NOTE: Circle job class levels applying for and submit to your DATCP Area Engineer

DATCP Conservation Engineering Practitioner Certification
Master Skills Matrix

Conservation Practice		Lead Discipline		Controlling Factor	Units	Job Class					CPS_ID
Has KSA						I	II	III	IV	V	
560	Access Road	Eng	Eng	Surfacing material	Type	earth	stone	concrete	asphalt	All	560-01
		Eng	Eng	Length	Feet	1,500	3,000	5,000	10,000	All	560-02
309	Agrichemical Handling Facility	Eng	Eng	Storage volume	Gallons	500	1,000	2,000	5,000	All	309-01
591	Amendments for Treatment of Agricultural Waste	Eng	Eng	None	N/A	---	---	---	---	All	591-01
366	Anaerobic Digester	Eng	Eng	Animals	Animal Units	150	300	500	1,000	All	366-01
316	Animal Mortality Facility	Eng	Eng	Annual mortality	Animal Units	50	125	250	500	All	316-01
450	Anionic Polyacrylamide (PAM) Application	Eng	Eng	None	Acres	2	5	10	20	40	450-01
000	Any practice	Eng	CED-SCE	Hazard potential as defined in NEM 520.21 (1)	Class	---	---	---	---	Low	000-01
		Eng	CED-SCE	Alters the visual resources of beaches and shorelines on the Great Lakes	N/A	---	---	---	---	None	000-02
		Eng	CED-SCE	Embankment over active fault	N/A	None	None	None	None	None	000-03
397	Aquaculture Ponds	Eng	Eng	Same as Pond (378)	---	---	---	---	---	---	397-01
672	Building Envelope Improvement	Eng	Eng	Implementation of on-farm energy audit recommendations	N/A	---	---	---	---	All	672-01
584	Channel Bed Stabilization	Eng	Eng	(See Open Channel 582)		---	---	---	---	---	584-03
326	Clearing & Snagging	Eng	Eng	Length of reach	Feet	1,000	2,500	5,000	10,000	All	326-01
317	Composting Facility	Eng	Eng	Design volume	Cubic Feet	10,000	20,000	50,000	100,000	All	317-01
656	Constructed Wetland	Eng	Eng	Embankment - effective height	Feet	4	6	8	10	All	656-01
		Eng	Eng	Embankment - drainage area	Acres	10	20	40	80	160	656-02
		Eng	Eng	Embankment - storage volume (top of dam)	Acre Feet	5	10	15	30	50	656-03

Conservation Practice		Lead Discipline		Controlling Factor	Units	Job Class					CPS_ID
Has KSA						I	II	III	IV	V	
402	Dam	Eng	Eng	Same as Pond (378)	---	---	---	---	---	---	402-01
605	Denitrifying Bioreactor	Eng	Eng	Area Drained	Acres	20	40	80	160	All	605-01
356	Dike	Eng	Eng	Class III (minimal damage due to failure)	N/A	---	---	---	---	All	356-01
		Eng	Eng	Berm Soil	Type	---	---	Mineral	Organic	All	356-02
		Eng	Eng	Height	Feet	3	6	8	10	All	356-03
362	Diversion	Eng	Eng	Drainage area	Acres	10	20	40	100	All	362-01
554	Drainage Water Management	Eng	Eng	Area drained	Acres	20	40	80	160	All	554-01
373	Dust Control on Unpaved Roads and Surfaces	Eng	Eng	Length	Feet	1,500	3,000	5,000	10,000	All	373-01
374	Farmstead Energy Improvement	Eng	Eng	Implementation of on-farm energy audit recommendations	N/A	---	---	---	---	All	374-01
398 ✔	Fish Raceway or Tank	Eng	ESD-AqEco & CED-DE	Raceway/tank size	Ft.2	---	---	---	---	All	398-01
410	Grade Stabilization Structure	Eng	Eng	Same as Pond (378)	N/A	---	---	---	---	---	410-01
		Eng	Eng	Embankment (1) - public road on structure	N/A	---	---	---	No	All	410-05
		Eng	Eng	Toewall or drop spillway - net drop	Feet	2*	4*	6*	3	4	410-07
		Eng	Eng	Toewall or drop spillway - weir capacity	CFS	100	200	300	400	500	410-08
		Eng	Eng	Box inlet - net drop	Feet	2*	3*	4*	4	6	410-09
		Eng	Eng	Box inlet - weir capacity	CFS	100	200	300	400	500	410-10
		Eng	Eng	Box inlet - within public road right-of-way	N/A	---	---	---	No	All	410-11
		Eng	Eng	Chute spillway (2) - concrete block or rock riprap - net drop	Feet	4	6	8	10	12	410-12
		Eng	Eng	Chute spillway (2) - concrete block or rock riprap - design capacity	CFS	50	100	150	200	300	410-13

Conservation Practice		Lead Discipline		Controlling Factor	Units	Job Class					CPS_ID
Has KSA						I	II	III	IV	V	
410	Grade Stabilization Structure	Eng	Eng	Geotextile reinforced vegetated chute - net drop	Feet	3	4	5	6	8	410-14
		Eng	Eng	Geotextile reinforced vegetated chute - design capacity	CFS	10	25	50	100	200	410-15
		Eng	Eng	Side inlets (to drainage ditch) - net drop	Feet	6	8	10	12	16	410-16
		Eng	Eng	Side inlets (to drainage ditch) - pipe diameter	Inches	12	18	24	36	48	410-17
412	Grassed Waterway	Eng	Eng	Drainage area	Acres	50	200	600	1,300	All	412-01
355	Groundwater Testing	Eng	Eng	Well use	Type	Micro Irrigation	Sprinkler Irrigation	Livestock	Potable	All	355-01
561	Heavy Use Area Protection	Eng	Eng	Site surface area	Square Feet	5,000	10,000	43,560	80,000	All	561-01
		Eng	Eng	Surface protection	Type	earth	stone	concrete	asphalt	All	561-02
430	Irrigation Pipeline	Eng	Eng	Pipeline capacity < 50 psi maximum pressure	gallons per minute	250	500	1,000	1800	2500	430-01
		Eng	Eng	Pipeline capacity ≥ 50 psi operating pressure	gallons per minute	250	500	1,000	1800	2500	430-02
436	Irrigation Reservoir	Eng	Eng	Same as Pond (378)	---	---	---	---	---	---	436-01
441	Irrigation System, Microirrigation	Eng	Eng	Area irrigated	Acres	0.5	1	5	10	All	441-01
447	Irrigation System, Tailwater Recovery	Eng	Eng	Pump capacity	GPM	2,000	4,000	6,000	8,000	15,000	447-01
449	Irrigation Water Management	Eng	Eng	Area irrigated	Acres	40	80	160	320	All	449-01
527	Karst Sinkhole Treatment	Eng	Eng	None	N/A	---	---	---	---	All	527-01
670	Lighting System Improvement	Eng	Eng	Implementation of on-farm energy audit recommendations	N/A	---	---	---	---	All	670-01
468	Lined Waterway or Outlet	Eng	Eng	Design capacity	CFS	10	30	100	200	All	468-01
516	Livestock Pipeline	Eng	Eng	Total Length	Feet	1,000	3,000	5,000	10,000	All	516-01
		Eng	Eng	Pipe diameter	Inches	---	---	1	2	All	516-02
		Eng	Eng	Pipe design pressure	PSI	40	60	100	160	240	516-03

Conservation Practice		Lead Discipline		Controlling Factor	Units	Job Class					CPS_ID
Has KSA						I	II	III	IV	V	
576	Livestock Shelter Structure	Eng	Eng	Shelter area	Square Feet	500	2,500	10,000	25,000	40,000	576-01
457	Mine Shaft and Adit Closing	Eng	Eng	None	N/A	---	---	---	---	All	457-01
353	Monitoring Well	Eng	Eng	Each	N/A	---	---	---	---	All	353-01
500	Obstruction Removal	Eng	Eng	None	N/A	---	---	---	---	All	500-01
319	On-Farm Secondary Containment Facility	Eng	Eng	None	N/A	---	---	---	---	All	319-01
582	Open Channel	Eng	Eng	Capacity - Bankfull	CFS	150	300	500	750	1000	582-02
		Eng	Eng	Velocity - Bankfull	FPS	2	4	6	8	10	582-03
		Eng	Eng	Thalweg Depth - Bankfull	FEET	2	4	6	8	10	582-04
		Eng	Eng	Max Tractive Stress - Bankfull	PSF	---	0.7	1.1	1.7	2.2	582-05
		Eng	Eng	Inventoried Stream Type	Rosgen	---	---	C & E	C, B, E, & F	A - G	582-06
782	Phosphorous Removal System	Eng	Eng	Area Drained	Acres	20	40	80	160	All	782-01
378	Pond	Eng	Eng	Excavated - use	Type	livestock	fish & wildlife	recreation	fire	All	378-01
		Eng	Eng	Excavated - surface area	Acres	0.5	1	2	5	All	378-02
		Eng	Eng	Embankment (1) - drainage area	Acres	20	80	320	640	2,000	378-03
		Eng	Eng	Embankment (1) - effective height	Feet	6	10	15	25	35	378-04
		Eng	Eng	Embankment (1) - principal spillway diameter	Inches	12	18	24	36	48	378-05
		Eng	Eng	Embankment (1) - storage volume (top of dam)	Acre Feet	5	15	30	50	75	378-06
		Eng	Eng	Embankment (1) - plunge pool	N/A	---	---	---	---	All	378-07
520	Pond Sealing or Lining, Compacted Soil Treatment	Eng	Eng	Pond surface area	Acres	0.1	1	3	5	All	520-01
522	Pond Sealing or Lining, Concrete	Eng	Eng	Pond surface area	Acres	0.1	1	3	5	All	522-01

Conservation Practice		Lead Discipline		Controlling Factor	Units	Job Class					CPS_ID
Has KSA						I	II	III	IV	V	
521	Pond Sealing or Lining, Geomembrane or Geosynthetic Clay Liner	Eng	Eng	Pond surface area	Acres	0.1	1	3	5	All	521-01
533	Pumping Plant	Eng	Eng	Centrifugal Pump - Design Capacity	GPM	500	1000	1800	3000	3500	533-02
		Eng	Eng	Centrifugal Pump - Static Head	FEET	100	165	205	265	350	533-03
		Eng	Eng	Turbine Pump - Design Capacity	GPM	500	1000	1800	3000	3500	533-04
		Eng	Eng	Turbine Pump - Static Head	FEET	100	165	265	400	500	533-05
		Eng	Eng	Submersible Well Pump - Design Capacity	GPM	5	10	20	30	50	533-06
		Eng	Eng	Submersible Well Pump - Static Head	FEET	60	100	200	300	400	533-07
		Eng	Eng	Axial Flow Pump (Trailer/Prop) - Design Capacity	GPM	---	---	500	1000	50000	533-08
		Eng	Eng	Axial Flow Pump (Trailer/Prop) - Static Head	FEET	---	---	20	25	All	533-09
		Eng	Eng	Vertical Manure Pump - Total Pipeline Length	FEET	---	300	500	1500	All	533-10
		Eng	Eng	Vertical Manure Pump - Design Capacity	GPM	---	100	250	500	All	533-11
		Eng	Eng	Vertical Manure Pump - Static Head	FEET	---	20	40	80	All	533-12
		Eng	Eng	Piston Manure Pump - Total Pipeline Length	FEET	---	150	300	600	All	533-13
		Eng	Eng	Piston Manure Pump - Design Capacity	GPM	---	50	100	150	All	533-14
558	Roof Runoff Structure	Eng	Eng	Area of roof	Square Feet	500	1,000	2,000	5,000	All	558-01
367	Roofs and Covers	Eng	Eng	Covered area	Square Feet	500	2,500	10,000	25,000	All	367-01
604	Saturated Buffer	Eng	Eng	Area Drained	Acres	20	40	80	160	All	604-01
350	Sediment Basin	Eng	Eng	Drainage area (1)	Acres	5	10	50	100	500	350-01

Conservation Practice		Lead Discipline		Controlling Factor	Units	Job Class					CPS_ID
Has KSA						I	II	III	IV	V	
350	Sediment Basin	Eng	Eng	Effective height (1)	Feet	6	10	15	25	35	350-02
		Eng	Eng	Principal spillway diameter (1)	Inches	12	18	24	36	48	350-03
		Eng	Eng	Storage volume (top of dam) (1)	Acre Feet	2	5	15	30	50	350-04
318	Short Term Storage of Animal Waste and Byproducts	Eng	Eng	Stack volume	Cubic Feet	5,000	10,000	20,000	30,000	40,000	318-01
572	Spoil Spreading	Eng	Eng	Area	Acres	---	---	---	0.5	All	572-01
574	Spring Development	Eng	Eng	None	N/A	---	---	---	---	All	574-01
442	Sprinkler System	Eng	Eng	Area irrigated	Acres	40	80	160	320	All	442-01
570	Stormwater Runoff Control	Eng	Eng	Disturbed area	Acres	0.25	0.50	1	2	All	570-01
578	Stream Crossing	Eng	Eng	Culvert crossing - drainage area	Acres	50	200	600	1,300	All	578-01
		Eng	Eng	Culvert crossing - plunge pool	N/A	---	---	---	---	All	578-02
		Eng	Eng	Ford crossing - design velocity	FPS	4	6	8	10	All	578-03
580	Streambank and Shoreline Protection	Eng	Eng	Water Height Above Shoreline (3)	Feet	---	1	2	2.3	3	580-01
		Eng	Eng	Capacity - Bankfull	CFS	150	300	500	1,000	5,000	580-02
		Eng	Eng	Velocity - Bankfull	FPS	2	4	6	8	10	580-03
		Eng	Eng	Streambank - fish habitat	Feet	100	300	500	1,000	All	580-05
		Eng	Eng	Max Tractive Stress - Bankfull	PSF	---	0.7	1.1	1.7	2.2	580-06
		Eng	Eng	Distance from OHWM to Structural Property	feet	---	---	>40	20-40	<20	580-07
		Eng	Eng	Shoreline Raw Bank Height	feet	---	---	5	10	20	580-08
587	Structure for Water Control	Eng	Eng	Structure capacity	CFS	10	25	50	100	500	587-01
		Eng	Eng	Drainage area	Acres	10	50	100	250	500	587-02
		Eng	Eng	Effective height	Feet	5	10	15	20	35	587-03

Conservation Practice		Lead Discipline		Controlling Factor	Units	Job Class					CPS_ID
Has KSA						I	II	III	IV	V	
606	Subsurface Drain	Eng	Eng	Drain diameter	Inches	4	6	8	12	All	606-01
		Eng	Eng	Area drained	Acres	60	160	240	320	All	606-02
607	Surface Drain, Field Ditch	Eng	Eng	Design capacity	CFS	10	25	50	100	All	607-01
608	Surface Drain, Main or Lateral	Eng	Eng	Design capacity	CFS	10	25	50	100	500	608-01
		Eng	Eng	Design velocity	FPS	2	4	6	8	10	608-02
600	Terrace	Eng	Eng	Area controlled (total system)	Acres	10	20	50	100	All	600-01
		Eng	Eng	Embankment height	Feet	2	4	5	6	All	600-02
575	Trails and Walkways	Eng	Eng	Same as Access Road (560)	---	---	---	---	---	---	575-01
620	Underground Outlet	Eng	Eng	Acres drained per intake	Acres	5	10	15	40	All	620-01
		Eng	Eng	Diameter	Inches	6	8	12	18	All	620-02
635	Vegetated Treatment Area	Eng	Eng	Animals present at production site	Animal Units	100	300	500**	1,000**	All**	635-01
360	Waste Facility Closure	Eng	Eng	Earthen liner - storage volume	1,000 cu. ft.	25	50	100	500	2,000	360-01
		Eng	Eng	Concrete liner - storage volume	1,000 cu. ft.	25	50	100	500	2,000	360-02
632	Waste Separation Facility	Eng	Eng	Animals	Animal Units	250	500	750	1,000	All	632-01
		Eng	Eng	Livestock yard - wall height	Feet	2*	4*	6*	8*	All	632-02
		Eng	Eng	Livestock yard - contributing area (drainage area)	Square Feet	5,000	10,000	43,560	80,000	All	632-03
313	Waste Storage Facility	Eng	Eng	Sensitive Environmental Setting	N/A	---	---	No	SES Removed	All**	313-01
		Eng	Eng	Earthen embankment - effective height	Feet	10	15	20	25	All	313-02
		Eng	Eng	Impoundment - design storage volume	1,000 cu. ft.	100	200	500	1,000	2,000	313-03
		Eng	Eng	Structures - design storage volume	1,000 cu. ft.	25	50	100	500	2,000	313-07

Conservation Practice		Lead Discipline		Controlling Factor	Units	Job Class					CPS_ID
Has KSA						I	II	III	IV	V	
313	Waste Storage Facility	Eng	Eng	Prequalified structures (4)	N/A	---	---	---	---	All	313-08
		Eng	Eng	Structures - wall height	Feet	4*	6*	8*	10*	All	313-09
634	Waste Transfer	Eng	Eng	Gravity flow pipe - length	Feet	50	100	150	200	All	634-01
		Eng	Eng	Pressurized flow pipe - diameter	Inches	4	8	12	15	All	634-02
		Eng	Eng	Reception tank/trough - cast in place - wall height	Feet	4*	6*	8*	10*	All	634-03
		Eng	Eng	Prefabricted reception tank - sewage tank (5)	N/A	---	---	---	---	All	634-04
		Eng	Eng	Prefabricated manhole/trough	N/A	---	---	---	---	All	634-05
629	Waste Treatment	Eng	Eng	Milking center - design capacity	GPD	100	200	300	400	500	629-01
		Eng	Eng	Silage leachate - site surface area	Square Feet	5,000	10,000	43,560	80,000	All	629-02
		Eng	Eng	Silage leachate - surface protection (type)	N/A	earth	stone	concrete	asphalt	All	629-03
638	Water and Sediment Control Basin	Eng	Eng	Embankment height	Feet	4	6	8	10	All	638-01
642	Water Well	Eng	Eng	Casing diameter	Inches	4	6	8	12	All	642-01
		Eng	Eng	Estimated depth	Feet	100	200	300	400	All	642-02
614	Watering Facility	Eng	Eng	Animals	Animal Units	50	100	300	500	All	614-01
351	Well Decommissioning	Eng	Eng	Drilled well - estimated depth	Feet	100	200	300	400	All	351-01
		Eng	Eng	Driven well point - estimated depth	Feet	5	10	15	25	All	351-02
		Eng	Eng	Dug well	N/A	---	---	---	---	All	351-03
658	Wetland Creation	Eng	Eng	Same as Wetland Restoration (657)	---	---	---	---	---	---	658-01
659	Wetland Enhancement	Eng	Eng	Same as Wetland Restoration (657)	---	---	---	---	---	---	659-01
657	Wetland Restoration	Eng	Eng	Embankment - drainage area	Acres	10	20	40	80	160	657-01

Conservation Practice		Lead Discipline		Controlling Factor	Units	Job Class					CPS_ID
Has KSA						I	II	III	IV	V	
657	Wetland Restoration	Eng	Eng	Embankment - effective height	Feet	4	6	8	10	All	657-02
		Eng	Eng	Embankment - storage volume (top of dam)	Acre Feet	5	10	15	30	50	657-03
		Eng	Eng	Scrape - Surface area	Acres	---	---	0.5	1	All	657-04
		Eng	Eng	Tile break - drain diameter	Inches	---	---	6	12	All	657-05
		Eng	Eng	Ditch plug - ditch depth	Feet	---	---	4	6	All	657-06
		Eng	Eng	Ditch plug - drainage area	Acres	80	160	320	640	All	657-07