want to comment.

(Sec. Todd Cornett):
I mean that's entirely up to you that's certainly not a requirement.

(Councilmember Condon):
Yeah, I I understand that. it kind of drives the needs if they're not here. Thank you.

(Councilmember Grail):
Chair Howe, I'm ready for a motion if you are ready.

Thank you.

Mister Chair, I move that the council deny the request by Columbia Riverkeeper report an extension of the public comment time frame because they have not provided good cause to justify an extension.

(Chair Howe):
Do we have a second?

(Councilmember Condon):
Chair Howe, I'll second that motion.

(Chair Howe):
Councilmember Condon. Thank you.

Okay, we've got a motion in a second. Secretary Cornett. Could you please call the roll?

(Sec. Todd Cornett & Councilmembers):
Cyndi Condon? Yes.

Richard Devlin? Yes.

Marcy Grail? Yes.

Kent Howe? Yes.

Katie Imes. Yes.

Mister Chair.

(Chair Howe):
Ok. We've taken care of that piece of business. Are there any council members that would like to provide comments to the department for the certificate holder on this application?

(Councilmember Devlin):
Yes, Mister Chairman?

(Chair Howe):
Councilmember Devlin

To the Certificate holder: I appreciate their explanation of what will happen after twenty forty. I would appreciate some further explanation from them in terms of obviously their pipelines and storage facilities are and asset and could be used in other ways. And some of their business sectors, even after the electric sector declines, in terms of use of natural gas, may increase. And there are some not, there are some not too distant states, particularly maybe some of the states- Montana, Wyoming… Montana probably less because they're moving toward more towards renewables. Maybe in need of further capability for transfer of gas that maybe Northwest Natural can provide them, but I would appreciate some further explanation from them about how they expect their business may change in term of the operations facility after twenty forty.

(Chair Howe):
Any other comments from Council?

So as previously stated, the public comment period ends that the close of the hearing tonight. However, if requested by the certificate holder, the Council may grant additional time to respond. So based upon the comments received tonight and on the record, does the certificate holder which to provide any responses by the record of job open or would you like to request the record remain open to allow you time to respond?

(Tim McMahan – Council for NWN):
Tim McMahan here on behalf of the applicant, Stoel-Reeves Law Firm. We would request a fourteen-day extension to respond, partly because we, like you, just receive the eleven-page letter from four environmental nonprofits and we haven't had an opportunity to study, so erring on the side of caution, we would request fourteen days.

(Chair Howe):
Okay, let me just…That would - If somebody checked me here, but I think that would be two weeks, which would be October third and we'll make that at five o'clock.

(Sec. Cornett):
Yes. Okay, five PM October third. The record is extended for you, sir. And just for clarification, should you want to reduce that, we certainly would be available, as we're preparing then for the next council meeting two weeks start to put us in a very difficult time frame to evaluate your responses, draft our staff reports, get that to Council prior to the next council meeting. So that may switch push us out to November. So, if you were to shorten that by a week that would probably be more, you know, available for us to do our job and get it to council so they

can do their job. But, that being said is you need the time that you need. So you just understand what the potential ramifications are.

(Tim McMahan for NWN):
No, I appreciate that and we will endeavor to have a response back in seven days, if we can do that, but we can, again, we're, you know, operating a little bit of avoid not understanding just how much we need to respond to, but we will do what we can to just as quickly as possible, and I appreciate that.

(Chair Howe):
So, you're, still asking for fourteen, but you're hoping to be done in seven.

(Tim McMahan for NWN):
Let's call it ten and we'll hope to do it.
Thank you.

(Chair Howe):
Thank you. Okay
Do we need to have a Council action to accept the extension of time? Okay, I don't believe so.

You know I heard it object

(Sec. Todd Cornett):
So yeah, and just one point of clarification. So, Councilmember Devlin asked a question, which you certainly could wait to respond to, but you could respond to it now also if you wanted to.

(Councilmember Devlin):
Yeah, that's not. I would actually prefer a written response.

(Chair Howe):
Oh cool.

(Dave Webber NWN):
I'm happy to provide one.

(Chair Howe):
Okay. Councilmember Devlin. Mister Webber said he had he's happy to provide.

(Councilmember Devlin):
Thank you.

(Chair Howe):
Anything else for tonight? I think that is a wrap, so it is now Six fifty eight PM on September nineteenth, twenty twenty four in the public hearing and public comment period on the draft

proposed order for the request for amendment thirteen of the missed underground natural gas storage facility is now closed.

(Sec. Todd Cornett):
And just for clarification, the sites should be builders requested and has received an opportunity to respond to comments within ten days within ten days right.

(Chair Howe):
Okay. And, so the record has it correctly- there's seven. It'd be like Sunday the twenty ninth, but we'll make it Monday the thirtieth.

(Tim McMahan for NWN):
Okay.

(Chair Howe):
With that, the time is now, six fifty nine oh seven and the September nineteenth twentieth, twenty twenty four meeting of the unity facility signing council was now recessed until tomorrow morning at eight thirty eight AM. Thank you all. Thank you, Tim.

[End of Public Hearing] Counter Ends 2:09

Attachment B-3: Certificate Holder's Responses to Comments

NW Natural®

250 SW Taylor Street
Portland, OR 97204

503-226-4211
nwnatural.com

September 27, 2024

Kathleen Sloan, Senior Siting Analyst
Oregon Department of Energy
550 Capitol Street NE, 1st Floor
Salem, OR 97301

Re: Response to Public Comments and Energy Facility Siting Council Members

Dear Ms. Sloan:

Thank you for the opportunity to submit responses to comments at the Draft Proposed Order ("DPO") hearing on September 19, 2024. Applicant Northwest Natural Gas ("NWN"), on behalf of the Mist Resiliency Project, submits this letter ("Letter") in response to submitted comments on NWN's 13th request for amendment concerning the Mist underground natural gas storage field ("RFA 13"), as well as to questions from Energy Facility Siting Council ("EFSC" or "Council") Members during the hearing.

1. Responses to Comments from the Green Energy Institute, the Oregon Chapter of the Sierra Club, Columbia Riverkeeper, and Breach Collective.

The comment letter dated September 19, 2024 ("Comment") from the Green Energy Institute, the Northwest Environmental Defense Council, the Oregon Chapter of the Sierra Club, Columbia Riverkeeper, and Breach Collective (together, the "ENGOs") asks EFSC to adopt an ad hoc "need" standard into the regulations and then use that "need" standard to deny "RFA 13." The ENGOs further insist that EFSC deny RFA 13 by changing its prior decisions made over several decades of precedent concerning the treatment of "related or supporting facilities." That change would likely impact nearly every EFSC jurisdictional facility.

The Comment does not point to a standard that NWN does not meet. The Comment points to OAR 345-023-0005 (the "need standard" or "rule") as a standard that EFSC must use to evaluate this application. However, <u>OAR 345-023-0005 does not apply to "nongenerating facilities that are related or supporting facilities</u>." The Comment jumps through several hoops to try and argue that EFSC can and should deny the application based on OAR 345-023-0005, but it fails on all counts.

250 SW Taylor Street
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nwnatural.com

1.1 OAR 345-023-0005 Does Not Apply Regardless of Whether RFA 13 Proposes Changes to a "Nongenerating Facility" or "Nongenerating Facilities That Are Related or Supporting Facilities."

The need standard only applies to three types of "nongenerating facility[ies]" as defined in ORS 469.503.[1] The ENGOs agree that current language in OAR 345-023-0005 does not apply to RFA 13 because it does not fall under one of the three nongenerating facilities that require a need analysis. Instead, the ENGOs ask the Council to "*establish* a need standard for surface facilities related to an underground gas storage reservoir." Comment at 4 (emphasis added). The Comment provides no legal support for EFSC to adopt a need standard for this or other "nongenerating facilities." Moreover, there are no grounds for EFSC to change OAR 345-023-0005 at this late date. Such action would require a formal rulemaking process.[2]

EFSC cannot apply the need standard without first amending OAR 345-023-0005. EFSC cannot amend OAR 345-023-0005 to extend it to "nongenerating facilities that are related or supporting facilities" through agency order because new rulemaking is required when an agency interpretation would "amplify" (i.e., extend) an existing rule.[3] Here the rules expressly exempt "nongenerating facilities that are related or supporting facilities" from the need analysis. Any such change would require formal rulemaking.

1.2 Further Clarification of the DPO's Position on Which Facilities Are "Related or Supporting Facilities" Is Unnecessary.

The Letter asks that the Council interpret RFA 13 to change the definition and interpretation of "related or supporting facilities." Under Oregon law a "[r]elated or supporting facilit[y]" is:

> any structure, proposed by the applicant, to be constructed or substantially modified in connection with the construction of an energy facility, including associated transmission lines, reservoirs, storage facilities, intake structures, road and rail access, pipelines, barge basins, office or public buildings, and commercial and industrial

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[1] OAR 345-023-0005.

[2] *See Burke v. Public Welfare Division*, 31 Or App 161, 165, 570 P2d 87 (1977) ("[T]he interpretive amplification or refinement of an existing rule is a new exercise of agency discretion and must be promulgated as a rule under the APA to be valid."); *Smith v. Two Rivers Correctional Institution*, 259 Or App 11, 17, 312 P3d 568 (2013) (reiterating that formal rulemaking is not required when the agency is explaining what is necessarily required by the existing rules or how the promulgated rule operates in a specific context or need).

[3] *Id.*

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> structures. "Related or supporting facilities" does not include geothermal or underground gas storage reservoirs, production, injection or monitoring wells or wellhead equipment or pumps.[4]

As noted above, the longstanding definition and application of the term "related or supporting facilities" applies to virtually every EFSC jurisdictional energy facility. There is no need to make the radical change demanded here.

The application of "related or supporting facilities" for the Mist facility was directly adjudicated in 2013. EFSC issued a declaratory ruling (the "Declaratory Ruling") that clarified that "related to or supporting facilities" are facilities that are constructed and operated "in connection" with an "energy facility."[5] The Council concluded that just because a related or supporting facility could "independently satisf[y]" the "energy facility" definition does not expressly exempt it from being a related or supporting facility.[6] That is, contrary to the ENGOs' assertions, a nongenerating facility *can* be a related or supporting facility, even if it fits the definition of an "energy facility." The analysis is not whether it is an energy facility *or* a related or supporting facility, but rather whether it is "built in connection" with the energy facility.[7] A "related or supporting facility" is "built in connection" when "it would not be built but for the construction or operation of the energy facility."[8] The Council's 2013 ruling confirmed that the 13-mile North Mist Pipeline would not be considered a new stand-alone energy facility, but instead is a related and supporting facility, as a component of the Mist facility.

The ENGOs' concern that the DPO mischaracterizes and relies on Amendment 11's Final Order for its determination of what is a "related or supporting facility" is overblown, factually incorrect, and contrary to the 2013 precedential Council ruling. The DPO describes "[t]he underground storage reservoir and related or supporting facilities."[9] It also notes that the related or supporting facilities currently include "compressors, pipelines, control equipment, dehydration and auxiliary systems,

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[4] ORS 469.300(25); *see also Teledyne Wah Chang Albany v. Energy Facility Siting Council*, 298 Or 240, 258, 692 P2d 86 (1984) (concluding that "related or supporting facilities" does not include all land owned by the applicant at the plant site).
[5] In the Matter of Petition by the NW Natural Gas Company for a Declaratory Ruling, before the Energy Facility Siting Council of the State of Oregon, *Final Declaratory Ruling* ("Final Order") at 7.
[6] *Id.* at 6.
[7] *Id.*
[8] *Id.* at fn. 4.
[9] EFSC, *Mist Underground Natural Gas Storage Facility*, Draft Proposed Order on Request for Amendment 13 at 5-6 (Aug. 15, 2024).

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most of which are located at NWN's Miller Station. Other related surface facilities include gathering lines and facilities for maintenance and operations staff."[10] EFSC has determined, independent of the Final Order on Amendment 11, that these facilities are "related or supporting facilities" consistent with the analysis set forth in the Declaratory Ruling.

1.3 Oregon Energy Policy Does Not Require a "Need" Analysis for RFA 13.

The failure to adopt a need standard here also does not conflict with Oregon's energy and environmental policy. As acknowledged by the Comment, "ODOE believes that renewable natural gas or green hydrogen will play some role in the decarbonization of Oregon's economy." Comment at 6. Oregon Department of Energy ("ODOE") expects annual increases in renewable natural gas producing facilities as renewable natural gas is integrated into transportation fuel and replaces fossil natural gas. *Id.* at 98. As acknowledged in the Biennial Report, NWN is "pursuing contracts with renewable gas producers to add to the company's supply," including for storage at the Mist facility. . ODOE, Biennial Report 2022, p. iv (2022). The report also notes that "Oregon natural gas utilities can insulate themselves from potential price volatility with local natural gas storage," such as at NWN's Mist facility. *Id.* HB 2021 does not affect the determination here because it expressly relates to *generating facilities*, not non-generating facilities. House Bill 3630 gives ODOE the discretion to determine and develop the best strategy to achieve the state's energy policy objectives and does not prohibit expansion of existing facilities. It is entirely possible that that strategy recognizes the need for underground natural gas storage in future years and the potential benefit of storage of renewable natural gas and/or hydrogen at the facility. Consistent with Oregon's energy policy, the proposed amendments will allow ongoing service of over 800,000 NWN utility customers and will further serve regional energy customers seeking to insulate themselves during this transition and provide potential opportunities for storage of renewable fuels.

In sum, while advocating for policy changes, the Comment does not raise any issues with any applicable standards. The proposed amendment proposes to change and expand "related or supporting facilities." Because the RFA 13 proposes changes to a "related or supporting facility," OAR 345-023-0005 expressly does not apply. To the extent that the Comment is proposing adding a need evaluation for ORS 469.300(12)(a)(I), such rule or interpretation is entirely irrelevant to this proceeding because it does not propose "[a] surface facility related to an underground gas storage reservoir."

[10] *Id.* at 28-29.

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2. NWN Maintains High Standards to Control Fugitive Emissions.

During the September 19, 2024, DPO public hearing there was a question from the Council about potential fugitive emissions on pipelines and at the Mist Underground Natural Gas Storage Facility that NWN would like to address.

NWN has one of the tightest, most modern natural gas distribution systems in the nation. We aim to perform a leak survey of each gas main at least every five years, and survey 20% of mains every year. We also strive to perform leakage and atmospheric corrosion surveys every three years and conduct annual inspections in high-occupancy buildings and business districts. We use Supervisory Control and Data Acquisition ("SCADA") and telemetry to monitor the system in real time and transmit data from remote sources. This technology makes it possible to quickly detect leaks even in remote locations.

Specifically, at the Mist Underground Natural Gas Storage Facility we employ a variety of technologies and systems to monitor the wellheads and pipelines. In addition to continuous monitoring of the storage wells and associated transmission line pressure via SCADA, wellheads, well safety systems, well piping, and site locations are inspected for operability, leaks, and mechanical or other faults weekly under our integrity monitoring program. Wellhead master valves and pipeline isolation valves are tested at least annually to ensure proper function and ability to isolate the well.

We conduct biannual aerial patrols and two-week-long foot patrols at the Facility. Regular valve maintenance occurs as well. Any fugitive emissions are publicly reported to the Oregon Department of Environmental Quality ("DEQ") on an annual basis.

NWN is a member of Our Nation's Energy Future ("ONE Future"), a coalition representing around 50 companies and more than 20% of the U.S. natural gas value chain that is committed to reducing methane emissions through adopting science-based standards and deploying best practices. ONE Future has exceeded its goal of reducing methane emissions across the natural gas value chain to below 1% by 2025.[11]

[11] One Future, 2021 Methane Emissions Intensity Overview, https://onefuture.us/2022-methane-emissions-intensity-report/.

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3. Future Service to Portland General Electric.

The Council asked about the future service of the North Mist Facility at the Mist Underground Natural Gas Storage Facility to Portland General Electric ("PGE").

NWN has a contract with PGE to provide long-term, no-notice underground gas storage service through 2049. PGE uses the facility to fuel its gas-fired electric power generation facilities, which backs up PGE's variable load of renewable energy on the electric grid. While HB 2021 sets clean energy targets by 2040 that include offramps for risks to reliability and cost, PGE is best positioned to answer how they plan to use the contracted capacity.

4. Alleged Impacts to Regional Aquifers.

Lastly, NWN would like to address suggestions made in two public comments that our operations have impacted regional aquifers.

About two years ago, NWN reviewed questions regarding our Mist Underground Natural Gas Storage Facility and after taking a close look at our operations, we determined that there was no connection between our operations at Mist and any alleged concerns about water contamination in the region.

In addition, several federal and state regulatory agencies, including Oregon Department of Geology and Mineral Industries ("DOGAMI"), DEQ, ODOE, and U.S. Pipeline and Hazardous Materials Safety Administration ("PHMSA"), reviewed the concerns that were raised and did not find any violations in how we operate and maintain our natural gas storage operations.

For three decades, DOGAMI has enforced stringent storage well design and implementation standards to prevent the release of any natural gas into the atmosphere or contamination of the native aquifers. These standards remain at or above the level of national storage standards set by PHMSA. We take compliance with these regulations and the regulations set by EFSC for our facilities seriously and actively manage our facilities to ensure compliance with these regulations. Safety and environmental stewardship are core values at NWN and are paramount in our day-to-day operations at Mist.

NWN appreciates the opportunity to respond to questions from the Council and public comments. We respectfully urge EFSC to proceed with a Notice of Proposed Order.

Sincerely,

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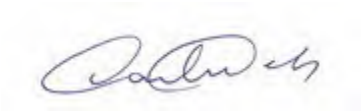

David Weber
Northwest Natural Gas Company

Attachment B-4: Department's Third-Party Consultant (Haley-Aldrich)

Review of American Aquifers DPO Comments

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TECHNICAL MEMORANDUM

7 November 2024
File No. 0203739-001

TO: Oregon Department of Energy
Kate Sloan, Siting Analyst

C: Sarah Esterson, Senior Policy Advisor

FROM: Haley & Aldrich, Inc.
Kevin Loeb, P.G., C.E.G., L.G., Engineering Geologist
Emrah Yenier, Senior Engineering Seismologist
Jennifer Casler, R.G., Senior Associate Geologist

SUBJECT: Geotechnical and Seismic Review
Mist Amendment 13 DPO

The following technical memorandum was prepared at the request of the Oregon Department of Energy (ODOE) to address public comments regarding the adequacy of NW Natural's geotechnical review provided in Exhibit H of Request for Amendment 13. Our review was conducted by Mr. Kevin Loeb, Engineering Geologist, and Mr. Emrah Yenier, Senior Engineering Seismologist. Our comments are based on a review of the following two documents:

- Exhibit H of the 13th amendment request application, "Geologic Hazards Evaluation, Mist Resiliency Project, August 2024", prepared for NW Natural Gas, by GeoEngineers, Inc.
- Public comment prepared by American Aquifers dated 18 September 2024.

This memorandum evaluates the merits of issues of fact identified within the "Statements of Opposition" in the American Aquifers letter.

Statement of Opposition 1:

The best available science has not been applied to adequately evaluate geologic hazards and risks associated with operations at the Mist Gas Field.

Evaluation

It is our understanding that an evaluation of best available science is not required to demonstrate compliance; and risks associated with operations of the Mist Resiliency Project, not the Mist Gas Field, are currently under review.

Oregon Administrative Rule (OAR) 345-021-0010(1)(h) establishes the information requirements necessary for Exhibit H, the exhibit that provides the information, evidence and analysis to support the ODOE, Energy Facility Siting Council (Council), and the public's review of compliance with the Structural Standard (OAR 345-022-0020). OAR 345-021-0010(1)(h) states that, "information from *reasonably* available sources regarding the geologic and soil stability within the analysis area" should be used to inform the exhibit [Emphasis added]. OAR 345-021-0010(1)(h) does not require that "best available science" be used/relied upon to evaluate geologic hazards and risks at the site.

OAR 45-021-0010(1)(h)(B) requires that a certificate holder consult with the Department of Geology and Mineral Industries (DOGAMI) on the appropriate methodology and scope of the seismic hazards and geology and soil-related hazards assessment, and the appropriate site-specific geotechnical work that must be done to adequately characterize the site, to inform a design that protects public health and safety, and environmental risks from seismic and non-seismic hazards. NW Natural completed this consultation with DOGAMI and ODOE, and provided evidence of the discussion and DOGAMI's concurrence in RFA13 Exhibit H Attachment H-1.

In addition, the requirements of the Structural Standard currently being evaluated are specific to the construction and operation of the Mist Resiliency Project, as proposed in NW Natural's Request for Amendment 13 of the Mist Underground Natural Gas Storage Facility Site Certificate, and not to the entirety of existing operations at the Mist Gas Field.

ISSUE OF FACT 1

The Mist Gas Field is in an extremely active location where velocity data, obtained through high-density geodetic GPS measurements, show significant rotation occurring beneath the gas field.

Evaluation

The crustal rotations and displacements in the Pacific Northwest and Cascadia Subduction Zone manifest in the form of faulting and seismicity in the region. GeoEngineers uses the 2014 U.S. Geological Survey (USGS) National Seismic Hazard Model (NSHM), which accounts for crustal rotations and displacements along with other geological and seismological data in the interpretation of potential seismicity in the region.

ISSUE OF FACT 2

USGS' 2020 Portland Map was not utilized in the evaluation of geo hazards; and therefore, the geo hazards at the site have not been properly evaluated for the Mist Resiliency Project.

Evaluation

The northern boundary of the 2020 geologic map prepared by USGS (USGS Portland Map) terminates just south of the project site. The USGS Portland Map consists of a compilation of existing geologic mapping data by various resources, including studies by Ray Wells and Alan Niem. Older and recent studies by these two authors among others, were referenced in the Geologic Hazards Evaluation Report by GeoEngineers.

One of the primary concerns described in the letter by American Aquifers is the presence of additional mapped faults along the northern boundary of the USGS Portland Map that are not depicted in Figure H-8 by GeoEngineers, which shows active faults. The Geologic Hazards Evaluation Report does mention the presence of older faults in the Mist area that date from the Late Eocene (38 to 33.9 million years ago). Figure H-3 in the report also shows three mapped fault traces within the project site from Niem et al. (1990), which are documented as being inactive. GeoEngineers further evaluated these three mapped faults by "*reviewing LiDAR hillshade models and did not reveal lineaments, offset stream channels, truncated mountain faces or other disruptions to Quaternary-aged alluvium at the 3 mapped fault locations*."

Faults included in Table H-8 of the report (Quaternary Faults with 50 Miles of the Project) include only mapped Quaternary active fault traces (from 2.6 million years to present day) from the USGS Quaternary Fault and Fold Database. Table H-8 of the report does not include mapped inactive faults, which we judge to be appropriate for this study. In the report, GeoEngineers also referenced multiple recent articles on active faulting (e.g., Wells, 2018; and Wells et al., 2020), which include articles prepared by some of the same authors of the USGS (2020) reference that American Aquifers recommended using to further evaluate site geology. According to USGS (2020), "*unequivocal evidence of fault scarps produced by large, surface-rupturing earthquakes after the Missoula floods (about 15,000 years ago) is rare*" with the major exception being the Gales Creek fault, which displays evidence of Quaternary deformation. Activity of the Gales Creek fault was emphasized in the Geologic Hazards Evaluation Report by GeoEngineers.

The letter by American Aquifers also discusses the use of older geologic resources from the 1970s and 1980s, which were used to describe site soil and bedrock contacts and lithologies. In our judgement, the use of these older resources is appropriate, as bedrock and soils minimally change over such short time periods and many of the newer geologic maps rely heavily on older geologic mapping. GeoEngineers also mentions that these older resources were more detailed as they included subsurface data from well logs.

ISSUE OF FACT 3

Based on the 2023 earthquake catalogue from Seismological Research Letters, Exhibit H Figure H-8 does not accurately represent the number of earthquakes in the region; and therefore, the seismic hazard at the site has not been properly evaluated for the Mist Resiliency Project.

Evaluation

Section 8.1 of the Geologic Hazards Evaluation Report references Attachment H-2, which "*provides a list of recorded earthquakes over magnitude 2.5 that occurred within 50 miles of the site between November 1961 and August 2023*." These earthquakes are also shown in Figure H-8 of the report. The legend in Figure H-8 lists recorded earthquakes ranging from magnitudes of less than 2 up to 5. It is unclear what minimum magnitude of earthquakes is displayed in Figure H-8. This causes an inconsistency with the earthquakes listed in Attachment H-2, which only include magnitudes of 2.5 of greater.

The letter by American Aquifers includes a different USGS earthquake catalog map that shows more recorded earthquakes in the project area. Because the USGS catalog maps can be generated using variable input values (e.g., magnitude range) by the website user, we cannot properly evaluate the map without the input values and map legends. A comparison of both maps with the complete USGS earthquake catalog suggests that the earthquake catalog map presented by American Aquifers includes much smaller earthquake events than those included in Figure H-8.

Nevertheless, the differences between the two earthquake catalog maps do not impact the results from the seismic hazard point of view, because:

i) Attachment H-2 and Figure H-8 of the GeoEngineers report serve to provide an overview of observed seismicity in the vicinity of project site;

ii) GeoEngineers uses the USGS Unified Hazard Tool to determine seismic hazards at the project site based on the Conterminous US 2014 model, which was developed using a complete earthquake catalog that was available at the time; and

iii) Standard of practice in seismic hazard analysis typically considers earthquakes of magnitudes greater than 4.5 because small events are unlikely to cause damage and are considered outside of engineering interest.

The USGS released a new NSHM in 2023. It incorporates the most recent seismic data and models available in the literature, as well as the feedback received from academia, industry, and public. The following table shows a comparison of outcrop peak ground acceleration (PGA) at Miller Station and NMCS presented in Table H-9 of the report (based on the 2014 USGS NSHM) and our preliminary estimates outcrop PGA based on the 2023 USGS NSHM (Peterson et al., 2024). Based on our comparison of the outputs from the 2014 and 2023 models, the outcrop PGA values presented in Table H-9 in the report are all within 12 percent of those estimated based on the 2023 USGS NSHM. This suggests that the seismic hazard estimates presented in the report are valid.

Location	Return Period	Outcrop PGA (g)	
		Based on 2023 USGS Seismic Hazard Model	From Table H-9 (Based on 2014 USGS NSHM)
NMCS	475	0.173	0.194
	2475	0.508	0.535
	4975	0.723	0.736
Miller Station	475	0.172	0.192
	2475	0.501	0.526
	4975	0.713	0.718

Statement of Opposition 2*:*

This Mist Gas Field is operated outside of conditions listed in OAR 345-022-0022(c). The potential geological hazards of the site are not properly identified. This is evident in the recent research released by USGS in 2020. Although it was conducted in coordination with DOGAMI, no operational changes were implemented to reflect the complex geological conditions which show extensive faulting and cap rock exposure, which is now identified within the southernmost boundary of the gas field.

ISSUE OF FACT 1

***A balancing determination is being made for this facility, but the facility is outside of the conditions listed in OAR 345-022-0022(c)*.**

Evaluation

Neither the certificate holder, the ODOE, nor the Council have applied for or requested application/review of a balancing determination for the structural standard or any other standard.

ISSUE OF FACT 2

The complexity of the geology and faulting in the 2020 USGS map is more intricate than Oregon Geologic Data Compilation (OGDC)-7; and therefore, surficial geology of the area has not been adequately assessed.

Evaluation

Surficial geology of the area was adequately addressed by GeoEngineers review. As indicated previously, Figure H-3 in the report also shows three mapped fault traces within the project site, which are documented as being inactive. GeoEngineers' review of the three mapped faults using LiDAR hillshade models did not reveal geomorphological evidence of active fault locations.

Also, as previously presented, the USGS released a new NSHM in 2023, which incorporates the most recent seismic data and models available in the literature, as well as the feedback received from academia, industry, and public. Based on our comparison of the outputs from the 2014 model referenced in the GeoEngineers report and the 2023 model, the outcrop PGA values presented in Table H-9 in the report are all within 12 percent of those estimated based on the 2023 USGS NSHM. This suggests that the seismic hazard estimates presented in the report are valid.

https://haleyaldrich.sharepoint.com/sites/EXT-ODOE-EFSC/Shared Documents/0203739.MIST Natural Gas Storage/0203739-001 Mist Amendment 13/Response to American Aquifers/2024_1107_HAI_MistMemo_F.docx

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Attachment C: Horizontal Direction Drilling (HDD)

Inadvertent Return Response Plan

Mist Underground Natural Gas Storage Facility RFA13

NW Natural

DRAFT

Inadvertent Return Response Plan

Preventative Measures

Prior to the start of construction, the Horizontal Directional Drilling (HDD) contractor will be required to read the HDD Design report, if applicable. The contractor will be required to follow the recommendations presented in that report for preventing Inadvertent Returns during construction.

Based upon consultation with Oregon Department of Fish and Wildlife (ODFW), the certificate holder identified the following best management practices (BMPs) to ensure that the use of HDD will not impact T&E fish or their habitat:

- NWN will minimize the use of herbicides to the extent practicable including avoiding their use in the vicinity of sensitive environments or species. If use of herbicides are required to control the growth of vegetation in the pipeline corridor, NWN will comply with all applicable federal and state regulations.

- An HDD Design has been prepared to reduce the risk of impacts to Lindgren Creek. This design includes analysis of hydraulically fracturing the bore hole during drilling, which could lead to drilling fluid surface release, and adjusting the depth of the HDD profile such that the risk of drilling fluid surface release is minimized. In addition, entry and exit points are set back from Lindgren Creek between approximately 175 and 185 feet to minimize impacts to the creek and riparian areas surrounding the creek. Entry and exit workspace are located within Mainline Road or an adjacent pull out to reduce impacts to surrounding areas.

- Silt fence will be installed adjacent to the entry and exit workspaces to limit migration of any surface water or drilling fluid. However, the risk of drilling fluid leaving the workspace is low as discussed in the following bullet point.

- Drilling fluid will be contained in drilling fluid returns pits excavated at the entry and exit points. These pits are typically 4 feet wide by 4 feet long by 4 feet deep. Drilling fluid used during drilling will return to these pits where they will be pumped to a vacuum truck and hauled off site.

- Drilling fluids can be inadvertently release to the ground surface during HDD operations. The likelihood of drilling fluid surface release is typically higher near the HDD entry/exit pits. Therefore, the HDD is being designed to cross the stream in the HDD profile's bottom tangent (deepest depth of the profile). Hydraulic fracture analyses completed during preliminary design of the HDD indicates that the risk of hydraulic fracture (and subsequent drilling

fluid release to Lindgren Creek) is low, with calculated factors of safety against hydraulically fracturing the bore hole greater than 1.5.

- Drilling fluid returns to the entry or exit pits are visually monitored during drilling to verify that drilling fluid returns are maintained to the entry or exit pits at all times during construction. If a decrease in drilling fluid returns is observed (which could indicate a blockage downhole that could lead to hydraulic fracture and subsequent drilling fluid surface release) the contractor will take measures such as tripping out tooling to clean the hole and reestablish drilling fluid returns. Provided drilling fluid returns are maintained during drilling, there is typically a low risk of hydraulic fracture and subsequent inadvertent returns.

- The HDD contractor will designate a person to continually monitor the HDD alignment for surface indications of drilling fluid surface release. If observed, the contractor will immediately disengage drilling fluid pumps to minimize the release and will immediately contain and clean the release.

- Downhole drilling fluid pressures will be monitored during construction and compared to the hydraulic fracture analysis. If drilling fluid pressures are significantly higher than anticipated, the contractor will implement mitigation measures to reduce the downhole drilling fluid pressures. Such measures may include tripping out tooling to clean the hole, adjusting drilling fluid properties to more effectively clean the hole and reduce drilling fluid pressures or performing partial reaming passes to enlarge the hole thereby creating more annular space downhole for drilling fluid flow which in turn reduces downhole annular pressures.

- An HDD design and associated report are being prepared, including specifications for deviance from the HDD profile depth and HDD alignment. The contractor will be required to maintain the HDD alignment and profile specifications, follow the designed HDD alignment and profile, and follow recommendations contained within the HDD design report. Requiring the contractor to follow the HDD design alignment and profile, alignment and profile specifications, and recommendations of the HDD design report will reduce the risk of impact on essential fish habitat.

Wetlands and Perennial Streams

In the event of an Inadvertent Return (IR), or unintentional release of drilling mud under pressure into perennial streams or wetlands, the following response plan would be implemented.

1. **Pre-drilling**.

   Pipeline construction personnel and inspection staff would be adequately trained prior to construction to identify and use appropriate response materials. The following materials would be on-site during drilling and available for transport to the vent location within 30 minutes:

- Vacuum Truck with sufficient capacity for an immediate response; arrangements for additional trucks as needed prior to commencing bores
- Certified Weed Free Straw or hay bales
- Stakes to secure bales
- Silt fence
- Sand bags
- Leak-free hose(s) and pump(s)
- Straw logs (wattles, or fiber rolls)
- Heavy-duty push brooms
- Light tower(s) (if necessary, deliver to site as soon as practicable)
- Boat with appropriate personal safety equipment, of sufficient capacity to safely conduct clean up from (if necessary, deliver to site as soon as practicable)

A sufficient pumping system would be in place to accommodate all drilling fluids at the bore entry and exit location to contain all drilling fluids within the bore entry and exit pits.

2. **Event response.**
   Contact NWN Environmental Management immediately 503-226-4211 x4330

In addition to previously stated measures to avoid and minimize IR related impacts, the following response measures would be implemented upon discovery of the loss of drilling fluid into streams or wetlands:

- Directional drilling will stop immediately.
- The drill fluids will be contained immediately. Types of containment may be straw bales, sediment fence, 55 gallon barrel, culvert, or sandbags. It is up to the Environmental Inspector to determine the appropriate containment method in order to best protect the site-specific resource.
- The following entities would be contacted by phone immediately, but no later than 24 hours; USACE, DSL, DEQ or Ecology, ODFW or WDFW. NMFS and USFWS would also be contacted in the event of impacts to federally listed species.
- In flowing streams, qualified fisheries biologists would be on alert to conduct fish salvage operations (under the appropriate permits to be acquired prior to construction) in the reach prior to any bentonite removal activities, and block nets would be employed to ensure no fish or other aquatic species reenter the affected area until after the sediments are removed.
- In delineated wetlands, qualified wetland scientists would be on-site to identify resources and monitor effects.
- Commercially available non-toxic polymers may be used in an attempt to seal the fracture.
- If an IR vent cannot be sealed, where practical, the drill pipe would be removed from the existing drill hole to a point where a new drill path can be attempted by drilling out of the existing hole and creating a new hole. The old hole would be abandoned.
- If the original drill path cannot be utilized, the drill rig would be moved to a new, adjacent location, staff would verify that the new, adjacent location meets the requirements of all applicable project permits and approvals.
- If an IR occurs during “pull-back”, adjustments to the pull-back operations will be made to minimize inadvertent returns.

In flowing streams the following approach would generally be followed after the vent (IR) is stopped. Due to the unpredictable nature of the location and environment in which vents may appear, this description cannot encompass all possible approaches to clean up under all conditions. Agency staff and other experts would be consulted with to the extent practicable to develop ad hoc clean up techniques as needed. The following are standard response techniques that would be applied:

- If the bentonite material flows overland prior to entering the stream, installation of silt fencing or sandbag dams at the point of entry would be

used to reduce or stop the flow; if the vent is directly into the stream, other means to isolate the vent site from the flowing stream would be used.

- Using a vacuum truck, with a sufficient hose, personnel would remove the bentonite, working from downstream to upstream, to allow maximum visibility. Hand tools may be used to scarify the sediments and ensure removal to maximum extent practicable.
- If necessary water may be diverted using a coffer dam to isolate the impact area. Only a portion of the stream would be diverted to minimize dewatering impacts. Water would be able to pass through the site in its natural condition.
- If it is impracticable to remove the drill fluid from the stream, a clear, written explanation would be submitted to the Corps. The Corps would coordinate with USFWS and/or NOAA Fisheries. Any fluids left in the stream channel would receive a written approval from the Corps.
- Any disturbed soils would be stabilized immediately.
- Exposed mineral soils would be seeded with native vegetation immediately.
- Disturbance of vegetation would be kept to a minimum and all disturbed vegetation would be restored and/or replanted with native species, to eventually recreate the functional values of the lost vegetation
- Damaged riffle and pool sediment strata would be re-contoured to the extent practicable under the direction of Agency personnel.
- NWN would compensate for the loss of aquatic habitat by mitigating at a ratio of 2:1. A mitigation plan would be submitted to the Corps within 7 days of an IR occurring. The mitigation plan would include detailed information about the IR, how the drill fluid was contained and removed, the amount, if any, of drill fluid left in the stream, the impact area drawn on a map, the location of the mitigation site, type of mitigation to be performed, and types of plantings.

Ephemeral Streams

In the event of an Inadvertent Return (IR) into dry ephemeral streams, a response plan similar to the above described would be implemented, with the following exceptions:

- Fisheries personnel would not be required to respond unless the IR produced sufficient flow to introduce bentonite into downstream perennial streams.
- Qualified wetlands scientists would be on-site to evaluate conditions, and to assist with minimization of further impacts resulting from clean up activities (e.g. equipment entering sensitive wetland areas).
- Mitigation would only be required for material that must be left as permanent fill in a delineated wetland.

Attachment P-1: Draft Restoration of Temporary Impacts Plan

Mist Underground Natural Gas Storage Facility RFA13

Restoration of Temporary Impacts Plan

Mist Resiliency Project
~~March~~ June 2024

Prepared for

Northwest Natural Gas

Prepared by

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Table 1. Acres of Temporary Impact to Habitat Categories and Types 2

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1.0 Introduction

This Restoration of Temporary Impacts Plan (Plan) describes how Northwest Natural Gas (NWN), the Certificate Holder, proposes to restore habitats after construction of the Mist Resiliency Project (Project). The Plan focuses on areas that will be temporarily impacted during construction, which will then be restored and revegetated.

2.0 Description of the Impacts Addressed by this Plan

Project impacts will primarily include temporary impacts to wildlife habitat. Temporary impact areas are those areas that will be disturbed during construction activities but will be restored and revegetated following construction. Temporary impacts will occur at the powerline replacement corridor, transmission pipeline corridors, construction storage and laydown yards, and North Mist Compressor Station improvement areas.

The Project would create impacts to habitat field-mapped as Oregon Department of Fish and Wildlife (ODFW) Habitat Categories 3, 4, and 6. These categories and the accompanying mitigation goals are set forth in Oregon Administrative Rules (OAR) 635-415-0025, as follows:

- **Habitat Category 3:** Essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.

  Mitigation Goal: No net loss in either existing habitat quantity or quality. Mitigation must be in-kind and in-proximity.

- **Habitat Category 4:** Important habitat for fish and wildlife species.

  Mitigation Goal: No net loss in either existing habitat quantity or quality. Mitigation may be in-kind or out-of-kind, and in-proximity or off-proximity.

- **Habitat Category 6:** Habitat that has low potential to become essential or important habitat for fish and wildlife.

  Mitigation Goal: Minimize impacts. Mitigation may include actions that minimize direct habitat loss and avoid impacts to off-site habitat.

NWN mapped the habitat type and category of each area potentially impacted by the Project, as required in OAR 345-021-0010(1)(p)(B) and (C). Details and methods for habitat categorization and mapping effort can be found in Exhibit P and Attachment P-1. Based on the habitat categorization mapping, NWN calculated the expected Project impacts by habitat type and category (Table 1). Preliminary habitat categories were assigned based on vegetative characteristics observed in the field (Exhibit P, Attachment P-1), while final habitat categories provided in Table 1 below were determined based on overlap with Year-Round Peripheral (Category 4) and Year-Round Major (Category 3) habitats defined in the ODFW West Side Big Game Habitat overlay.

The area of impact to each habitat type and category will depend on final Project design. The impact areas presented in this Plan are preliminary and are based on NWN's estimate of reasonable maximum potential impacts. Impact areas are expected to decrease overall through continued avoidance measures.

Table 1. Acres of Temporary Impact to Habitat Categories and Types

Final Habitat Category	Preliminary Habitat Category	Habitat Type-Subtype[1]	Temporary Impact
3 Year-Round Major Big Game Habitat	3	Upland Forests and Woodlands- Westside Lowlands Conifer-Hardwood Forest	0.004
		Wetlands- Emergent Wetlands	0.01
		Wetlands- Scrub-Shrub Wetlands	0.005
	4	Agriculture, Pasture, and Mixed Environs- Irrigated Pastures and Hay Meadows	5.55
		Open Water- Lakes, Rivers, Streams- Ephemeral Streams	0.01
		Upland Forests and Woodlands- Westside Lowlands Conifer-Hardwood Forest	27.55
Category 3 Final Total			**33.13**
4 Year-Round Peripheral Big Game Habitat	4	Agriculture, Pasture, and Mixed Environs- Irrigated Pastures and Hay Meadows	0.24
		Open Water- Lakes, Rivers, Streams- Ephemeral Streams	--
		Riparian Forest and Shrubland Complexes- Westside Riparian	0.50
		Upland Forests and Woodlands- Westside Lowlands Conifer-Hardwood Forest	12.59
	6	Agriculture, Pasture, and Mixed Environs- Orchards, Vineyards, Wheat Fields, Other Row Crops, Irrigated Poplar Plantations	5.26
Category 4 Final Total			**18.58**
6		Urban and Mixed Environs- Urban and Mixed Environs	11.98
Category 6 Final Total			**11.98**
Grand Total			**63.69**

3.0 Restoration Approach

NWN will restore and revegetate all temporary impact areas following construction; including the powerline replacement corridor, transmission pipeline corridors, construction storage and laydown yards, and North Mist Compressor Station improvement areas-. Detail on methods are discussed in Exhibit I, with details by location shown in maps associated with the Erosion and Sediment Control Plan (Attachment I-1). All areas will be managed in accordance with NWN's Vegetation Control and Management Operating Requirements (Attachment P-3A) to treat noxious

weeds. Additionally~~, any noxious weeds will be removed, and~~ the areas will be reseeded with an ODFW-approved seed mix beneficial to wildlife species, as approved by the underlying landowner.

3.1 Restoration and Revegetation of Agricultural Area

NWN may use an approximate 4.5-acre area along Highway 202 for laydown during construction. This parcel is currently agriculture. As is typical for privately-owned agriculture, at the completion of construction, NWN would restore the area and replant according to the landowner's wishes.

Detail on how the parcel would be used is provided in RFA13 Attachment I-1, Sheet 40 and summarized here. NWN would leave existing vegetation intact and install geofabric and gravel to protect soils during construction. The adjacent wetlands would be bordered by silt fence, and the full parcel would be delimited by orange construction fence. At the completion of construction, the fencing, gravel, and geofabric would be removed and the wetland would be assessed for signs of sedimentation or other impacts. Any wetland impacts identified would require remedial action in consultation with the Oregon Department of State Lands and the Oregon Department of Energy (ODOE).

The Applicant would consult with the landowner to determine seed mix, application methods, and rates for seed and fertilizer. All seeds would be obtained from a reputable supplier in compliance with the Oregon Seed Law (Oregon Administrative Rule 603-056). The seeding methods and timing of planting would be appropriate to the seed mixes, weather conditions (e.g., precipitation, wind speed, temperature, etc.), and site conditions (including area size, slope, and erosion potential) based upon consultation with ODFW, ODOE, and the seed supplier. Three common seed application methods that may be used are broadcast seeding, drill seeding, and hydroseeding. Other seeding methods may be proposed for review and approval prior to revegetation efforts.

Prior to seeding and/or planting of revegetation areas, soils would be prepared to facilitate revegetation success. Site preparation would involve standard, commonly used methods, and would take into account all relevant site-specific factors, including slope, size of area, compaction, and erosion potential. Where applicable, soils would be mechanically scarified (e.g., tilling or ripping the soil) to an appropriate depth to reduce the potential effects of compaction, to maintain soil productivity, and reduce the potential for erosion on compacted soils. If the geofabric and gravel are removed during a season that is not appropriate for seeding, the Applicant would stabilize the area until the next appropriate season. During the following growing season, NWN would view the site to identify any newly established noxious weeds and would treat them in accordance with their Vegetation Control and Management Operating Requirements (Attachment P-4).

3.1.1 Success Determination

Success determination will involve consultation with the landowner or farm operator and ODOE based on a site visit and the contents of the revegetation report outlined in Section 3.1.1. Noxious weed control is necessary for successful revegetation of croplands. After revegetation and weed control is deemed successful by the landowner and ODOE, long-term vegetation management would then be performed by the landowner.

3.1.1.1 Revegetation Documentation

Records will be kept of revegetation efforts and reported to ODOE for review and approval of revegetation success. Records will include:

- Date construction was completed;
- Description of the affected area;
- Date revegetation was initiated;
- Description of the revegetation effort;
- Assessment of revegetation success;
- Assessment of weed presence;
- Supporting figures representing the location, acres affected, and pre-disturbance condition of the revegetation area; and
- Confirmation from the landowner that temporary disturbances in cropland have been satisfactorily restored.

The Applicant will update these records periodically as revegetation work occurs and will provide ODOE with copies of these records along with submission of a revegetation report. The first revegetation report would be submitted to ODOE within two months of completing initial site revegetation and is intended to document restoration work that was completed. A final revegetation report would be submitted for ODOE review and approval to close-out the Applicant's revegetation obligation. ODOE may require reseeding or other remedial measures and follow-up reporting in cases where revegetation is determined to be insufficient.

4.0 Implementation Schedule

Within temporary impact areas affected by construction of the Project, restoration will occur no later than fall of the year of construction in order to stabilize the area for winter weather consistent with the 1200-c permit requirements, as discussed in Exhibit I. ~~.~~

5.0 Monitoring and Reporting

The following information provides the strategy for restoration and monitoring in temporary impact areas. ~~No m~~Monitoring ~~will occur~~ in temporary impact areas where the land use is active agriculture (Hwy 202 laydown area) will occur to the extent necessary to demonstrate revegetation success, as described in Section 3.1.1. At temporary impact areas that will be restored, monitoring will occur during the growing season the year following reseeding. Investigators will randomly select 15 5-foot by 5-foot plots and provide photo documentation and ocular estimates of revegetation cover. Investigators will document percent cover in reseeded areas: documenting

percent seed mix species, percent noxious weeds and species, and percent bare ground. Success criteria at each plot would include 70 percent of native seed mix/forb species, 10 percent bare ground, and not to exceed 20 percent non-native species. If success criteria are not met, NWN will begin maintenance activities in the summer and replant in the fall of the same year. ~~Within temporarily impacted private working timber lands, NWN will not have control over what occurs on the lands beyond Project implementation (use of heavy machinery, spraying, etc.).~~ The Applicant will submit monitoring reports to ODOE within two months of each monitoring visit until revegetation is determined to meet the success criteria.~~Therefore,~~ Within temporarily impacted private working timber lands, NWN will not have control over what occurs on the lands beyond Project implementation (use of heavy machinery, spraying, etc.). NWN does not believe that further monitoring or replanting beyond one year following construction would be valuable. A report will be provided to ~~the Oregon Department of Energy~~ODOE with percent cover information and photo documentation within one month of monitoring visits. ODOE may require reseeding or other remedial measures in cases where success criteria have not been met.

6.0 Plan Amendment

This Plan may be amended from time to time by agreement of the Applicant and the Oregon Energy Facility Siting Council (EFSC). Such amendments may be made without amendment of the site certificate. EFSC authorizes ODOE to agree to amendments to this plan. ODOE shall notify EFSC of all amendments, and EFSC retains the authority to approve, reject, or modify any amendment of this plan agreed to by ODOE.

Attachment P-3: Draft Habitat Mitigation Plan

Mist Underground Natural Gas Storage Facility RFA13

Habitat Mitigation Plan

Mist Resiliency Project
August 2024

Amended by the Department as part of recommendations in DPO, August 2024

Prepared for

Northwest Natural Gas

Prepared by

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Figure 1. Potential Habitat Mitigation Areas

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1.0 Introduction

This Habitat Mitigation Plan (HMP or Plan) describes how Northwest Natural Gas (NWN), the Certificate Holder, proposes to mitigate for the unavoidable impacts of the Mist Resiliency Project (Project) on habitats based on the Oregon Department of Fish and Wildlife (ODFW) Habitat Mitigation Policy. This Plan addresses mitigation for both the temporary and permanent impacts of Project construction associated with Request for Amendment 13. NWN proposes to protect and enhance a nearby mitigation area.

1.1 Plan Finalization

- Prior to fully securing the legal right to the habitat mitigation area, if other than HMA Site – Option 1 as presented in the draft HMP, certificate holder shall be required to complete desktop and field surveys of the HMA site and propose suitable enhancement actions for the site, and obtain concurrence from ODOE, in coordination with ODFW, on the adequacy of the enhancement actions in meeting the Category 3 mitigation goal for no net loss of habitat quality. If concurrence is not obtained from ODOE and ODFW, certificate holder shall propose another HMA site.
- Certificate holder shall be required to demonstrate that it has acquired the legal right to create, enhance, maintain and protect the HMA site concurred with by ODOE and ODFW, by means of outright purchase, conservation easement or similar conveyance.
- Certificate holder shall finalize the plan by specifying the scope and schedule of the selected enhancement actions, including monitoring protocol and success criteria that applies both short-term and for the operational life of the facility.

2.0 Description of the Impacts Addressed by the HMP

Project impacts will include primarily temporary impacts to wildlife habitat. Temporary impact areas are those areas that will be disturbed during construction activities but will be restored and revegetated following construction. Permanent impacts will occur at the Miller Station storage yard, Newton wellpad, Stegosaur wellpad, and Medicine wellpad. Temporary impacts will occur at the powerline replacement corridor, transmission pipeline corridors, construction storage and laydown yards, and North Mist Compressor Station improvement areas.

The Project would create impacts to habitat field-mapped as ODFW Habitat Categories 3, 4, and 6. These categories and the accompanying mitigation goals are set forth in OAR 635-415-0025, as follows:

- **Habitat Category 3:** Essential habitat for fish and wildlife, or important habitat for fish and wildlife that is limited either on a physiographic province or site-specific basis, depending on the individual species or population.

  Mitigation Goal: No net loss in either existing habitat quantity or quality. Mitigation must be in-kind and in-proximity.

- **Habitat Category 4:** Important habitat for fish and wildlife species.

  Mitigation Goal: No net loss in either existing habitat quantity or quality. Mitigation may be in-kind or out-of-kind, and in-proximity or off-proximity.

- **Habitat Category 6:** Habitat that has low potential to become essential or important habitat for fish and wildlife.

  Mitigation Goal: Minimize impacts. Mitigation may include actions that minimize direct habitat loss and avoid impacts to off-site habitat.

NWN mapped the habitat type and category of each area potentially impacted by the Project, as required in OAR 345-021-0010(1)(p)(B) and (C). Details and methods for habitat categorization and mapping effort can be found in Exhibit P and Attachment P-1. Based on the habitat categorization mapping, NWN calculated the expected Project impacts by habitat type and category (Table 1). Preliminary habitat categories were assigned based on vegetative characteristics observed in the field (Exhibit P, Attachment P-1), while final habitat categories provided in Table 1 below were determined based on overlap with Year-Round Peripheral (Category 4) and Year-Round Major (Category 3) habitats defined in the ODFW West Side Big Game Habitat overlay.

The area of impact to each habitat type and category will depend on final Project design. The impact areas presented in this Plan are preliminary and are based on NWN's estimate of reasonable maximum potential impacts. Impact areas are expected to decrease overall through continued avoidance measures.

Table 1. Acres of Impact to Habitat Categories and Types

Final Habitat Category	Preliminary Habitat Category	Habitat Type-Subtype[1]	Permanent Impact	Temporary Impact
3 Year-Round Major Big Game Habitat	3	Upland Forests and Woodlands- Westside Lowlands Conifer-Hardwood Forest	–	0.004
		Wetlands- Emergent Wetlands	–	0.01
		Wetlands- Scrub-Shrub Wetlands	–	0.005
	4	Agriculture, Pasture, and Mixed Environs- Irrigated Pastures and Hay Meadows	–	5.55
		Open Water- Lakes, Rivers, Streams- Ephemeral Streams	–	0.01
		Upland Forests and Woodlands- Westside Lowlands Conifer-Hardwood Forest	26.90	27.55
Category 3 Final Total			**26.90**	**33.13**
4 Year-Round Peripheral	4	Agriculture, Pasture, and Mixed Environs- Irrigated Pastures and Hay Meadows	–	0.24
		Open Water- Lakes, Rivers, Streams- Ephemeral Streams	–	–

Final Habitat Category	Preliminary Habitat Category	Habitat Type-Subtype[1]	Permanent Impact	Temporary Impact
Big Game Habitat		Riparian Forest and Shrubland Complexes- Westside Riparian	–	0.50
		Upland Forests and Woodlands- Westside Lowlands Conifer-Hardwood Forest	–	12.59
	6	Agriculture, Pasture, and Mixed Environs- Orchards, Vineyards, Wheat Fields, Other Row Crops, Irrigated Poplar Plantations	–	5.26
Category 4 Final Total			**–**	**18.58**
6		Urban and Mixed Environs- Urban and Mixed Environs	0.83	11.98
Category 6 Final Total			**0.83**	**11.98**
Grand Total			**27.73**	**63.69**

Note: Totals in this table may not be precise due to rounding.

1. Only impacted Habitat Types-Subtypes present within the proposed micrositing corridor are represented.

3.0 Mitigation Approach

3.1 Temporary Impacts

Temporary impact areas are addressed in the Restoration of Temporary Impacts Plan (Attachment P-3).

3.2 Permanent Impacts

For the up to approximately 28 acres permanently impacted by the Project, NWN has identified two options for addressing the mitigation obligation where habitat protection or commensurate funding are feasible and consistent with this HMP. NWN may use one or both options to mitigate for habitat impacts and will determine the mitigation option that best correlates to the impacted areas in consultation with ODFW and the affected landowners, subject to approval by the Oregon Department of Energy (ODOE). The final mitigation approach will offer enough suitable habitat to achieve the ODFW goal of no net loss of habitat quantity or quality. NWN met with ODFW and ODOE at the Project site on June 6, 2024 to view the general area, as well as the proposed habitat mitigation area. At this meeting, ODFW and ODOE provided recommendations on the range of enhancement actions that could occur at the habitat mitigation area.

3.2.1 Option 1. Habitat Mitigation Area Adjacent to the North Mist Compressor Station

Under this option, NWN has identified a parcel available for establishing a habitat mitigation area adjacent to the Project (Figure 1). The parcel is proximate to the Project, provides ample acreage, and is composed of similar habitat types suitable for in-kind mitigation.

NWN has performed a desktop analysis of the mitigation parcels (Figure 1). The desktop review confirmed the identified parcels are currently managed for timber harvest, which would provide in-kind forest habitat beneficial to big game and other forest-associated species. As the potential mitigation location is within ODFW-mapped West Side Big Game Year-Round Major Habitat, acquisition of this area constitutes acquisition of Category 3 habitat regardless of the habitat condition and thus meets the ODFW goal of no net loss of habitat quantity or quality.

This area would be taken out of timber harvest rotation, thus allowing the habitat to improve over time. NWN would reshape the existing rock quarry by adding soil to fill in the quarry, restoring contours and installing erosion control structures as needed, and replanting with an ODFW-approved seed mix. NWN will manage the mitigation area over the long-term for overall forest health and habitat in consultation with a forestry and habitat consultant. NWN would conduct an assessment of the HMA every 5 years to understand and document current status of the HMA and identify actions that may continue to increase habitat quality. These actions may include but would not be limited to: removing individual trees by hand to increase spacing between trees, placement of downed wood, creation of snags by girdling, or planting of native forage species. NWN will review proposed actions with ODFW and ODOE prior to implementation. The HMA would be incorporated into NWN's standard vegetation management program to minimize and treat noxious weeds.

Prior to operation of the Project, NWN will acquire the legal right to create, maintain, and protect the habitat mitigation area for the life of the Project[1] by means of an outright purchase and will provide a copy of the documentation to ODOE.

3.2.2 Option 2. Habitat Mitigation Area Adjacent to Miller Station

NWN identifies Option 2 as a parcel that is located just west of Miller Station. This parcel has been cleared and replanted within the last 5 years and falls within ODFW West Side Big Game Year-Round Major Habitat. In addition, NWN will reclaim a rock quarry on another parcel near the Project.

Similar to Option 1, this area would be taken out of timber harvest rotation, thus allowing the habitat to improve over time. NWN would manage the mitigation area over the long-term for overall forest health and habitat in consultation with a forestry and habitat consultant. NWN would work with ODFW and ODOE to identify a set of appropriate enhancement actions to meet the ODFW

[1] As used in this Plan, "life of the Project" means continuously until the Project site is restored and the site certificate is terminated in accordance with Oregon Administrative Rules 345-027-0110.

Habitat Mitigation Policy goal of no net loss. NWN would conduct an assessment of the HMA every 5 years to understand and document current status of the HMA and identify actions that may continue to increase habitat quality. These actions may include but would not be limited to: removing individual trees by hand to increase spacing between trees, placement of downed wood, creation of snags by girdling, or planting of native forage species. NWN would review proposed actions with ODFW and ODOE prior to implementation. The HMA would be incorporated into NWN's standard vegetation management program to minimize and treat noxious weeds. NWN would reshape the existing rock quarry by adding soil to fill in the quarry, restoring contours and installing erosion control structures as needed, and replanting with an ODFW-approved seed mix.

Prior to operation of the Project, NWN will acquire the legal right to create, maintain, and protect the habitat mitigation area for the life of the Project[2], the details of that control are currently being negotiated with the property owner(s). NWN will provide an agreement letter between the parties to ODOE for their records. NWN cannot provide contractual documentation to ODOE as the property owners have asked that the terms of any signed lease or purchase agreements remain confidential.

3.2.3 Option 3. Habitat Mitigation Area Near the Project

To address any uncertainty associated with Options 1 and 2, NWN identifies Option 3 as an as yet unidentified parcel within the vicinity of the Project. The region southwest of Clatskanie, Oregon where the Project occurs, is marked by large areas of privately owned timber lands. If NWN is unable to secure the parcel identified in Options 1 or 2, they will identify a similar parcel as close to the Project as possible. This parcel would ideally also fall within ODFW West Side Big Game Year-Round Major Habitat to be categorized as Category 3 habitat.

Similar to Option 1, this area would be taken out of timber harvest rotation, thus allowing the habitat to improve over time. NWN would manage the mitigation area over the long-term for overall forest health and habitat in consultation with a forestry and habitat consultant. NWN would work with ODFW and ODOE to identify a set of appropriate enhancement actions to meet the ODFW Habitat Mitigation Policy goal of no net loss. NWN would conduct an assessment of the HMA every 5 years to understand and document current status of the HMA and identify actions that may continue to increase habitat quality. These actions may include but would not be limited to: removing individual trees by hand to increase spacing between trees, placement of downed wood, creation of snags by girdling, or planting of native forage species. NWN would review proposed actions with ODFW and ODOE prior to implementation. The HMA would be incorporated into NWN's standard vegetation management program to minimize and treat noxious weeds.

[2] As used in this Plan, "life of the Project" means continuously until the Project site is restored and the site certificate is terminated in accordance with Oregon Administrative Rules 345-027-0110.

Prior to operation of the Project, NWN will acquire the legal right to create, maintain, and protect the habitat mitigation area for the life of the Project[3]. NWN will provide a copy of the documentation to ODOE.

3.2.4 Option 4. ODFW Payment to Provide

NWN understands that ODFW is considering a payment-to-provide program that could be used to mitigate habitat impacts related to energy facilities. However, at this time, this program is not yet available. Should such a program become available in the future, NWN could use a payment-to-provide mitigation option with the approval of ODOE and ODFW.

4.0 Implementation Schedule

Within temporary impact areas affected by construction of the Project, mitigation in the form of restoration will occur no later than fall of the year of construction in order to stabilize the area for winter weather. The legal mechanism to secure the mitigation areas for permanent impacts would be secured prior to construction.

5.0 Monitoring and Reporting

NWN will provide a copy of the documentation to ODOE showing purchase or other protective conveyance of the Habitat Mitigation Area. NWN will provide a memo report summarizing actions taken at the Habitat Mitigation Area the year following completed construction, and every five years after that year. This memo report will provide general site photos and a summary of any actions taken on the property. As mentioned above, NWN would conduct an assessment of the HMA every 5 years to understand and document current status of the HMA and identify actions that may continue to increase habitat quality. NWN will review proposed actions with ODFW and ODOE prior to implementation.

6.0 Amendment of the Plan

This Habitat Mitigation Plan may be amended from time to time by agreement between NWN and the Energy Facility Siting Council (EFSC). Such amendments may be made without amendment of the Site Certificate. EFSC authorizes ODOE to agree to amendments to this Plan and to mitigation actions that may be required under this Plan. ODOE-approved amendments to this Plan will be in consultation with ODFW. ODOE shall notify EFSC of all amendments and

[3] As used in this Plan, "life of the Project" means continuously until the Project site is restored and the site certificate is terminated in accordance with Oregon Administrative Rules 345-027-0110.

mitigation actions, and EFSC retains the authority to approve, reject, or modify any amendment of this Plan or mitigation action agreed to by ODOE.

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Figure

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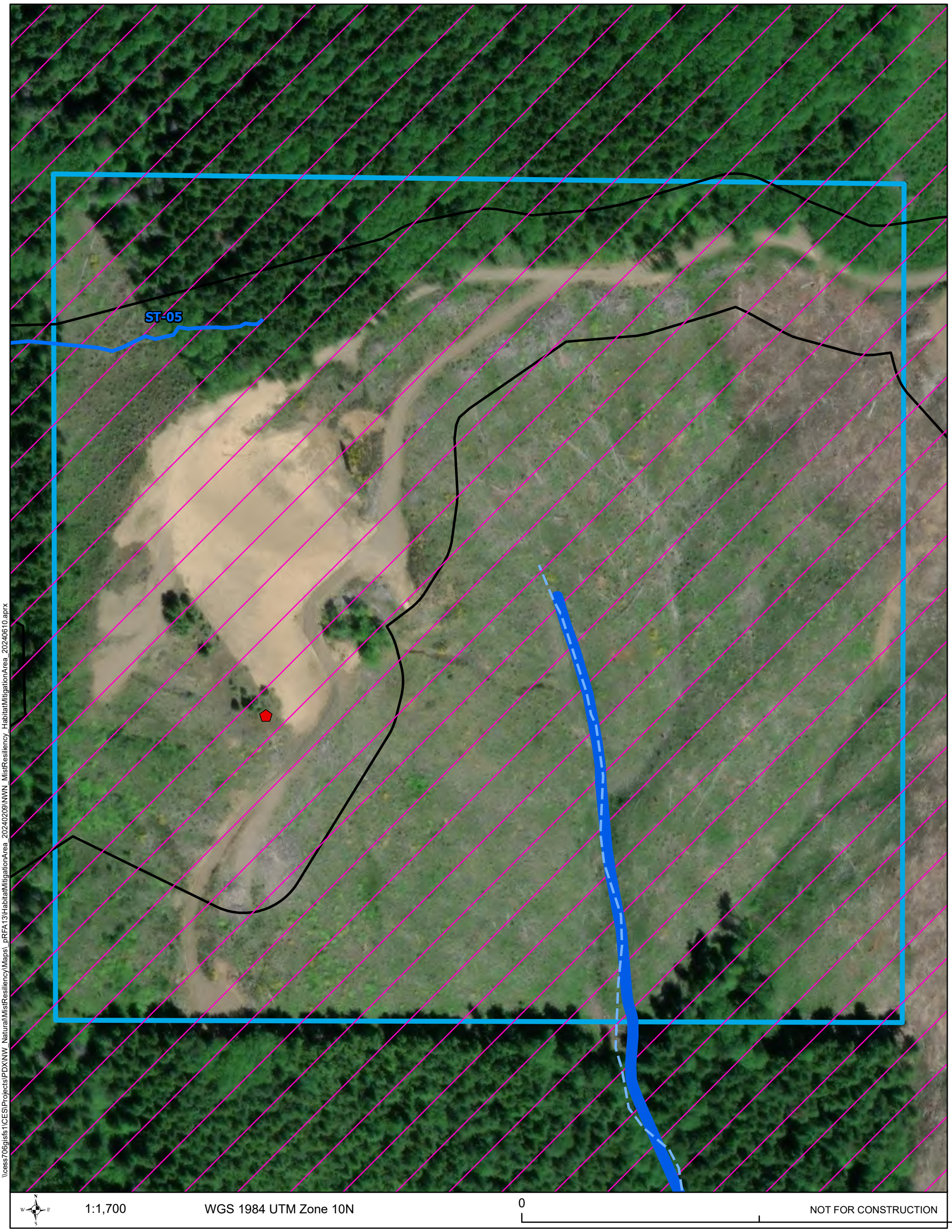

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Mist Resiliency Project

Figure 1
Potential Habitat Mitigation Areas

COLUMBIA COUNTY, OREGON

- Site Boundary
- Potential Habitat Mitigation Areas
- Olive-sided Flycatcher
- Field Delineated Stream

Wetlands and Waters
- Riverine (NWI)

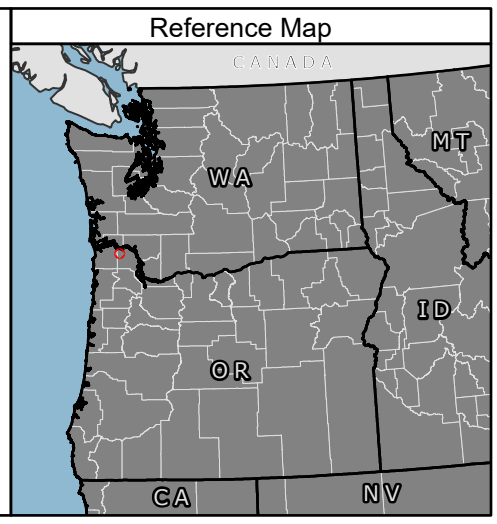
Stream
- Intermittent Stream (NHD)

ODFW West Side Big Game Overlay
- Year-round Major Habitat

TETRA TECH

NW Natural

Reference Map



Attachment S: Draft Inadvertent Discovery Plan

Mist Underground Natural Gas Storage Facility RFA13

ARCHAEOLOGICAL AND HUMAN REMAINS INADVERTENT DISCOVERY PLAN (IDP)

Mist Resiliency Project
NW Natural May 2024 SHPO case number 24-0707

This document outlines procedures and protocols to be followed if archaeological objects or features, or human remains are encountered in the course of work. These procedures are intended for circumstances where there is not an expectation or anticipation of encountering cultural resources or human remains. **This is not a replacement for due diligence, robust project design, and consultation with appropriate Native American Tribes**. Prior to undertaking project work, an assessment of the likelihood for disturbance to cultural resources should be completed. All personnel will be briefed on all procedures and reporting structures before the start of any work.

CONTENTS OF THIS DOCUMENT

A. Procedures for archaeological features and materials
B. Procedures for human remains, burials, funerary objects, and objects of cultural patrimony
C. Roles and responsibilities
D. Contact information
E. Confidentiality statement
F. Procedure flow chart
G. Visual reference guide for archaeology

A. *PROCEDURES FOR INADVERTENT DISCOVERY OF ARCHAEOLOGICAL FEATURES AND MATERIALS (FOR NON-HUMAN REMAINS AND NON-FUNERARY CONTEXTS)*

It is expected that ALL artifacts, features, structural elements, etc. that are identified will be reported to required project, agency, and Tribal contacts, and accounted for as soon as possible. It is understood that there will be a single project point of contact to coordinate with the project archaeologist, SHPO, LCIS, and appropriate Native American Tribes.

Step 1. Stop work (immediately after discovery)

If any person believes that they have located an archaeological object[1] or site[2], all work must stop immediately.

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[1] "Archaeological object" means an object that is at least 75 years old (or 50 years if there is a federal nexus), is part of the physical record of an indigenous or other culture found in the state or waters of the state, and is material remains of past human life or activity that are of archaeological significance including, but not limited to, monuments, symbols, tools, facilities, technological by-products and dietary by-products (ORS 358.905).

[2] "Archaeological site" means a geographic locality in Oregon that contains archaeological objects and the contextual associations of the archaeological objects with each other or biotic or geological remains or deposits (ORS 358.905).

Discovery made in field _____(date/time) _____ (initials of discoverer)

Step 2. Secure and protect the area (within first hour after discovery)

Establish a **minimum** 30 meter/100-foot area of protection, or more if necessary, around the find. Exclude all vehicle traffic and non-essential foot traffic. Non-ground-disturbing work may continue outside of the area of protection with caution until the situation is assessed by a qualified archaeologist.[3]

Buffer established _____ (time) _____ (initials of person responsible)

Step 3. Notify (within first hour after discovery)

Notify the project manager, agency official (if applicable), and project archaeologist. If there is not an archaeologist on-site, or on retainer for the project, the project manager will contact an Oregon Qualified Archaeologist (which include agency and Tribal archaeologists) to assess the find.

Project Manager contacted _____ (time) _____ (initials of contactor)
Agency Official contacted _____ (time) _____ (initials of contactor)
Project Archaeologist contacted _____ (time) _____ (initials of contactor)

Step 4. Identify and Follow Guidance (timeline variable, as soon as possible)

If the archaeologist determines the find is an archaeological feature or object, the State Historic Preservation Office (SHPO) must be contacted, and their guidance must be followed. If Native American Tribes have made it a condition of the archaeological permit or project undertaking to be notified of any inadvertent discovery, **contact these Tribes now and follow their guidance**. SHPO, Native American Tribes, and project and agency personnel will determine in consultation how or if work may continue at the site. If the discovery is determined to *not* be archaeological, you may continue work. This determination should be confirmed in writing to the project manager and agency official.

SHPO contacted _____ (time) _____ (initials of contactor)
Appropriate Native American Tribes[4] _____ (time) _____ (initials of contactor)

B. PROCEDURES FOR INADVERTENT DISCOVERY OF HUMAN REMAINS

(HUMAN REMAINS, FUNERARY OBJECTS, AND OR FEATURES CONSISTENT WITH EITHER)

It is expected that ALL potential human remains, burials, funerary objects, or objects of cultural patrimony that are identified will be reported and accounted for within 3 hours of discovery.[5] It is

[3] Ground-disturbing work on different landforms distant from the find and outside of the buffer may continue.
[4] ALL Tribes designated by LCIS must be notified. Contacting one or some of the Tribes does not fulfill the obligation to notify.
[5] Modifications to reporting timelines can be made in consultation with SHPO and Tribes.

understood that there will be a single project point of contact to coordinate with the project archaeologist, SHPO, LCIS, OSP and appropriate Native American Tribes.

Step 1: Stop work (immediately after discovery)

If any person believes that they have located human remains[6], ALL work will stop immediately. Any human remains, regardless of antiquity or ethnic origin, will always be treated with dignity and respect.

Step 2. Secure and protect the area (as soon as possible, within c. 10 min)

Secure and protect the area of inadvertent discovery with a minimum of 30 meter/100 foot buffer, or more if necessary. Prevent all vehicle traffic and unauthorized foot traffic from entry. Block remains from view and protect them from damage or exposure without touching or disturbing the remains, and leave them in place. **Do not take photographs** unless approved by the appropriate Native American Tribes and Oregon Legislative Commission on Indian Services (LCIS), and only for the purpose of identification. **Do not speak to the media or public** or post any information about the find on social media. **Do not resume any work in the buffered area**. Non-ground-disturbing work may continue outside of the buffer with caution.[7]

Buffer established _____ (time) _____ (initials of person responsible)

Step 3. Notify (within first hour after discovery) – see contact list below (section D)

1. Project Manager _____ (time) _____ (initials)
2. Agency Official _____ (time) _____ (initials)
3. Oregon State Police[8] **DO NOT CALL 911** _____ (time) _____ (initials)
4. State Historic Preservation Office (SHPO) _____ (time) _____ (initials)
5. Commission on Indian Services (LCIS) _____ (time) _____ (initials)
6. Appropriate Native American Tribes[9] _____ (time) _____ (initials)

   Name of Tribe(s) Contacted and Individual(s):

_____
_____
_____
_____

Step 4. Follow guidance (timeline variable, may be up to several days)

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[6] Bone may be fragmented, weathered, or otherwise modified to make it difficult to identify, so when in doubt, stop work and call it in.
[7] Ground-disturbing work on different landforms distant from the find and outside of the buffer may continue.
[8] OSP will be responsible for contacting the county or state medical examiner's office as appropriate.
[9] ALL Tribes designated by LCIS must be notified. Contacting one or some of the Tribes does not fulfill the obligation to notify.

If the site is determined not to be a crime scene by the Oregon State Police, **do not move anything!** The remains will continue to be *secured in place* along with any associated funerary objects, and protected from weather, water runoff, and shielded from view. Follow all guidance provided by OSP, LCIS, SHPO, and appropriate Native American Tribes.
Continue to maintain the work stoppage within the buffer until a plan is developed and carried out between the Oregon State Police, SHPO, LCIS, and appropriate Native American Tribes and you are directed in writing by the project manager that work may proceed.

C. *Roles and Responsibilities*

Responsibility	**Person Responsible**
Notify Project Manager	
Notify Contracted Archaeologist	
Notify State Agencies (OSP, LCIS, SHPO)	
Notify Native American Tribes	
Enforce work stoppage and buffer	

D. *Contact Information*[10]

Agency	**Position/Contact**	**Contact Information**
Project Manager	Andrew Bauer, NW Natural	503-610-7060
Contracted Archaeologist	Michele L. Punke, Historical Research Associates	971-386-2048
Legislative Commission in Indian Services (LCIS)	Primary Contact: Dr. Elissa Bullion, State Physical Anthropologist	971-707-1372
	Secondary Contact: LCIS Office	503-986-1067
Oregon State Police (OSP)	Primary Contact: Dispatch	503-731-3030
	Secondary Contact: Sgt. Ryan Tague	541-576-4393
State Historic Preservation Office (SHPO)	Primary Contact: John Pouley, State Archaeologist	503-480-9164
	Secondary Contact: Jamie French, Asst. State Archaeologist	503-979-7580
Native American Tribes	Appropriate Tribes will be provided by LCIS	

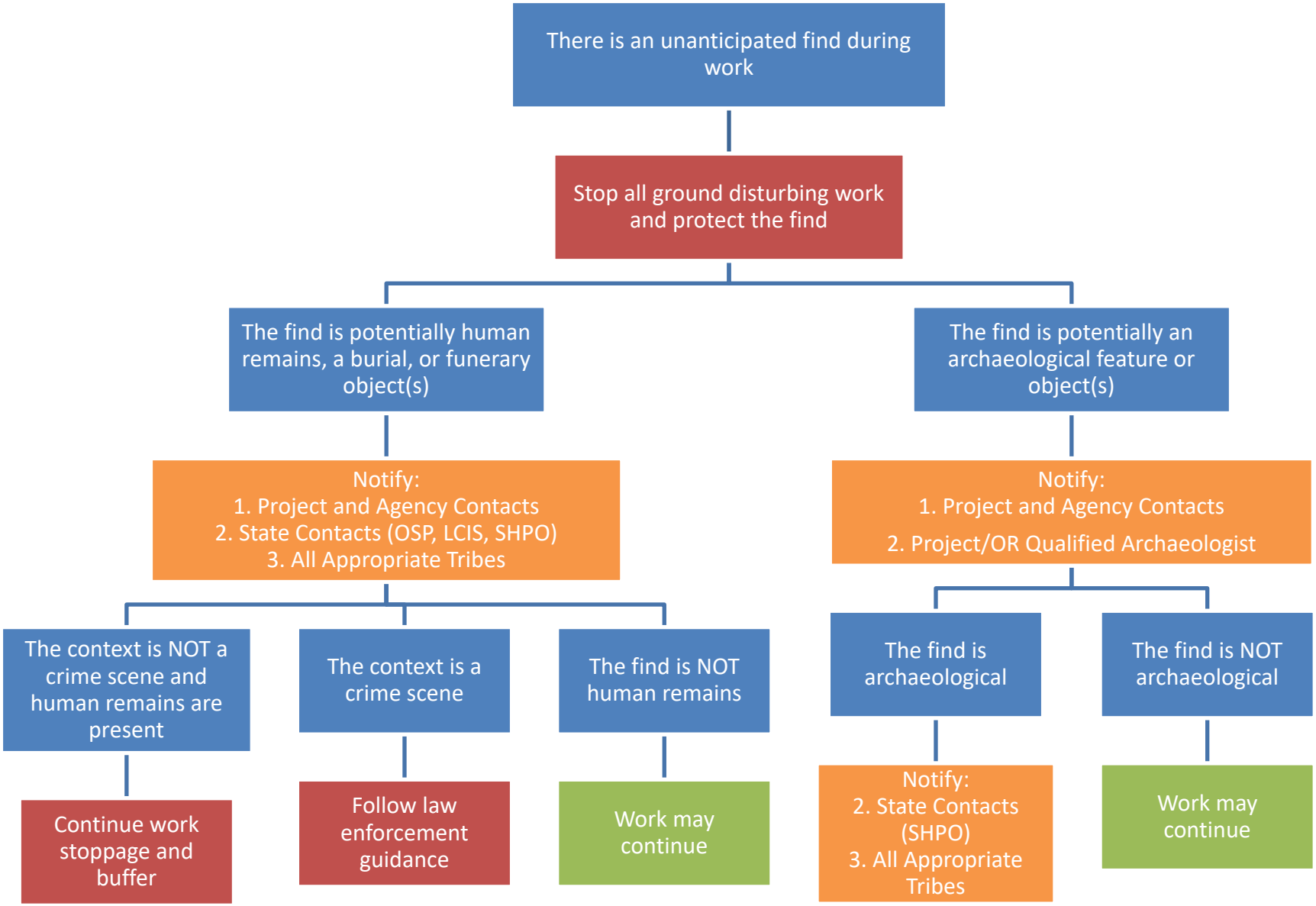
[10] ***Contact information should be regularly updated for all individuals. Up to date contacts for LCIS, OSP, SHPO, and Native American Tribes can be found on the LCIS cultural resources page: Commission on Indian Services archaeology (oregonlegislature.gov)

E. CONFIDENTIALITY

The Mist Resiliency Project and employees shall make their best efforts, in accordance with federal and state law, to ensure that its personnel and contractors keep the discovery confidential. The media, or any third-party member or members of the public are not to be contacted or have information regarding the discovery, and any public or media inquiry is to be reported to NW Natural. Photos shall not be taken except for when authorized by LCIS, SHPO, and Native American Tribes for identification purposes, and no photos will be circulated publicly or on social media. Prior to any release, the responsible agencies and Tribes shall concur on the amount of information, if any, to be released to the public.

To protect fragile, vulnerable, or threatened sites, the National Historic Preservation Act, as amended (Section 304 [16 U.S.C. 470s-3]), and Oregon State law (ORS 192.501(11)) establishes that the location of archaeological sites, both on land and underwater, shall be confidential.

F. Procedure Flow Chart



E. Visual Reference Guide for Archaeology in Oregon (Modify based on region/context)

Lithics and stone tools

Figure 1. Stone flakes

Figure 2. Stone projectile points

Figure 3. Ground stone tools: (left) pestle, (right) net weights,

Basketry/Cordage

Figure 4. Open diagonal twine basket fragments from Fort Rock Cave (UOMNCH).

Figure 5. Three-strand braid, sagebrush bark from Paisley Caves (UOMNCH).

Shell Middens

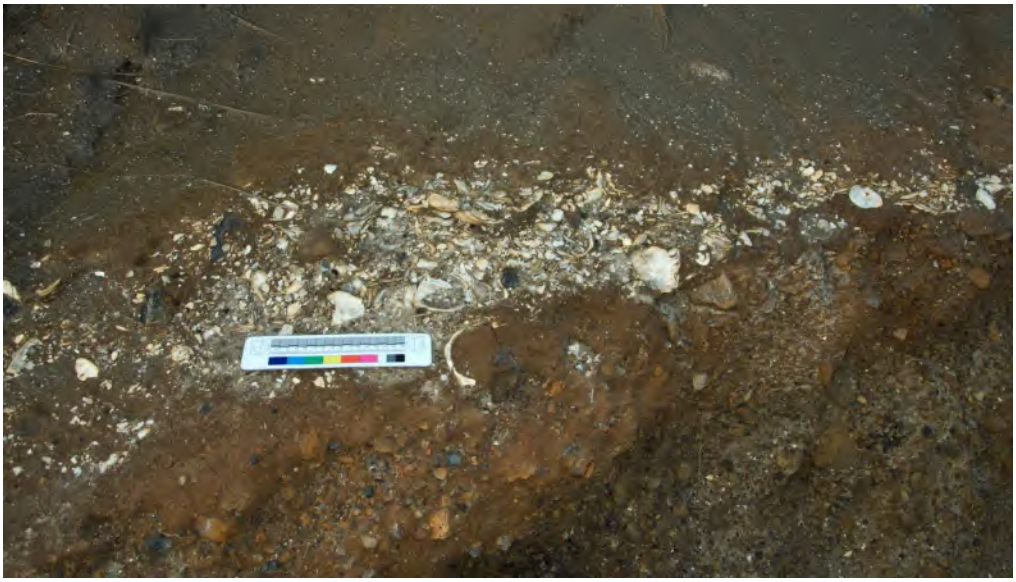


Figure 6.

Figure 7. Dentalium shell beads (UOMNCH).

Figure 8. Glass trade beads, Upper Columbia River (UOMNCH).

Figure 9. Wooden fish weir (Scott Byram, 2010)

Figure 10. Stone fish weir (Brown and Brown, 2009)

Figure 11. Example of peeled pine.

Figure 12. Arborglyph on aspen tree

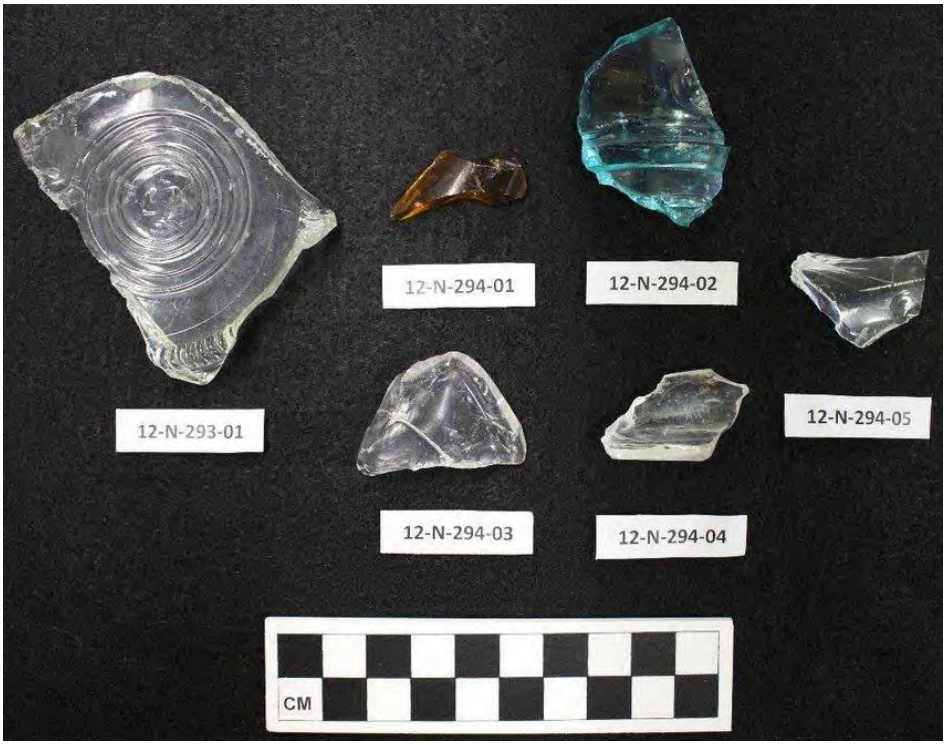


Figure 13. Historical glass

Figure 14. Historical metal artifacts

Attachment V-1: Construction Wildfire Mitigation Plan

Mist Underground Natural Gas Storage Facility RFA13

Construction Wildfire Mitigation Plan

Mist Resiliency Project
August 2024

Amended by Department August 2024

Prepared for

NW Natural

Northwest Natural Gas

Prepared by

TETRA TECH

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6.0 Emergency Response 3
7.0 References 4

List of Attachments

Attachment A. ODF Industrial Fire Precaution Levels (IFPLs) for West of the Cascades

Attachment B. ODF's Fire Season Requirements

Attachment C. Oregon Department of Forestry Forest Activity Inspection Report

Acronyms and Abbreviations

CFR	Code of Federal Regulations
CWPP	Community Wildfire Protection Plan
ERRP	Emergency Response and Recovery Plan
Facility	Mist Underground Natural Gas Storage Facility
IFPL	Industrial Fire Precaution Levels
NERC	North American Electric Reliability Corporation
NMCS	North Mist Compressor Station
NWN	Northwest Natural Gas
OAR	Oregon Administrative Rule
ODF	Oregon Department of Forestry
Plan	Wildfire Mitigation Plan
RACE	Remove, Alarm, Confine and Extinguish or Evacuate
RFA	Request for Amendment

1.0 Introduction

Northwest Natural Gas (NWN) and its contractor(s) will follow all relevant Occupational Safety and Health Administration and National Fire Protection Association requirements related to fire hazards including a no smoking policy, fire permit requirement, hazardous material and combustible storage areas, pre-task planning to assess fire risks, relevant fire awareness training, lockout-tagout requirement, hazardous materials documentation, appropriate management, and disposal. NWN and its contractor(s) will follow Oregon Department of Forestry's (ODF) Industrial Fire Precaution Levels (IFPL; Attachment A) and general fire season requirements (Attachment B).

NWN will submit a Notification of Operations and Application for Permit NO/AP to ODF prior to any well work or major construction; note that a NO/AP is technically not required for work outside of the fence lines of the Facility, but travel to and from the Facility (outside of the Facility fence line) will still adhere to IFPL restrictions and requirements.

NWN will also provide ODOE with an ODF Forest Activity Inspection Report (Attachment C), to be finalized and/or amended as needed, on an annual basis while construction is occurring as a record of inspection during construction.

2.0 Design Features Applicable to Construction for Reducing Wildfire Risk

NWN will design the Facility to maintain a defensible space clearance along Facility features. Defensible space will be free of combustible vegetation or other materials. Roads and parking areas will be maintained to be free of vegetation tall enough to contact the undercarriage of the vehicle. Travel off road or parking in vegetated areas will be restricted during fire season. The existing county roads will form a fire break between fields that will discourage the spread of wildfire between fields into wildlife habitat. The fenced areas around Facility infrastructure will be graveled, with no vegetation present.

3.0 Fire Watch, Hot Work, and Fire Weather Monitoring

During fire season (as identified by ODF) each construction area is required to have a Firewatch unless otherwise waived (see Attachment B; ORS 477.665, OAR 629-043-0030)[1]. As described in

[1] OAR 629-043-0030
(1) Pursuant to ORS 477.665 (Fire watch service), during fire season inside or within one-eighth of one mile of a forest protection district, operators must comply with the following fire watch requirements. A person performing fire watch service must:

(a)Constantly observe the operation area during any breaks (up to three hours) in operation activity and for three hours after the power driven machinery used by the operator has been shut down for the day;

Attachment A, a fire watch shall be on during any breaks and for three hours after all power-driven machinery used by the operator has been shut down for the day. Based on weather and the probability of fire, ODF identifies different IPFLs which have associated rules about what work may occur, as well as when and where that work may occur (ODF 2024). For example, IFPL II allows for most activities between 8pm and 1pm, whereas IFPL IV represents a complete shutdown of operations. For construction outside of fire season, hot work permits will be in-place, issued by managers at Miller Station and NMCS.

Fire watch shall be on duty during any breaks (up to 3 hours) and for three hours after all power driven machinery used by the operator has been shut down for the day. Note: Some ODF districts waive this requirement based on the IFPL in place.

Fire watch shall:

- Be physically capable and experienced to operate firefighting equipment.
- Have facilities for transportation and communications to summon assistance.
- Observe all portions of the operation on which activity occurred during the day.

Upon discovery of a fire, Firewatch personnel must: first report the fire, summon any necessary firefighting assistance, describe intended fire suppression activities and agree on a checking system; then, after determining a safety zone and an escape route that will not be cut off if the fire increases or changes direction, immediately proceed to control and extinguish the fire, consistent with firefighting training and safety. Regular coordination with ODF will continue to occur during the fire season.

Classification of Fire Precaution Level is decided by ODF and communicated directly to NWN staff at Miller Station, posted online, and posted at all area fire stations. In addition, ODF operates a guard station at the northern end of Facility on Palm Hill Road, which is staffed during fire season.

4.0 Vegetation Management

NWN and contractor(s) will maintain vegetation within the Amended Site Boundary and will also maintain a defensible space clearance along Facility features, per their existing Vegetation Control

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(b)Visually observe all portions of the operation area on which operation activity occurred during the preceding period of activity; and
(c)Be qualified in the use and operation of assigned firefighting equipment and tools; be physically capable of performing assigned fire suppression activities; and be advised of single employee assignment responsibilities (OAR 437-007-1315 (Single Personnel Assignments)), when working alone.
(2)After a measurable amount of rain on the operation area, the forester may suspend the requirements of subsection (1) of this rule until such time as, in the judgment of the forester, conditions warrant reinstatement.
(3)The forester may reduce or waive any requirement of subsection (1)(a) or (b) of this rule in a written order if, in the judgment of the forester, conditions so warrant.
(4)Immediately following a period when the only operation activity has been the use of self-loading log trucks on improved roads or landings cleared of flammable material, fire watch service is not required.***

and Management Plan (see Attachment P-4). Defensible space will be free of combustible vegetation or other materials. Roads and parking areas will be maintained to be free of vegetation tall enough to contact the undercarriage of the vehicle. Travel off road or parking in vegetated areas will be restricted during fire season and will adhere to IFPL restrictions and requirements. Per ODF fire season requirements, Attachment B, all power driven machinery will be kept free of excess flammable material which may create a risk of fire (ORS 477.625, OAR 629-043-0026); line-rub on rock or woody material will also be avoided, which may result in sparks or sufficient heat to cause ignition of a fire. Additionally, all non-turbo charged engines must meet Spark Arrester Guide specifications outlined in ODF fire season requirements, spark arresters and mufflers, Attachment B (ORS 477.645, OAR 529-043-0015).

5.0 Minimization of Fire Risk from Construction Activities and Best Management Practices

Best management practices to minimize fire risk from vehicle travel and fueling activities would be implemented at the site during fire season (typically June/July through September/October) per ODF IFPL requirements and fire season requirements (see Attachments A and B). Additional measures identified in the Request for Amendment 11 Exhibit U, and RFA 13, Exhibit U, may be required by the Oregon Department of Energy.

6.0 Emergency Response

Personnel will be trained on the Remove, Alarm, Confine and Extinguish or Evacuate (RACE) procedure to implement in the event of a fire start. RACE procedure includes:

- Rescue anyone in danger (if safe to do so);
- Alarm – call the control room, who will then determine if 911 should be alerted;
- Contain the fire (if safe to do so); and
- Extinguish the incipient fire stage (if safe to do so).

Personnel on site will carry fire suppression equipment during the fire season in their vehicles. Per ODF fire season requirements, Attachment B (fire tools, extinguishers for trucks; ORS 477.655, OAR 629-043-0025), each truck shall be equipped with:

- 1 round pointed shovel at least 8 inches wide, with a handle at least 26 inches long
- 1 axe or Pulaski with 26 inch handle or longer
- 1 fire extinguisher rated not less than 2A:10BC (5-pound).

Miller Station and the NMCS will also maintain emergency firefighting equipment including shovels, portable water for hand sprayers, fire extinguishers, and other equipment (see also Section 3.2.6,

Fire Protection (Subpart L 29 CFR 1910.155-165)). Per ODF fire season requirements, Attachment B (hand tools; ORS 477.655, OAR 629-043-0025), hand tools will be available at each construction site. Tools will be stored in a sturdy box clearly identified as containing firefighting tools. One box will be provided for each construction area. Crews of four or less are not required to have a fire tools box as long as each person has a shovel, suitable for fire-fighting that is available for immediate use during construction.

Additionally, each internal combustion engine used in construction, except power saws, shall be equipped with a chemical fire extinguisher rated as not less than 2A:10BC (5-pound).

Personnel will receive training on use of suppression equipment and have onsite fire extinguishers to respond to small fires. In the event of a large fire, 911 will be called and emergency responders will be dispatched. Prior to construction of the Facility, NWN will provide employee fire prevention and response training that shall include instruction on Facility fire hazards, fire safety, emergency notification procedures, use of fire safety equipment, and fire safety rules and regulations. Equivalent training shall be provided to new employees or subcontractors working on site that are hired after the start of construction. All personnel shall be equipped with communication equipment capable of reaching the control room from all locations within the Amended Site Boundary.

To minimize wildfire impacts, NWN will utilize the expertise of local fire brigades in the event of a fire. NWN has written agreements with the Clatskanie Rural Fire Protection District and the Mist-Birkenfeld Rural Fire Protection District dating back to 2015 (Request for Amendment 11, Attachment U-2). Both groups have willingness and ability to respond as staffing allows to any fire protection issues which may arise during construction of the Facility. Additionally, NWN will continue to provide notice to Mist-Birkenfeld Rural Fire Protection District whenever they are performing well work or major construction for emergency response purposes.

7.0 References

ODF. 2024. Industrial Fire Precaution Levels. https://gisapps.odf.oregon.gov/firerestrictions/IFPL.html. Accessed July 11, 2024.

Attachment A. ODF Industrial Fire Precaution Levels (IFPLs) for West of the Cascades

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FIRE SEASON REQUIREMENTS

The following fire season requirements become effective when fire season is declared in each Oregon Department of Forestry Fire Protection District, including those protected by associations (DFPA, CFPA, WRPA).

NO SMOKING **(477.510)**

No smoking while working or traveling in an operation area.

HAND TOOLS **(ORS 477.655, OAR 629-43-0025)**

Supply hand tools for each operation site - 1 tool per person with a mix of pulaskis, axes, shovels, hazel hoes.
Store all hand tools for fire in a sturdy box clearly identified as containing firefighting tools. Supply at least one box for each operation area. Crews of 4 or less are not required to have a fire tools box as long as each person has a shovel, suitable for fire-fighting and available for immediate use while working on the operation.

FIRE EXTINGUISHERS **(ORS 477.655, OAR 629-43-0025)**

Each internal combustion engine used in an operation, except power saws, shall be equipped with a chemical fire extinguisher rated as not less than 2A:10BC (5 pound).

POWER SAWS **(ORS 477.640, OAR 629-043-0036)**

Power saws must meet Spark Arrester Guide specifications - a stock exhaust system and screen with ≤ .023 inch holes.

The following shall be immediately available for prevention and suppression of fire:

- One gallon of water or pressurized container of fire suppressant of at least eight ounce capacity
- 1 round pointed shovel at least 8 inches wide with a handle at least 26 inches long
- The power saw must be moved at least 20' from the place of fueling before it is started.

FIRE TOOLS, EXTINGUISHERS FOR TRUCKS **(ORS 477.655, OAR 629-043-0025)**

Equip each truck driven in forest areas for industrial purposes with:

- 1 round pointed shovel at least 8 inches wide, with a handle at least 26 inches long
- 1 axe or Pulaski with 26 inch handle or longer
- 1 fire extinguisher rated not less than 2A:10BC (5 pound).

SPARK ARRESTERS AND MUFFLERS **(ORS 477.645, OAR 629-043-0015)**

All non-turbo charged engines must meet Spark Arrester Guide specifications except:

- Fully turbo charged engines.
- Engines in motor vehicles operating on improved roads equipped with an adequate muffler and exhaust system.
- Engines in light trucks (26,000 GVW or less) that are equipped with an adequate muffler and an exhaust system.
- Engines in heavy trucks (greater than 26,000 GVW) that are equipped with an adequate muffler and exhaust system.
- If a truck engine is not fully turbo-charged, then the exhaust must extend above the cab and discharge upward or to the rear, or to the end of the truck frame.
- Water pumping equipment used exclusively for fighting fire.
- Engines of 50 cubic inch displacement or less, except ATV's and motorcycles, shall be equipped with an adequate muffler and an exhaust system.
- Engines in ATV's and motorcycles must be equipped with an adequate muffler and exhaust system or an approved screen, which completely encloses exhaust system.
- Power saws. (See power saw requirements)

PUMP, HOSE, AND WATER SUPPLY **(ORS 477.650, 477.625, OAR 629-043-0026, 629-43-0020)**

Supply a pump, hose and water supply for equipment used on an operation.

- Pump must be maintained ready to operate and capable to provide a discharge of not less than 20 gallons per minute at 115 psi at pump level. **Note: Volume pumps will not produce the necessary pressure to effectively attack a fire start. Pressure pumps are recommended.**
- Water supply shall be a minimum of 300 gallons if a self-propelled engine.
  Water supply shall be a minimum of 500 gallons if not self-propelled (pond, stream, tank, sump, trailer, etc.)
- One water supply is adequate as long as the operator can deliver water to the fire within 10 minutes
- Provide enough hose (500 feet minimum) not less than 3/4" inside diameter to reach areas where power driven machinery has worked.

Note: Should a fire occur, the operator must be able to position the water supply in a location where enough hose is available to reach the area worked by power driven machinery. This includes mobile equipment as well as motorized carriages and their moving lines. Moving lines are defined as main lines and haul back lines. This can be achieved in many ways, including the practice of having a water tank and hose attached to a piece of equipment, like a skidgen or skidder, that can get the water to the fire.

- Water supply, pump, and at least 250' of hose with nozzle must be maintained as a connected, operating unit ready for immediate use.

CABLE LOGGING OPERATIONS **(ORS 477.625, 477.655, OAR 629-043-0026, 629-043-0025)**

Clear the ground of flammable debris within a 10-foot radius around any block. This cleared area shall be kept free of flammable debris while the block is in use.

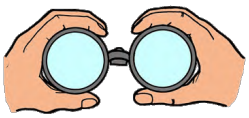
Provide at each block:

- 5 gallon pump can filled with water
- 1 round pointed shovel at least 8 inches wide with a handle at least 26 inches long.

FIRE WATCH SERVICE **(477.665, 629-043-0030)**

Each operation area is to have a Firewatch.

Fire watch shall be on duty during any breaks (up to 3 hours) and for three hours after all power driven machinery used by the operator has been shut down for the day. ***Note: Some ODF districts waive this requirement based on the IFPL in place. Check with the district in which you are working.***



Fire watch shall:

- Be physically capable and experienced to operate firefighting equipment.
- Have facilities for transportation and communications to summon assistance.
- Observe all portions of the operation on which activity occurred during the day.

Upon discovery of a fire, Firewatch personnel must: First report the fire, summon any necessary firefighting assistance, describe intended fire suppression activities and agree on a checking system; then, after determining a safety zone and an escape route that will not be cut off if the fire increases or changes direction, immediately proceed to control and extinguish the fire, consistent with firefighting training and safety.

OPERATION AREA FIRE PREVENTION **(477.625, 629-043-0026)**

- Keep all power driven machinery free on excess flammable material which may create a risk of fire.
- Avoid line-rub on rock or woody material, which may result in sparks or sufficient heat to cause ignition of a fire.
- Disconnect main batteries from powered components (other than what may be necessary to retain computer memory) through a shut-off switch or other means or, leave equipment on ground cleared of flammable material.

NOTICE**:**

THESE ARE MINIMUM STANDARDS BY LAW. MANY LANDOWNERS REQUIRE ADDITIONAL REQUIREMENTS.

Attachment B. ODF's Fire Season Requirements

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Industrial Fire Precaution Levels (IFPLs) for Oregon Department of Forestry Protection west of the Cascades

IFPL I. Fire Season
Fire season requirements are in effect. In addition to other fire prevention measures, a Firewatch is required at this and all higher levels unless otherwise waived.

IFPL II. Limited Shutdown
The following may operate only between the hours of 8 P.M. and 1 P.M.:

- Power saws except at loading sites;
- Feller-bunchers with rotary head saws;
- Cable yarding;
- Blasting;
- Welding, cutting, or grinding of metal.

IFPL III. Restricted Shutdown
The following is prohibited except as indicated:

- Cable yarding - except that gravity operated logging systems employing non-motorized carriages or approved motorized carriages (defined below), may operate between 8 P.M. and 1 P.M. when all blocks and moving lines are suspended 10 feet above the ground except the line between the carriage and the chokers and during rigging.

The following are permitted to operate between the hours of 8 P.M. and 1 P.M. where mechanized equipment capable of constructing fire line is immediately available to quickly reach and effectively attack a fire start:

- Ground-based operations (defined below);
- Power saws on ground-based operations;
- Rotary head saw feller-bunchers with a continuous Firewatch;
- Non-rotary head saw feller-bunchers;
- Tethered logging systems (defined below).

The following are permitted to operate between the hours of 8 P.M. and 1 P.M.:

- Power saws at loading sites;
- Loading or hauling of any product or material;
- Blasting;
- Welding, cutting, or grinding of metal;
- Any other spark emitting operation not specifically mentioned.

IFPL IV. Complete Shutdown
All operations are prohibited.

NOTE: Where hauling involves transit through more than one shutdown/regulated use area, the precaution level at the woods loading site shall govern the level of haul restriction, unless otherwise prohibited by other than the IFPL system. Under IFPL III, all trucks must be loaded and leaving the loading site no later than 1 P.M.

IFPL Definitions

Approved motorized carriage: a cable yarding system employing a motorized carriage with two fire extinguishers, each with at least a 2A:10BC rating, mounted securely on opposite sides of the carriage, an emergency motor cutoff, and an approved exhaust system.
Cable yarding system: a yarding system employing cables, and winches in a fixed position.
Fire Season: that season of the year when a fire hazard exists as declared by the responsible agency official.
Ground-based operations: mobile and stationary equipment operations other than cable yarding systems, including but not limited to tractor/skidder, feller-buncher, forwarder, processor, and shovel operations.
Loading sites: a place where any product or material (including, but not limited to logs, firewood, slash, soil, rock, poles, etc.) is placed in or upon a truck or other vehicle. loading site shall govern the level of haul restriction, unless otherwise prohibited by other than the industrial precaution level system.
Tethered logging system: winch-assisted, cable-assisted, traction-assisted, etc., which enable ground-based timber harvesting machines to operate on steep slopes.

Waivers

Waivers, written in advance, may be used for any and all activities. Activities for which waivers may be issued include, but are not limited to:

- mechanized loading and hauling.
- road maintenance such as sprinkling, graveling, grading and paving.
- cable yarding using gravity systems or suspended lines and blocks, or other yarding systems where extra prevention measures will significantly reduce the risk of fire.
- power saws at loading sites or in felling and bucking where extra prevention measures will significantly reduce the risk of fire.
- maintenance of equipment (other than metal cutting and welding) or improvements such as structures, fences and powerlines.

Best Management Practices for Forest Operations Checklist

- Assure good communications are established with protection district.
- Keep all equipment clean of flammable material and debris.
- Utilize and keep in good working condition manufacturer recommended non-sparking clamping jaws on braking systems on carriages.
- Clean out spark arrester ports.
- Hydraulic and fuel lines are in good condition.
- Battery hold-downs are in good repair and positive terminal is insulated;
- Electrical wiring and circuit breakers are in good working order according to manufacturer specifications;
- Pumps and fire trucks are in good working condition;
- Line rub is eliminated;
- Where possible, and when not in use, park equipment overnight in location clear of flammable material.
- Monitor relative humidity hourly and consider shut down when relative humidity drops below 30 percent.

NOTE: The IFPL system does not apply on lands protected by ODF east of the summit of the Cascades.

Attachment C. Oregon Department of Forestry Forest Activity Inspection Report

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"STEWARDSHIP IN FORESTRY"

Oregon Department of Forestry
Forest Activity Inspection Report

Date: _____
Notification / Unit No.: _____
Sale or Job Name: _____
FPF Name/No.: _____

Operator: _____ Landowner: _____ Timber Owner: _____

FIRE PREVENTION

REQUIRED OK THIS DATE ☐ Slash Hazard Inspection ☐ Not Active This Date

☐ ☐ Fire Tools: Number of workers in operation:_____

Power Saws: Number in operation:_____ Number Checked_____

☐ ☐ **Spark Arresters / Exhaust Systems**
☐ ☐ **Shovels and Fire Extinguishers**

Trucks: Number in operation:_____ Number Checked_____

☐ ☐ **Exhaust Systems**
☐ ☐ **Tools and Fire Extinguishers**

Other Power Driven Machinery and Engines:

☐ ☐ **Spark Arresters / Exhaust Systems**
☐ ☐ **Debris Accumulation Removed**
☐ ☐ **Fire Extinguishers**

Cable Logging Systems:

☐ ☐ **Cable lines clear**
☐ ☐ **Blocks cleared Number checked:** _____
☐ ☐ **Shovels and water at blocks**

☐ ☐ **Water Supply / Pump / Hose / Nozzle**

☐ ☐ **Fire Watch Hours after operation:** _____

☐ ☐ **Alternate methods or equipment, as described below are approved for use.**

☐ ☐ Other: _____
☐ ☐ Other: _____

☐ **IFPL Waiver, as described below, is approved**

☐ **Order:** For the items described below, you are hereby ordered to cease violation of ORS Chapter 477. Your Permit to Use Fire or Power Driven Machinery is suspended for these items until compliance is restored.

FOREST PRACTICES

☐ Pre-Operation Inspection ☐ Active or Post-Operation Inspection ☐ Complaint Investigation ☐ Waiver of 15 Day Waiting Period

Prior Approval / Written Plans

☐ Prior Approval Granted: Applicable rule(s)_____

Written Plan Action: ☐ Required ☐ Approved ☐ Approval Denied

Written plan rule(s): _____

Written plan resources: _____

_____

☐ RECOMMENDATIONS

Written below are recommendations. The inspecting Forest Practices Forester recommends these actions to prevent an unsatisfactory condition which may result in a violation of the Forest Practices Act. These recommendations pertain to the following rules:

☐ Written Plans ☐ Chemicals ☐ Water Protection
☐ Reforestation ☐ Road Construction ☐ Other_____
☐ Slash ☐ Harvesting

☐ **WRITTEN STATEMENT OF UNSATISFACTORY CONDITION**

This operation is not in compliance with the Forest Practices Act. Further enforcement action will begin if damage occurs or if you do not comply with the instructions written below by this compliance date: _____

This unsatisfactory condition(s) pertain to rule(s) or statute(s):

☐ Written Plans ☐ Chemicals ☐ Water Protection
☐ Reforestation ☐ Road Construction ☐ Other_____
☐ Slash ☐ Harvesting

ORS/OAR(s)_____

INFORMATION ON ITEMS CHECKED ABOVE: Page ____of ____

_____
_____
_____
_____
_____
_____
_____

THIS REPORT INDICATES THE CONDITIONS FOUND TO EXIST AT THE TIME OF THIS INSPECTION FOR THOSE ITEMS CHECKED OR NOTED ABOVE. IT DOES NOT IMPLY THAT ALL PARTS OF THE OPERATION WERE INSPECTED NOR DOES IT INDICATE ITEMS NOT INSPECTED ARE SATISFACTORY.

_____
_____
_____
_____

Signed _____
Received By: Date

☐ Copies Mailed _____
Date

_____
State Forester's Representative Date

FORM 6-2-5-211 (9/2000)

OPERATOR COPY

Attachment V-2: Operational Wildfire Mitigation Plan

Mist Underground Natural Gas Storage Facility RFA13

Operational Wildfire Mitigation Plan

Mist Resiliency Project
August 2024

Amended by Department August 2024

Prepared for

NW Natural

Northwest Natural Gas

Prepared by

TETRA TECH

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Acronyms and Abbreviations

CFR	Code of Federal Regulations
CWPP	Community Wildfire Protection Plan
ERRP	Emergency Response and Recovery Plan
Facility	Mist Underground Natural Gas Storage Facility
IFPL	Industrial Fire Precaution Levels
NERC	North American Electric Reliability Corporation
NMCS	North Mist Compressor Station
NWN	Northwest Natural Gas
OAR	Oregon Administrative Rule
ODF	Oregon Department of Forestry
Plan	Wildfire Mitigation Plan
RACE	Remove, Alarm, Confine and Extinguish or Evacuate
RFA	Request for Amendment

1.0 Introduction

NWN and its contractor(s) will follow all relevant Occupational Safety and Health Administration and National Fire Protection Association requirements related to fire hazards including: no smoking policy, fire permit requirement, hazardous material and combustible storage areas, pre task planning to assess fire risks, relevant fire awareness training, lockout-tagout requirement, hazardous materials documentation, appropriate management, and disposal. NWN and its contractor(s) will follow Oregon Department of Forestry's (ODF) Industrial Fire Precaution Levels (IFPL; Attachment A) and general fire season requirements (Attachment B).

NWN will submit an annual Notification of Operations and Application for Permit NO/AP to ODF prior to any well work or major construction; note that a NO/AP is technically not required for work outside of the fence lines of the Facility, but travel to and from the Facility (outside of the Facility fence line) will still adhere to IFPL restrictions and requirements. NWN will also provide ODOE with an ODF Inspection Form (Attachment C), to be finalized and/or amended throughout operations as needed, on an annual basis as a record of inspection during operations.

2.0 Wildfire Mitigation Through Facility Design

The Facility's components, and overall project design, will meet National Electrical Code and Institute of Electrical and Electronics Engineers standards and will not pose a significant fire risk. Emergency shutdown systems, notification systems, and venting systems at the Miller Station and NMCS will be in place in the event of mechanical failure that could cause fire and will be equipped with internal fire suppression systems to reduce the potential for structural fires.

NWN will design the Facility to maintain a defensible space clearance along Facility features. Defensible space will be free of combustible vegetation or other materials. Roads and parking areas will be maintained to be free of vegetation tall enough to contact the undercarriage of the vehicle. Travel off road or parking in vegetated areas will be restricted during fire season. The existing county roads will form a fire break between fields that will discourage the spread of wildfire between fields into wildlife habitat.

Vegetation within the fence line will be managed as needed to reduce fuels for fire. Facility access roads are sufficiently sized for emergency vehicle access, in accordance with local building code and local fire department requirements. The fenced areas around Facility infrastructure will be graveled, with no vegetation present. The public will also be excluded from the well pads, Miller Station, and NMCS facilities by this fencing. Installation of fire detection systems (including smoke detectors and fire alarms; see also Section 3.2.6, Fire Protection (Subpart L 29 CFR 1910.155-165)) will be installed throughout the operations buildings to detect and control fires in their early stages. A water truck, water buffalo or tank of at least 500 gallons will also be available onsite. Any potential fires inside the Amended Site Boundary will be controlled by onsite trained staff who will be able to access the Facility around the clock. These measures will help keep external fires out or

internal fires in. NWN shall provide an updated site plan to all fire protection districts, first responders identified in RFA 13 Exhibit U, and the Department if additional structures are later added to the Facility.

3.0 Vegetation Management

NWN and contractor(s) will maintain vegetation within the Amended Site Boundary and will also maintain a defensible space clearance along Facility features. The vegetation will be managed in accordance with their existing Vegetation Control and Management Plan (see Attachment P-4). Defensible space will be free of combustible vegetation or other materials. Roads and parking areas will be maintained to be free of vegetation tall enough to contact the undercarriage of the vehicle. Travel off road or parking in vegetated areas will be restricted during fire season and will adhere to IFPL restrictions and requirements. Per ODF fire season requirements (Attachment B), all power - driven machinery will be kept free of excess flammable material which may create a risk of fire (ORS 477.625, OAR 629-043-0026); line-rub on rock or woody material will also be avoided, which may result in sparks or sufficient heat to cause ignition of a fire. Additionally, all non-turbo charged engines must meet Spark Arrester Guide specifications outlined in ODF fire season requirements, spark arresters and mufflers, Attachment B (ORS 477.645, OAR 529-043-0015).

A physical vegetation survey assessment of the fenced area will be completed at least annually to monitor for vegetation growth. This survey will focus on areas of heightened risk and high fire consequences as described in Section 2.0 and displayed in Figures V-1 through V-6 (see Exhibit V). The initial vegetation survey assessments will occur typically in the spring, prior to the start of the dry season, a time when wildfire risk is usually heightened due to low fuel moisture and high temperature. The vegetation survey assessment will be conducted by operations staff and will be used to assess the frequency of upcoming vegetation maintenance and identify areas that may need additional attention.

To reduce the availability of fuels for wildfire near electrical components, NWN will install a non-flammable gravel base around the NMCS components and implement ongoing vegetation management outlined in Table 1 to ensure that vegetation does not grow in these graveled areas.

Table 1. Vegetation Management Procedures by Facility Component

Vegetation Management	Procedure	Standard	Time Frame
NMCS	Herbicide or mechanical application on all associated gravel pads (e.g., compressor stations). Highly compacted gravel foundations are not suitable for vegetation.	IEEE 80[1] NEC 70[2] North American Electric Reliability Corporation (NERC)[3]	Yearly, depending on vegetation condition.

1. IEEE (2015)
2. NFPA (2023)
3. NERC (2023)

Vegetation control will begin following the surveys and employ best management practices and techniques that are most appropriate for the local environment. In areas where vegetation is present and could pose a fire risk, vegetation management and removal measures shall be implemented prior to fire season. Encroaching vegetation near aboveground structures within Miller Station and NMCS, along with the newly built well pads will be treated accordingly depending on the location, soil type, etc., in accordance with Exhibit P and the Habitat Mitigation Plan (Attachment P-2), Restoration of Temporary Impacts Plan (Attachment P-3), and the Vegetation Control and Management Plan (Attachment P-4). Any herbicides used for vegetation management the site will be selected and used in a manner that fully complies with all applicable laws and regulations and will adhere to the No-Spray guidelines outlined in the Vegetation Control and Management Plan (see Exhibit P, Attachment P-4). Noxious weeds within the Site Boundary will be controlled in accordance with the Vegetation Control and Management Plan (see Exhibit P, Attachment P-4).

4.0 Fire Weather Monitoring

During fire season (as identified by ODF) a fire watch is required (ORS 477.665, OAR 629-043-0030) for each operation area[1]. As described in Attachment A, a fire watch shall be on duty during any breaks (up to 3 hours) and for three hours after all power-driven machinery used by the operator has been shut down for the day. Note: Some ODF districts waive this requirement based on the IFPL in place; the current IFPL for the Facility site is IFPL II which requires a fire watch.

Fire watch shall:

- Be physically capable and experienced to operate firefighting equipment.

[1] OAR 629-043-0030

(1) Pursuant to ORS 477.665 (Fire watch service), during fire season inside or within one-eighth of one mile of a forest protection district, operators must comply with the following fire watch requirements. A person performing fire watch service must:

(a)Constantly observe the operation area during any breaks (up to three hours) in operation activity and for three hours after the power driven machinery used by the operator has been shut down for the day;

(b)Visually observe all portions of the operation area on which operation activity occurred during the preceding period of activity; and

(c)Be qualified in the use and operation of assigned firefighting equipment and tools; be physically capable of performing assigned fire suppression activities; and be advised of single employee assignment responsibilities (OAR 437-007-1315 (Single Personnel Assignments)), when working alone.

(2)After a measurable amount of rain on the operation area, the forester may suspend the requirements of subsection (1) of this rule until such time as, in the judgment of the forester, conditions warrant reinstatement.

(3)The forester may reduce or waive any requirement of subsection (1)(a) or (b) of this rule in a written order if, in the judgment of the forester, conditions so warrant.

(4)Immediately following a period when the only operation activity has been the use of self-loading log trucks on improved roads or landings cleared of flammable material, fire watch service is not required.***

- Have facilities for transportation and communications to summon assistance.
- Observe all portions of the operation on which activity occurred during the day.

Upon discovery of a fire, fire watch personnel must: first report the fire, summon any necessary firefighting assistance, describe intended fire suppression activities and agree on a checking system; then, after determining a safety zone and an escape route that will not be cut off if the fire increases or changes direction, immediately proceed to control and extinguish the fire, consistent with firefighting training and safety. Regular coordination with ODF will occur during the fire season.

Classification of Fire Precaution Level is decided by ODF and communicated directly to NWN staff at Miller Station, posted online, and posted at all area fire stations. In addition, ODF operates a guard station at the northern end of Facility on Palm Hill Road, which is staffed during fire season.

5.0 Emergency Response

Personnel will be trained on the RACE (i.e., Remove, Alarm, Confine and Extinguish or Evacuate) procedure to implement in the event of a fire start. RACE procedure includes:

- Rescue anyone in danger (if safe to do so);
- Alarm – call the control room, who will then determine if 911 should be alerted;
- Contain the fire (if safe to do so); and
- Extinguish the incipient fire stage (if safe to do so).

Personnel on site will carry fire suppression equipment during the fire season in their vehicles. Per ODF fire season requirements, Attachment B (fire tools, extinguishers for trucks; ORS 477.655, OAR 629-043-0025), each truck shall be equipped with:

- 1 round pointed shovel at least 8 inches wide, with a handle at least 26 inches long
- 1 axe or Pulaski with 26 inch handle or longer
- 1 fire extinguisher rated not less than 2A:10BC (5 pound).

Miller Station and the NMCS will maintain emergency firefighting equipment including shovels, portable water for hand sprayers, fire extinguishers, and other equipment (see also Section 3.2.6, Fire Protection (Subpart L 29 CFR 1910.155-165)). Per ODF fire season requirements, Attachment B (hand tools; ORS 477.655, OAR 629-043-0025), hand tools will be available for each operation site. Tools will be stored in a sturdy box clearly identified as containing firefighting tools. One box will be provided for each operation area. Crews of four or less are not required to have a fire tools box as long as each person has a shovel, suitable for fire-fighting and available for immediate use during operations Additionally, per ODF fire season requirements, Attachment B (fire tools, extinguishers for trucks; ORS 477.655, OAR 629-043-0025), each truck shall be equipped with:

- 1 round pointed shovel at least 8 inches wide, with a handle at least 26 inches long

- 1 axe or Pulaski with 26 inch handle or longer
- 1 fire extinguisher rated not less than 2A:10BC (5 pound).

Additionally, each internal combustion engine used in an operation, except power saws, shall be equipped with a chemical fire extinguisher rated as not less than 2A:10BC (5 pound).

Personnel will receive training on use of suppression equipment and have onsite fire extinguishers to respond to small fires. In the event of a large fire, 911 will be called and emergency responders will be dispatched. Prior to construction of the Facility, NWN will provide employee fire prevention and response training that shall include instruction on Facility fire hazards, fire safety, emergency notification procedures, use of fire safety equipment, and fire safety rules and regulations. Equivalent training shall be provided to new employees or subcontractors working on site that are hired after the start of construction. All personnel shall be equipped with communication equipment capable of reaching the control room from all locations within the Amended Site Boundary.

To minimize wildfire impacts, NWN will utilize the expertise of local fire brigades in the event of a fire. NWN has written agreements with the Clatskanie Rural Fire Protection District and the Mist-Birkenfeld Rural Fire Protection District dating back to 2015 (Amendment 11, Attachment U-2). Both groups have willingness and ability to respond as staffing allows to any fire protection issues which may arise during the operation of the Facility. NWN shall provide the Mist Birkenfeld Rural Fire Protection District with an annual tour of the Miller Station to familiarize personnel with the facility in case of an emergency; these meetings will also cover any updated firefighting responses to electrical and gas leak fires. Additionally, NWN will continue to provide notice to Mist-Birkenfeld Rural Fire Protection District whenever they are performing well work or major construction for emergency response purposes.

6.0 Plan Updates and Modifications - OAR 345-022-0115(1)(b)(E)

> *OAR 345-022-0115(1)(b)(E) Describe methods the applicant will use to ensure that updates of the plan incorporate best practices and emerging technologies to minimize and mitigate wildfire risk.*

NWN will annually review this WMP in accordance with NWN Mist Underground Storage operation and maintenance manuals. Evaluation of wildfire risk will be consistent with the requirements of OAR 345-022-0115(1) using current data from reputable sources. Updates to this Plan will account for changes in local fire protection agency personnel and changes in best practices for minimizing and mitigating fire risk. NWN will consult with Columbia County, the local fire department, and the Columbia County Emergency Manager.

After each review, a copy of the updated Plan will be provided to the Oregon Department of Energy within the annual compliance report required under OAR 345-026-0080(2). In the annual report's

monitoring report, a discussion of any significant changes to the wildfire mitigation program, including the reason for any such changes, will be described (OAR 345-026-0080(2)(e)). If after the review of the Plan by ODOE (as appended to the annual report), a determination is made that no changes are required, an explanation of this determination will be provided. Additionally, the annual report's compliance report will describe the certificate holder's compliance with all site certificate conditions that are applicable during the preceding year (OAR 345-026-0080(2)(f)).

Updates to this Plan will be submitted to the Department for approval or Council approval prior to adopting any changes. NWN shall document and report annually to the Department (pursuant to OAR 345-022-0080(2):

- Whether wildfire risk has changed significantly at the site.
- Whether the industry groups and applicable design standards outlined in Table 2 have changed or been updated to resulting in new future technologies or best practices that could be implemented at the Facility. The Plan shall be updated based on changes in best practices or technologies deemed necessary and appropriate at the site, or as needed at the site based on changes in site conditions and modeled wildfire risk.
- Any significant changes in vegetation management.

NWN shall update Table 2 below prior to operation, subject to Department approval. Emerging technologies will likely contribute to increased knowledge of wildfire risk and wildfire mitigation. Improvements in wildfire modeling and detection will be monitored and integrated into the plan. Specifically, this document will be updated if wildfire models cited in this report are updated.

Table 2. Resources for Future Best Practices

Reference	Description	Method
ODF's Fire Season Requirements (Attachment B; ODF 2023a)	Fire season requirements which come into effect by PSA, according to ODF foresters.	Facility personnel will keep up-to-date with changes to ODF's Fire Season Requirements document for PSA NW03.
Industrial Fire Precaution Levels (IFPLs) for Oregon Department of Forestry Protection west of the Cascades (Attachment A; ODF 2023b, ODF 2023c)	Additional fire season requirements and Best Management Practices, which change according to the local severity of fire risk.	Facility personnel will keep up-to-date with changes to ODF's IFPL requirements for PSA NW03.
North American Electric Reliability Corporation (NERC; NERC 2023)	NERC develops electrical standards for large energy facilities.	NWN will follow the NERC reliability guidelines for natural gas, as outlined in their March, 2023 report.
Pipeline and Hazardous Materials Safety Administration (PHMSA 2021)	PHMSA exists through the US Department of Transportation and is responsible for developing and enforcing regulations for the safe, reliable, and environmentally sound transportation of energy and other hazardous materials.	Remain up to date with new bulletins shared through PHMSA regarding changes to regulations or recommended safety procedures.

Reference	Description	Method
ODF's Fire Season Requirements (Attachment B; ODF 2023a)	Fire season requirements which come into effect by PSA, according to ODF foresters.	Facility personnel will keep up-to-date with changes to ODF's Fire Season Requirements document for PSA NW03.
Industrial Fire Precaution Levels (IFPLs) for Oregon Department of Forestry Protection west of the Cascades (Attachment A; ODF 2023b, ODF 2023c)	Additional fire season requirements and Best Management Practices, which change according to the local severity of fire risk.	Facility personnel will keep up-to-date with changes to ODF's IFPL requirements for PSA NW03.
Oregon Structural Specialty Code (OSSC 2022)	Building codes applicable to inhabitable spaces, including the Operations and Maintenance building, and written according to the 2021 International Fire Code.	Remodeling to the Operations and Maintenance building that requires permits will follow any updates to the Oregon Structural Specialty Code at that time.

7.0 References

NERC (North American Electric Reliability Corporation). 2023. Reliability Guideline Natural Gas and Electrical Operational Coordination Considerations. https://www.nerc.com/comm/RSTC_Reliability_Guidelines/Reliability%20Guideline%20-%20Gas%20and%20Electric%20Operational%20Coord%20Considerations.pdf. Accessed October 2023.

ODF (Oregon Department of Forestry). 2023a. Fire Season Requirements. https://www.oregon.gov/odf/fire/documents/fire-season-requirements-for-industrial-operations.pdf. Accessed October 2023.

ODF. 2023b. Industrial Fire Restrictions. https://gisapps.odf.oregon.gov/firerestrictions/IFPL.html. Accessed October 2023.

ODF. 2023c. Industrial Fire Precaution Levels (IFPLs) for Oregon Department of Forestry Protection west of the Cascades. https://www.oregon.gov/odf/fire/documents/industrial-fire-precaution-levels.pdf. Accessed October 2023.

OSSC (Oregon Structural Specialty Code). 2022. Commercial Structures Code Program. https://www.oregon.gov/bcd/codes-stand/pages/commercial-structures.aspx. Accessed November 14, 2023.

PHMSA (Pipeline and Hazardous Materials Safety Administration). 2021. Underground Natural Gas Storage. December 20, 2021. https://www.phmsa.dot.gov/pipeline/underground-natural-gas-storage/underground-natural-gas-storage. Accessed November 14, 2023.

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Attachment A. ODF Industrial Fire Precaution Levels (IFPLs) for West of the Cascades

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FIRE SEASON REQUIREMENTS

The following fire season requirements become effective when fire season is declared in each Oregon Department of Forestry Fire Protection District, including those protected by associations (DFPA, CFPA, WRPA).

NO SMOKING **(477.510)**

No smoking while working or traveling in an operation area.

HAND TOOLS **(ORS 477.655, OAR 629-43-0025)**

Supply hand tools for each operation site - 1 tool per person with a mix of pulaskis, axes, shovels, hazel hoes.
Store all hand tools for fire in a sturdy box clearly identified as containing firefighting tools. Supply at least one box for each operation area. Crews of 4 or less are not required to have a fire tools box as long as each person has a shovel, suitable for fire-fighting and available for immediate use while working on the operation.

FIRE EXTINGUISHERS **(ORS 477.655, OAR 629-43-0025)**

Each internal combustion engine used in an operation, except power saws, shall be equipped with a chemical fire extinguisher rated as not less than 2A:10BC (5 pound).

POWER SAWS **(ORS 477.640, OAR 629-043-0036)**

Power saws must meet Spark Arrester Guide specifications - a stock exhaust system and screen with ≤ .023 inch holes.

The following shall be immediately available for prevention and suppression of fire:

- One gallon of water or pressurized container of fire suppressant of at least eight ounce capacity
- 1 round pointed shovel at least 8 inches wide with a handle at least 26 inches long
- The power saw must be moved at least 20' from the place of fueling before it is started.

FIRE TOOLS, EXTINGUISHERS FOR TRUCKS **(ORS 477.655, OAR 629-043-0025)**

Equip each truck driven in forest areas for industrial purposes with:

- 1 round pointed shovel at least 8 inches wide, with a handle at least 26 inches long
- 1 axe or Pulaski with 26 inch handle or longer
- 1 fire extinguisher rated not less than 2A:10BC (5 pound).

SPARK ARRESTERS AND MUFFLERS **(ORS 477.645, OAR 629-043-0015)**

All non-turbo charged engines must meet Spark Arrester Guide specifications except:

- Fully turbo charged engines.
- Engines in motor vehicles operating on improved roads equipped with an adequate muffler and exhaust system.
- Engines in light trucks (26,000 GVW or less) that are equipped with an adequate muffler and an exhaust system.
- Engines in heavy trucks (greater than 26,000 GVW) that are equipped with an adequate muffler and exhaust system.
- If a truck engine is not fully turbo-charged, then the exhaust must extend above the cab and discharge upward or to the rear, or to the end of the truck frame.
- Water pumping equipment used exclusively for fighting fire.
- Engines of 50 cubic inch displacement or less, except ATV's and motorcycles, shall be equipped with an adequate muffler and an exhaust system.
- Engines in ATV's and motorcycles must be equipped with an adequate muffler and exhaust system or an approved screen, which completely encloses exhaust system.
- Power saws. (See power saw requirements)

PUMP, HOSE, AND WATER SUPPLY **(ORS 477.650, 477.625, OAR 629-043-0026, 629-43-0020)**

Supply a pump, hose and water supply for equipment used on an operation.

- Pump must be maintained ready to operate and capable to provide a discharge of not less than 20 gallons per minute at 115 psi at pump level. **Note: Volume pumps will not produce the necessary pressure to effectively attack a fire start. Pressure pumps are recommended.**
- Water supply shall be a minimum of 300 gallons if a self-propelled engine.
  Water supply shall be a minimum of 500 gallons if not self-propelled (pond, stream, tank, sump, trailer, etc.)
- One water supply is adequate as long as the operator can deliver water to the fire within 10 minutes
- Provide enough hose (500 feet minimum) not less than 3/4" inside diameter to reach areas where power driven machinery has worked.

Note: Should a fire occur, the operator must be able to position the water supply in a location where enough hose is available to reach the area worked by power driven machinery. This includes mobile equipment as well as motorized carriages and their moving lines. Moving lines are defined as main lines and haul back lines. This can be achieved in many ways, including the practice of having a water tank and hose attached to a piece of equipment, like a skidgen or skidder, that can get the water to the fire.

- Water supply, pump, and at least 250' of hose with nozzle must be maintained as a connected, operating unit ready for immediate use.

CABLE LOGGING OPERATIONS **(ORS 477.625, 477.655, OAR 629-043-0026, 629-043-0025)**

Clear the ground of flammable debris within a 10-foot radius around any block. This cleared area shall be kept free of flammable debris while the block is in use.

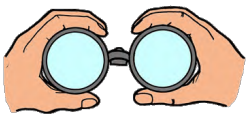
Provide at each block:

- 5 gallon pump can filled with water
- 1 round pointed shovel at least 8 inches wide with a handle at least 26 inches long.

FIRE WATCH SERVICE **(477.665, 629-043-0030)**

Each operation area is to have a Firewatch.

Fire watch shall be on duty during any breaks (up to 3 hours) and for three hours after all power driven machinery used by the operator has been shut down for the day. ***Note: Some ODF districts waive this requirement based on the IFPL in place. Check with the district in which you are working.***



Fire watch shall:

- Be physically capable and experienced to operate firefighting equipment.
- Have facilities for transportation and communications to summon assistance.
- Observe all portions of the operation on which activity occurred during the day.

Upon discovery of a fire, Firewatch personnel must: First report the fire, summon any necessary firefighting assistance, describe intended fire suppression activities and agree on a checking system; then, after determining a safety zone and an escape route that will not be cut off if the fire increases or changes direction, immediately proceed to control and extinguish the fire, consistent with firefighting training and safety.

OPERATION AREA FIRE PREVENTION **(477.625, 629-043-0026)**

- Keep all power driven machinery free on excess flammable material which may create a risk of fire.
- Avoid line-rub on rock or woody material, which may result in sparks or sufficient heat to cause ignition of a fire.
- Disconnect main batteries from powered components (other than what may be necessary to retain computer memory) through a shut-off switch or other means or, leave equipment on ground cleared of flammable material.

NOTICE**:**

THESE ARE MINIMUM STANDARDS BY LAW. MANY LANDOWNERS REQUIRE ADDITIONAL REQUIREMENTS.

Attachment B. ODF's Fire Season Requirements

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Industrial Fire Precaution Levels (IFPLs) for Oregon Department of Forestry Protection west of the Cascades

IFPL I. Fire Season
Fire season requirements are in effect. In addition to other fire prevention measures, a Firewatch is required at this and all higher levels unless otherwise waived.

IFPL II. Limited Shutdown
The following may operate only between the hours of 8 P.M. and 1 P.M.:

- Power saws except at loading sites;
- Feller-bunchers with rotary head saws;
- Cable yarding;
- Blasting;
- Welding, cutting, or grinding of metal.

IFPL III. Restricted Shutdown
The following is prohibited except as indicated:

- Cable yarding - except that gravity operated logging systems employing non-motorized carriages or approved motorized carriages (defined below), may operate between 8 P.M. and 1 P.M. when all blocks and moving lines are suspended 10 feet above the ground except the line between the carriage and the chokers and during rigging.

The following are permitted to operate between the hours of 8 P.M. and 1 P.M. where mechanized equipment capable of constructing fire line is immediately available to quickly reach and effectively attack a fire start:

- Ground-based operations (defined below);
- Power saws on ground-based operations;
- Rotary head saw feller-bunchers with a continuous Firewatch;
- Non-rotary head saw feller-bunchers;
- Tethered logging systems (defined below).

The following are permitted to operate between the hours of 8 P.M. and 1 P.M.:

- Power saws at loading sites;
- Loading or hauling of any product or material;
- Blasting;
- Welding, cutting, or grinding of metal;
- Any other spark emitting operation not specifically mentioned.

IFPL IV. Complete Shutdown
All operations are prohibited.

NOTE: Where hauling involves transit through more than one shutdown/regulated use area, the precaution level at the woods loading site shall govern the level of haul restriction, unless otherwise prohibited by other than the IFPL system. Under IFPL III, all trucks must be loaded and leaving the loading site no later than 1 P.M.

IFPL Definitions

Approved motorized carriage: a cable yarding system employing a motorized carriage with two fire extinguishers, each with at least a 2A:10BC rating, mounted securely on opposite sides of the carriage, an emergency motor cutoff, and an approved exhaust system.
Cable yarding system: a yarding system employing cables, and winches in a fixed position.
Fire Season: that season of the year when a fire hazard exists as declared by the responsible agency official.
Ground-based operations: mobile and stationary equipment operations other than cable yarding systems, including but not limited to tractor/skidder, feller-buncher, forwarder, processor, and shovel operations.
Loading sites: a place where any product or material (including, but not limited to logs, firewood, slash, soil, rock, poles, etc.) is placed in or upon a truck or other vehicle. loading site shall govern the level of haul restriction, unless otherwise prohibited by other than the industrial precaution level system.
Tethered logging system: winch-assisted, cable-assisted, traction-assisted, etc., which enable ground-based timber harvesting machines to operate on steep slopes.

Waivers

Waivers, written in advance, may be used for any and all activities. Activities for which waivers may be issued include, but are not limited to:

- mechanized loading and hauling.
- road maintenance such as sprinkling, graveling, grading and paving.
- cable yarding using gravity systems or suspended lines and blocks, or other yarding systems where extra prevention measures will significantly reduce the risk of fire.
- power saws at loading sites or in felling and bucking where extra prevention measures will significantly reduce the risk of fire.
- maintenance of equipment (other than metal cutting and welding) or improvements such as structures, fences and powerlines.

Best Management Practices for Forest Operations Checklist

- Assure good communications are established with protection district.
- Keep all equipment clean of flammable material and debris.
- Utilize and keep in good working condition manufacturer recommended non-sparking clamping jaws on braking systems on carriages.
- Clean out spark arrester ports.
- Hydraulic and fuel lines are in good condition.
- Battery hold-downs are in good repair and positive terminal is insulated;
- Electrical wiring and circuit breakers are in good working order according to manufacturer specifications;
- Pumps and fire trucks are in good working condition;
- Line rub is eliminated;
- Where possible, and when not in use, park equipment overnight in location clear of flammable material.
- Monitor relative humidity hourly and consider shut down when relative humidity drops below 30 percent.

NOTE: The IFPL system does not apply on lands protected by ODF east of the summit of the Cascades.

"STEWARDSHIP IN FORESTRY"

Oregon Department of Forestry
Forest Activity Inspection Report

Date: _____
Notification / Unit No.: _____
Sale or Job Name: _____
FPF Name/No.: _____

Operator: _____ Landowner: _____ Timber Owner: _____

FIRE PREVENTION

REQUIRED | OK THIS DATE | ☐ Slash Hazard Inspection | ☐ Not Active This Date

☐ ☐ Fire Tools: Number of workers in operation:_____

Power Saws: Number in operation:_____ Number Checked_____

☐ ☐ **Spark Arresters / Exhaust Systems**
☐ ☐ **Shovels and Fire Extinguishers**

Trucks: Number in operation:_____ Number Checked_____

☐ ☐ **Exhaust Systems**
☐ ☐ **Tools and Fire Extinguishers**

Other Power Driven Machinery and Engines:

☐ ☐ **Spark Arresters / Exhaust Systems**
☐ ☐ **Debris Accumulation Removed**
☐ ☐ **Fire Extinguishers**

Cable Logging Systems:

☐ ☐ **Cable lines clear**
☐ ☐ **Blocks cleared Number checked:** _____
☐ ☐ **Shovels and water at blocks**

☐ ☐ **Water Supply / Pump / Hose / Nozzle**

☐ ☐ **Fire Watch Hours after operation:** _____

☐ ☐ **Alternate methods or equipment, as described below are approved for use.**

☐ ☐ Other: _____
☐ ☐ Other: _____

☐ **IFPL Waiver, as described below, is approved**

☐ **Order:** For the items described below, you are hereby ordered to cease violation of ORS Chapter 477. Your Permit to Use Fire or Power Driven Machinery is suspended for these items until compliance is restored.

FOREST PRACTICES

☐ Pre-Operation Inspection ☐ Active or Post-Operation Inspection ☐ Complaint Investigation ☐ Waiver of 15 Day Waiting Period

Prior Approval / Written Plans

☐ Prior Approval Granted: Applicable rule(s)_____

Written Plan Action: ☐ Required ☐ Approved ☐ Approval Denied

Written plan rule(s): _____

Written plan resources: _____

☐ RECOMMENDATIONS

Written below are recommendations. The inspecting Forest Practices Forester recommends these actions to prevent an unsatisfactory condition which may result in a violation of the Forest Practices Act. These recommendations pertain to the following rules:

☐ Written Plans ☐ Chemicals ☐ Water Protection
☐ Reforestation ☐ Road Construction ☐ Other_____
☐ Slash ☐ Harvesting

☐ **WRITTEN STATEMENT OF UNSATISFACTORY CONDITION**

This operation is not in compliance with the Forest Practices Act. Further enforcement action will begin if damage occurs or if you do not comply with the instructions written below by this compliance date: _____

This unsatisfactory condition(s) pertain to rule(s) or statute(s):

☐ Written Plans ☐ Chemicals ☐ Water Protection
☐ Reforestation ☐ Road Construction ☐ Other_____
☐ Slash ☐ Harvesting

ORS/OAR(s)_____

INFORMATION ON ITEMS CHECKED ABOVE: Page ____of ____

_____
_____
_____
_____
_____
_____
_____

THIS REPORT INDICATES THE CONDITIONS FOUND TO EXIST AT THE TIME OF THIS INSPECTION FOR THOSE ITEMS CHECKED OR NOTED ABOVE. IT DOES NOT IMPLY THAT ALL PARTS OF THE OPERATION WERE INSPECTED NOR DOES IT INDICATE ITEMS NOT INSPECTED ARE SATISFACTORY.

_____
_____
_____
_____

Signed _____
Received By: Date

☐ Copies Mailed _____
Date

_____
State Forester's Representative Date

FORM 6-2-5-211 (9/2000)

OPERATOR COPY

Attachment P-2: NWN Vegetation Control and Management Plan

Mist Underground Natural Gas Storage Facility RFA13

Environmental Operating Requirements – Module 9

Vegetation Control and Management

NW Natural
Environmental Department

June 2018
Revision 3

Contact Information
Environmental Management: 503-226-4211 x3587; x4327; x4342; x4312

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1 Typical Invasive Species

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Top 10 Things to Know about Vegetation Control
1. Herbicides are regulated as a category of pesticide.
2. A Commercial Pesticide Applicator License is required to apply or supervise the application of restricted-use pesticides in NW Natural right-of-ways and around buildings at facilities.
3. A trainee license is required for staff who apply pesticides under the supervision of a commercial applicator.
4. If NW Natural is responsible for supervising a contractor in the application of pesticides, the person performing the supervision must be licensed as a commercial applicator.
5. A record of each pesticide application must be maintained. Records are required to be kept for 3 years.
6. The NW Natural Chemical Safety Evaluation Committee must approve each pesticide before it can be purchased.
7. NW Natural has a NO SPRAY ZONE policy for specific locations within right-of-ways.
8. NW Natural manages waste pesticides under Universal Waste Regulations.
9. Pesticide spills of more than one pound must be reported to the State of Oregon
10. All areas must be evaluated prior to clearing or spraying

Vegetation Control and Management
Environmental Operating Requirements

1.0 Introduction

NW Natural uses mechanical and chemical (e.g., herbicides) techniques to control noxious weeds and unwanted vegetation in Rights-of-Way (ROW) and around buildings and structures at our facilities. In the right-of-way, selective herbicides[1] are used to control targeted types of vegetation. Around buildings, non-selective[2] herbicides are used. Information about the requirements for application and waste management of herbicides used in vegetation control is presented in this document.

NW Natural Vegetation Management Objectives and Policies are:

1. Provide a clear accessible path on utility right-of-ways.
2. Identify the highest priority vegetation management needs.
3. Control vegetative obstructions, noxious weed control, and nuisance weed control.
4. Perform work in compliance with the Endangered Species Act (ESA), Clean Water Act, and NPDES Requirements and use Best Management Practices (BMP) to meet the evolving requirements
5. Re-evaluate maintenance consistently for cost effective measures.
6. Identify, mark, and report Environmentally Critical Areas, culverts, and other right-of-way concerns.
7. Follow all state and local regulations for herbicide use.
8. Provide a safe and esthetically pleasing right of way.
9. Adhere to NW Natural's No Spray Zone and Natural Areas Policies.

2.0 Controlling Noxious Weeds

"Noxious Weed" is the traditional, legal term for an invasive, non-native plant that threatens agricultural crops, local ecosystems or fish and wildlife habitat. The term "noxious weeds" includes non-native grasses, flowering plants, shrubs and trees. It also includes aquatic plants that invade wetlands, lakes, rivers and shorelines. Noxious weeds cause damage that has considerable environmental and economic costs.

Noxious weeds are spread in a variety of ways. While some of these are natural (wind, water, and wildlife), weeds are often spread by human activity, especially in disturbed area. Seeds get caught in tires or the undercarriage of vehicles, and heavy equipment, and in the tread of shoes and boots, get stuck on clothing and accidentally transported. Noxious weeds often times germinate before and out compete native species.

All reasonable attempts should be made on ROWs and around buildings to control or eradicate noxious weeds. This can be accomplished through mechanical means or use of approved herbicides. Most typical noxious weeds encountered in Oregon include: Canada Thistle, Scotch Broom, Himalayan Blackberry, Gorse, and Kudzu. Imagines of these species are provided in Attachment A to assist with identification.

Controlling and eradicating noxious weeds is important to the operability and longevity of NW Natural assets. Root growth can be aggressive and penetrate pipelines or damage pipe coatings which will eventually lead to pipe corrosion and possibly failure. Figure 1 shows examples of damage to pipelines or pipeline coatings caused by invasive species root growth.

---

[1] Selective herbicides are applied to control specific types of vegetation such as woody plants but not non-target species (such

[2] Non-selective herbicides are applied to control all vegetation in the application area without preference to type of species.

3.0 NWN Vegetation Management Application Guidelines

NW Natural staff and contractors must adhere to these vegetation management application guidelines.

1. Coordinate with NW Natural Staff to field locate gas lines prior to any vegetation removal. Once the gas line is located the utility easement can be measured and the brush clearing width will be determined. An image of a typical gas pipeline easement is provided in Figure 2.

   Note: Have the gas line located and the utility easement measured. Not in all instances do gas line markers posts share the same alignment as the natural gas pipeline.

2. Identify and temporarily mark critical areas, natural areas, riparian areas, wetlands, and setbacks.
3. Conduct a site evaluation prior to maintenance using onsite inspections and maps.
4. Pre-Walk the proposed area to be cleared to avoid any unintended damage to life or property.
5. Use bio-degradable oil in a chain saw whenever necessary.
6. Crew will be familiar with a spill prevention plan and carry spill kits on-site.
7. Fueling of equipment will be done using a spill prevention pump and spill guard.
8. Repair any disturbed soils using approved methods.
9. Implement Tree Clearance and Tree felling protection measures for trees larger than 6” in diameter in and around pipelines. Work with transmission maintenance to determine necessary protection; examples include, plywood, steel plating, and avoidance measures.
10. Maintain tree free zone 10’ from centerline of pipe.

4.0 NW Natural No Spray Zone Guidelines

NW Natural employees and contractors must adhere to the NW Natural No Spray Zones. No Spray Zones are areas along NW Natural's facility corridors where no pesticide spray may be applied. Typical no spray zones are located in and around streams and wetlands. Customers, property owners, and/ or governmental entities may also request no Spray Zones.

No Spray Zone General Guidelines

- No Spray in Water
- No Spray with 100’ from annual waterway
- No Spray on Lane County, Oregon public right-of-ways.

NW Natural’s Corporate Environmental Department should be contacted if you have questions about No Spray Zones or need assistance in identifying No Spray Zones in your work area. Environmental Management maintains a list of No Spray Zones.

5.0 Certification and Licensing

Herbicides are included in the definition of a ‘pesticide’. Insecticides, fungicides, rodenticides, and other pest control products also are pesticides. From a regulatory perspective, there are two types of pesticides: *restricted-use pesticides* (RUP) and *general use pesticides*. A RUP statement on the product label identifies restricted-use pesticides. General use pesticide products do not have the RUP statement on the label.

There are licensing requirements for individuals who apply or supervise the application of pesticides in Oregon. The specific name of the license needed by NW Natural staff is a "Commercial Pesticide Applicator License" and it applies to persons who use or supervise the use of RUP to non-agricultural land or property that belongs to them or an employer. In order to obtain a license, the person must pass an examination in pesticide Laws & Safety and added examinations in the specific categories of pesticide application to be performed. One of the licensing categories covers use of pesticides in right-of-way areas. Two other applicable categories are Industrial, Institutional, Health and Structural: General Pest Control and Moss Control. The license expires at the end of the calendar year it is issued and is renewable annually. Periodic re-certification is required.

Persons who work under the supervision of a licensed commercial applicator must have one of two trainee licenses. A summary of requirements for these pesticide licenses is presented in Table1.

NOTE: NW Natural policy requires that all pesticides be applied by a licensed applicator for both RUP and general use pesticides. The NW Natural Right-of-way supervisor is a licensed for pesticide applicator. Also, if NW Natural is responsible for supervising a contractor in the application of pesticides, the person performing the supervision must be licensed as a Commercial Pesticide Applicator; which means the Right-of-way supervisor will be responsible for overseeing all contractor pesticide applications.

6.0 Common Permits & Best Management Practices

Clearing brush on cross county ROW requires permits. Common permits include:

- Department of Forestry (ODOF) – Notification of Operations Permit
- Must Adhere to ODOF Fire Guidelines during fire season, fire watch may be required (Fire Guidelines are provided in Appendix B.
- Public Property Notifications, i.e. Parks Permit, etc.…
- Spraying Notifications Requirements in Oregon and Washington
- Take permits to work in or around Critical Habitat Area that have identified Threatened or Endangered Species

The NW Natural Corporate Environmental Department can assist with obtaining needed permits.

7.0 Natural Areas, Critical Habitat Areas, and Riparian Zones

Where NW Natural gas pipelines were installed using Horizontally Directional Drilling (HDD) technology no aboveground disturbance or clearing took place at time of construction. HDD installation was utilized to preserve the natural areas and limit the environment impact at time of construction. Typically, HDD technology was used to limit impacts to wetlands, water crossings, parklands, and other natural features.

General Guidelines

- A field evaluation must be performed prior to clearing/spraying work
- Natural Area brush clearing should be limited only to achieve a clear and accessible path for a pedestrian survey of the pipeline.
- Riparian zones should be left intact with only a man-trail cleared for access.
- Maintain a 30' riparian buffer to preserve vegetation and to protect surface water
- Critical Habitat Areas may contain Threatened and Endangered Species. Work in these areas will be restricted and require a permit. Damage to the habitat (e.g., a tree used for nesting or a wetland) or directly to the species without a "Take" permit could be a Federal offense.

8.0 Record Keeping

Pesticide application records must be prepared and maintained. The records are required to be kept by a Commercial Pesticide Applicator (not employed by an operator) and are the same as required of commercial pesticide operators [OAR 603-57-130). **The records must be maintained for at least three years from the date of application.**

The required pesticide application record information is summarized in Table 2.

Table 1
Pesticide License Requirements

License	Requirements	Renewal
Commercial Pesticide Applicator	• Must be certified in appropriate categories • Can supervise trainee applicators • Can consult on the use of RUP • Must be re-certified periodically (about every four years)	• License valid for remainder of year of issuance • Renewable annually throughout certification period
Directly Supervised Commercial Pesticide Trainee	• Work under direction of licensed commercial applicator • Onsite supervision not required • Must pass trainee certification exam • Must obtain license	• License valid for remainder of year of issuance • Limited to one-time renewal for following year
Immediately Supervised Commercial Pesticide Trainee	• Work under immediate supervision of licensed commercial applicator • Onsite supervision required at all times and no further than 5 minutes away from supervisor • No exam is required • Must obtain license	• License valid for remainder of year of issuance • Can be renewed annually without limitation

Table 2
Required Pesticide Application Records

1. Full name, address and phone number of the business or individual who owns or controls the property.
2. Address of the site or geographic description of the site and the size of the area treated.
3. Date and approximate beginning and ending time of application.
4. Full name of individual or business that supplied the pesticide.
5. EPA registration number of each pesticide product applied or the manufacturer, product name, and formulation type.
6. Amounts and types of products used, amount of each pesticide applied, amount and type of carrier used, amount and type of other material applied (i.e., wetting agent or drift retardant).
7. For each pesticide product applied, the specific crop or site of application.
8. Identification of the specific application equipment used (i.e., aerosol can, speed sprayer, fogger, etc.).
9. Full name of the applicator(s) and/or trainee(s) who applied the pesticides.

The Right-of-Way team leaders for NW Natural maintain these records in the Rights-of-Way Supervisor's office located at the Sherwood Operations and Training Center.

9.0 Waste Management

9.1 Pesticide Selection

Part of the training and certification for pesticide applicators involves the selection of the appropriate pesticide that will achieve a desired result. Selection of the appropriate pesticide for the job helps reduce the need to re-spray or discard unused pesticide and is a first step in reducing the amount of waste generated.

After selecting the herbicide for a specific application, the NW Natural Chemical Safety Evaluation Committee must approve the herbicide before it can be purchased or used. This is part of NW Natural's chemical management program. Because of the time needed in the approval process and the goal of reducing the number of chemicals in use, it is helpful if the herbicide could be used for as many right-of-way sites as appropriate.

9.2 Waste Generation

Pesticide Waste	→	• **Surplus spray solution** • **Pesticide-contaminated water from cleaning pesticide application equipment or containers** • **Empty, contaminated pesticide containers**

Pesticide waste should be managed under the Universal Waste Rule (See Module 6 – Universal Waste Management). The universal waste regulations require six (6) simple management steps:

- Do NOT throw pesticide wastes into the trash;
- At Service Centers, Mist, and other fixed locations, collect and store pesticide wastes in appropriate, non-leaking containers;
- Label or mark the container with "Waste Pesticide" and put the date the waste was created;
- Do NOT store accumulated pesticide waste onsite for more than 1 year;
- Provide basic training to NW Natural employees that produce, handle, or manage pesticide wastes; and
- Assure that pesticide wastes are shipped to and received by an authorized universal waste collection site or destination facility.

In addition, NW Natural's internal requirement for empty pesticide containers (after they have been triple rinsed or in accordance with the label instructions) is to puncture or drill holes in the bottom of the container so that it cannot be used again.

Despite the fact that the Universal Waste rules impose certain requirements, these rules are significantly more relaxed when compared to DEQ's 'regular' hazardous waste regulations. Therefore it is imperative that we properly identify, accumulate, store, and transfer our pesticide wastes as universal wastes to companies that will properly manage these materials.

The best method for waste management is to reduce the amount of waste generated. Here are some suggestions on reducing the amount of pesticide waste generated:

- Whenever possible, use-up all pesticide and application residuals (e.g., sprayer heel, equipment rinsate, etc.) on the target vegetation to avoid creating any waste.
- Buy only what you will use in one season.
- Measure, mix and load only enough to do the job.

9.3 Spills

Spills of pesticides (and pesticide residues) in an amount equal to or greater than one pound (about 2 cups) are required to be reported to the State of Oregon Emergency Management Division[3]. In accordance with Module 15, however, the NW Natural Environmental Department is responsible for notifying the State.

All spills must be immediately reported (within 15 minutes of discovery) to the Corporate Environmental Specialist. Depending on the size of the spill and the internal resources available, outside contractors may be retained to perform the spill cleanup and decontamination, as necessary. All reasonable attempts should be made to recover spilled material for reuse if at all possible.

A written report that describes all aspects of the spill and steps taken to prevent a recurrence may be required within 15 days of the spill [OAR 340-108-0010]. DEQ will notify us if a report is needed. The NW Natural Environmental Department will be the lead for preparing any reports, but will require assistance from the field personnel knowledgeable on the incident.

10.0 Reference Materials

There are many references available to assist in preparing for the pesticide certification examinations. Following is a list of some of the primary resources:

Study Material	Location/Source
1. Oregon Pesticide Applicator Manual (EM8532)	Publication Orders & OSU Bookstore
2. Pesticide Control Regulations	Oregon Dept. of Agriculture (OAR 603-057) https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=2734
3. Management of Pesticide Waste	Oregon DEQ (OAR 340-109) https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=1503
4. Right-of-Way Vegetation Management (EM 8863)	Publications Orders & OSU Bookstore
5. Pacific Northwest Weed Control Handbook	Publications Orders & OSU Bookstore https://pnwhandbooks.org/weed
6. Weeds of the West	Publications Orders & OSU Bookstore
7. Oregon Department of Agriculture (ODOA) Noxious Weed List	ODOA website https://www.oregon.gov/oda/programs/weeds/pages/aboutweeds.aspx#A_List

A summary of the pesticide testing requirements and additional reference materials are presented in the Oregon Department of Agriculture website:
https://www.oregon.gov/ODA/programs/Pesticides/Pages/AboutPesticides.aspx

[3] OAR 340-108-0010(1)(f)

Figure 1
Examples Invasive Root Growth

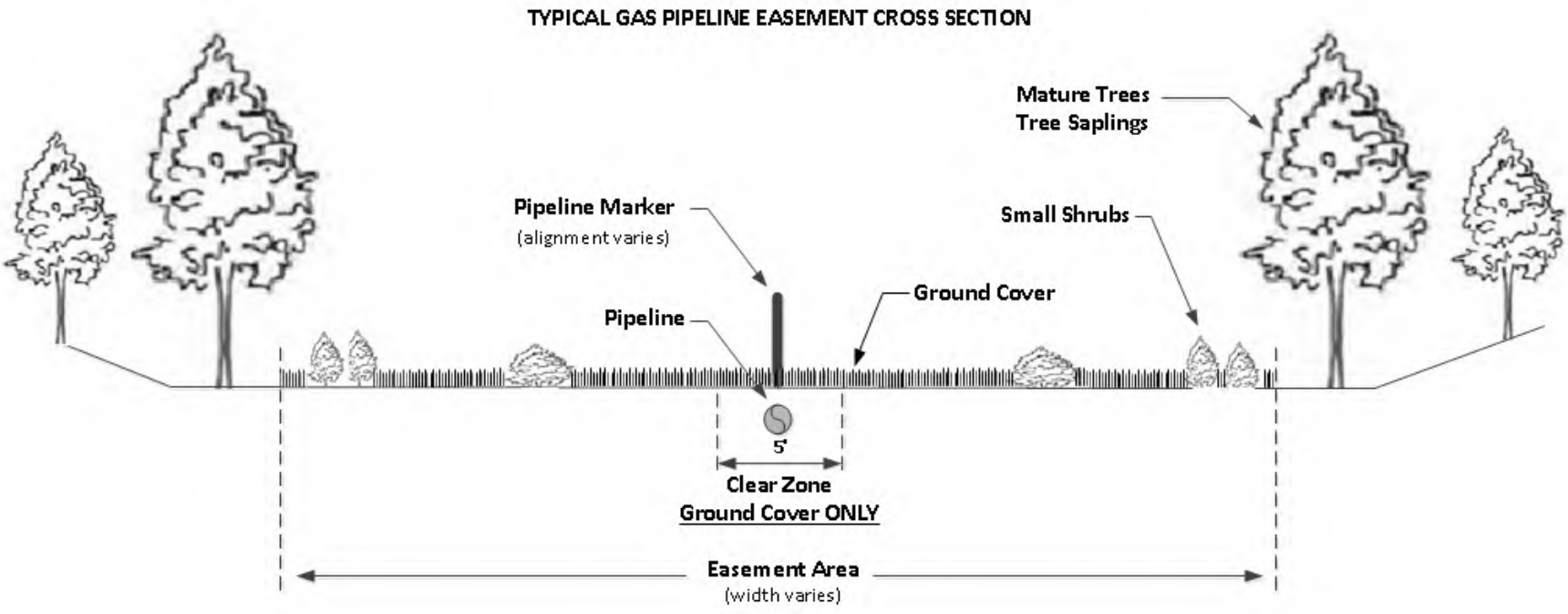

Figure 2
Typical Gas Pipeline Easement Cross Section

Appendix A:
Common Noxious Weeds found on Utility Right of Ways

[https://www.oregon.gov/ODA/programs/Weeds/OregonNoxiousWeeds/Pages/AboutOregonWeeds.aspx]

Canada Thistle

Scotch Broom

Himalayan Blackberry

Gorse

Kudzu

Appendix B

FIRE SEASON REQUIREMENTS

The following fire season requirements become effective when fire season is declared in each Oregon Department of Forestry Fire Protection District, including those protected by associations (DFPA, CFPA, WRPA).

NO SMOKING **(477.510)**

No smoking while working or traveling in an operation area.

HAND TOOLS **(ORS 477.655, OAR 629-43-0025)**

NEW IN 2017. Supply hand tools for each operation site - 1 tool per person with a mix of pulaskis, axes, shovels, hazel hoes.
This language replaces the fire tool table based on the number of workers.

Store all hand tools for fire in a sturdy box clearly identified as containing firefighting tools. Supply at least one box for each operation area. Crews of 4 or less are not required to have a fire tools box as long as each person has a shovel, suitable for fire-fighting and available for immediate use while working on the operation.

FIRE EXTINGUISHERS **(ORS 477.655, OAR 629-43-0025)**

NEW IN 2017. Each internal combustion engine used in an operation, except power saws, shall be equipped with a chemical fire extinguisher rated as not less than 2A:10BC (5 pound).

POWER SAWS **(ORS 477.640, OAR 629-043-0036)**

Power saws must meet Spark Arrester Guide specifications - a stock exhaust system and screen with ≤ .023 inch holes.

The following shall be immediately available for prevention and suppression of fire:

- One gallon of water or pressurized container of fire suppressant of at least eight ounce capacity
- 1 round pointed shovel at least 8 inches wide with a handle at least 26 inches long
- The power saw must be moved at least 20' from the place of fueling before it is started.

FIRE TOOLS, EXTINGUISHERS FOR TRUCKS **(ORS 477.655, OAR 629-043-0025)**

Equip each truck driven in forest areas for industrial purposes with:

- 1 round pointed shovel at least 8 inches wide, with a handle at least 26 inches long
- 1 axe or Pulaski with 26 inch handle or longer
- 1 fire extinguisher rated not less than 2A:10BC (5 pound).

SPARK ARRESTERS AND MUFFLERS **(ORS 477.645, OAR 629-043-0015)**

All non-turbo charged engines must meet Spark Arrester Guide specifications except:

- Fully turbo charged engines.
- Engines in motor vehicles operating on improved roads equipped with an adequate muffler and exhaust system.
- Engines in light trucks (26,000 GVW or less) that are equipped with an adequate muffler and an exhaust system.
- Engines in heavy trucks (greater than 26,000 GVW) that are equipped with an adequate muffler and exhaust system.
- If a truck engine is not fully turbo-charged, then the exhaust must extend above the cab and discharge upward or to the rear, or to the end of the truck frame.
- Water pumping equipment used exclusively for fighting fire.
- Engines of 50 cubic inch displacement or less, except ATV's and motorcycles, shall be equipped with an adequate muffler and an exhaust system.
- Engines in ATV's and motorcycles must be equipped with an adequate muffler and exhaust system or an approved screen, which completely encloses exhaust system.
- Power saws. (See power saw requirements)

Attachment W: Waste Minimization and Recycling Plan

Mist Underground Natural Gas Storage Facility RFA13

NW Natural

Waste Minimization & Recycling Plan

NW Natural is committed to excellence in environmental stewardship. In all activities, from office to field we work to encourage and accomplish waste minimization and recycling of materials. All employees have a role in reducing waste as we work to safely and effectively deliver natural gas to our customers throughout the region. In addition to practical application of this plan, NW Natural's senior management has been demonstrating leadership in stewardship for many years, even recognizing Environmental Stewardship as a core value.

Waste audits are conducted every 3-5 years in the Portland office to benchmark success of waste diversion and reduction processes. Additionally, programs and education are offered to all employees on the topic of waste reduction with regularity through intranet posts, special waste reduction challenges and sustainability lunch brownbag events.

Scope

This plan details practices for reduction and disposal of all waste streams (hazardous and non-hazardous) produced by NW Natural in all business operations and applies to all employees and contractors.

This plan covers both standard office operations and gas delivery as well as construction work managed by the Company. NW Natural works to reduce waste associated with processes whenever possible. Some limiting factors to further reduction include best practices in the areas of environmental management, health and safety. NW Natural will always prioritize operation in the manner that is most safe- this includes the use of one time use protective wear, site security and erosion prevention materials.

Waste Streams, Sources & Minimization/Disposal Strategy

NW Natural operates with best practices to produce the least waste possible without compromising quality and safety. Initiatives and policies support responsible purchasing, waste and resource use reduction. The company also works to responsibly dispose of or recycle those wastes which are produced necessarily. The annual waste footprint of NW Natural varies with the company's operational needs.

Non-hazardous Waste

The vast majority of NW Natural's waste streams fall under the category of Non-Hazardous. The types, sources and handling procedures of these waste streams are outlined in the table below.

Waste Type	Source(s)	Handling Procedure
Cardboard & Paper Products	• Office and print shop: generate paper waste and packaging waste. • Field Operations and Construction Packaging generate paper and cardboard waste.	• The company has Policies in place to reduce paper use through behavioral guidelines and default printer settings on all office computers. • Clean Paper and Cardboard is recycled at all NW Natural offices. This includes traditional office generated waste as well as construction packaging. • All NW Natural offices participate in paper and cardboard collection and recycling programs in standard operations
Metals	• Construction and Maintenance: Steel pipe, and other metal equipment or construction debris. • Field Services: retired meter sets Depressurized spray paint vessels • Offices: Aluminum and Tin can collection	• Pipe, meters and other scrap metals are collected, for recycling, at all office and construction sites in marked boxes and/or bins. Once full, NW Natural contacts hauler for collection. • Aluminum and tin cans are collected at all office sites in traditional municipal recycling. This stream is collected weekly by the contracted recycling hauler.
Plastics	• Polyethylene pipe • Equipment • Packaging • Plastic food and beverage containers	• Scrap and retired polyethylene piping is collected at construction sites and service centers in marked containers. When containers are full vendor is contacted to coordinate recycling. • All plastic equipment and packaging that is recyclable in the local municipality is separated and recycle pickup is coordinated weekly

		• Plastic food and beverage containers are collected and recycled at all NW Natural offices as part of single or mixed stream recycling programs.
Wood	• Pallets- used in bulk and equipment delivery • Construction & Demolition Surplus	• Pallets are collected and returned for reuse by vendor. • Wood not eligible for reuse will be transported to a facility for recycling.
Glass	• Facilities • Catering and break room - glass bottles and food containers	• Collect florescent light bulbs in centralized collection containers for recycling- (hazardous mercury collected-see next table). • Recycle glass bottles locally through municipal waste collection programs- regular hauler pick-up at all offices.
Liquids (non-hazardous)	• Automotive and equipment Paint (latex & oil based paints) • Automotive Oil • Pipeline Oil • Anti-Freeze	• Best practice is to use chemical products completely so no waste is generated. • Used paint thinner is collected and distilled for reuse. • Remaining chemical waste is classified and disposed of using certified vendor and landfill/ incinerator facility. • Used oil is collected and recycled using certified vendor • Used anti-freeze is recycled by vendor
Electronics	• Office & Field Equipment use of small and large electronic equipment for regular operations (computers, handheld data devices, GPS, printers, cellular phones, etc.)	• NW Natural collects and returns to vendor or certified recycler.
Organic Food & Plant associated	• Office Kitchen & Break-room wastes and Catering Wastes. • Greenspace clearing debris- limited.	• NW Natural participates in composting programs available in metro Portland. • Organic waste generated in areas without municipal compost are disposed of in the traditional solid waste stream.

Hazardous Waste

NW Natural's Environmental Management, Safety and Purchasing department have prioritized the purchase of nonhazardous and water based solvents and solutions whenever possible for more than 20 years.

The Chemical Safety Evaluation Committee (CSEC), chaired by Environmental Management staff and incuding members from both the Safety and Purchasing departments, determines if a proposed new

chemical is acceptable and beneficial for use in NW Natural operations. Chemicals are assessed based on the potential ecologial toxicity, worker health and safety critera, safety of storage and end of life disposal considerations.

The CSEC meets as needed to evaluate requests for new chemical use. It employs an online program for managing Saftey Data Sheets. Additionally, CSEC conducts periodic audits and inventories chemicals used in company facilities, in conjuction with a third party firm, to ensure the catalog of active chemicals in use at NWN is accurate and up to date.

Market availability is the limiting factor in almost all of our remaining hazardous waste streams. As new products become available, it may be possible to move toward the eventual goal of zero.

Waste Type	Source(s)	Handling Procedure
Chemical	• Automotive • Cleaning • Mercury containing items	• Best practice is to use chemical products completely so no waste is generated. • Used paint thinner is collected and distilled for reuse. • Remaining chemical waste is classified and disposed of using certified vendor and landfill/ incinerator facility.
Battery	• Facilities • Operations	• Batteries are collected at each facility and then recycled through a certified vendor.
Fluorescent Lamps	• Facilities	• Collect spent lamps and crush bulbs for glass recycling; Residual mercury is captured and disposed of as listed hazardous waste.
Liquids (Hazardous)	• Aerosol marking paint	• Collect residual waste paint from aerosol marking paint cans. • Waste paint is disposed of using certified vendor incinerator facility
Solid Waste (Hazardous)	• Liquefied Natural Gas (LNG) Plant(s) • Pipeline Contaminants	• Gas filters (Molecular Sieve Media) utilized at LNG Plants is replaced on an as-needed basis resulting in hazardous waste generation. Sieve media is disposed of at a certified waste disposal facility. • Pipeline Oil sludge and carbon black generated from pipeline maintenance is analyzed. If determined hazardous it is disposed of using a certified waste disposal facility.

Other Impact Reductions

Water Management Plan

Responsible water use is a priority in all construction and operational use.

Construction

NWN actively coordinates construction water use and sourcing with local water districts to ensure water is utilized with the least impact to both the environment and customers. This is especially key in dry and drought seasons.

When water is used on construction sites, NWN works to optimize water collection, reuse and recycling throughout the project whenever possible.

Automotive & Equipment Maintenance

All NW Natural auto garages comply with DEQ's EcoBiz Certification program. The EcoBiz program is composed of environmentally sustainable practices that are codified into legal requirements, best practices, and elective actions that support a sustainable workplace. Some of the compliance measures outlined in the EcoBiz program include waste minimization, waste collection, waste recycling, chemical storage, chemical reduction practices, sustainable purchasing protocols, waste water collection, and employee training.

Special Programs & Certifications

Eco-Biz Certification

All NW Natural Automotive Service Centers have attained Eco-Biz certification. The EcoBiz Maintenance Certification Program recognizes mechanical shops that reach the highest standards in minimizing their environmental impact. The goal of the program is to prevent and minimize pollution.

EPA Gas Star Program

NW Natural participates in the EPA Gas Star Program. This voluntary program applies to all sectors of the natural gas industry and provides industry best practices which NW Natural follows.

Sustainability at Work Gold Certification

NW Natural has been recognized by the City of Portland's Bureau of Planning and Sustainability as a Sustainable Workplace at the gold level. This certification is awarded to companies that achieve excellence in waste reduction, environmentally responsible practices, and employee programs.

Waste Minimization Responsibilities

Leadership

NW Natural officers are committed to Environmental Stewardship. The all-employee corporate expectations document is distributed to all staff (see attachment).

Environmental Management

In all areas of environmental compliance and voluntary management actions the Environmental Management department monitors and manages behaviors in construction, waste disposal, water use, erosion control, right of way maintenance, and other situational environmental issues.

All Employees: Best Practices

All NW Natural Employees are expected to operate with the core value of Environmental Stewardship in all work they do from office to field.

Green Team & Challenges

A volunteer group of employees, NW Natural's green team, implement voluntary programs including initiatives around waste stream management and resource utilization. All employees have the opportunity to participate in challenges to reduce their footprints.

NW Natural
Environmental Stewardship

NW Natural's Sustainability Guidelines

NW Natural has been a regional leader on environmental policy for many years – from promoting energy efficiency to creation of the Smart Energy Program to advocacy on behalf of livability in the Pacific Northwest. As we help our customers use less energy and reduce their carbon footprint, we are setting sustainability expectations for ourselves, as well.

In the daily operation of our company, we have substantially cut back our use of toxic materials, and we are a regional utility leader in reducing our fleet's carbon emissions. Every facility remodel helps us better manage our energy use; every pipeline improvement reduces the potential for methane emissions, as well as safety hazards; and every construction project applies the best environmental practices we know of.

As with every aspect of our business, we comply with all laws and regulations governing environmental protection. But we don't stop at compliance – we constantly look for ways to do more than meet the requirements.

The ongoing challenge is to continuously find better methods to reduce the impact of our operations on the environment.

Environmental Stewardship is one of the company's core values. While company-wide policies, procedures and investments support this value, the steps you take each day at work can also make a great contribution to environmental protection.

The Green Team suggests these actions you can incorporate into your daily activities.

REDUCE, REUSE, RECYCLE at NW Natural.

Actions to reduce resource use, reuse materials and dispose of waste responsibly benefit more than the environment. Most sustainable practices are accompanied by cost savings and community benefits, so they are good for business from many perspectives. That's why it's valuable to apply these guidelines in all aspects of our work.

REDUCE. Of the "three R's," Reduce is the most important:

Be paper smart: Before you print, think about it. A digital file may be all you need. If you need a hard copy, use double-sided printing whenever possible, according to company policy. Many printers are set to use two sides of the paper automatically – set your computer to print on those printers. Also, make two-sided copies whenever possible. For more ways to reduce your paper use, check out NW Natural's **Paper and Printing Policies**. Find it on the Hub at **OurNWN>Culture & Community>Sustainability** and click on **Waste Reduction**.

Drive Mindfully: You have the opportunity to make environmentally responsible choices whenever you're in a vehicle. Every gallon of gasoline burned creates 20 pounds of carbon emissions. One easy way to use less fuel is to reduce the amount of time you spend idling in your car, truck or van. Learn more about the 2014 launch of the **idling reduction initiative** for our vehicle fleet. Find it on the Hub by visiting **OurNWN>Culture & Community>Sustainability**, then, click on **Field Operations**.

REUSE

Office Supply Collection & Reuse: Surplus and used office supplies can have a second life beyond your desk. Starting this summer, NW Natural's Green Team will set up collection stations for reusable office supplies. From staplers and scissors to file folders and binders, reuse can add up to savings.

Drink and eat responsibly: Avoid single-use beverage and food containers. Instead, grab a glass or mug from your break room. This summer, the ***Reduce, Reuse, Recaffienate*** initiative will focus on reducing the paper cup waste that happens in our coffee-crazed part of the world.

RECYCLE

Recycle and dispose of waste with care. We're fortunate to be in a region that values recycling and smart waste management. Recycling services are available everywhere NW Natural has operations. The City of Portland has the most extensive options for waste disposal in our service area, including compost collection. Use the resources available in your office and try to keep waste out of landfills. The company is rolling out **clearer signage** in 2014 to make the process even easier. Read more about this on the Hub at **OurNWN>Culture & Community>Sustainability** and click on **Waste Reduction**.